SUBSCRIPTION INFORMATION: Caribbean Curriculum is published once a year. **Price per issue**: TT $20.00 in Trinidad and Tobago. US $5.00 in the Caribbean, and US $10.00 elsewhere. *Prices include postage and handling*.

ISSN 1017-5636

CARIBBEAN CURRICULUM

Volume 18

2011

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Caribbean Curriculum
Vol. 18, 2011, 1–25.

WHAT ARE UPPER SECONDARY SCHOOL STUDENTS SAYING ABOUT HISTORY?

Stephen Joseph

This study sought to examine students' thinking about history to determine the extent to which their perceptions coincided with widely held views on the subject. The study employed a mixed-method research design aimed at triangulating quantitative and qualitative data obtained from questionnaires and focus group interviews. Four hundred and fifteen participants were randomly drawn from selected secondary schools in Tobago and the east/west corridor of Trinidad. Findings of the study revealed that while students largely rejected the notion that history is boring and irrelevant to contemporary life, many of them were still reluctant to pursue the subject further at the tertiary level. This apparent reluctance seems to be influenced by the perception that history becomes increasingly cumbersome and details-laden as one advances in study. Perhaps this perception could be adjusted if students were introduced to history differently at an earlier period. This study, therefore, has implications for curriculum policy and practice regarding the appropriate time history should be introduced as a subject in the school curriculum.

Introduction

History is one of those subjects on the school curriculum that has consistently suffered from negative perceptions. Individuals with little or no exposure to the subject often make comments to suggest that history is boring and irrelevant to contemporary life. Outstanding international figures such as Henry Ford and Alexander Pope have also perpetuated the myth that history serves little purpose. While Alexander Pope spoke of the eternal and perpetual dullness of history, Henry Ford (1916) dismissed the subject as "more or less bunk."

Contrary to negative reactions about the subject, history assists individuals in understanding not only who they are and where they came from, but also offers them a platform on which to make informed decisions about present issues and future developments. By carefully plotting the trends of the past, many historians believe that individuals

can make intelligent estimates of the probable broad trends of the future (Laushey, 1988).

Without some rudimentary knowledge of history, says Robert Daniels (1981), we become victims of collective amnesia, groping in the dark for our identity. Arthur Marwick (2001) posits that it is only through knowledge of its history that a society can have knowledge of itself. He asserts that a society without memory and self-knowledge is a society adrift. History, therefore, fulfils our desire to know and understand ourselves as well as our ancestors.

History teaches responsible citizenship, and develops critical thinking and problem-solving skills (Bradley Commission on History in Schools, 1988). Barton and Levstik (2004) also highlight the role of history in helping citizens engage in collaboration towards a common good. Moreover, the subject provides an opportunity for students to understand and appreciate the inevitability of change and the need to develop historical empathy as opposed to present-mindedness. When properly taught, history establishes a context of human life in a particular time and place, relating art, literature, philosophy, law, architecture, language, government, economics, and social life (Voss, 1998).

Historians believe that a study of history sensitizes an individual to the universality of the human experience as well as to the peculiarities that distinguish cultures and societies from one another (Daniels, 1981; Voss, 1998). With such knowledge, students are more likely to show tolerance and appreciation of others. They are also better equipped to coexist with those who think and live differently in a multiracial and multicultural society. Ferretti, MacArthur, and Okolo (2001) also support the view that certain skills students obtain from studying history are essential for "active and engaged" civic participation.

While history teachers generally agree that there are many values and virtues to be gained from studying the subject, not all students buy into the notion that history is essential to their understanding of who they are. There are several explanations for this. One such explanation is that students enter into the secondary school system with little or no background in the subject. This is due largely to the fact that history is not part of the prescribed primary school curriculum; and while some students may obtain a knowledge of history from educational films and selected television programmes, the only exposure a student is likely to get to the subject might be oblique references to history in a social studies class.

Furthermore, many secondary schools in Trinidad and Tobago do not begin formal instruction in history until the third or fourth year of the 5-

year secondary education programme. Social studies is generally taught in the early secondary school years as an alternative to history. This means that students who select history as one of their examination options often have only two to three years to understand key historical concepts as well as to develop an appreciation for the subject.

The authors of the social studies curriculum for Forms 1-3 clearly identify the primary purpose of the subject, and indicate that the curriculum is not designed nor intended to teach discrete social sciences disciplines such as history, geography, and economics (Trinidad and Tobago. Ministry of Education [MOE], 2008). This does not mean, however, that history concepts are totally absent from the social studies curriculum. At the lower secondary school level, for example, basic concepts such as identity, resistance, and change form part of the content of social studies. Enquiry and research skills as well as information processing skills are also part of the intended learning outcomes of the subject (MOE, 2008). Still, key history concepts such as historical evidence, causation, and historical explanation cannot be adequately explored in a social studies curriculum that must also include a wide array of concepts in economics, government and politics, geography, and international relations. Given the structure of social studies and the treatment of history as one of several components of the subject, it is very difficult to determine what students actually take away from social studies as historical knowledge.

Seixas (2009) presents an interesting framework for history education, where he highlights six second-order concepts for developing historical thinking. These are historical significance, primary source evidence, continuity and change, cause and consequence, historical perspective-taking, and ethical dimensions of history. Historical thinking, according to Wineburg (2007), requires an orientation to the past informed by disciplinary canons of evidence and rules of argument. History instruction, therefore, should assist students in mastering concepts like causality, comparison, and change, as well as the exploration of history as constructed interpretive account (Stearns, Seixas, & Wineburg, 2000; VanSledright, 2009). But in the absence of adequate formal instruction in history during the early years, some students are likely to develop negative attitudes towards the subject and may find it difficult to appreciate the purpose and relevance of history to contemporary life.

Another explanation for students' apparent lack of interest has to do with the manner in which history is taught in schools. In some instances, history is presented to students as a compilation of facts and dates. In this

approach, students are required to memorize a mass of information and recall a series of facts about history. This view of history contrasts sharply with the way historians see their work (Daniels, 1981; Marwick, 2001; Yilmaz, 2008). Unfortunately, students who perceive history as facts and dates often fail to appreciate history as a discipline guided by particular rules of evidence. Such students generally do not appreciate the relevance of history to their everyday lives. In discussing new approaches to studying history, Peck (2005) posits that content and pedagogy cannot be separated because historical knowledge develops most successfully by doing history—using the historian's tools to construct historical knowledge (see also Barton & Levstik, 2004; Holt, 1990; Levstik & Barton, 2001; Rogers, 1987; VanSledright, 1998; Wineburg, 2001).

Student perceptions of history may also be shaped by factors outside the classroom. Such factors include a general perception that history is dull and boring and has little or no relevance to present-day existence. There is also the view that studying history offers little prospect for future advancement except, perhaps, in the field of teaching. Whether this is actually true or not, the fact remains that such a perception helps to shape students' conceptions of history and impacts significantly on the subsequent learning of the subject.

Purpose of the Study

The purpose of this study was to discover what upper secondary school students (Fifth and Sixth Form) say about the subject of history and the extent to which their perceptions coincide with popular views on the subject. The study examined students' perceptions of the history curriculum and the influence of teaching methodology on students' attitudes towards history. It also explored possible external factors that may have influenced students' thinking about history.

Methodology

This study employed a mixed-method research design aimed at triangulating quantitative and qualitative data obtained from questionnaires and focus group interviews. A two-stage sampling process was used with a sample frame obtained from the Planning Division of the Ministry of Education**.** In the first stage, a cluster random sample was drawn from a list of 53 secondary schools located in Tobago and the

east/west corridor of Trinidad. These schools were divided into three distinct groups:

1. Government secondary schools
2. Government-assisted secondary schools
3. Private secondary schools

A computer-generated series of random numbers was used to locate three to five schools within each group. All history students of the fifth and sixth forms were used as participants. The sample size was 415, out of a target population of approximately 1,500 students.

In the second stage of the sampling process, a purposive sample was drawn to participate in focus group discussions. There were five homogeneous focus groups comprising six students each. The first three groups comprised Form 5 students and the two other groups were made up of Form 6 students. The sample size for the focus group discussions was 30 participants per group. In these participant groups, females made up the greater portion of respondents with an age distribution between 15 and 19 years.

Table 1. Number of Students in the 15 to 19 Age Groups

Age Group	No. of Students
15	54
16	163
17	127
18	51
19	22

The survey instrument included 15 items covering three objectives arising from the following research questions:

1 .What are respondents' perceptions of history in the Fifth, Lower Sixth, and Upper Sixth Forms?

2. What are students' perception of historical evidence, causation, and historical explanation?

3. Does a relationship exist between students' perceptions of history and those of persons outside the school vis-a-vis the subject of history?

For most of the survey items, respondents were required to express their opinions on a 5-point Likert scale designed to elicit responses

ranging from *strongly agree* to *strongly disagree*. Statistical techniques such as one-way ANOVA, Student-Newman-Keuls post hoc procedure, and Pearson correlation coefficient were used to identify underlying patterns of responses. Some responses required the use of open-ended items such as *fill-in-the-blanks* and *comment on* formats to elicit extensive comments from respondents on their perceptions of the teaching and learning of history. The instrument was pilot-tested and feedback from that activity was used to improve the instrument before formally distributing the questionnaires to the research sample.

Focus group interviews were used also as a complementary instrument to collect qualitative data for the study. These interviews were conducted in five mini-groups consisting of six persons per session. All questions were the same across differing groups of participants to facilitate consistency and ease in analysis. Pilot testing of questions was also done to determine the extent to which questions were clear enough to elicit appropriate responses from participants. The following 13 questions were used for one-hour-long student focus group discussions:

1. Think about your experience as a history student over the years. Now tell me how do you feel about studying history?
2. What were you thinking at the time that led you to choose history as one of your examination subjects?
3. Tell me how you feel about studying history at a higher level.
4. What in your view is a history concept? Think about it for a while and jot down your thoughts on a piece of paper.
5. How do you know that “historical facts” are really true?
6. What causes an event to happen in history (simple cause-effect relations or multiple complex causes)?
7. Who or what determines the course of history (human beings, events, technology or supernatural forces)?
8. How does a historian use historical evidence?
9. Tell me a little about history classes. Describe what you do.
10. What do you like most about your history classes? What do you dislike most?
11. What are some of the things you feel history teachers can do to make the subject more appealing?

12. What factors outside the classroom influence the way you feel about history?

13. Think back about all the things you have learned in history. Now tell me, what important lessons do you think people can learn from history?

Data Analysis

Quantitative data analysis for this study was done with the aid of the Statistical Package for the Social Sciences (SPSS) software. Using the SPSS software, variables from the survey were put in the correct form and checks were made for missing values. The student data were grouped according to forms (Fifth Form, Lower Sixth Form, Upper Sixth Form) to assist in easy analysis of student perception of the teaching and learning of history. This procedure was useful in assisting the researcher to find out the extent to which student perception of history changed over a 3-year period from Fifth Form to Upper Sixth Form.

One-way ANOVA tests were used to analyse student responses to Research Question 1, which asked about student perceptions of history. The Pearson correlation procedure was helpful also in identifying significant relationships between the variables measuring student perceptions of history and those measuring external opinions about the subject of history. Both tests of significance (one-way ANOVA and Pearson correlation) were done on the basis of a probability of error threshold of 1 in 20, or $p < .05$.

Qualitative data analysis was done without the aid of a software program. All focus group sessions were taped and information from the audio cassettes was reviewed several times to obtain verbatim accounts of focus group interviews. All redundant or overlapping statements were removed, leaving only those points that were pertinent to the study. These points were later summarized and presented as data for the research. Some verbatim accounts were presented also as findings. Qualitative data were used to inquire into student understandings of history concepts such as historical evidence, causation, and historical explanation. Qualitative data also served to confirm or highlight contradictions in the survey findings as well as to clarify certain unclear elements of the survey. The following techniques were used to ensure credibility or validity of the focus group process:

1. Verbatim accounts of focus group interviews

2. Use of audio cassettes for recording data

3. Participant review of researcher's synthesis of interviews

I employed all of the above measures in an attempt to strengthen validity. Care was taken to capture verbatim accounts of respondents in order to avoid misrepresentation of the data. At the end of each focus group session, I gave a brief summary of the major issues discussed to allow respondents a final opportunity to add or clarify aspects of the account. The extent to which interpretations and concepts have mutual meanings between participants and researcher is the extent to which validity is achieved in qualitative research.

In order to achieve consistency, I engaged in a series of self-monitoring and self-questioning exercises. Some of these involved multiple listening as well as multiple transcription of audiotapes used in focus groups. To avoid analytical errors, I gave an oral summary after each section of the discussion. I then asked whether or not the summary represented the collective views of the group. In one case where the summary was challenged, I obtained clarification on key issues before restating the summary for group consensus.

Summary of Student Focus Group Findings

Findings from focus group questions revealed that the majority of participants in the five student focus groups expressed mixed feelings about studying history. While on the one hand students generally appreciated the value of studying history, on the other hand they expressed reservations about the quantity of details students of history were expected to remember. As a result, the majority of respondents doubted whether they would pursue the subject at a higher level. Three major themes emerged from focus group discussions: (a) teaching methodology, (b) the impact of outside influences, and (c) understanding history concepts.

Teaching Methodology

Findings from the question on teaching methodology revealed that students generally expressed preference for interactive class sessions where they were given the opportunity to share information and engage in critical thinking activities. Participants felt that excessive note taking and long lectures served to lessen their enjoyment of the subject. All participants suggested that field trips, visual aids, and other graphic representations would stimulate greater interest in history. One respondent felt that teachers should "*give more personal attention to*

students," while another wanted teachers to demonstrate "*greater passion*" for the subject.

When asked to identify what they liked or disliked about history classes, students reported that they enjoyed class discussions most since these sessions gave them the opportunity to sharpen their argumentative skills. Generally, students disliked having to adjust their thinking to suit that of their teachers. One student stated that "*not enough opportunity was given to engage in analysis*" and that he often felt "*pressured to express only the views of the class teacher*."

Impact of Outside Influences

Further discussions revealed that students were able to obtain a great deal of valuable information from sources outside the classroom. Historical information obtained from family members, television programmes, and historical websites provided a good source of history instruction. However, several factors outside the classroom also contributed to students' negative perceptions of history. Many of the respondents agreed that perhaps the greatest negative influence came from their own peers who perceived history as boring. They admitted that history was not a popular examination subject in the school, and some history students often buckled under the pressure to drop the subject.

Understanding History Concepts

Five focus group sessions were conducted to probe deeper into students' perception of key concepts in history. These sessions also provided greater insights into participants' ability to master the kind of conceptual reasoning needed to provide acceptable historical explanations. Focus group questions 4–8 were as follows:

- What in your view is a history concept?
- How does one know that "historical facts" are really true?
- What causes an event to happen in history?
- Who or what determines the course of history?
- How does a historian use historical evidence?

Findings from the first question in this category revealed that students had varying views on what a history concept was. Not only were these views varied but, for the most part, they were also inaccurate. For example, student "A" understands a history concept as "*distinguishable events or persons*." Student "B" has a similar view of a history concept as "*these important terms or remarkable events that took place in our*

history." Only 3 out of 30 students demonstrated some degree of understanding of what a historical concept was. Two of these three responses came from Advanced Level students; the other response came from a student of the Fifth Form focus group. One such response was that "*a history concept is a mix of historical ideas of what influenced contemporary society*." Another respondent puts it this way: "*a history concept is a matter of ideas being formulated about a particular event – the time period it took place, and the impact of this event on society, economy and politics.*" The vast majority of students could not readily identify one single concept that they had learned in history class. The majority of participants believed that human beings were the primary determinants of history. Some were willing to consider other factors such as man-made events and supernatural forces as possible suggestions, but only after much probing by the moderator.

Findings also revealed that the majority of students gave single-factor explanations for events in history. For example, when asked to explain what causes an event to happen, students gave responses like: *"people cause events to happen,"* or *"a particular disturbance causes an event to happen… like the attempted 1990 coup."* The data indicate that students generally believed that an event was caused by one particular factor rather than by a mix of different factors. After some probing, only a few students were willing to consider multiple causation as a viable explanation for the occurrence of an historical event.

This contrasts sharply with responses from the survey questionnaires which suggested that students generally understood the concept of multiple causation in history. Focus group discussions revealed, however, that while students were able to identify appropriate responses on the survey, they were unable to adequately defend their positions with any adequacy in the focus group setting.

Students were more confident, however, about their perception of historical facts. Many respondents hesitated to state categorically that historical facts were really true. Instead, they adopted a somewhat postmodern, deconstructionist approach, questioning the validity of certain historical sources. Deconstructionists generally challenge what they consider as the old modernist principles of historical truth and methodological objectivity (Munslow, 1997). In response to the question about the truthfulness of "historical facts," one student stated: "*I will not limit myself to any one way of thinking. I prefer to look at different interpretations rather than hold on to one way of thinking.*"

The final question in this category dealt with the historian's use of historical evidence. An analysis of students' responses revealed that

students generally regarded the historian as a detective using a number of clues to solve a mystery. Respondents were also aware of some of the limitations historians faced in trying to reconstruct the past. Still, students believed that notwithstanding the possibility of bias, historians were expected to carefully assess historical evidence before presenting any account of the past. One student volunteered to summarize the discussion in this way: "*History is a mystery story to be pieced together. The historian searches for clues and puts them together to determine the most logical explanation of a particular event. But there is also need to consider other alternatives that may also be plausible*."

Summary of Survey Questions on Students' Perceptions of History

The student survey questions were:

1. All students in secondary schools should study history.
2. History is a boring subject.
3. History is relevant to everyday life.
4. I would enjoy history more if there were fewer details to be studied.
5. Historical evidence should be questioned.
6. Human beings determine the course of history.
7. Historical facts are caused by a complex mix of different factors.
8. All historical events are inevitable.
9. History involves the study of change over time.
10. I learn a great deal about history from other sources outside of the classroom.
11. My family and friends influence the way I feel about history.
12. Studying history will enhance my chances of employment.
13. I intend to study history at a higher level.
14. Identify two (2) things you like most about your history classes.
15. Identify two (2) things you dislike most about your history classes.
16. What is the most important lesson a student can learn from history?
17. Give two (2) reasons why you study history.
18. Give two (2) reasons why you believe some students are unwilling to study history.

Four hundred and fifteen (415) participants were asked to indicate their level of agreement with the above questions by circling the appropriate letter on a 5-point Likert-type scale, with the letter *A* representing strong agreement and *E* representing strong disagreement. Students were required to write responses for questions 14–18.

Research Question 1

What are respondents' perceptions of history in the Fifth, Lower Sixth, and Upper Sixth Forms?

Survey items 1–4 and 14–18 addressed this research question. Survey item 1 asked participants to indicate on a 5-point Likert-type scale whether they agreed with the statement that all students in secondary schools should study history. Of the 415 respondents, 72 indicated strong agreement and 124 students indicated agreement. This gave a general total agreement of 48%. Of this group, 136 students (33%) disagreed and 26 students (6%) strongly disagreed. Fifty-six of the total number of participants (14%) were uncertain as to whether all students in secondary school should study history.

Survey item 2 asked whether history was regarded as a boring subject. Only 14% of the respondents agreed that the subject was boring, while 73% disagreed with the statement. A relatively small percentage (13%) held no opinion on the matter.

Survey item 3 questioned whether history is relevant to everyday life. Seventy-five percent of the respondents felt that history was relevant; 14% disagreed, and 11% expressed uncertainty.

Hypothesis Testing

Research Question 1 was tested through the following hypothesis:

Hypothesis 1: *There is no difference in students' perceptions of history based on Form level*.

This hypothesis was tested using one-way analysis of variance (ANOVA) with data from student survey items 1–3. Table 2 illustrates findings for this hypothesis.

Student-Newman-Keuls post-hoc procedures in Tables 3 and 4 were used to show differences in students' perceptions based on three different Form levels, namely Fifth, Lower Sixth, and Upper Sixth Forms.

With regard to survey item 1, the implied null hypothesis is retained. There is no significant difference in students' perceptions in the three year-levels about whether or not all students should study history.

Table 2. One-Way ANOVA of Students' Perceptions About History

Survey Item	Source	SS	df	MS	F	p
1	Between Groups	8.455	2	4.228	2.840	.060
	Within Groups	613.193	412	1.488		
2	Between Groups	30.216	2	15.108	9.012	.000*
	Within Groups	690.709	412	1.676		
3	Between Groups	12.526	2	6.263	4.234	.015*
	Within Groups	609.435	412	1.479		

Note. Survey item 1 = All students in secondary school should study history; Survey item 2 = History is a boring subject; Survey item 3 = History is relevant to everyday life.

* Significant at $p < .05$ level.

With regard to survey item 2, the implied null hypothesis is rejected. The Student-Newman-Keuls post hoc procedure indicates that students in the Fifth Form are more likely to view history as boring than students of the Lower and Upper Sixth Forms.

With regard to survey item 3, the implied null hypothesis is rejected. The Student-Newman-Keuls post hoc procedure indicates that students in the Fifth Form are more likely to see history as relevant to everyday life than those students in the Lower and Upper Sixth Forms (see Table 4).

Survey items 14–18 were open-ended questions that elicited students' reactions based on their perception of history. Item 14 asked participants to identify two things they liked most about history classes. The majority of respondents listed "*interactive class activities*" as their first choice. The second most popular response was that "*my teacher makes the subject interesting and lively*." These responses placed great stress on the teacher's role in providing a stimulating environment for learning.

Table 3. Student-Newman-Keuls of Students' Perceptions About Whether History Is Boring

Forms	Mean	1	2	3
1. Fifth	3.5890	----	*	*
2. Upper Sixth	4.0889	*	----	----
3. Lower Sixth	4.2787	*	----	----

Table 4. Student-Newman-Keuls of Students' Perceptions About the Relevance of History to Everyday Life

Forms	Mean	1	2	3
1. Fifth	3.7087	----	*	*
2. Upper Sixth	4.0656	*	----	----
3. Lower Sixth	4.1556	*	----	----

Survey item 15 focused on negative classroom experiences. Students were asked to identify two things they disliked most about their history classes. Respondents cited the following as their major dislikes:

- *too much information to write*
- *too many dates to remember*
- *too much reading to be done*
- *the subject is too long and boring*
- *limited access to supplementary texts*

Respondents from one of the private secondary schools identified "*poor teaching methods"* as one of the things they disliked most about history classes. A few students felt that the time of the day (immediately after lunch) in which the subject was offered heightened their dislike for the subject.

Survey item 16 asked participants to identify the most important lesson that a student can learn from history. Only a few students felt that avoiding the mistakes of others was the most important lesson to be learned. Some students felt that the single most important lesson was the idea that the present is shaped by the past. The majority gave responses that did not seem to relate to the question precisely. One such response was "*knowledge about my ancestors*" is the most important lesson one can learn from history. Others identified "*patience, persistence, and tolerance*" as important lessons to be learned from history.

Survey item 17 asked students to give two reasons why they studied history. While some participants cited love for the subject as one of the reasons, many felt that they had no choice since the subject fell into a particular subject grouping that required students to select history as one of the options for the Caribbean Examinations Council/Caribbean Secondary Education Certificate (CXC/CSEC) examination. Some participants indicated that history expanded their knowledge; others

studied the subject to gain greater insights into the past and to bolster a sense of self. Only a small percentage indicated, however, that they studied history mainly to receive a passing CXC/CSEC grade in the subject.

Survey item 18 required participants to give two reasons why they felt that some students were unwilling to study history. The vast majority indicated that the primary reason was that some students viewed the subject as "too boring." Others felt that history had too many dates and events to study, and some students simply did not like to read. Respondents also indicated that some students did not study history because of the view that history is not required for their future career and that the subject is not relevant to everyday life.

In analysing student responses to Research Question 1, two observations are noteworthy:

1. Students generally disagreed with the notion that history was a boring subject, and that it was irrelevant to everyday life.
2. Many students cited interactive class activities as the single factor they liked most about history classes, while too much reading was a major deterrent to the subject.

Research Question 2

What are students' perception of historical evidence, causation, and historical explanation?

Survey items 5–9 addressed this research question. Survey item 5 asked students to respond to the assertion that historical evidence should be questioned. The majority of students (309) indicated that they agreed with the statement, and a small number (52) disagreed. Thirteen percent (13%) of respondents had no opinion on the matter.

Survey item 6 probed deeper into the question of historical understanding and asked participants to respond to whether they believed that human beings determined the course of history. Again, the majority of participants (316) responded in the affirmative while 43 or 11% of the respondents disagreed.

Survey item 7 asked whether historical events were caused by a complex mix of different factors. Eighty percent (80%) of the respondents agreed with the notion of multiple causation in history as opposed to a small percentage (6%) who disagreed. This high response rate is reflected in the one-way ANOVA at Table 5, which suggests that a highly significant relationship exists between students' year-level and

their perception that historical events are caused by a complex mix of different factors.

Survey item 8 inquired into the question of historical inevitability. The question asked whether all historical events were inevitable. Respondents seemed divided on this issue as evidenced by the 27% who agreed, 43% who disagreed, and 30% who could neither agree nor disagree with the statement.

Survey item 9 probed into the students' understanding of continuity and change. The question asked whether history involved the study of change over time. The majority of respondents (357) agreed with the statement, while 24 expressed disagreement.

Figure 1 gives a graphic representation of student responses to Research Question 2.

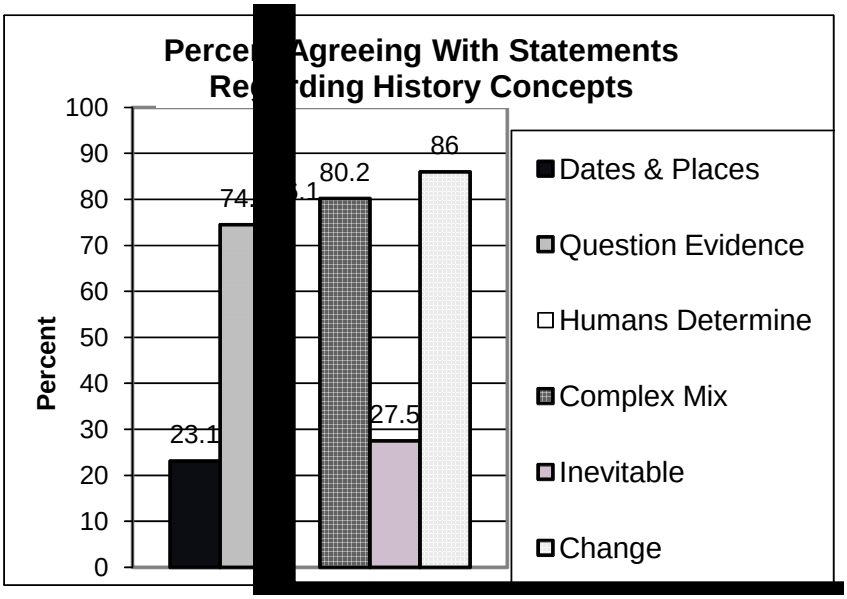

Figure 1. Student understandings of historical concepts.

Based on the findings of students' responses to Research Question 2, it appears that students generally demonstrated understanding of historical concepts such as historical evidence and causation. This is noteworthy because upon further probing in focus group settings, students displayed a general lack of clear understanding of these concepts. This matter will be examined more closely in the analysis section.

Research Question 3

Does a relationship exist between students' perceptions of history and external opinions about the subject of history?

Survey items 10–13 addressed this research question. Survey item 10 probed into the question of the role of factors outside the classroom in shaping students' understanding of the subject. This particular question asked whether students learned a great deal about history from other sources outside of the classroom. The majority (257 or 62%) of respondents admitted that they did learn a great deal of history from sources outside of the classroom. One hundred and thirty-one students (31%) felt that little history was acquired outside of the classroom.

Survey item 11 asked whether family and friends influenced the way students felt about history. Only 28% (116) of the students reported that their perception of history was influenced by relatives and friends, while 55% (230) of the students disagreed that friends and family members had any significant impact on the way they view the subject of history.

Survey item 12 asked whether studying history would enhance students' chances of employment. Fifty-four percent (223) agreed, while 20% disagreed. One hundred and nine (26%) students could not say for certain whether history instruction could make them more employable.

Survey item 13 inquired into students' intention to pursue the subject at a higher level. Forty-seven percent (195) reported that they intended to do so, while 33% (138) said no. Twenty percent of the participants were undecided.

Hypothesis Testing

Research Question 3 was tested with the following hypothesis:

Hypothesis 2: *There is no relationship between the variables measuring student perceptions of history and those measuring external opinions about the subject*.

The null hypothesis was tested using the Pearson correlation procedure to identify significant relationships between the variables measuring student perceptions of history and those measuring external opinions about the subject. This analysis yielded five significant relationships among the variables that are represented in Table 5. Thus the null hypothesis was rejected for these five significant relationships.

The first item relating to student perception of history asked whether all students in secondary schools should study history. Here, two significant relationships were identified. The first of these indicates that

those who feel all students should study history also believe that a great deal of history can be learned from other sources outside the classroom (r = .115, p< .05, N= 415). The second significant relationship suggests that those who believe that all secondary students should study history also believe that family and friends influence the way they feel about history (r = .171, p< .05, N= 415).

The second item relating to student perception of history dealt with the question of whether or not history is a boring subject. Two significant relationships were identified. The first significant relationship indicates that students who think history is boring do not believe that they learn a great deal about history from sources outside the classroom (r = -.172, p< .05, N= 415). The second significant relationship indicates that students who think history is boring do not think that family and friends influence the way they feel about history (r = -.113, p< .05, N= 415).

Table 5. Relationship Between Student Perceptions of History and External Opinions About the Subject

Variables Measuring Student Perceptions of History and Those Measuring External Opinions About the Subject		All students in secondary schools should study history	History is a boring subject	History is relevant to everyday life
I learn a great deal about history from sources outside of the classroom	Pearson Correlation	.115*	-.172*	.200*
	Sig. (2-tailed)	.019	.000	.000
	N	415	415	415
My family and friends influence the way I feel about history	Pearson Correlation	.171*	-.113*	-.096
	Sig. (2-tailed)	.000	.021	.050
	N	415	415	415

*Correlation is significant at the 0.05 level (2-tailed).

The third item relating to student perception of history dealt with the question of the relevance of history to everyday life. One significant relationship was identified. This significant relationship indicates that students who think that history is relevant to everyday life also believe that they learn a great deal about history from other sources outside of the classroom (r = .200, p< .05, N= 415).

Analysis and Discussion of Research Questions/Findings

Three research questions set the parameters for this study. The following is an analysis of each of these research questions.

Research Question 1

What are respondents' perceptions of history in the Fifth, Lower Sixth, and Upper Sixth Forms?

It can be concluded that, generally, both CXC/CSEC and Advanced Level history students have a positive perception of history as a subject in the school's curriculum. Contrary to the belief that history is dull and boring, students in this study regard history as interesting and relevant to contemporary life. For example, when responses of Fifth, Lower Sixth, and Upper Sixth Form students were analysed using one-way ANOVA tests, findings revealed that there was a significant difference in students' opinions in the three year-levels about the relevance of history to everyday life.

When the Student-Newman-Keuls post hoc procedure was used to further analyse differences in students' perceptions, the findings revealed that students in the Fifth Form are more likely to view history as boring than students in the Lower and Upper Sixth Forms. Based on these findings, one could assume that students' perceptions of history are likely to improve with greater exposure to the subject.

The assumption could also be made that Fifth Form students seem to operate at a lower cognitive level with regard to historical reasoning. If these students view history mostly as the compilation of dates and places, then they are operating at what Hallam (1970) describes as the concrete operational level of thinking. According to Hallam, such students possess the ability to give organized answers, yet very often their responses are limited to what is immediately apparent in the text. It is necessary, therefore, that teachers guide students beyond this threshold to the point where they could move past historical dates to engage in deeper probing about the meaning of the events associated with historical dates and places.

While students generally regard interactive class activities as the single most positive aspect of history instruction, they consider information overload and too much reading as major deterrents. Notwithstanding their apparent interest in history, less than half of the respondents on the survey agree that all students in secondary schools should study the subject.

When responses of Fifth, Lower Sixth, and Upper Sixth Form students were examined by one-way ANOVA tests, the null hypothesis was retained. This suggests that there is no significant difference in students' opinions in the three year-levels about whether or not all students should study history. One can conclude that, notwithstanding their earlier position, neither maturation nor greater exposure to the subject of history affected students' opinion of history as a subject to be studied by all secondary school students.

Student focus group discussions also highlighted students' mixed feelings about studying history. While students generally appreciate the value of studying history, they express reservations about the quantity of details students of history are expected to remember. As a result, the majority of respondents have serious doubts as to whether they would pursue the subject at a higher level.

Students' apparent reluctance to pursue history at a higher level seems to have some relationship with their perceptions of history as a details-laden subject that becomes more cumbersome as one advances in study. While students are required to engage in deeper learning as they move toward higher levels, the fear of becoming overwhelmed by an endless series of names, dates, and places needs to be addressed if students are to appreciate the value of history in later years. The onus is therefore on teachers to clarify this conceptual misunderstanding by instruction. This could be more readily achieved if students were exposed to history at an earlier Form level where teachers have adequate time to properly introduce students to the subject of history.

Wineburg (2007) supports the view that the development of historical thinking requires what he refers to as an orientation to the past informed by disciplinary canons of evidence and rules of argument. VanSledright (2009), and Stearns, Seixas, and Wineburg (2001) concur that history instruction should assist students in mastering concepts like causality, comparison, and change, as well as the exploration of history as constructed interpretive account. But this can only be achieved by careful history instruction and engagement over a period of time. Once this is done, students' conceptions of history are likely to improve.

Research Question 2

W*hat are students' perceptions of historical evidence, causation and historical explanation?*

Based on student survey responses to this question, one can reasonably assume that students understand concepts such as historical evidence,

causation, historical explanation, and continuity and change. But the focus group discussions do not support this assumption. The majority of students in these discussions demonstrated a lack of clear understanding of what a history concept is. While the majority naïvely regarded history concepts as events of the past, only 3 out of 30 respondents were able to identify historical concepts as ideas formulated about past events. This finding reveals the need for greater emphasis to be placed on the teaching of history concepts in secondary schools.

Findings of the focus group discussions also contradict survey responses to the question of causation. While students demonstrated understanding of multiple causation on the survey questionnaire, during the focus group discussions they continued to offer single-factor explanations for events in history. Based on responses, it appears that students believe that an event is caused by one single factor, rather than by a mix of different factors. After much probing, only a few students were willing to consider multiple causation as a viable explanation for the occurrence of an historical event.

Given this lack of understanding, one can reasonably conclude that the wording of the survey questions made it easy for students to select an appropriate response. But when placed under closer scrutiny in a focus group setting, these students were unable to adequately account for their perceived knowledge of multiple causation in history. In this regard, the focus group interviews served as an effective mechanism for cross-referencing student knowledge of information recorded on the survey questionnaire.

Focus group discussions also confirmed what students regard as an historical explanation for events of the past. Holding fast to their popular survey response that human beings determine the course of history, students generally failed to consider other possible factors such as social and political events, technology, or even supernatural forces, as other possible explanations for events of the past. This suggests a lack of clear understanding on the part of students of what constitutes an historical explanation. But given the complexity of this particular historical concept, one needs to be sympathetic to students who are generally not taught history concepts at the secondary school level.

Focus group discussions corroborated survey findings on students' perceptions of historical evidence. Generally speaking, students believe that historical evidence should be questioned, and that the historian, like a detective, uses a number of clues to unlock the mystery of the past. Students also demonstrated understanding of some of the limitations that historians face in attempting to reconstruct the past.

Research Question 3

Does a relationship exist between students' perceptions of history and external opinions about the subject of history?

Survey findings revealed mixed results. While the majority of students admitted to learning a great deal of history from sources outside the classroom, only a small number believed that external factors, including family members and friends, influence their perception of the subject.

The analysis of student focus group discussions gives some confirmation and elaboration on responses obtained through the questionnaire. But some degree of contradiction is also evident. Focus group findings confirmed, for example, that students are able to obtain valuable information from sources outside the classroom. These sources include family members, selected television programmes, and historical websites. However, unlike survey findings, focus group discussions revealed that the greatest negative influence came from factors outside the classroom. These factors have been identified largely as non-history students who perceive history as dull and boring.

Based on these findings, one can argue that, to a large extent, factors outside the classroom shape students' perceptions of history. These factors are both positive and negative. One is uncertain, however, about the extent to which the external negative factors supersede positive factors. Still, one can assume that these external factors, both negative and positive, contribute in some way to the formation of student perceptions about the subject of history.

Research Question 3 was further investigated by testing the null hypothesis of no significant relationship existing between the variables measuring student perceptions of history and those measuring external opinions about the subject of history. The null hypothesis was tested using the Pearson correlation coefficient. This analysis reveals that a significant relationship exists between the perception of those who feel all students should study history and the perception that a great deal of history can be learned from other sources outside the classroom.

The analysis also reveals that those who think that history is boring do not believe that they could learn a great deal of history from sources outside the classroom (r = -.172, p< .05, N = 415). Conversely, those who regard history as relevant to everyday life also believe that they learn a great deal of history from sources outside the classroom (r = .200, p< .05, N = 415).

The assumption could be made that students who have a positive attitude towards history also make use of opportunities outside the classroom to heighten their appreciation of the subject. This concurs with the literature that seeks to establish a link between student interest in a subject and students' ability to discover their own knowledge, both inside and outside the classroom.

Epstein (1997), for example, posits that many students learn a great deal of history outside the classroom from their families and friends. Notwithstanding the possible conflict that may arise from different interpretations of the "official history" taught in the classroom and the "unofficial history" acquired outside, the idea of students exploring the historical account beyond the classroom augurs well for a constructivist approach to learning. The possible conflict in interpretations should not necessarily be cause for concern since Fifth and Sixth Form students are at the developmental stage where they are capable of reflective thinking as well as formulating perspectives of their own.

Concluding Comments

This study explored students' thinking about history to determine the extent to which these views coincided with popular external views about the subject. Generally speaking, students rejected the notion that history is boring and irrelevant to contemporary life. As a matter of fact, most upper secondary school students regard history as a subject to be studied by all students in the education system. Still, there seems to be some reluctance among students to pursue history at the post-secondary and tertiary levels. This apparent reluctance seems to be influenced by the perception that history becomes increasingly cumbersome and details-laden as one advances in study.

The study also revealed a general weakness in student understanding of such concepts as historical evidence, causation, and historical explanation. For example, while the majority of focus group respondents naïvely regard history concepts as events of the past, only 3 out of 30 respondents were able to identify historical concepts as ideas formulated about past events. Findings of the focus group discussions revealed that students continued to offer single factor explanations for events in history. Based on responses, it appears that students believe that an event is caused by one single factor, rather than by a mix of factors. These findings reveal the need for greater emphasis to be placed on the teaching of and about history concepts in secondary schools. Lévesque (2008) is perhaps correct in concluding that students may well need powerful

conceptual and procedural historical-thinking tools and ideas now more than ever.

Focus group discussions also confirmed what students regard as an historical explanation for events of the past. Some popular responses suggested that human beings determine the course of history. This means that, generally speaking, students failed to consider other factors such as social and political events, technology, or even supernatural forces, as other possible explanations for events of the past. This suggests a lack of clear understanding on the part of students of what constitutes an historical explanation. But this is not surprising as these students are not adequately exposed to history concepts in the lower forms where social studies is often taught as an alternative to history.

Perhaps these conceptual gaps could be adjusted if all students were exposed to history at an earlier level, maybe at Form 1, where teachers can spend more time teaching students to appreciate the subject while also laying the foundation for sound historical understanding. In this regard, the study has implications for policy and practice concerning the introduction of history at an earlier level in all secondary schools of Trinidad and Tobago. Of course, the preferred seamless approach would be to introduce history to students as early as the primary level. But all of this is based on the assumption that teachers are secure in their own ability to adequately teach history concepts at various levels of the school system.

References

Barton, K., & Levstik, L. (2004). *Teaching history for the common good.* London, UK: Routledge.

Bradley Commission on History in Schools. (1988). *Building a history curriculum: Guidelines for teaching history in schools*. Washington DC: Educational Excellence Network.

Daniels, R. (1981). *Studying history: How and why*. Englewood Cliffs, NJ: Prentice-Hall.

Epstein, T. L. (1997). Sociocultural approaches to young people's historical understanding. *Social Education, 61*(1), 28–31.

Ferretti, R., MacArthur, C., & Okolo, C. M. (2001). Teaching for historical understanding in inclusive classrooms. *Learning Disability Quarterly, 24*(1), 59–71.

Ford, H. (1916, May 25). Interview with Charles N. Wheeler. *Chicago Tribune.*

Hallam, R. N. (1970). Piaget and thinking in history. In M. Ballard (Ed.), *New movements in the study and teaching of history* (pp. 163–178). Bloomington, IN: Indiana University Press.

Holt, T. (1990). *Thinking historically: Narrative, imagination, and understanding.* New York, NY: College Entrance Examination Board.

Laushey, D. (1988). A discussion of the values of history. *Teaching History: A Journal of Methods*, *13*(1), 19–21.

Lévesque, S. (2008). *Thinking historically: Educating students for the 21st century*. Toronto, Canada: University of Toronto Press.

Levstik, L. S., & Barton, K. C. (2001). *Doing history: Investigating with children in elementary and middle schools* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.

Marwick, A. (2001). *The new nature of history*. New York, NY: Alfred A. Knopf.

Munslow, A. (1997). *Deconstructing history.* London, UK: Routledge.

Peck, C. (2005). New approaches to teaching history. *Canadian Social Studies, 39*(2). Retrieved from www.quasar.ualberta.ca/css

Rogers, P. (1987). History: The past as a frame of reference. In C. Portal (Ed.), *The history curriculum for teachers* (pp. 3–21). London, UK: Falmer.

Seixas, P. (2009). A modest proposal for change in Canadian history education. *Teaching History, 137*, 26–30.

Stearns, P., Seixas, P., & Wineburg, S. (2000). *Knowing, teaching, and learning history: National and international perspectives*. New York, NY: New York University Press.

Trinidad and Tobago. Ministry of Education. Secondary Education Modernization Programme. (2008). *Secondary school curriculum Forms 1–3: Social studies*. McBean, Trinidad: Curriculum Planning and Development Division, Ministry of Education.

VanSledright, B. (1998). On the importance of historical positionality to thinking about and teaching history. *International Journal of Social Education, 12*(2), 1–8.

VanSledright, B. (2009). Thinking historically. *Journal of Curriculum Studies, 41*(3), 433–438.

Voss, J. F. (1998). Issues in the learning of history. *Issues in Education, 4*(2), 163–210.

Wineburg, S. (2007). Unnatural and essential: The nature of historical thinking. *Teaching History, 129*, 6–11.

Wineburg, S. (2001). *Historical thinking and other unnatural acts: Charting the future of teaching the past.* Philadelphia, PA: Temple University Press.

Yilmaz, K. (2008). A vision of history teaching and learning: Thoughts on history education in secondary schools. *High School Journal, 92*(2), 37–46.

Caribbean Curriculum
Vol. 18, 2011, 27–42.

MUCH WRITING BEGETS GOOD WRITING: Some Considerations for Teaching Writing in an Anglophone Creole Context

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Writing for academic purposes is, without doubt, an extremely difficult task for many university students in the Anglophone Creole context. The teaching of writing to many of these students is equally challenging because instructors must find effective ways of helping them to become proficient writers of what is, in reality, a second language for them, even though it is not treated in this manner. This paper is a conceptual/theoretical one in which I maintain that the difficulty that many university students in Jamaica encounter in their attempts to write Standard Jamaican English (SJE) is the result of their unfamiliarity with the language in both written and spoken forms. The demands of academic writing are overwhelming for many who are unaware of the differences—syntactic and otherwise—between the SJE and Jamaican Creole (JC). Theories related to language learning in general, and writing in a second language, which SJE is for many, are used to frame the discussions. Additionally, I maintain that students will improve with more practice in writing a wide variety of texts of different genres with more frequency, and recommend a model that combines the Writing Across the Curriculum (WAC) and second language teaching strategies to provide students with the regular practice that will facilitate the development of their linguistic competences in SJE, so as to meet the demands of writing for formal and academic situations.

In Caribbean countries in which English is the official language, there are diglossic-type relations between the main language varieties in use. In most of the countries concerned, what exists may be viewed as straightforwardly diglossic. It involves the interaction between English, as the official and public formal language, and English-lexicon creoles, as languages of private and informal interaction. (Devonish, 2003, p. 159)

> *Writing is worth learning.… Our growth as human beings depends on our capacity to understand and to use language. Writing is a way of growing*. (Kane, 1988, p. i)

The excerpt from Devonish (2003) aptly describes the complex linguistic situation that exists in Jamaica. It is, moreover, the context in which Jamaican students are required to produce writing in English that is regarded as suitable for academic purposes. The challenges presented by this situation revolve around the absence of, or very little, practice by many of these same students in speaking and writing any form of English that may be regarded as Standard Jamaican. The majority of Jamaican students are Creole speakers who "have repertoires that can span varying ranges of the continuum" (Devonish, 2003, p. 159). Most Jamaican children grow up hearing only Jamaican Creole (JC) in the home and only a small number live in homes in which Standard Jamaican English (SJE) is spoken.

In many cases, students even enter university without being made aware of many of the differences between the Creole they speak for private purposes and the English they are expected to produce in more formal contexts. The classroom, in particular the English language classroom, is usually the only place in which there is an insistence that students use and write SJE. Consequently, some of the most commonly made errors by native speakers of JC, when speaking or writing SJE, occur due to a process of transfer. Native JC speakers, especially those without a proper understanding of the grammatical differences between the two languages, tend to transfer grammatical structures from the language they are most familiar with to the language with which they are less familiar. In this case, the less familiar language is SJE. Many English teachers and teachers of writing struggle to help students produce a standard form that is not replete with colloquialisms, poor diction, and structural errors. Shields Brodber (1989), a Caribbean linguist with experience in teaching SJE to speakers of JC, further explains the situation in her claim that the limited exposure to native speakers of English makes it difficult for Jamaicans to acquire SJE.

English teachers from primary to university levels are concerned about the poor performance of Jamaican students in English language, and there are repeated calls for more effective methods to be found to improve the performance in English (Bryan, 2010). There are some university students who feel that the claims about the need for them to write well in English are overstated, since they are able to communicate well in Creole or through code-switching. Despite their own positions,

however, they need to understand the importance of writing well in English, not just for academic purposes, but also for the world of work when they graduate. According to Bryan, "the main argument voiced for the primacy of English in Jamaica is that it is an international language" (p. 49). Moreover, English is spreading with tremendous rapidity across the world and, as a result, in vernacular situations in which their formal language is English, students need to take advantage of the opportunity to write and speak it well.

Research on Second Language Writing

Several Caribbean educators, such as Craig (1999) who has done extensive research on the teaching of English to vernacular speakers in the Caribbean, have concluded that English is in the position of a second language and should be taught as such. Although most of the research on writing has focused on first language writing, interest in writing in the second language is increasing. Educators such as Reichelt (1999) and Silva (1990, 2001) have drawn attention to the usefulness of research in English as a Second Language (ESL). One of the most important factors highlighted by Reichelt is the fact that English is a universal language as well as a medium for accessing higher education. I firmly believe that this critical aspect of the research should consistently be emphasized to Jamaican university students, who need to fully grasp the importance of writing well in SJE. Moreover, if we accept that many Jamaican university students are learning to write in a second language, then it is critical for writing instructors to bear in mind some of the social and cognitive factors that may affect the development of writing skills among their students.

Attitude and Motivation

Attitude and motivation are two critical factors that can have tremendous effects on language learning. Attitude refers to the beliefs and disposition to behave in a certain way, while motivation refers to the learner's orientation regarding the goal of learning a second language. Gardner's (1985) socio-educational model, which was designed to account for the role of social factors in language acquisition, classifies motivation into two types: integrative motivation and instructional motivation. *Integrative motivation* involves the desire to learn a second language because the individual likes the people that speak the language, admires the culture, and has a desire to become familiar with or integrated into the society in which the language is used. In contrast, *instrumental motivation* involves the desire to learn the language in order to obtain

something practical from the experience, for example, meeting the requirements for school, job opportunities, and so on. With this understanding of how students' writing may be inhibited by cognitive factors, every effort should be made to get university students to become motivated on both integrative and instructional levels. University students in Jamaica should not be allowed to lose sight of the centrality of writing to their future careers and goals, and, as such, any programme developed for them must help them to develop positive attitudes towards writing in English.

Towards a Definition of Writing

Writing is a cognitive process that involves different mental operations. Anderson's (1985) model of language production, which can be applied to both speaking and writing in a second language, divides writing into three stages: construction, transformation, and execution. *Construction* refers to how the writer plans what he or she is going to write, by using strategies such as brainstorming, using mind maps, or making outlines. *Transformation* involves the application of rules to transform intended meanings into the form of a message during the process of composition and revision, and *execution* involves the actual writing process.

Several researchers have highlighted the links between first and second language writing (Raimes, 1985), while some studies have revealed that second language writers employ many of the strategies that they use for writing in their native language to assist them when writing in a second language (Edelsky, 1982; Lay, 1982; Zamel, 1985). In his overview of research on the second language writing process, Krapels (1990) concluded that the lack of competence in writing in a second language results more from lack of competence in composing rather than a lack of linguistic competence. Similarly, Friedlander (1990) maintains that "students who have not developed good strategies for writing in their first language will not have appropriate strategies to transfer to their second language" (p. 109).

The preceding debate on the link between first and second language writing underlines the dilemma that Jamaican students face, since they do not have a writing culture in Creole. In other words, while they may be very proficient in the oral production of Creole, there is no tradition of learning to write well or effectively in Creole; in fact, Creole is hardly ever written by Jamaican students. Consequently, Jamaican university students do not benefit from this symbiosis or "synergy" that educators believe exists between writing in the first language and second language writing. But this does not mean that it is impossible to teach Jamaican

university students to write well. In fact, not all educators embrace this notion of how first language writing helps second language writing. Indeed, Kroll (1990) cautions that "it should not be presumed that the act of writing in one's first language is the same as the act of writing in one's second language" (p. 2). Kroll further notes that writing in a second language is even more complex since the second language learners' ability to master writing skills is compounded by the inherent difficulties in learning a foreign language.

"Skill-using" or "Skill-getting"?

There is no doubt that developing writing proficiency in English is a tremendous challenge for many Jamaican students, since in the context of second language learning, when students grapple with deciding what belongs in which language, it is even more difficult. Rivers (1987) regards writing as a group of activities that can be classified as "skill-getting" or "skill using." *Skill-getting* refers to the learning of convention (for example, grammar, mechanisms), while *skill-using* refers to using these codes for expressive writing and broad communication purposes. It is my view that the teaching of writing should involve both skill-getting and skill-using on the part of Jamaican university students, who need to master linguistic and general communicative competences.

Writing in a Second Language

In order for learners to be able to write in a second language they need adequate knowledge of vocabulary and syntactic structures, as well as an overall understanding of the conventions of written discourse in that language. Writing instructors can help students by providing the type of instruction that will simultaneously help them to understand the interrelationship between writing in JE and writing in JC, while facilitating the acquisition of SJE.

This essay is a conceptual/theoretical one, in which I maintain that the inability of many Jamaican university students to write well in SJE is the result of inadequate practice in writing a wide variety of texts. Indeed, in a context in which students speak one type of English in informal situations, and are expected to write another for more formal situations and academic purposes, they need to write with more frequency and to write different texts. Writing teachers need to combine different writing approaches that will allow students to write more, not necessarily in terms of the number of pieces they write, but in the variety of genres in which they write. Academic writing tends to focus mainly on the formal essay or summary writing, which many students find impersonal,

repetitious, and often uninspiring. I suggest that the implementation of a programme which includes the use of broad communicative teaching strategies that give attention to the learning of second language skills, combined with broad Writing Across the Curriculum (WAC) strategies, would allow frequent practice in writing, resolve problems of motivation and attitude, give attention to grammatical accuracy, and help students to write better. Such a programme would not only emphasize critical thinking skills, problem-solving skills, and reasoning skills, but would also target difficult aspects of grammar. This view of the importance and usefulness of increased writing activities finds support in Halliday's (1975) claim that knowledge of a language is best demonstrated by using it.

Communicative Language Teaching (CLT)

Communicative Language Teaching (CLT) is an approach to the teaching of foreign language that essentially emphasizes interaction as both the means and the ultimate goal of learning a language. Although CLT de-emphasizes lengthy grammatical explanations, it does stress the five Cs, one of which is comparison/contrast between the second language and the native language of students. Additionally, CLT has as its main concern helping students to communicate effectively in the target language. In this light, CLT is suitable for teaching writing in English to students in a Creole environment.

CLT and the Speaking/Writing Connection

Writing and speaking are both productive skills that require students to encode and negotiate meaning. Perera (1990), however, asserts that writing is not just a means of recording speech, as written language provides different opportunities from speech and requires different skills. It forces the writer to use language in different ways, and these different experiences of language use are then able to be fed back to speech. Writing, then, is not just a reflection or a record of oral competence, but it is also an important agent in language development.

Some experts in language competence are of the view that writing and speech need to be considered together because there is a close relationship between oral and written communication. Others, like Wells and Chang (1990), argue that the relationship between speech and writing is a complex one and that writing is not simply speech written down. While I concede that the different positions all have validity, I maintain that oral practice in English will be beneficial to students who

do not normally speak English outside of the English class. In other words, students' writing will improve as their speech improves.

Several educators have examined the role of orality in improving writing. They assert that the inclusion of speaking as part of writing allows for more collaboration among writers and more success as a writer. The same approach used in the development of oral skills in foreign languages like Spanish can be used. For these classes, there are structured conversation classes to ensure that students develop oral proficiency in the target language. For writing in English, this oral proficiency will then feed into their writing as they will then write the ideas discussed, in the language in which they are discussed. Students should participate in conversation classes and discuss different topics in SJE only. Exercises should be interactive and contextualized—such as simulations—but students should not be allowed to use Creole in these classes. This is by no means intended as a disparagement of Creole, but is instead an attempt to focus on the taught language in the classroom context, especially since the students are, generally speaking, all very proficient in speaking Creole. Students in a vernacular setting need to hear English in the classroom. Bryan (2010) argues for the importance of "hearing English" by students who are learning to write it. She refers to this as the *Input Principle*. Bryan (2010) states:

> The word 'input' refers to the language that the learner hears that carries some communicative purpose.... In formal language settings written language forms a part of the linguistic output. Whatever the source, linguistic input is essential to language learning.… learning English as a second language need to hear English every day, to follow the contours of the language and expand on their vocabulary in communicative contexts. (pp 79–80)

Indeed, oral language is acquired in real-life, natural settings through interactions with others. As students listen to each other and develop listening comprehension skills, they are able to make connections between the oral language and the writing that represents this oral language. This could prove to be an effective tool in the writing process. I suggest that students be allowed to make oral presentations of their writing. Once they know that they will be speaking about their written work in a formal setting, they will make the effort to ensure accuracy in the language they choose to use for their presentations.

From Speaking and Writing to More Writing: The Role of Reading Comprehension

This paper, however, is primarily concerned with giving university students more to write, as a way of improving their writing in English. One important way in which English language proficiency can be built is through the use of comprehension exercises. Craig (1999) suggests that developing comprehension skills is integral to building English language proficiency in students in a vernacular situation. Furthermore, he regards comprehension as aiding in or facilitating the learning of language structures in English. In other words, the more students are exposed to phrases and sentences in English, the more they will manipulate and produce these structures. Reading comprehension allows for closer examination of texts and will encourage students to focus on accuracy as they read and evaluate texts. Students should be encouraged to inform their writing with the structures they scrutinize and synthesize. Reading comprehension should therefore encourage students to write more idiomatic English. Sometimes, Jamaican students write English which is very stilted, due to their unfamiliarity with expressing themselves on a regular basis in the language. Velma Pollard (2003) attests to this when she states that:

> After all the nouns and verbs are correct and the syntax is in place, we as teachers of English in a Creole-speaking environment, are still left with the problem of getting students to write idiomatic English. The Creole speaker frequently falls into the trap of writing Creole idioms with English grammar and believing that he is writing English. (p. 49)

Reading comprehension will expose students to idiomatic uses of the language, which they can internalize as they read and reproduce in their own writing. As Pollard asserts, "only by using a language can you acquire competence in its idiomatic use" (p. 51).

Writing Across the Curriculum

> Writing Across the Curriculum (WAC) is essentially an educational reform movement that promotes pedagogical and curricular changes to encourage the use of writing, so that it will support students' understanding of ideas, promote active learning, and facilitate the acquisition of content knowledge in all disciplinary areas. (Ramsay, 2008, p. vii)

WAC is grounded in several theories of learning. Two of the main theories are critical thinking and constructivism.

Critical thinking

Theories of critical thinking are an expansion of Dewey's (1916) views that solving problems, or the process of grappling with the problem, enables students to think critically and analytically, and to acquire the skills needed to resolve difficult situations. Other critical thinking theoreticians have expanded on Dewey's ideas to support their view of how important it is for educators to get students to explore ideas and think. For instance, Kurfiss (1988) characterizes critical thinking as "an investigation or exploration of a situation or phenomenon, or problem, with a view to arrive at a hypothesis or conclusion about it" (as cited in Ramsay & Bailey, 2008, p. 349).

Constructivism

The central idea of constructivism is that human learning is constructed, and that learners build new knowledge upon the foundations of previous learning. This view of learning sharply contrasts with one in which learning is the passive transmission of information from one individual to another; a view in which reception, not construction, is the key. Constructivists regard WAC as helping students to pay attention to the discourse demands as they explore and write in their respective disciplines.

WAC provides the opportunity to draw on both critical thinking principles and constructivism as it accentuates doing through writing. The core principles of WAC work to promote critical thinking skills and develop students' understanding of the relationships among writing, content, knowledge, and power (Keifer, 2009). Indeed, WAC promotes consistent, regular writing. Writing takes time to develop, so when students are given the opportunity to do regular, purposeful writing, their writing skills are developed over time.

A Model for the Improvement of English Through Writing: Writing a Wide Variety of Texts

There are two approaches to WAC, based on important theories of language learning. The first, "Writing to learn," focuses on writing as a means of learning, as it requires writers to explain ideas and concepts to themselves and engage in critical thinking. The second, "Writing to communicate," draws on the theory of the social construction of knowledge and promotes the learning of disciplinary discourse. The

writing activities included in this model draw mainly on the principle of "Writing to learn."

Exploratory essays

The exploratory essay is very useful for university students. It requires a writer to present the chronological account of the thinking related to the progress of the research for the essay. This would include the efforts to explore different approaches to the writing, an account of the perspectives taken to explore the ideas suggested by a topic, and the way(s) in which the thinking about the topic evolved.

Students are required to use real-time strategies as well as retrospective strategies to write their exploratory essays. Real-time strategies are used during the actual process of researching and thinking to compose the body of the essay, while retrospective strategies are used to revise the research notes and the body of the essay (Ramage, Brown, & Johnson, 2009).

This practice facilitates acquisition of acceptable standards in the language, because the more students are required to write, the more they think in the language and improve their production—in terms of content, the employment of effective rhetorical strategies, and grammatical accuracy. Indeed, as students contemplate and think through "subject-matter problems," writing becomes a process of "inquiry and discovery" as their thinking becomes more refined and elevated, and this will be reflected in the improvement of their expression, use of diction, and language in general. Exploratory essays also aid in improving the organization of students' essays, because of their focus on chronology and because of careful revisions and re-drafting to remove "extraneous details" (Ramage et al., 2009).

Annotated bibliography

The annotated bibliography is a writing exercise that is undervalued and is not used enough by many instructors at the university or college level. However, it should be seen as more than a list; it is an effective method for getting students to write, develop their critical thinking skills, and improve their use of language. Annotated bibliographies can be either "summary only" or "evaluative." The evaluative form is particularly useful because it involves writing a critique of the works in the bibliography. This type of engagement in making comments on the rhetorical context of a source, as well as its strengths and weaknesses, provides students with material to write about and the opportunity to practise writing in English. Moreover, the writing of annotated bibliographies requires students to do exploratory thinking and engage in

scholarly critiques and assessment of the sources, both of which will have a positive impact on their writing.

Autobiographical narratives

The writing of autobiographical narratives will provide students with useful writing practice that will not only focus on the rhetorical aims of writing, but will also provide students with a genre that may seem less formidable than the academic essay. The autobiographical narrative can be done in two forms. One is the narrative that centres on a significant moment in the students' lives. The second is a literacy narrative that involves the students' personal experience with language, reading, writing, thinking skills, or with education as a process and a social institution (Ramage et al., 2009). I suggest that both forms be used, as the familiarity of subject and content (the self), should make it easier for students to express themselves, use language freely, and focus on accuracy in their use of language as they write. As students explore matters such as how they themselves have evolved, their new interests, and their challenges, they will intimately be engaged with what they write and are more likely to focus on avoiding grammatical errors and unidiomatic English.

But it is the literacy narrative that promises to be especially effective in helping students to write, confront their own writing difficulties, and write their way out of some of their problems. This is so because a literacy narrative forces writers to examine their strengths, weaknesses, and significant moments in learning a language or learning to read and write. Additionally, it allows writers to recount their personal experience with reading, writing, and education as a process. Historical literacy narratives, for instance, give attention to how famous persons overcame difficulties with reading and writing. When students are faced with exploring their own problems with writing SJE, it will undoubtedly cause them to confront and seriously accept the challenge of correcting their weaknesses.

Dialogue journals

One of the activities that students can engage in is the writing of dialogue journals. Students should be allowed to write and exchange journals about the content they are learning. However, they could be asked to also comment on each other's grammar. Students can talk about the correct rendering of grammatical forms they find difficult, as they read each other's original entries. This activity will not only encourage collaborative learning, but will also help students to recognize problems in SJE, and be motivated to help each other to improve.

Summary statements

In this exercise, students write statements that summarize the main points of readings. They should work in pairs to discuss each other's summary, and would be required to check at least two aspects of grammar in each other's statements; each pair would have to revise and correct the grammatical errors identified in their statements. Again, this exercise facilitates critical thinking skills, in addition to giving attention to the aspect of grammar highlighted.

The writing of scholarly letters and emails

In this writing activity, students will create responses to letters to scholars or theorists about an idea they are learning or reading about in one of their discipline-specific courses. This will convince them of the need to use formal language for certain contexts. For each of these exercises, one problem such as subject-verb agreement should be the common grammatical point, because it is a grave error that many Jamaican students commit repeatedly. Pollard (2003) corroborates this, when she notes that, "for every ten teachers I ask what is the most common problem students have with writing English, nine tell me subject-verb agreement" (p. 21). Once students know that this grammatical point is being monitored, they will, in turn, monitor themselves to write it correctly. Also, once they develop an understanding of the advanced and scholarly level of language needed for this type of writing, they will discipline themselves to produce it to the best of their ability.

Conjugation charts

Students should be given conjugation charts and spelling charts to consult every time they write. This is one of the approaches that is used in foreign language teaching and should be adopted to aid the development of grammatical proficiency. The criticism may be made that this is too traditional an approach, but I believe that it has its place in a situation in which students need to learn that the correct verb form is important. We will recall Pollard's (2003) assertion that this is one of the major problems facing Jamaican students when they write in English. The writing of their own charts will also force students to concentrate on the accuracy of verb forms.

Continuous assessment

Both teacher and peer assessment are recommended, since feedback is important in the process of writing to learn. Clear rubrics and checklists should be developed to guide the process of assessment. A checklist is a

set of concrete observable behaviour or task dimensions that are organized in a logical way. It outlines the goals for writing as well as the characteristics of good writing. A well-developed checklist can guide student writers towards the completion of a specific writing task. The checklist can be used to generate conversation between peers and among instructors and students. Students can write their own checklists for different writing tasks. This will help them to develop a disciplined approach to writing.

Journaling

This is a notebook that is used to record inquiry, research, data collected, and facts learned. It provides permanence and stability for students' reflections and questions. It also provides resources for writing reports about class activities and records information gained during lectures or discussion sessions. The journal can be used to provide feedback about students' reporting skills and can be used for both self and teacher assessment. Instructors should always provide feedback on entries and encourage students to use the journal for further growth and development of their writing skills.

Quick writes

These may also be referred to as one-minute paper, admit or exit slips. They are used to engage students in thinking about an upcoming topic or lesson. Questions are asked before the class to ascertain students' previous knowledge of a topic or area of language usage or writing. At the end of the class, questions are used to determine how much was learned in the class. Students then do their quick writes, which are useful for helping them to think and write quickly with accuracy, directness, and focus.

Writing on micro themes

Students write key ideas in their own words from reading assignments. These summaries can be written on note cards, which are quickly assessed by the instructor and feedback given to the students. This is an exercise that can help students to develop their thinking skills, while enabling them to write quickly, with accuracy and focus.

Framed photographs

These are skeletal paragraphs with strategically placed transitions or cues that signal to students a particular way to think or write about a topic or concept. Students complete the framed photograph by writing in the missing words or by creating their own sentences. The idea is to encourage creativity, critical thinking, and the development of

vocabulary related to different topics to enhance the quality of students' writing.

Conclusion

The exercises or writing tasks suggested in the preceding model are by no means exhaustive, but will without doubt provide effective ways through which Jamaican students could develop greater interest in writing SJE.

Linguistic ambivalence

The argument has been advanced, as part of the debate on the centrality of JC to the expression of national identity, that there should be less insistence on the writing of SJE by Jamaican students since it is restricting their expression of self or identity. Linguist Hubert Devonish (2003) argues that "conquest diglossia by confining Creole to the private, informal and oral, restricts the ability amongst the growing number of educated bilinguals to express their national identity linguistically" (p. 182).

I agree with the need for people in post-colonial societies to assert agency and national identity, and firmly agree that language is a crucial way of doing so. However, I am also unyielding in my belief that university students should understand the importance of writing SJE, which is acceptable in formal contexts. Teachers of Writing and Use of English can motivate students to develop a positive attitude toward the teaching/learning of SJE. While it may be true that more use of Creole may well fulfil the important role of developing pride in the first language, students need to understand the need to learn a language that will enable them to function more effectively on the global level. Indeed, university students must understand that JC is a language in its own right, but they must be encouraged to seek empowerment through English as well, for purposes of travel, business, commerce, and further studies abroad. Writing teachers must begin by helping students to come to terms with this linguistic ambivalence by acknowledging the role of Creole in developing their individuality, national pride, and identity, but they must also take the responsibility for helping students to develop general communicative and linguistic competences in English. This can be achieved by the development of rich, varied programmes that will allow students to write more in SJE: "Much writing," teachers will discover, "begets good writing."

References

Anderson, J. (1985). *Cognitive psychology and its implications* (2nd ed.). New York, NY: Freeman.

Bryan, B. (2010). *Between two grammars: Research and practice for language learning and teaching in a Creole-speaking environment.* Kingston, Jamaica: Ian Randle.

Craig, D. R. (1999). *Teaching language and literacy: Policies and procedures for vernacular situations*. Georgetown, Guyana: Educational Development Services.

Devonish, H. (2003). Language advocacy and 'conquest' diglossia in the 'Anglophone' Caribbean. In C. Mair (Ed.), *The politics of English as a world language: New horizons in postcolonial cultural studies* (pp. 157–178). Amsterdam, The Netherlands: Rodopi.

Dewey, J. (1916). *Democracy and education*. New York, NY: Macmillan.

Edelsky, C. (1982). Writing in a bilingual program: The relation of L1 and L2 tests. *TESOL Quarterly*, *16*(2), 211–228.

Friedlander, A. (1990). Composing in English: Effects of a first language on writing in English as a second language. In B. Kroll (Ed.), *Second language writing: Research insights for the classroom* (pp. 109–125). Cambridge, UK: Cambridge University Press

Gardner, R. (1985). *Social psychology and second language learning: The role of attitudes and motivation*. London, UK: Edward Arnold.

Halliday, M. A. K. (1975). *Learning how to mean — Explorations in the development of language*. London, UK: Arnold.

Kane, T. (1988). *The new Oxford guide to writing.* Oxford, UK: Oxford University Press.

Kiefer, K. (2009). *Basic principles of WAC.* Fort Collins, CO: WAC Clearinghouse. Retrieved from http://wac.colostate.edu/intro/pop3a.cfm.

Krapels, A. (1990). An overview of second language writing process research. In B. Kroll (Ed.), *Second language writing: Research insights for the classroom* (pp. 37–56). Cambridge, UK: Cambridge University Press.

Kroll, B. (1990). *Second language writing: Research insights for the classroom*. Cambridge, UK: Cambridge University Press.

Kurfiss, J. G. (1988). *Critical thinking: Theory, research, practice, and possibilities* (ASHE-ERIC Higher Education Report, No. 2). San Francisco, CA: Jossey-Bass.

Lay, N. (1982). Composing processes of adult ESL learners: A case study. *TESOL Quarterly*, *16*(2), 406–407.

Perera, K. (1990). Grammatical differentiation between speech and writing in children aged 8 to 12. In R. Carter (Ed.), *Knowledge about language and the curriculum* (pp. 216–233). London, UK: Hodder & Stoughton.

Pollard, V. (2003). *From Jamaican Creole to Standard English: A handbook for teachers*. Brooklyn, NY: Caribbean Research Center, Medgar Evers College.

Raimes, A. (1985). What unskilled ESL students do as they write: A classroom study of composing. *TESOL Quarterly*, *19*(2), 229–258.

Ramage, J., Brown, J., & Johnson, J. (2009). *The Allyn & Bacon guide to writing* (5th ed.). New York, NY: Pearson.

Ramsay, P. (Ed.). (2008). Writing across the curriculum: Integrating discourse communities in the academy [Special issue]. *Caribbean Journal of Education, 30*(2).

Ramsay, P., & Bailey, C. (2008). Integrating discourse communities: Using WAC strategies to enhance the learning of mathematics in a Grade 7 class. *Caribbean Journal of Education, 30*(2), 345–377.

Reichelt, M. (1999). Towards a more comprehensive view of L2 writing: Foreign language writing in the U.S. *Journal of Second Language Writing, 8*(2), 181–204.

Rivers, W. (1987). *Teaching foreign language skills*. Chicago, IL: University of Chicago Press.

Shields Brodber, K. (1989). Standard English in Jamaica: A case of competing models. *English World-wide, 10*(1), 41–53.

Silva, T. (1990). Second language composition instruction: Developments, issues, and directions in ESL. In B. Kroll (Ed.), *Second language writing: Research insights for the classroom* (pp. 11–23). Cambridge, UK: Cambridge University Press.

Silva, T. (2001). Towards an understanding of the distinct nature of L2 writing: The ESL research and its implications. In T. Silva & P. K. Matsuda (Eds.), *Landmark essays on ESL writing* (pp. 191–208). Mahwah, NJ: Erlbaum.

Wells, G., & Chang, G. L. (1990). From speech to writing: Some evidence on the relationship between oracy and literacy. In A. Wilkinson (Ed.), *The writing of writing* (pp. 109–131). Milton Keynes, UK: Open University Press.

Zamel, V. (1985). Responding to student writing. *TESOL Quarterly*, *19*(1), 79–101.

Caribbean Curriculum
Vol. 18, 2011, 43–67.

PROFESSIONAL EDUCATION DEVELOPMENT IN THE CONTEXT OF TOBAGO: Teachers' Concerns With Change

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Teacher professional development has been one of the main avenues through which Caribbean nation states have sought to reform and modernize their education systems. Several models have been adopted over the past four decades in response to the varying development trajectories and resources of the individual nation states, with varying degrees of success. This study reports on a teacher professional development innovation project in Tobago, one of the two islands making up the Republic of Trinidad and Tobago, from the perspective of a small group of secondary school teachers who participated in the project. Data about the teachers' concerns with the innovation were collected using a Stages of Concerns Questionnaire, and the data were analysed using the Concerns Based Adoption Model framework. The study found that the teachers who participated had low-level Personal Stage 2 concerns with the innovation, that is, they were typical nonusers of the innovation. This suggests that the majority of the teachers who participated in the professional development innovation would not use what they had learned in their classrooms once the period of training had been completed. This has implications for school improvement reforms since the assumption of most of these reforms is that teachers will embrace the new competencies and utilize them to improve the teaching and learning processes in their classrooms. The recommendation is that every effort should be made to mitigate against teachers' personal concerns, or at least to minimize them, to ensure that in-service secondary school teachers approach these professional development innovations more objectively, and by so doing increase the likelihood of them embracing these innovations in the ways that were intended.

Introduction

Tobagonian teachers' concerns with change can be viewed in the context of the tensions that persist between Tobago and its rich, powerful sister

isle, Trinidad, the centre of power in the two-island Caribbean nation state. Up until 1980, the year Tobago achieved internal self-government from the Republic of Trinidad and Tobago (T&T), "Trinidadians considered Tobago as a rural, if not backward island" and the junior partner in the union (Luke, 2007, p. 232). Trinidad, as the larger, richer, more developed island and the place where the legislative power resides, has historically claimed that it has a moral obligation to foster the development of Tobago. The moral obligation to Tobago, however, has never been fulfilled. As late as 1997, Tobago had a very low transition rate (59.1%) from primary to secondary education relative to the rest of the country (70.0% on average) (Craig-James, 2008). Though more secondary places were provided from 1997, and both islands moved to universal secondary education from 2000, for Tobago, the question of quality remains much more an issue for policymakers than it is for Trinidad.

For example, in 2000, a Task Force appointed to enquire into poor secondary school performance in Tobago noted that "more than half of the students assigned to secondary schools were in serious need of remedial teaching" (Craig-James, 2008, p. 235), and recommended special remedial programmes for the students. These remedial programmes have not yet been implemented in most of the schools that receive these students; in part, because many secondary school teachers in Tobago lack the professional teacher education training needed to implement any such intervention. Because secondary school teachers in T&T are hired as untrained graduates, there is a high proportion of untrained teachers in secondary schools. This problem is magnified in Tobago. In 2004, for example, of the 128 teachers with a university degree in public secondary schools in Tobago, 109 or 85.2% of them had no postgraduate training in education, as compared to 57% country-wide (Trinidad and Tobago. Central Statistical Office, 2005).

There are many conflicting accounts as to why the levels of untrained teachers in secondary schools in the country in general, and Tobago in particular, have remained high. One argument is that, historically, the Ministry of Education in Trinidad has adopted and continues to perpetuate the old "integrationist model of development" (Luke, 2007) that requires teachers from Tobago (the periphery) to come to Trinidad (the centre) for training; and that this historic centre-periphery development model did not change when Tobago gained self-government status in 1980. Those who advance this view suggest that this is why both the central government and the Tobago House of Assembly have remained insensitive to the hardship and expense for

travel, food, and lodging that Tobagonians have to endure when travelling to Trinidad to procure educational services. It has been further suggested by Craig-James (2008) and Luke (2007) that this century-old policy of centralizing higher education in Trinidad has aided the perpetuation of tensions between the two island communities, in addition to accounting for the marked differentials in trained graduate secondary school teachers on the two islands. These authors, however, have focused their inquiries on developing grand historical theories of identity and secession in Caribbean nation states over vast time periods from primary and secondary historical data sources. In these studies, teacher professional development has only been incidental to the grand march of Caribbean history as a discipline. The purpose of this inquiry, therefore, is to bring practising Tobagonian teachers more directly into the discourse of teacher change, by describing the stages of concerns a group of teachers from Tobago had with a professional teacher development innovation that was delivered to them in Tobago. Through their stages of concerns, I intend to explore the extent to which teachers who participated in the pilot project embraced the professional development teacher education programme as it was intended.

Education Development in Tobago: An Overview

The gestation period of education development in Tobago has been long. Today, over a century since it became "a Ward of Trinidad" in 1898, Tobago has still not yet fully come into its own in terms of actualizing the full potential benefits from the many education reforms the country has undertaken. For example, the development of its education infrastructure still lags behind that of Trinidad. This has been the case since the two islands amalgamated into a single colony. As early as the 1920s, James Biggart, a local black pharmacist turned politician, was requesting "special consideration for education in Tobago, including increasing funding, college exhibitions set aside for Tobago students, special representation on the Board of Education for Tobagonians, and an inspector of schools for the island" (Luke, 2007, p. 131). In addition to this, Biggart was at the forefront of efforts to establish secondary education in Tobago; efforts which led to the establishment of Bishop's High School, the first high school in Tobago, in 1925, almost three-quarters of a century after the establishment of Queen's Royal College (QRC) in Trinidad in 1859. The other eight secondary schools were long in coming. The Government of Trinidad and Tobago built five in the latter half of the twentieth century (Roxborough, Scarborough, Signal

Hill, Mason Hall, and Harmon High School) and three (Light and Life Pentecostal, Goodwood, and Speyside) in the last 10 years.

Additionally, almost all Tobagonian teachers still have to go to Trinidad to be trained, as there is yet no in situ tertiary level teacher training institution on the island. Furthermore, as the eighth educational ward (district) of the Republic of Trinidad and Tobago, its schools are underperforming, as reported by the 2000 Task Force on secondary education in Tobago (Craig-James, 2008); and its students' rankings on the high-stakes Secondary Entrance Assessment (SEA) has been consistently eighth of eight over the last decade (Trinidad and Tobago. Ministry of Education [MOE], 2009). The results on the Caribbean Secondary Education Certificate (CSEC) and Caribbean Advanced Proficiency (CAPE) examinations have also been consistently poor over this period.

This is in stark contrast to Trinidad, the sister island, which leads on all the education development indicators. For example, of the 152 secondary schools in the country, 141 are in Trinidad, including 41 of the 42 high-performing "prestige" secondary schools (Lochan & Barrow, 2008). Furthermore, quality indicators such as the results of the 2010 CAPE examination highlight the ongoing contrasting performances of the students being schooled on the two islands. Of the 355 scholarships offered to students in 2010 based on their performance on the CAPE examinations, 354 went to students who attended secondary schools in Trinidad, with only one going to a Tobagonian student!

If the assumption is made, as Neal Gross (1979) recommends, "that individuals must change before organizations, and schools are no exception, can be altered" (p. 20), then coming into its own in the context of education for Tobago, in part, means "teachers having a greater willingness to engage in new practices, to push new boundaries, to explore new territories in education reforms" (Ornstein & Hunkins, 2004). That is, teachers must change, in radical ways, their classroom practices. However, these new classroom practices that Tobagonian teachers must embrace for its system of schooling to improve are not only those with respect to the best practices of their counterparts in Trinidad, but also with respect to best practices by those teachers in countries now considered as having developed nation status. The study, therefore, further explored the commonly held perception of Tobagonian teachers' resistance to the embrace of such practices.

Specifically, in an attempt to address what was perceived as one of the underlying causes of this type of structural inequity faced by schools and teachers in Tobago, as well as trying to stem the proliferation of

"virtual universities" beaming their programmes to prospective clients on the island, the School of Education of The University of the West Indies (UWI) initiated a Diploma in Education (Dip.Ed.) pilot programme for secondary school teachers in Tobago. This pilot programme in teacher education development was delivered on-site in Tobago over the period July 2009 to May 2010. This paper reports on the concerns that the teachers who participated in this pilot programme had with this specific innovation, and sought insights into the extent to which such resistance was impacting on education development in Tobago.

Theoretical Perspective: Development and Teacher Resistance

Manifestations of the desire to achieve excellence in education for Tobagonians are evident everywhere in the island's schools. For example, the vision statement of one the leading secondary schools in Tobago captures this desire as follows: "to be the premier institution for the provision of world-class holistic secondary student education in the changing global environment."[1] This is contrary to the views held of them by Trinidadians as reported in the historical literature. Luke (2007), for example, documents a vivid example of an experience that James Biggart had with this conflicting view held by the Trinidad authorities, that is, that Tobagonian "teachers were poorly qualified, [with] too many small schools wasting government's money" (p. 143).[2]

These comments provide insights not only of how Trinidadians viewed Tobagonians in the early years of the union, but also suggests the level of resistance the wider Tobagonian population was willing to offer against Trinidadian hegemony. The experience of A.P.T. James, a former teacher, gives specific insights into the level of concerns Tobagonian teachers had with the education system at the time when the country was seeking political independence from Britain:

> As a former teacher, A.P.T. James was very much concerned about education in Tobago. During his fifteen years in the legislature he demanded that the government build and maintain schools in Tobago, as many of the existing ones were very dilapidated. In 1947 he requested that a "proper school" be built in Roxborough, the island's second town, to replace the 'two old shacks' there. In 1950 James urged the government to construct at least one of the other secondary school in Tobago. At that time Tobago had only one secondary school – Bishop's High School in Scarborough, which was an Anglican school. (Luke, 2007, p. 173)[3]

It is therefore not surprising that Tobagonian teachers viewed the professional development innovation with some degree of scepticism, given that it was coming from Trinidad and their experiences with "gift-horses" coming out of that source. This is notwithstanding the fact that this innovation was a UWI-initiated project.

Researchers who have examined how teachers respond to professional development opportunities elsewhere have found that each teacher approaches a new programme, or any change for that matter, with a personal set of concerns. For example, Karel Holloway (2003) notes that individuals ask: "Why should I do this? How long is it going to take for me to work through this? I know my students and I don't think this will work" (p. 1). Helping teachers work through these personal concerns is crucial in ensuring that the intended changes occur, since being aware of the concerns allows those in charge of the innovation to tailor aid given to individuals (Holloway, 2003).

The current education literature is also replete with general concerns teachers have with the implementation of education innovations (Barrow & De Lisle, 2009; Fullan, 1991; Fuller, 1969; Gross, 1979; Hall, 2001; Holloway, 2003; Hord, 1987, as cited in Holloway, 2003; Ornstein & Hunkins, 2004). These concerns can be categorized in various ways depending on the change model adopted by the researcher. The Concerns-Based Adoption Model (CBAM) was developed by researchers at the Southwest Education Development Laboratory in the mid-1970s (George, Hall, & Stiegelbauer, 2006; Hall & Hord, 2001; Hall & Loucks, 1977), and has been used to analyse teachers' concerns with change. The CBAM framework categorizes teachers' concerns with innovations as: awareness, informational, personal, management, consequence, collaboration, and refocusing concerns.

Though the CBAM model assumes that each concern operates as an independent factor, and that a teacher may exhibit peak intensities in one or more of the stages of concerns, it postulates that "it is the profile of the intensities of the concerns that an individual teacher has that is most revealing about the teacher's commitment to the innovation in which he/she might be involved" (George, Hall, & Stiegelbauer, 2006, p. 31). Furthermore, analysis of concerns can also be carried out at the group level by aggregating the individual concerns, using the same CBAM framework (Hall & Hord, 2001). The latter was the approach to the analysis that was adopted in this study, in which data on the concerns of seven secondary school teachers with a teacher professional development innovation were collected and analysed using the CBAM framework.

Research using this theoretical framework has consistently shown that teachers have varying intensities of concerns with any innovation (Hall & Loucks, 1978). This is even more so when the initiative is directed at changing their professional practice (Fullan, 1991). The concerns can vary from issues of awareness, through management, to more substantive issues of consequence, collaboration, and refocusing (Hall & Hord, 2001). Since the intensity of teachers' concerns can impact on the extent to which an innovation is successfully adopted, it could be helpful, when implementing any new teacher education initiative, to monitor the profiles of teacher concerns about the innovation, as awareness of the concerns allows those in charge of the innovation to tailor aid given to individual teachers (Holloway, 2003).

One possible way of generating the concerns profiles of teachers participating in any innovation is through use of the concerns-based questionnaire (George, Hall, & Stiegelbauer, 2006). In this study, the Stages of Concerns Questionnaire (SoCQ) was administered to a small convenient sample of Tobagonian teachers participating in a pilot teacher professional development innovation. The data collected was subsequently used to construct the concerns-based profile of the group, and the profile was analysed in conjunction with interview and classroom observation data. The analysis provided some insights into the concerns that this group of teachers had with the innovation and the process of change.

The study describes, as a composite, the concerns profiles of seven individual secondary school teachers who participated in the piloting of a Dip.Ed. programme offered on-site in Tobago in 2009/2010. This postgraduate programme, like CBAM, had its origins in the early 1970s, and aims at enhancing secondary school teachers' best practice in the classroom. The programme, developed at the School of Education of the St. Augustine Campus of UWI, is a one-year in-service programme offered to secondary school teachers who have had no professional teacher training.

The sample comprised five female and two male secondary school teachers. Five had been teaching for five years or less, one for eight years, and a male physics teacher for 26 years. Four taught in urban secondary schools in Tobago, and the other three taught in two rural schools located in villages in the north-east and centre of the island. Two of the female teachers were not born in Tobago—one was born in Venezuela of Tobagonian parentage, and the other in Trinidad. Though the latter two participants were raised and went to school in Tobago, and were citizens of the Republic of Trinidad and Tobago, they were

considered by the Tobago natives at the school to be "outsiders." In one of the rural secondary schools where one of these young female teachers taught, there were two staff rooms, one room for native Tobagonian teachers and the other staff room for "outsiders." This "insider"/"outsider" theme, with all its ramifications, including their concerns about innovation and change, was one of the unintended observations that evolved from the analysis of the qualitative interview and classroom observation data.

Methods

Stages of Concern Questionnaire

The Stages of Concern Questionnaire (SoCQ) is a 35-item instrument used to determine the intensities of teachers' concerns about an innovation. The instrument conceptualizes concerns as having seven dimensions, as summarized by Holloway (2003):

- Awareness: Aware that an innovation is being introduced but not really interested or concerned with it.
- Informational: Interested in some information about the change.
- Personal: Wants to know the personal impact of the change.
- Management: Concerned about how the change will be managed in practice.
- Consequence: Interested in the impact on students or the school.
- Collaboration: Interested in working with colleagues to make the change effective.
- Refocusing: Begins refining the innovation to improve student learning results. (p. 2)

In the CBAM construct, the Stages of Concerns are hierarchical and also developmental, with Awareness concerns being the lowest set of concerns and Refocusing concerns the highest.

The purpose of the questionnaire is "to determine what people who are using or thinking about using various programs are concerned about at various times during the innovation adoption process" (Hall & Hord, 2001, p. 279). It consists of agree-disagree statements on a 7-0 Likert scale, ranging from "concerns about teachers attitudes towards this

innovation" to "concerns about not having enough time to organize myself each day."

Each of the seven dimensions of concerns on the SoCQ has five statements associated with it, and the respondents are urged to score each statement on the 7-0 Likert-type scale in terms of irrelevant (0); not true of me now (1); somewhat true of me now (4); and very true of me at this time (7). The respondent's raw scores on statements on each of the stages of concern are them tallied and the total score used to determine a percentile ranking from a table provided by its developers. The percentile ranking is a measure of the intensity of respondents' concern on that dimension or stage. To construct the individual profile of the stages of concern of respondents, a graphical plot is done with the percentile score (dependent variable, DV) against the stages of concern (independent variable, IV). Both variables are continuous. To construct the group profile of the stages of concern of the respondents, the raw score mean of each stage is used to determine the percentile score for that stage of concern and a graphical plot done as for the individual profile (George, Hall, & Stiegelbauer, 2006).

Since its initial development, many of the original staff developers have field-tested, modified, and integrated the concepts into their work over the past 35 years (Holloway, 2003). The questionnaire has also been validated for use in several countries other than the United States, including Canada, the UK, the Netherlands, Spain, Hong Kong, Korea, and Japan (Anderson, 1997).

The SoCQ was used to construct the concerns profile of each individual teacher participating in the innovation (Hall, 2001). Constructing these profiles was seen at important for several reasons. For example, if the person in charge of overseeing the implementation of the innovation knows that a teacher is concerned about how to effectively source multimedia materials to use in the classroom, the teacher can be given additional preparation, or paired with a teacher who is able to source and use media in the classroom effectively. Additionally, the stages of concerns profile provides a snapshot of the intensity of each of the seven concerns that the teacher has at any specific point in time throughout the process of implementing the innovation. Hence, the data generated from the SoCQ provided insights not only on the ongoing, steady support needed to move an innovation forward (Holloway, 2003), but also documentary evidence of this sample of teachers' concerns with the innovation at a particular point in time.

Elite Interviews

Elite interviews were done with four of the seven respondents following the administration of the questionnaire. The interviews were semi-structured and the questions sought to determine the perceived impacts that specific components of the programme had on the participants. For example, the interviewees were asked which aspects of the programme they found most useful to their teaching and which they found least useful. Notes were taken on the respondents' responses to questions and their suggestions on how to improve on the programme's implementation. The average length of an interview was 15 minutes. An interpretive approach (Bogdan & Biklen, 1992; Creswell, 2003) was taken in the analysis of the interview data. Interview data were therefore used as an additional source of information on the teachers' concerns about the programme.

Classroom Observations

In this study, the stage of the teachers' concerns about the innovation was assumed to be associated with their level of use (LoU) of the various elements of the programme in their classroom practice (Hall & Hord, 2001), and was therefore further examined in the secondary school setting. Each teacher was observed five times teaching in their subject area to a class in their own school, and two times teaching to a class in another secondary school. The observations were all clinical classroom observations in that they all accommodated pre- and post-observation conferences. A rubric constructed specifically for this purpose was used to guide the classroom observations and the investigator generated field notes immediately following each of the supervisory observation visits. An interpretive approach (Bogdan & Biklen, 1992; Creswell, 2003) was used to track teachers' level of use of the various elements of the programme, including planning, use of media, student engagement, questioning skills, and appropriate choice of teaching strategy, and so on, and their levels of use was mapped onto their stages of concerns in the analysis of the data.

Analysis of the Findings

Analysis of the Questionnaire

The analysis of the seven teachers' responses to the SoCQ was, as far as possible, guided by the approaches recommended by George, Hall, and Stiegelbauer (2006). As they note, the SoCQ data "can be interpreted at several different levels of detail and abstraction" (p. 31). For the

purposes of this paper, group data were analysed at three levels to accommodate three types of interpretations, namely: the peak stage score, the first and second highest stage score, and profile interpretations. The three levels of analyses were done since this allows for the most sensitive interpretation of respondents' concerns, while at the same time presenting a rich clinical picture of how some teachers as a group react to innovation and change (Holloway, 2003).

Peak Stage Score Interpretation

Table 1 shows the peak stage scores (*) for each of the seven teachers in the sample and their composite group peak stage score. The group peak score of 76 (percentile scale) suggests that, as a group, these teachers were predominantly at a personal stage of concern at this point in time in the innovation implementation process. This was followed closely by an expression of a relatively highly intense set of management concerns, mean peak score of 73. It is important to note that although as a group their collective peak concerns were with the personal dimensions of the change process, three (T3, T5, and T7) of the seven teachers had most concerns with the management dimensions of the change process.

The percentile ranking of a stage of concern score is a measure of the relative intensity of the concern. The higher the percentile score the greater is the intensity of the concern. Hence a percentile score of 76 indicates a moderately high intensity of personal concerns. The score of 76 suggests that the respondents have intense personal concerns about the innovation and its consequences for them, that is, they want to know the personal impact of the change (Holloway, 2003).

Table 1. Listing of Individual and Group Stages of Concern Percentile Scores

Teachers	Stages of Concern Percentile Scores						
	Awareness 0	Informational 1	Personal 2	Management 3	Consequence 4	Collaboration 5	Refocusing 6
T1	66	88	85	88	63	80	92*
T2	29	54	80*	43	24	48	34
T3	10	45	57	64*	54	48	42
T4	23	69	76	28	92	98*	65
T5	37	95	97	99*	86	95	99*
T6	37	40*	35	34	27	36	34
T7	81	66	78	94*	43	64	65
Average (Group)	0	1	2	3	4	5	6
	46	66	76*	73	66	68	65

Note: Teachers were assigned numbers T1, T2, … T7, as pseudonyms.

Table 2 confirms that though, as a group, the respondents' collective peak concerns were at the Stage 2 level (personal), 43% of the respondents peaked at the Stage 3 level (management). The explanation for this is the way that the group data were manipulated in the construction of the composite concerns of the group. George, Hall, and Stiegelbauer (2006) recommend against "averaging percentile scores, because such averaging allows the extreme values to influence the results more than might be appropriate" (p. 34). They suggest that the proper procedure is to average the raw scores for each stage of concern and "refer those averages to the percentile score table" (p. 34). In addition, they note that users of the SoCQ always use the raw scale scores in statistical analyses.

Table 2. Frequency of Highest Concerns Stage for Individuals Displayed in Table 1

Highest Stages of Concerns								
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
No. of Teachers	0	1	1	3	0	1	1	7
% of Teachers	0%	14%	14%	43%	0%	14%	14%	100%

First and Second Highest Stage Scores Interpretation

Including the second highest stage of concern in the analysis is helpful for several reasons. The most obvious reason for including it is to see whether a general pattern is really present. Secondly, "because of the developmental nature of concerns, the second highest stage of concern will often be adjacent to the highest one" (George, Hall, & Stiegelbauer, 2006, p. 34). If this turns out to be the case, then one could have a little more confidence in the suggested pattern. Finally, analysis of the second highest stage score for the small sample of respondents included in this study is reasonably straightforward.

Table 1 listed the group as scoring highest on Stage 2 and second highest on Stage 3. This suggests that the respondents have intense personal concerns about this innovation and its consequences for them. The second highest Stage 3 concerns indicate that the respondents also are concerned about how the changes necessary will be managed in practice, that is, the group as whole also has concerns about logistics, time, and other general management issues. It is common for groups to have this adjacent combination of highest score on Stage 2 and second highest score on Stage 3. George, Hall, and Stiegelbauer (2006) suggest

that this arrangement "might indicate that respondents have uncertainty and doubt about whether they can master the innovation" (p. 35).

With group data, it is sometimes useful to develop a matrix that cross-tabulates each individual highest Stage of Concern and the second highest Stage of Concern. Such a matrix, Table 3, shows that the highest Stage of Concern for most individuals is Stage 3. This indicates that most of the respondents are concerned about how the change will be managed in practice, that is, how they will be able to make all these changes to their classroom practice—planning units of lessons, infusing media in their lesson presentations, selecting appropriate teaching strategies, catering for the diversity in their classrooms, and so on. The matrix also shows that this group of respondents has no Stage 1 Concerns (Awareness), that is, they fully understood the nature of the innovation; but also no Stage 4 Concerns (Consequence), that is, no concerns with the impact that this innovation will have on their students or their school. Altogether, although there appears to be uneasiness with the innovation, there is no real indication of any serious resistance to it.

Table 3. Percent Distribution of Second Highest Stage of Concern in Relation to First Highest Stage of Concern

Highest Stage of Concern	Second Highest Stage of Concern								
	0	1	2	3	4	5	6	Row Pct.	Row No.
0 Awareness	0	0	0	0	0	0	0	0	0
1 Informational	100	0	0	0	0	0	0	14	2
2 Personal	50	50	0	0	0	0	0	14	2
3 Management	66	0	17	0	0	0	17	44	6
4 Consequence	0	0	0	0	0	0	0	0	0
5 Collaboration	50	0	0	0	50	0	0	14	2
6 Refocusing	50	0	0	50	0	0	0	14	2
Total									**14**

Profile Interpretation

Table 4 shows the profile of the group Stages of Concerns. The profile shows a constant rise in the intensity of the Stages of Concerns from Stage 0 through Stage 2 where the intensity peaks, followed by a slight negative dip in intensity at Stage 3, followed by a gradual fall in intensity through Stage 6. This is a typical nonuser SoCQ profile. "Nonusers' concerns normally are highest on Stages 0, 1, and 2, and lowest on

Stages 4, 5, and 6" (George, Hall, & Stiegelbauer, 2006, p. 37). To better understand the variation of the profile of the group presented here, it is necessary to closely examine the relative positions of Stages 1 and 2 and also the relative position of Stage 6.

Table 4. Listing Group Stages of Concerns Percentile Scores

	Stages of Concerns Percentile Scores						
Average	0	1	2	3	4	5	6
	46	66	76*	73	66	68	65

Table 4 shows a "negative one-two" split in the group profile, that is, the Stage 2 score (76) is higher than the Stage 1 score (66) (George, Hall, & Stiegelbauer, 2006). When Stage 2 concerns override Stage 1 concerns, the concerns about an innovation's effect on personal position are greater than the desire to learn more about the innovation. George, Hall, and Stiegelbauer (2006) have encountered this variation of the nonuser group profile on numerous occasions, and suggest that a group with this kind of profile will not be able to consider a "proposed innovations objectively until their personal Stage 2 concerns are reduced" (p. 41).

The tailing-down (65 percentile score) of Stage 6 (refocusing concerns) on the typical nonuser profile, as shown in Table 4, provides additional insights about the attitude of the respondents towards the innovation. "When Stage 6 tails down at end of a nonuser's profile,… it usually means that the respondents do not have ideas that would potentially compete with the innovation" (George, Hall, & Stiegelbauer, 2006, p. 42). This interpretation is consistent with what pertains on the ground in Tobago. Secondary school teachers are hired directly out of university on completion of their bachelor's degree, with no formal teacher education certification required. Their pedagogical knowledge is limited to that of their own experiences as students in faculties of arts, and social and natural sciences, and attendance at in-service professional development workshops in their capacity as teachers.

However, these professional development teacher training workshops are not offered to them on a regular sustained basis. One teacher who had five years teaching experience said that she had only attended one such workshop in the "*five years I have been teaching. It is not that they have these workshops and we choose not to go. They just hardly ever have them*" [T4]. The other option is to leave Tobago and go to a teacher training institution in Trinidad to get the pedagogical training. But this option is expensive, would take them away from their families for long

periods of time, and there are no job-related incentives—more pay, a meritocracy in place that would facilitate promotion, security of tenure—that would make this option attractive. Hence the options available to them are not "potentially competitive" with this innovation.

Interpretations of the Findings

The concerns these Tobagonian teachers had with a professional development programme offered to them on-site in Tobago, and related aspects of their level of use of the various elements of the programme in their classrooms, have been suggested within the limits of their summative responses to the SoCQ, select elite interviews, and some clinical classroom supervision reports. There are two of the findings that require further analysis and interpretation: the groups' peak Stage scores (76 percentile Stage 2 personal concern) and the group's first and second highest stage scores (personal and management concerns respectively).

Peak Stage Score

A Stage 2 peak concern suggested that the group of teachers was uncertain about the demands of the in-service teacher education programme and/or about their adequacy to meet those demands. The latter was especially evident in the classroom observations of some of these teachers. For example, the teachers were exposed to several models of instruction, including the traditional direct instructional model, as well as some of the constructivist models such as: the informal instructional model, the inquiry model, learning cycles, problem-based learning model, and the infusion lesson model. The direct instructional model is the model closest to their way of teaching before they entered the programme, and therefore learning how to do that skilfully required the least amount of effort. To skilfully use the other models required a radical change in their epistemologies, and demanded more of their creative energies and more thoughtful planning time. Most of the teachers chose to stick with the direct instructional model when visited by supervisors. T5 justified this choice of instructional model saying that "*this strategy required less time to plan, … [Furthermore] the model is consistent with my teaching style and the learning styles of my students*." The reason T4 gave for embracing this model above the others was: "*To me, the direct instructional model is the most efficient of all the models of teaching we were introduced to in this course. It helps me to do a much better job of preparing my students for the external examinations and to cover the syllabus material*."

A Stage 2 peak concern also suggested that the group of teachers was constantly analysing their relationships to the reward structure of their schools as part of the wider education system of the island and country (George, Hall, & Stiegelbauer, 2006). The education system of Trinidad and Tobago is elitist in many respects, including being driven, like many other Commonwealth countries that were former British colonies, by high-stakes external examinations (Tobin & McRobbie, 1996). Schools in Tobago, like its sister isle Trinidad, are recognized and ranked by the level of success their students have in passing the CSEC examinations. Teachers are also recognized and sought after for private supplementary tutoring services by students preparing to sit these examinations (Lochan & Barrow, 2008). From this perspective, it was not entirely surprising that these teachers were operating at the personal Stage of Concern, given that there was the potential of them being rewarded financially if they focused only on those teaching strategies that they saw as most helpful in getting students to pass the CSEC examinations.

Finally, a Stage 2 peak concern suggested that the group of teachers may have been occupied with the status implications that fully embracing the programme had for them (Hall & Hord, 2001). Though teachers in both Trinidad and Tobago are encouraged and supported by the Ministry of Education to do the professional in-service teacher training programme, there are no pecuniary, promotional, or direct status rewards associated with the extent to which they embrace the insights into teaching and learning offered by the programme. Promotion to a senior teaching, or to middle management, position in a secondary school is still largely done on a seniority basis. The majority of these teachers were teaching for five years or less, and may have realized that they were too far down the totem pole for any meaningful promotion "*any time soon*" [T6] that would come as a result of fully embracing this professional development opportunity.

Furthermore, some of them did not see teaching as a lifelong career. For example, in a personal communication with T5 five months after she completed the programme, she said:

"[she was] thinking of taking some time away from the classroom soon! Things haven't gotten better at my school. The leadership is still not doing what they are supposed to do. They are still leaving things that they are supposed to do up to the teachers. I have to teach, be the dean of discipline for some students, while being mother and auntie to others. I feel burnt-out and need to find a new space in Tobago to make a living."

Hence the status of the teaching profession itself, and their future in it, could have been some of the sources of teachers' personal concerns. This seems to have been the case, especially for the younger teachers in the group.

First and Second Highest Stage Scores

Because of the developmental nature of concerns, the second highest Stage of Concern often will be adjacent to the highest one (George, Hall, & Stiegelbauer, 2006). Hence it was not surprising that the second highest Stage of Concern for this group of teachers was Stage 3 (management concerns), given that their highest stage of concern was Stage 2 (personal concerns). This suggests that next to the personal concerns about the innovation and its consequences for them, they also had concerns about logistics, time, and management issues surrounding the innovation. These management concerns fell into three broad categories that were coded from their free responses to the question, "What other concerns, if any, do you have at this time?" These included concerns about the quality of the delivery of the programme; concerns about resources, and concerns about choice.

Concerns about the quality of delivery: Of the three categories of management concerns, this was the most intense. Students thought that the face-to-face lectures were too long; that too many "*power point presentations*" were used in the programme delivery; that "*there should be a better organized schedule for the delivery of the curriculum*"; that there was not "*sufficient communication among lecturers delivering the various aspects of the curriculum*"; that the "*quality of the venue was not ideal*"; that using a "*one-shot final teaching practice examination to assess their teaching competencies was inadequate*"; and that in the professional identity module delivered by a local adjunct faculty member "*no one was absolutely sure what was to be done*."

*Concerns about resources***:** This was the second most intense code of management concerns that the teachers articulated. Teachers expressed concerns about both material and financial resources. For example, they were concerned about the library resources that the programme made available to them in Tobago. The School of Education has its own library with a large collection of specialized education textbooks, journals, and multimedia materials, which is arguably one of the best such collections in the country. Students on campus at the School of Education have access to this specialized library as well as to the Campus's Main Library and the online library databases to which the university subscribes.

Doing this programme in Tobago meant that students only had direct access to the university's online library databases and a few select textbooks suggested by some tutors.

The School of Education Library is also the repository for exemplary theses, dissertations, and curriculum study reports of students who have done these programmes on campus. With regard to the last, the students' concern was that "*copies of curriculum studies, portfolio reports and library books should be available in Tobago*." Though they had access to the library at the site where the programme was delivered, they also thought that the service provided there was not on par with the service that the School of Education Library provided. For example, as two students pointed out: "*the time for loan of library books was too short and should be extended to match the time on book loans given by the School of Education Library*."

The material management concerns that these students had were in many ways directly related to the financial management concerns they had. Because the materials were not readily available in Tobago, they had to travel to Trinidad to access the resources and the "needed cost to travel to Trinidad (about US$50 per trip) to participate fully in the course was not provided and had to come from their own pockets." This was seen as an additional direct cost to them that their counterparts in Trinidad "*did not have to bear*" and which placed them at a "*further disadvantage to succeed in the program.*"

*Concerns about choice***:** Though these concerns were the least intense of the management concerns, they were a significant factor in the teachers' overall response to the programme. For example, some felt that the "*electives* [additional enrichment courses that were not a part of the core curriculum of the programme] *were not a choice for us*." Because of the number of teachers (seven) involved in the pilot project, the programme organizers felt that it would not be financially viable to offer more than one elective subject per semester. And even though the students, by consensus, "chose" what that one elective subject would be, there were challenges in getting them to reach a consensus. In the end, the programme organizers had to make this decision for them.

Another decision that was made for them was to limit the field-day experiences only to secondary schools in Tobago. This decision created two sets of problems and became sources of concerns for some of the teachers. The first was that "*the number of field day 'hostings' were uneven.*" This was a logistical problem, as there were four schools and nine field days. This meant that one school would have to host three of the nine field days compared to two hostings by the others. This was

further complicated by the uneven distribution of the teachers per school. There were two teachers each from three of the four schools and one teacher from the fourth. The lone teacher felt that hosting two field days was unfair to her since, unlike her colleagues, she had no help in arranging and planning for the hosting which "*made the work of organizing field days at [her] school twice as hard (and expensive) for her than it was for the others*."

The second set of problems created was that some teachers felt that the decision to limit the field day only to Tobago schools was not in their best interest, and they would have liked to have the "*field day opportunities expanded to schools in Trinidad*." They argued that this expansion would have broadened their experience and would have provided "*opportunities to see how the good schools in Trinidad operated and how teachers functioned in them*." One of the teachers who supported this view said:

"*I believe that these schools do better not only because they get better students, but also because they are closer to the center of power of the education system and so teachers there have more clout and greater access to resources than we have here in Tobago. I wanted an opportunity to see the extent to which this personal theory of mind had a bearing in reality"* [T2].

Another thought that:

"*It would have made life a little easier should I wish in the future to migrate to Trinidad to teach. I would have a much better idea of what it means to be a teacher in Trinidad vis-à-vis Tobago. I really wanted to have made that decision rather than having it been made for me*" [T7].

Discussion and Recommendations

Teachers Concerns and School Underperformance

The secondary schools in Tobago continue to underperform despite the substantive investments that have been made in education reforms over the past four decades (MOE, 2005). Though universal secondary education was achieved in Tobago in 2005, the quality of the education provided by most of the 10 secondary schools to students remains poor. This is evident in the consistent low ranking of the education district over the past five years on two of the most cited school quality indicators: the National Test and the CSEC examinations (Caribbean Examinations Council [CXC], 2010). Though there are many factors that impact on student learning, including: student self-concept, student attitude to

school, student school engagement, the student's socio-economic index, and parent factors (Anderson, George, & Herbert, 2009); teacher factors, including: teacher training, teacher engagement, and teacher care are also significant to student success at school (Newfields, 2006). In this regard, some insights into why secondary schools in Tobago continue to underperform have been suggested by the teachers' group concerns profile generated in this study.

The link between teachers' concerns and school underachievement in Tobago is best understood in the context of Tobago's development trajectory (Luke, 2006). A review of the country's history shows that Tobago was a colony in its own right, with all the associated challenges, until October 1898, when it was made, by decree, a Ward of Trinidad. This was when the then British Government, after a nine-year period of "trial and tribulations" had accepted, in full, the recommendations made by the West India Royal Commission a year earlier for: "the complete amalgamation of Tobago and Trinidad … [and for] Tobago [to] become a Ward, or district of Trinidad" (Brereton, 1981, p. 156). Hence from the inception of the union, Trinidad has been the dominant partner and the seat of institutional power and privilege. Therefore it is not surprising that, historically, the secondary school teachers of Tobago have had difficulties accessing teacher training. This, in part, has been attributed to there being no teacher training institutions on the island. Until this initiative was introduced, to access training institutions Tobagonian teachers have had to travel to Trinidad, in most cases, at a great added financial cost to the teachers themselves.[4]

Some conflict theorists and neo-Marxist historians have contended that the historical tensions between Trinidad and Tobago have their roots in the inequity of resource distribution between the two islands, and that this power inequity manifests itself through these types of arrangements whereby teachers have to leave the periphery (Tobago) and go to the centre (Trinidad) to get educated. This, they claim, is the historical source of the conflict between the two island communities and is the way in which "Trinidad, the more powerful community, has kept Tobago and its citizens marginalized" (Luke, 2006, p. 46). This study suggests that even if this analysis is viable, there are other concerns that the Tobagonian teachers have that are preventing them from embracing the type of teacher professional development opportunities that will provide them with the skills they need to better engage their students in the teaching/learning process, while enhancing the effectiveness of schooling on the island.

The study has suggested that these constraints are the relatively low-level personal and management concerns with the training programme itself, that is, the majority of the teachers who participated were concerned with how accessing the training would disrupt their lives and/or how the logistics of the programme could be improved to make the training period less stressful on them. In this regard, their group concerns profile suggests that most of the teachers were, on their own volition, typical nonusers of the innovation (George, Hall, & Stiegelbauer, 2006). This means that though they did not offer any major resistance to the programme's implementation, the majority of them were not likely to use many of the skills presented to them in the programme in their classrooms once the period of training had been completed.

It is important to note, however, that this claim is not without exception. Two (29%) of the seven participants [T1 and T4] had individual concerns profiles which suggested that they will become typical users of the innovation (Holloway, 2003). That is, these two teachers showed concerns with ways in which they could collaborate with other teachers in their school to use elements of the innovation to improve the quality of education delivery in the school (Stage 5 concerns); and even on ways of refocusing some of the elements of the innovation to better meet the needs of their school context (Stage 6 concerns). However, the majority of the participants remained resistant to fully embracing the innovation.

This finding has implications for the goal of breaking the cycle of school underperformance in Tobago. As Neal Gross (1979) has suggested, individuals must change before organizations can be altered. For this cycle to be broken, teachers cannot continue to do what they were doing before they entered the teacher training programme. The group concerns profile suggests that most of the teachers who participated in the teacher development innovation were not prepared to embrace the changes suggested by the innovation, and would return to doing what they were doing once the formal period of the training was over. Hence the prospect of these teachers, as a result of this professional development innovation, becoming pioneers in breaking the cycle of school underperformance in Tobago at this time seems bleak.

Recommendations

The concerns group profile of the seven Tobagonian secondary school teachers who participated in the professional education development innovation suggests various degrees of doubt and resistance to the innovation. Because their Stage 2 Personal concerns overrode all the

other five potential concerns they could have had about the innovation, including Consequence, Collaboration, and Refocusing concerns, the concerns about the innovation's effect on their personal positions were greater than the desire to embrace the programme in the way it was intended. As George, Hall, and Stiegelbauer (2006) have pointed out:

> Experience indicates that when general, nonthreatening attempts are made to discuss an innovation with a [group] with this profile, the high Stage 2 concerns are intensified and the [other] concerns are further reduced. [A group] with this kind of profile probably will not be able to consider a proposed innovation objectively until [their] Personal Stage 2 concerns are reduced. (p. 41)

The challenge then for the designers of this innovation—the UWI-School of Education—and their partners—the Division of Education, Tobago House of Assembly (THA)—is to find creative ways to reduce the Personal Stages of Concerns of the Tobagonian secondary school teacher. The source of some of these personal concerns is resident in the current tenuous offers of job security or security of tenure to Tobagonian teachers. In this regard, the THA could review their teacher hiring practices and tenure and promotion protocols in ways that would address some of the concerns the Tobagonian teachers have. For example, the current practice of hiring teachers on a temporary basis for three or more years before their positions are confirmed, or otherwise, by the Teaching Service Commission could be modified in ways that would make that process less stressful to teachers. Additionally, the practice of promotion by seniority, as opposed to merit based on further professional development, could also be reviewed. Furthermore, seconding teachers to other secondary schools on a visiting or sabbatical basis, including to schools in Trinidad to broaden their experiences of schooling in the country, should also be considered.

The planners of the programme need to address almost immediately the issues of quality of delivery, choice, and resources that have been identified by the participants as sources of concerns. Course delivery has to be made more interactive and there needs to be more, not less, personal, face-to-face interactions between faculty members and the in-service teachers. For, as one student commented, "*most of the lecturers just fly in, deliver their lecture, and head back to the airport*" [T7]. Another complained that "*almost all the feedback I got on assignments was 'on-line', and even then they were not sent at the times promised*"

[T6]. Furthermore, students should be provided with some "real" choices, especially with regards to the elective enrichment courses.

Finally, resource issues must be addressed in as timely a manner as is practical. Because of the size and location of the education district, a programme like this one would necessarily have a high unit cost. But this investment must be measured against the potential it has to help Tobago in meeting the national standards, which is universal quality secondary education for all the citizens of the Republic of Trinidad and Tobago (Trinidad and Tobago. National Task Force on Education, 1994). Students can only receive such a quality secondary education if there exists in all of T&T, quality schools run by a transformative leadership, with a quality curriculum delivered by highly trained, quality teachers (Ornstein & Hunkins, 2004). An investment in teacher professional development in Tobago is a laudable effort in making this vision possible.

Notes

1. World-class education status for students is therefore being sought even though Tobago's teachers in the past have had very limited opportunities to acquire the new competencies needed to change their ways of doing business in their classrooms.
2. Biggart's response to the Tobago school crisis of 1930 sheds light on his convictions. The affair stemmed from a visit to Tobago by the Governor Sir Claude Hollis and Director of Education James Merriot in July of 1930. Their comments about education in Tobago and about Tobagonians were not complimentary. Hollis "told Tobagonians that their school buildings were substandard, their teachers were poorly qualified, and that there were too many small schools wasting government money [while Marriot] said or implied that Tobagonians lacked 'brains' …" Biggart, who attended the function at which the remarks were made, was much offended, and retorted, "If the history of Tobago were written all these things would be made clear to people, and they would be able to realize that we Tobagonians are not the non-entity as some people imagine …" (Luke, 2007, p. 145).
3. James's philosophy of education promoted the study of agriculture, which he believed was Tobago's greatest asset. He advocated the establishment of a farm school in Tobago. The government expressed interest in such a school, but again cited cost as the mitigating factor in undertaking the venture… So frustrated was he with the government's lethargy in establishing a secondary school in the rural section of Tobago that he set up his own school in Roxborough – James Foundation Secondary School – "and devoted a class exclusively to the subject of agriculture" (Luke, 2007, p. 173).

4. Another option is for teachers to enrol in online (distance) education programmes that are being offered by other providers. This option, however, is expensive and in many respects requires a more long-term (two or three years) commitment.

References

Anderson, J. O., George, J., & Herbert, S. (2009). Factors impacting on student learning: A preliminary look at the national test of Trinidad and Tobago. *Caribbean Curriculum, 16*(2), 99–126.

Anderson, S. (1997). Understanding teacher change: Revisitng the Concerns Based Adoption Model. *Curriculum Inquiry, 27*(3), 331–367.

Barrow, D., & De Lisle, J. (2009). A qualitative evaluation of the lower secondary SEMP science curriculum in Trinidad and Tobago. *Caribbean Curriculum, 16*(2), 73–98.

Bogdan, R. C., & Biklen, S. K. (1992). *Qualitative research in education: An introduction to theory and methods.* Boston, MA: Allyn & Bacon.

Brereton, B. (1981). *History of modern Trinidad 1783–1962.* Exeter, NH: Heinemann.

Caribbean Examinations Council. (2010). *Trinidad and Tobago country report.* St. Michael, Barbados: Author.

Craig-James, S. (2008). *The changing society of Tobago: 1838–1938.* Arima, Trinidad: Cornerstone Press.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative and mixed methods approaches.* Thousand Oaks, CA: Sage.

Fullan, M. (1991). *The new meaning of education change.* New York, NY: Teachers College Press.

Fuller, F. F. (1969). Concerns of teachers: A developmental conceptualization. *American Educational Research Journal, 6*(2), 207–226.

George, A. A., Hall, G. E., & Stiegelbauer, S. M. (2006). *Measuring implementation in schools: The Stages of Concern Questionnaire.* Austin, TX: Southwest Educational Development Laboratory.

Gross, N. (1979). Basic issues in the management of educational change efforts. In R. E. Herriott & N. Gross (Eds.), *The dynamics of planned educational change* (pp. 20–46). Berkley CA: McCutchan.

Hall, G. E. (March, 2001). *Principal leadership and the development of organizational culture.* Paper presented at the Annual Meeting of the American Educational Research Association, Seattle, Washington.

Hall, G. E., & Hord, S. (2001). *Implementing change: Patterns, principles and potholes.* Boston, MA: Allyn & Bacon.

Hall, G. E., & Loucks, S. (1977). A developmental model for determining whether the treatment is actually implemented. *American Educational Research Journal, 14*(3), 263–276.

Hall, G. E., & Loucks, S. (1978). Teacher concerns as a basis for facilitating and personalizing staff development. *Teachers College Record, 80*(1), 36–53.

Holloway, K. (2003, February/March). A measure of concern: Research-based program aids innovation by addressing teacher concerns. *Tools for Schools*. Retrieved from http://www.nsdc.org/members/tools2-03.pdf

Lochan, S., & Barrow, D. (2008). Extra-lessons: A comparison between "different sides of the track" in Trinidad and Tobago. *Caribbean Curriculum, 15*, 45–69.

Luke, L. B. (2006). The role of identity in the movement for autonomy in Tobago. In H. Cateau & R. Pemberton (Eds.), *Beyond tradition: Reinterpreting the Caribbean historical experience* (pp. 249–265). Kingston Jamaica: Ian Randle

Luke, L. B. (2007). *Identity and secession in the Caribbean: Tobago versus Trinidad, 1889–1980*. Kingston, Jamaica: University of the West Indies Press.

Newfields, T. (2006). *Teacher development and assessment literacy*. Retrieved from http://www.jalt.org/pansig/2006/HTLM/Newfields.htm

Ornstein, A. C., & Hunkins, F. P. (2004). *Curriculum: Foundations, principles and issues* (3rd ed.). New York, NY: Pearson.

Tobin, K., & McRobbie, C. J. (1996). Cultural myths as constraints to the enacted science curriculum. *Science Education, 80*, 223–241.

Trinidad and Tobago. Central Statistical Office. (2005). *Annual statistical digest*. Port of Spain, Trinidad: Author.

Trinidad and Tobago. Ministry of Education. (2005). *Green paper for public comment: Draft quality standards for education in Trinidad and Tobago: The quest for excellence.* Port of Spain, Trinidad: Author.

Trinidad and Tobago. Ministry of Education. (2009). *Underperforming primary schools by Education District: Ministry's report.* Port of Spain Trinidad: Author.

Trinidad and Tobago. National Task Force on Education. (1994). *Education policy paper (1993–2003) (White Paper).* Port of Spain, Trinidad: Ministry of Education.

Caribbean Curriculum
Vol. 18, 2011, 69–85.

WHAT ARE STUDENTS' IDEAS ABOUT THE CONCEPT OF AN ELECTRIC CURRENT?
A Primary School Perspective

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Despite the body of research in science education on the concept of electricity in areas such as electricity consumption, electricity conservation, and the benefits and dangers of electricity, very little is known about young students' ideas about the phenomenon called electricity, and specifically the concept of an electric current. In this work, 15 students in Standard 5 (ages 9–11) of a primary school in south Trinidad were surveyed and interviewed in order to obtain qualitative measures of their understanding of what an electric current is. The findings indicate that students' initial ideas were either vague or different from textbook concepts, but that after being exposed to the teaching of a unit on electricity, most students held the scientifically accepted understandings of the concept of an electric current. Furthermore, it was revealed that there was an almost exact match between students' word understandings and their picture understandings of an electric current in both instances—before and after being exposed to a taught unit on electricity.

Introduction

This small-scale research project investigated the ideas that 9- to 11-year-old students have about the concept of an electric current. It is first-hand, classroom-based research that seeks to shed some light on students' understandings, in an attempt to bridge the gap between what is taught in the classroom and what understandings students develop as a result of what was taught. Even though there is little research into students' specific ideas about electric current, there are a number of studies of students' views on the uses of electrical energy (Borges & Gilbert, 1999; Boyes & Stanisstreet, 1990; Newton & Newton, 1996; Parker & Heywood, 1996). Other studies of students' views on electricity consumption and conservation (e.g., Sunal & Sunal, 2003), as well as their ideas on the generation of electricity (e.g., Malandrakis, 2007) also exist, but very little is known about the ideas that come to students' minds when they hear the term *electric current*.

Anecdotal evidence suggests that many practising primary school teachers in Trinidad and Tobago consider electricity to be one of the most difficult topics for students to grasp when delivering the primary science syllabus. Such anecdotal evidence further reveals that many primary school science teachers deliver science instruction mainly through rote methods, with hands-on, interactive science learning being an "occasional occurrence." Thus far, there has been no explorative survey done to reveal what conceptions students hold with respect to the concept of an electric current, either before being exposed to the topic in a formal classroom setting or after the topic has been formally taught to them in the classroom. This is the primary rationale for this work.

The overarching goal of this work is to identify students' (in the 9–11 year age group) ideas about what an electric current is. Three research questions guided the approach adopted in this work:

1. *What are students' word understandings of the term electric current before and after a unit on electricity?*
2. *What are students' picture understandings of the term electric current before and after a unit on electricity?*
3. *What relationship/s exists/exist between students' word understandings and their picture understandings of the term electric current before and after a unit on electricity?*

This work has been conceptualized in the local context as a small step aimed at revealing what kinds of conceptions a class of Standard 5 Trinidadian students have concerning the concept of electric current before and after instruction. As outlined in the primary school science syllabus document, students at the Standard 5 level are expected to be exposed to the following concepts: current flow under various conditions, electrical conductors and insulators, circuit components, simple series and parallel circuits, and simple applications of electrical circuits in the home. This content builds on students' knowledge of energy, and specifically electrical energy, which they would have been exposed to at the earlier levels in primary school, namely, Standards 1 and 3.

This work is significant in that the findings will add to the existing body of literature, in the local context, on students' ideas and understandings of scientific terms; but, more specifically, it aims to show how it is possible to achieve conceptual change among students when they are taught complex science topics about which they may already have some informal ideas. Furthermore, this work may serve to encourage primary school teachers involved in science teaching to

explore, in creative ways, the perceptions of their own students, not only about electricity and electric current, but also about other science terms and concepts as well.

Literature Survey

Conceptual change is an idea that has been widely discussed in many published works and, in general, the literature speaks to four views of conceptual change:

1. The view of conceptual change as a process that enables students to synthesize models in their minds, beginning with their existing explanatory frameworks (Vosniadou, 2002).
2. Chi and Roscoe (2002) describe conceptual change as repair of misconceptions.
3. diSessa (2002) suggests that it is the reorganization of diverse kinds of knowledge into complex systems in students' minds.
4. Ivarsson, Schoultz, and Saljo (2002) argue that conceptual change is the appropriation of intellectual tools.

In the current work, students would have been exposed to some ideas and understandings about electric current, and though these may have come from informal settings in most instances, in some cases, their existing ideas may have been formulated from classroom experiences at the lower levels of their primary schooling. In this context, therefore, any conceptual change arising from this work, incidental or otherwise, would resonate with the view expressed by Vosniadou (2002).

In respect of the topic of electricity, and specifically electric current, Etheredge and Rudnitsky (2003) suggest that electric current can be a difficult concept to teach at the primary level, and that while most students have heard the term before, they really know very little about the concept itself. Newton and Newton (1996) and Malandrakis (2007) suggest that many students think of electric current flow in five distinct ways or models, and that the "single wire" model is the model most easily retained by young students after the teaching/learning instruction. Kibble (1999), in an activity involving young children aged 7-11, found that children in this age group had a wide variety of picture understandings of the terms electricity and electric current, and that when exposed to practical, hands-on classroom activities many students exited the learning experience with the scientifically acceptable understandings. He reported further, that for students who were exposed to the same content of learning but whose learning occurred in the traditional

paradigm—through rote methods such as teacher telling and note-taking—only few exited the learning experience with the scientifically acceptable understandings. In agreement with this finding, Dunbar (2000) suggests that when students are provided with learning opportunities that allow them to act like real scientists, and when they are encouraged by teachers to think like scientists, they become more immersed in the classroom learning and that the likelihood of developing scientific misconceptions is greatly reduced.

All these findings seem to suggest that students' prior knowledge/ideas/concepts must be invoked in new classroom experiences; experiences that involve the use of dynamic and evolving contemporary teaching/learning strategies to enable students to make conceptual changes and/or to develop new ideas about a topic. In the current work, the class teacher made conscious efforts to enact classroom instruction as prescribed by Dunbar (2000), and developed classroom activities that facilitated the view of conceptual change articulated by Vosniadou (2002) to ensure that science learning in this exercise occurred through meaningful engagement of the learner in relevant well-structured, hands-on activities and group collaboration.

Methodology

In Trinidad and Tobago, all primary schools follow the same science syllabus, and there are recommended textbooks, with accompanying workbooks, which the Ministry of Education suggests that teachers use in the delivery of science instruction. Science is a formal subject at all levels of the primary curriculum. While the dominant method of teaching advocated for primary science is the activity-centred approach, many teachers do not readily adopt this approach in their classroom (Maharaj-Sharma, 2008). In the specific case of this study, the class teacher was familiar with Dunbar's (2000) approach, and indicated that during the previous two years she had made deliberate efforts to adopt this prescribed method of instruction in her teaching. No specific random or purposive selection was employed to select the teacher to participate in this study; it was a case of the class teacher volunteering to engage in the study because of an interest she shared with the researcher about wanting to find out more about students' ideas about the concept of electric current.

A Standard 5 class (ages 9–11) with 15 students of mixed socio-economic backgrounds and mixed academic abilities (9 girls and 6 boys) in an ordinary primary school in southern Trinidad was studied. The aim

was to obtain qualitative data on students' ideas. The researcher accepts that the sample used to derive the information was small but, as far as the researcher knows, little research is available on this specific topic.

One week before the class was taught the unit on electricity, the researcher spent five minutes with each student asking them to say/explain what words or ideas came to their mind when they heard the term electric current. Additionally, in this first intervention phase, the students were asked to sketch a picture to reflect the idea/s that came to their minds when they thought about what an electric current might be.

Following this first intervention phase, students were engaged for a period of six weeks, during which time the unit on electricity (as outlined on the syllabus document for their level) was taught to them by their class teacher. The general objectives of the unit were that at the end of the unit, students should be able to:

1. appreciate the role of electric currents in their daily lives;
2. distinguish between electrical conductors and electrical insulators;
3. appreciate the concept of mobile charges;
4. identify various electrical components;
5. use electrical components to assemble simple circuits;
6. understand the difference between series and parallel circuits; and
7. make decisions on the type of circuits to be used in simple applications.

The unit consisted of 12 lessons, each focusing on an aspect of electricity and delivered in sequence, as indicated below:

- **Lesson 1 – Introduction to electricity.** This lesson proceeded by way of a whole-group discussion in which a number of teacher-selected pictures and models were used.
- **Lesson 2 – Electrical conductors and electrical insulators**. Students interacted with text stimulus in conjunction with common everyday objects to classify a range of objects into electrical conductors and electrical insulators.
- **Lesson 3 – Structure of electrical conductors**. Students were exposed to a video which showed in simple form the metallic bonding (free electrons) characteristic of electric conductors. A follow-up activity provided students with the opportunity to demonstrate understandings gleaned from the video through word explanations and drawings.

- **Lesson 4 – Mobile charges**. Selected age-appropriate, computer-simulated video clips were used to explain this concept. These were complemented by related hands-on activities, which involved putting together models (by following instructional steps) to represent the movement/drifting of charges. Students subsequently interacted directly with the models in activities that allowed them to handle and manipulate a number of different configurations to aid in the development of their understanding of the nature and behaviour of mobile charges.
- **Lesson 5 – Circuit components**. In this lesson, students were exposed to a range of simple circuit components through hands-on interaction with the components. In jigsaw group activity they explored the functions of the components. Each group was given a different set of components and short descriptions of each component, and was asked to read the descriptions (which included the component name and its function) and to match the components to their respective descriptions. The groups then came together and each group taught the other groups about the components they learnt about using the actual examples and the descriptions.
- **Lesson 6 – More circuit components**. This lesson proceeded in a manner similar to Lesson 5.
- **Lesson 7 – Introduction to circuits**. The closed-loop idea of a circuit and the complete flow of charges were explored in this lesson through a number of student-aided demonstrations.
- **Lesson 8 – Building circuits**. This lesson built on Lesson 7, but here students worked in small groups to build their own circuits and to explain how they worked.
- **Lesson 9 – Series Circuits**. The particular arrangement of components in a series circuit was explored in this lesson, and students worked with the various components to explore the advantages and disadvantages of series circuits.
- **Lesson 10 – Parallel circuits**. This lesson followed the same format as Lesson 9, but with the focus on parallel circuits.
- **Lesson 11 – The switch**. In this lesson, students were exposed to the specific function of the switch in electrical circuits. They explored these functions by engaging in problem detection and corrective suggestions for a number of prewired circuits.
- **Lesson 12 – How my circuit works**. In this lesson, each student built his/her own circuit using components provided and explained how the circuit worked.

In all instances where classroom discussion occurred, the teacher used students' prior knowledge and understandings either to initiate the discussions or to clarify stated misconceptions; this approach that Vosniadou (2002) advocates can facilitate conceptual change in students' minds. Throughout the unit the teacher used structured group work, which involved activities that included pictures, diagrams, and models. The activities encouraged students to do drawings of various concepts covered in the unit of work. An example of one such activity is shown in Appendix A.

Personal interviews, each one lasting about 10 minutes, were conducted with all the students two weeks after the unit on electricity was taught to them. The Interview-About-Instance (IAI) protocol was adopted and suitably adapted, in terms of length and focus (Gilbert, Watts, & Osborne, 1985) for this work.

Data Collection

Phase I – Word and picture understandings before a unit on electricity

In this phase, the researcher conducted short interviews, lasting no more than 5 minutes, with each student, to identify their ideas about the concept of an electric current. Most of the students had a fair command of the English language and were able to write words or phrases to reflect their ideas. In the two cases where spelling was a challenge for the students, they were able to explain verbally their understandings of an electric current. To maintain the authenticity of the process, the sessions were audiotaped. In all instances, students were asked to represent their picture understandings of an electric current by drawing (on paper). Students completed the drawing exercise with great ease and comfort, even those students who had difficulty with spelling. For the researcher, this activity revealed that their spatial intelligence (Gardner, 2006) was acutely developed. The class teacher subsequently verified that the students participated in many drawing activities in everyday classroom activities and that they were familiar with the skill. These drawings were done on standard letter size sheets of paper.

Phase II – Teaching the unit on electricity

The researcher was invited to sit as an observer in the classroom during the teaching of the unit on electricity. There was good collaboration between the researcher and the classroom teacher to facilitate the process, but no collaboration occurred on the content delivered in the unit or the pedagogical tools used in the delivery.[2] The lessons included

the use of many colourful pictures and many group and hands-on activities, which provided students with the opportunity to speak about what they were learning and to explain what understandings they were developing as the lessons progressed. To a large extent, opportunity was provided for all students to draw pictures and sketches of several ideas in the unit. In both instances—word understandings and picture understandings—any misconceptions observed/detected in the students' work were clarified by the class teacher through the use of further explanations, additional pictures, and/or practical demonstrations.

Phase III – Word and picture understandings after a unit on electricity

Two weeks after being exposed to the unit on electricity, the students were interviewed by the researcher. To reveal their word understandings, they were asked the same sequence of questions as in Phase I. Again, the interviews were audiotaped. Picture understandings, too, were captured in a similar manner as described in Phase I.

Data Analysis

Data from the interviews before and after exposure to the unit on electricity were transcribed, reviewed, coded, and labelled to reveal the main ideas students attempted to communicate. Students' transcriptions and their accompanying drawings were individually reviewed, repeatedly, to determine, in the first instance, the degree of congruence between their word explanations and their drawings; and, secondly, to attach appropriate labels reflective of the ideas expressed by the students. Some labels emerged naturally from the students' responses while others had to be inferred from the data. The class teacher, who had critical tacit knowledge of her students, was invited to be part of the analytical process to ensure that students' words, phrases, and statements, as well as their drawings/sketches, were accurately captured. The initial labels were reviewed and similar/related ones were collapsed and replaced by broader labels to facilitate the extraction of meaning and messaging from the data. Extreme care, through detailed collaboration with the class teacher, was taken to guard against researcher subjectivity and to maximize objectivity in the data analysis procedure.

Results and Findings

The variety of responses given by the students **before** being exposed to the unit on electricity included ideas of an electric current being a light bulb, an electrical spark, and being related to a plug in the wall and to electrical transmission lines. Some students appeared to have linked the term electric current to its homophone "currant" to mean the fruit – black currants. This was revealed from their picture representations.

After exposure to the unit on electricity, when asked to draw what came to mind when they heard the term electric current (Phase III of the study), all but two of the students drew representations similar to those they had met during the unit. In each case, the teacher insisted that students articulate their word understandings of an electric current, each using their respective diagrams, in an attempt to gauge the extent to which their word explanations, and hence their conceptual understandings, were congruent with the drawings they presented. Even if there were cases of students simply reproducing the drawings provided by the teacher, the degree of conceptual understanding they had developed from the unit could be gleaned from their word explanations. In fact, students' responses, both word explanations and drawings, were sufficiently consistent to infer that most students exited this learning with explanations of their idea of an electric current consistent with the "single wire" model.

The word and picture understandings obtained from students **before** and **after** exposure to the unit on electricity were scanned, resized, and tabulated, and are presented in Appendix B. Some examples of their actual sketches are presented in Appendix C.

At the Standard 5 level, the science syllabus document identifies, among other concepts, an electric current—a flow of charges in a complete loop—as the content knowledge students should have at the end of the unit on electricity. The suggested teaching strategy includes a teacher demonstration of a simple circuit consisting of a battery, pieces of wire, and a bulb to emphasize the idea of a complete loop. The syllabus document suggests further that this demonstration should be complemented with teacher explanations and the use of suitable pictures that teachers ought to source to show the "movement of charges."

As can be seen from the illustrations in Appendix B, **before** exposure to the unit on electricity, there was congruence between students' word understandings and their picture understandings, that is, whatever ideas they had about an electric current (even if these were scientifically unsound) **before** the classroom learning were consistent in terms of their word and picture understandings.

Researcher observations revealed that the teacher proceeded to deliver the content of the unit as suggested by the syllabus document and, adopting Dunbar's (2000) approach, employed a number of demonstrations, hands-on activities, video clips, and a wide range of relevant stimulus material inclusive of charts, textbooks, diagrams, and models to stimulate classroom learning.

It was clear from students' responses after the unit (in Phase III of the project; 2 weeks after the unit was taught to them) that all, except two students, understood an electric current to be a flow of "moving charges" (see columns 4 and 5 of Appendix B). Furthermore, their diagrammatic/picture understandings in all cases were in congruence with their *new* word understandings.

When probed further by the researcher as to what they understood by "moving charges," their responses were somewhat varied. The following were responses obtained from each of the 15 students:

Student 1: "… like little marbles moving in the wire…"

Student 2: "things floating around in the bulb to make it light…"

Student 3: "the little things that move…and make the bulb light…"

Student 4: "…moving things…like very tiny balls…that move…"

Student 5: "hard things that move…but they are very small"

Student 6: "…they float through the wire"

Student 7: "like moving little marbles…"

Student 8: "…the little things that floats [sic] *along the wire…"*

Student 9: "…fast moving little things"

Student 10: "small hard balls that fly from one wire to another wire…"

Student 11: "things that move fast and make the bulb light"

Student 12: "…like marbles…but no [sic] *so big…moving fast…"*

Student 13: "little charges that go through the wire…"

Student 14: "things moving very fast in the wire…"

Student 15: "the things that are moving fast in it [wire]…"

It was clear that after the unit on electricity the students understood moving charges to be "little" and "fast-moving." Physicists will argue that both terms are relative and that in a very general sense such a description of an electric current is not entirely scientifically accurate (Cutnell & Johnson, 2001).[3] Educators will suggest that the fact that students emerged from the learning experience with such ideas is

significant in terms of the mental understandings of what constitutes an electric current (Summers, Kruger, & Mant, 1997).

This researcher agrees with both the physicist's perspective and the educator's point of view, and suggests that there is need to review either 1**)** the resource materials used by the teacher in the delivery of the lessons, including the textbooks; 2) the teacher's own understanding (a consequence of her own learning experience on the topic); or 3**)** both, to determine the influence of these on the content and the context of the science instruction presented to the students. This concern warrants further investigation and perhaps ought to be explored in another research project.

Interaction and discussion with Student 2, whose idea did not change after the unit on electricity, revealed that his exposure to the concept of electricity was limited to lighting. This student came from a home in which there were no televisions, radios, or other electrical appliances; in fact, the family had only recently obtained an electrical connection to provide lighting for the home. This student therefore may have been somewhat overwhelmed with the new experience of getting light from a bulb, and perhaps this might explain why his responses focused on the bulb. This state of being overwhelmed when exposed to an unfamiliar concept, idea, or feeling has been described by Hartman (2001) as an intricate interplay of metacognition, which arises when students attempt to negotiate existing understandings with new knowledge and insight.

Student 10, however, had greater exposure to electrical appliances and spoke about plugs and wires quite freely, yet seemed to have not appreciated the "flow of charges" or the "moving charges" concept the teacher explained in the classroom. Inghilleri (2002) suggests that the idea expressed by Student 10 is not necessarily a reflection of an understanding that is scientifically unsound but, rather, of a more "divergent view" of the concept, and suggests further that such divergence in the understanding of science topics/concepts warrants further investigation.

What Does This Work Show?

The procedure adopted in this work and the findings derived may appear simplistic, as no new strategy was employed and no comparisons with other classes, schools, or teachers were made. Electricity is a frequent topic in all the primary and secondary school science syllabus documents in Trinidad and Tobago, and students' conceptual understandings span a range of ideas to the extent that often at the higher secondary levels, when teachers make assumptions about students' understandings—some

basic—in the topic, they find out later that many students have misconceived notions about concepts they met at earlier levels in the education system. This work reveals the following:

1. Electricity is a very common term—primary school students hear it often, more often outside school that inside school.
2. The explanation of what an electric current is that students receive outside school is sometimes inadequate and often not scientifically sound.
3. Because we live in an electronic era, the bombardment of the term in a number of contexts outside the classroom leaves students with "mixed ideas."
4. "Mixed ideas" can be effectively distilled in the science classroom through the use of appropriate teaching/learning strategies in the delivery of the topic.
5. Students' prior (layman) ideas may not be scientifically sound, but these can be transformed through meaningful classroom instruction, activities, and interactions.[4]
6. Contemporary hands-on teaching/learning strategies were employed by the class teacher to facilitate conceptual change among students (Vosniadou, 2002)—an outcome that traditional methods of delivery may not necessarily have achieved (Dunbar, 2000).[5]
7. By extension of item 6, therefore, there is merit in insisting that teachers move away from the traditional methods of delivery and instead employ appropriate creative and innovative teaching/learning strategies to deliver science instruction in their classrooms. It would seem to suggest, from this work, that this approach might be ideal for facilitating conceptual change among students.

Conclusion

The above findings are instructive in several instances and suggest far-reaching implications for the teaching of electricity at the primary level. It is the hope of the researcher that teachers will realize that students pre-existing ideas have a place in the classroom, and that alternative ideas and misconceptions can be transformed; that conceptual change can occur among students through appropriately selected classroom experiences. Furthermore, classroom teaching needs to enrich and develop students in ways that will lead them to accepted scientific views, and it is the teachers' responsibility to achieve this outcome. In Trinidad

and Tobago, content coverage of electricity at the various levels of the education system—from primary through secondary—spirals from the lowest level upwards. This means, therefore, that a sound understanding at one level is a necessary requirement for coping with new understandings at the next incremental level. In other words, each level prepares students for the next level, and in this regard teachers are endowed with the critical responsibility of ensuring that students have the necessary prerequisite knowledge and the congruent sound scientific understandings to facilitate further learning on the topic.

Acknowledgement

I would like to acknowledge the assistance of my daughter, Aarti Sharma, for her input in the preparation of this work. Her comments and suggestions in the revision phase of the work, as well as her assistance in typing the document helped to create the final product.

Notes

1. In the "single wire" model, the implicit suggestion is that current leaves the battery and travels through a single wire to a bulb which serves as a kind of electricity sink.
2. The class teacher is a graduate of the Bachelor in Education Programme, and during her tenure as a student of that programme she worked closely with the researcher. She has a deep interest in students' misconceptions and willingly volunteered to be a pioneer (in the local context) in work of this nature. The researcher is grateful for her willing participation in this work.
3. The average drift speed of moving charges in a current-carrying conductor is approximately 0.00625 m/s, which from a macroscopic perspective is in fact relatively slow (Nelkon & Parker, 1994).
4. This is an important revelation of the present work. A number of hands-on and visually stimulating teaching/learning activities were used in the delivery of the unit of work—activities that primary school science teachers would not normally adopt on a regular and sustained basis in their everyday science teaching!
5. In this regard, it is important to note that most students exited the learning experience with the "single wire" model perception of what an electric current is.

References

Borges, A. T., & Gilbert, J. K. (1999). Mental models of electricity. *International Journal of Science Education*, *21*(1), 95–117.

Boyes, E., & Stanisstreet, M. (1990). Pupils' ideas concerning energy sources. *International Journal of Science Education*, *12*(5), 513–529.

Chi, M. T. H., & Roscoe, R. D. (2002). The processes and challenges of conceptual change. In M. Limon & L. Mason (Eds.), *Reconsidering conceptual change: Issues in theory and practice* (pp. 3–27). Dordrecht, Netherlands: Kluwer.

Cutnell, J. D., & Johnson, K. W. (2001). *Physics* (5th ed.). New York, NY: Wiley.

diSessa, A. A. (2002). Why "conceptual ecology" is a good idea. In M. Limon & L. Mason (Eds.), *Reconsidering conceptual change: Issues in theory and practice* (pp. 29–60). Dordrecht, Netherlands: Kluwer.

Dunbar, K. (2000). How scientists think in the real world: Implications for science education. *Journal of Applied Developmental Psychology*, *21*(1), 49–58.

Etheredge, S., & Rudnitsky, A. (2003). *Introducing students to scientific inquiry: How do we know what we know?* Boston, MA: Allyn & Bacon.

Gardner, H. (2006). *The development and education of the mind: The collected works of Howard Gardner*. New York, NY: Routledge.

Gilbert, J. K., Watts, D. M., & Osborne, R. (1985). Eliciting student views using an interview-about-instances technique. In H. T. L. West & A. L. Pines (Eds.), *Conceptual structure and conceptual change* (pp. 11–27). London, UK: Academic Press.

Hartman, H. J. (2001). Metacognition in science teaching and learning. In H. J. Hartman (Ed.), *Metacognition in learning and instruction: Theory, research and practice* (pp. 173–201). Dordrecht, Netherlands: Kluwer.

Inghilleri, M. (2002). Britton and Bernstein on Vygotsky: Divergent views on mind and language in the pedagogic context. *Pedagogy, Culture & Society*, *10*(3), 467–482.

Ivarsson, J., Schoultz, J., & Saljo, R. (2002). Map reading versus mind reading: Revisiting children's understandings of the shape of the earth. In M. Limon & L. Mason (Eds.), *Reconsidering conceptual change: Issues in theory and practice* (pp. 77–99). Dordrecht, Netherlands: Kluwer.

Kibble, B. (1999). How do you picture electricity? *Physics Education*, *34*(4), 226–229.

Maharaj-Sharma, R. (2008). Using role-play to develop science concepts. *Caribbean Curriculum*, *15*, 25–43.

Malandrakis, G. N. (2007). Children's ideas about commercial electricity generation. *School Science Review 89*(327), 45–52.

Nelkon, M., & Parker, P. (1994). *Advanced level physics* (7th ed.). London: Heinemann.

Newton, L., & Newton, D. (1996). Young children and understanding electricity. *Primary Science Review, 41*, 14–16.

Parker, J., & Heywood, D. (1996). Circuit training – Working towards the notion of a complete circuit. *Primary Science Review, 41*, 16–18.

Summers, M., Kruger, C., & Mant, J. (1997). *Teaching electricity effectively: A research-based guide for primary science*. Hatfield, UK: Association for Science Education.

Sunal, D. W., & Sunal, C. S. (2003). *Science in the elementary and middle school*. Upple Saddle River, NJ: Pearson.

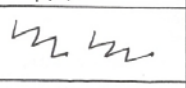
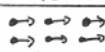
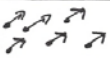
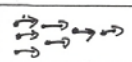
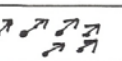
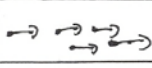
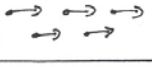
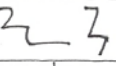
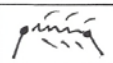
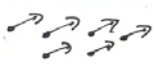
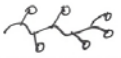
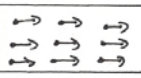
Vosniadou, S. (2002). On the nature of naïve physics. In M. Limon & L. Mason (Eds.), *Reconsidering conceptual change: Issues in theory and practice* (pp. 61–76). Dordrecht, Netherlands: Kluwer.

Appendix A

Drawing Activity

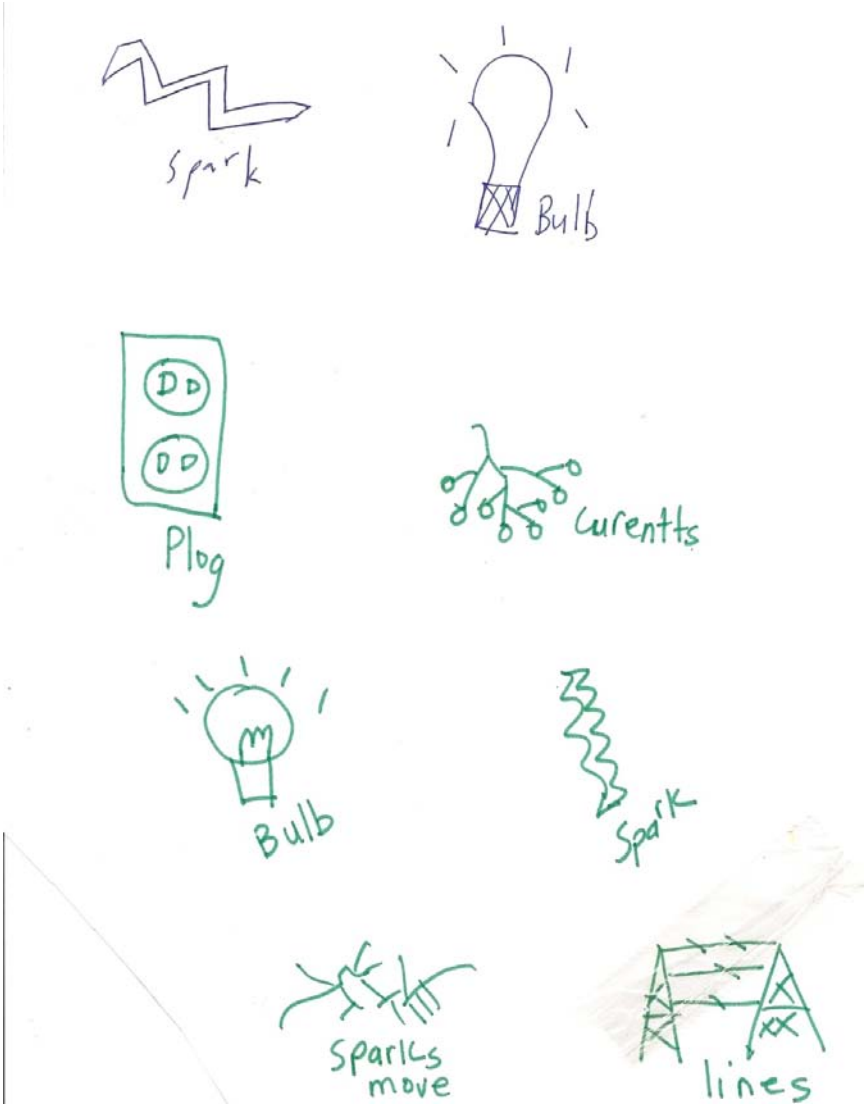
Please draw in the space below, a picture to show what you have learnt today about electricity.

Appendix B

Pupil	Before the Unit		After the Unit	
	Word	Picture	Word	Picture
1	A Spark		Moving Charge	
2	The Bulb		A bulb	
3	The plug in the wall		Moving Charges	
4	Light		moving charges	
5	lines in the Road		moving charges	
6	Sparks		moving charges	
7	Currant		moving Charges	
8	Light Bulb		moving Charges	
9	Sparks		moving charges	
10	Likea Spark		Sparks in a wire	
11	Light of a Bulb		moving Charges	
12	Current		moving Charges	
13	Current		moving Charges	
14	Energy		moving Charge	
15	Currant		Moving Charges	

Appendix C

Some of students' actual sketches:



Caribbean Curriculum
Vol. 18, 2011, 87–120.

THE BENEFITS AND CHALLENGES OF MIXING METHODS AND METHODOLOGIES: Lessons Learnt From Implementing Qualitatively Led Mixed Methods Research Designs in Trinidad and Tobago

Jerome De Lisle

There is increasing interest in the field of mixed methods research and the diverse ways in which quantitative and qualitative methodologies can be systematically combined. The first part of this paper describes the emergence of mixed methods research as a community of practice, distinct from the two dominant paradigms. The second part explores different mixed methods designs described in current typologies, with an emphasis on combinations that place equal or greater emphasis on the qualitative. I argue here that such designs, in which the qualitative is lead or dominant, are most useful for exploring complex and multiplex issues of education. I illustrate this argument with an analysis of the role of the qualitative in two recently conducted mixed methods research studies. The first was a concurrent nested (QUAL dominant) investigation of schools facing challenging circumstances and the second was a multilevel mixed methods study of secondary school choice in Trinidad and Tobago. The three lessons learnt were that (1) appropriate mental models and design rules in typologies are necessary for efficient implementation, (2) interaction between and across research teams can facilitate integration of qualitative and quantitative findings, and (3) qualitative findings can add value to meta-inferences by providing new, additional, or even conflicting perspectives. I then discuss the challenge of implementing mixed methods research studies in the Caribbean, including the need for attention to using quality criteria and targeting greater levels of integration.

The Emergence of Mixed Methods Research

In the Midst of the Paradigm Wars

Although for some, research paradigms are simply mental models for guiding practice; for others, paradigms are regarded as stable worldviews, with supportive assumptions, constructs, and propositions (Greene & Caracelli, 1997; Morgan, 2007). These and other

paradigmatic considerations have dominated the debate over research methodologies (Bryman, 1984). Up to the 1970s, positivism reigned supreme as its adherents tried to elevate this approach to the uppermost epistemic position, such that "doing quantitative" became the gold standard of education research (Howe, 1992, 2009). However, by the end of the 1980s, in what has been called the golden age of qualitative research, the constructivist-interpretive paradigm had become firmly entrenched within several fields, including that of education (Denzin & Lincoln, 2005; Ridenour & Newman, 2008).

However, as in all paradigmatic shifts, the positivists were quick to respond to the challenge. Stung and seemingly chastened, some reluctantly embraced concepts such as multiple realities and grudgingly accepted the possibility of a link between knowledge and the knower (Onwuegbuzie, 2002). At the same time, in the qualitative arena, alternative and supportive epistemological stances, such as critical theory and feminism, emerged (Denzin & Lincoln, 2007). At the root of the continued conflict, however, were the paradigm purists who vociferously argued for the superiority of one method over another and the incompatibility of different approaches (Johnson & Onwuegbuzie, 2004). Indeed, the paradigm wars sometimes led to real division, philosophical and physical (Gage, 1989), with language and rhetoric often used to divide and sometimes even to subjugate (Guba, 1990).

Fuelling the paradigm war were dogmas, such as the incompatibility thesis, the myth of "good" science, and the absurdity of strong relativism; and the traditional dualisms, which pitted one approach against another (Howe, 1988). With hindsight, this fuel was perhaps more ephemeral than real (Bergman, 2008), for if social phenomena are complex and knowing is subject to multiple realities, how could one philosophical paradigm be considered best or even superior? Indeed, how could any one method fully capture such complexity? It seems reasonable to conclude that some issues are best captured by adopting multiple mental models and employing different methodological approaches. Consequently, even in the midst of the conflict, dissenting voices emerged. For example, while many understood the conflict to be over paradigm and philosophy (Yanchar & Williams, 2006), there were those who denied the existence of any strong link between epistemology and methodology (Bergman, 2008). For example, Brannen (1992) suggested that it was unusual in practice "for epistemology or theory to be the sole determinant of method" (p. 3), and the distinction between different approaches often proved to be greater in theory than in practice. Thus, some felt that researchers needed to be pragmatic when responding to different constituencies. Others were beginning to question the

unchangeable, immutable, and exclusive nature of belief structures (Morgan, 2007).

Conception and Birth of the Mixed Methods Movement

These dissenting voices were part of an emerging community presenting a third perspective on doing research. It was well into the qualitative boom, and before the culmination of the sanguinary paradigm wars, that Jick (1979) considered the issue of mixing methodologies within organizational research. However, mixed methods research is neither a recent nor a bastard birth and the historical roots run deep. Teddlie and Tashakkori (2003) suggested that the time of conception extended well past the 1959 multitrait-multimethod validity studies of Fiske and Campbell to the groundbreaking Hawthorne studies of the 1930s, which made use of empirical data, observations, and interviews. Perhaps it was fortuitous, then, that a study initiating the humanistic perspective in management science would lead to groundbreaking insights into the multiple realities of organizational work life. More recently, Brannen (2009) has suggested that the date of conception is to be located in the use of multiple methods by Thomas and Znaniecki studying the Polish peasant in the 1920s.

Greene (2007, 2008) provided yet another perspective on the historical development of this third community of practice. She argued that in some applied fields like evaluation, the different methodologies have always coexisted comfortably (Datta, 1994). Thus, an alternative explanation for such willing acceptance of mixing methodologies may be that in the applied social sciences, evaluators and researchers are often confronted by complex and multiplex social phenomena that are not easily amenable to single frame probing. Complex social issues tend to be unforgiving to rigid probes by inflexible researchers who are insisting on their personal epistemological stance while ignoring the realities of the practical (Rogers, 2008). Greene was therefore right in arguing that the messiness of complexity demands multiple investigative tools.

But Should We Be 'Mixing' At All?

With the emergence of a third methodological framework, some traditional qualitative researchers have been keen to embrace an approach that appeared philosophically in line with long-held tenets, such as triangulation. For example, Patton (2006) noted, with some excitement, the growing interest in the mixed methods movement, saying "wherever I go there's a crescendo buzz about mixed methods that may prove to be a tipping point. Or may not. There are important counter-

forces afoot in the land" (p. i). Others, however, have been uneasy with the many challenges to longstanding rules and procedures inherent in combining methodologies. For example, Morse (2005), while embracing the field, admitted to feeling a sense of heresy because this "sudden faddishness of mixed methods" had brought to the fore awkward and unanswered questions about mixing qualitative and quantitative approaches within a single set (p. 583).

However, some have been definitely less than embracing. Thus, Bazeley (2004) warned about the dangers of this "new" methodology and the paradigmatic and methodological issues that could be raised. Perhaps the most critical and burning issue was expressed best by Giddings and Grant (2007), who considered mixed methods research simply as a bastardization of positivism. Elsewhere, Giddings (2006) had issued this candid warning:

> Clothed in a semblance of inclusiveness, mixed methods could serve as a cover for the continuing hegemony of positivism, and maintain the marginalisation of non-positivist research methodologies. I argue here that mixed methods as it is currently promoted is not a methodological movement, but a pragmatic research approach that fits most comfortably within a postpositivist epistemology. (p. 195)

Perhaps there was some validity to these fears. Poor quality research, masquerading as mixed methods, often violated basic assumptions of both methodologies (Morse, 2005). Some responsible for these violations were indeed chameleons, even imposters, trapped within a positivistic skirt and cloaked in pretence of naturalistic inquiry. Giddings and Grant (2007), for example, observed that in many instances, what was actually mixed were methods rather than methodologies, with the qualitative component too often in the subservient role. Many violators, however, were simply novice researchers in an emerging field, capturing but not fully comprehending the essence of the third paradigm. Niglas (2009) alluded to this when she spoke of the "immature readiness" of some new researchers employing mixed methods as a tool (p. 36). This, then, was not a problem of mixed methods research per se, but simply a case of poor research conducted without attention to quality criteria, a problem also common in the two dominant paradigms (Miyata & Kai, 2009; Rolfe, 2006). Perhaps the two issues most often ignored by novice researchers when planning and implementing mixed methods research are the adoption of an explicit philosophical stance and a design framework for organizing the inquiry.

Revisiting the Issue of Paradigm in Mixed Methods Research

Early in the movement, mixed methods researchers had sought to position themselves within the diversified paradigmatic landscape. Five distinct philosophical stances supportive of mixing were put forward. These included the (1) a-paradigmatic, (2) alternative, (3) complementary strengths, (4) substantive, and (5) dialectic approaches (Greene, 2006, 2007). While the a-paradigmatic stance disconnected paradigm from methodology, the substantive perspective interlinked substantive and paradigmatic issues. The alternative paradigmatic stance called for new mental models or ways of thinking to guide methodological issues in practice, whereas the dialectical stance gave attention to the new insights that could be derived from differences between the various approaches. The complementary strengths stance is strongly attuned to the philosophical assumptions of each approach, considering the methodologies as different and requiring appropriate implementation.

In practice, mixed methods researchers adopt either a single or multiple mental models. For example, in the dialectic, substantive and complementary strengths stances, multiple paradigms are honoured and made explicit (Moran-Ellis et al., 2006). A dialectical stance is certainly not foreign to qualitative researchers who often make use of different epistemological stances within the same interpretive family; and in mixed methods research, this philosophical framework might optimize mixing (Betzner, 2008). A single paradigm stance can be adopted and this might be transformative-emancipatory (Mertens, 2003), critical realist (McEvoy & Richards, 2006), or pragmatic (Johnson & Onweugbuzie, 2004). Pragmatism has emerged as the most frequently chosen single mental model, because it is the foundation for rejecting the incompatibility thesis and provides the scaffolding upon which a practical, multi-perspective, and flexible research philosophy is built (Bryman, 2006b, 2007; Denscombe, 2008). Some mixed methods researchers, however, chose to adopt an a-paradigmatic approach, which considers mental models as irrelevant to methodological considerations (Bergman, 2008).

Despite the popularity of pragmatism in the mixed methods research community, the transformative-emancipatory paradigm has great value in the disciplines of sociology and education, because it argues that knowledge is not neutral but reflects the power and social relationships within the societies we construct (Mertens, 2003). Thus, this model acknowledges that many constructs are simply social creations and some are even privileged. The focus therefore becomes the lives and

experiences of marginalized groups and the analysis of asymmetric power relationships. As with the constructivist-interpretive, the transformative-emancipatory paradigm acknowledges multiple realities. Although "objectivity" is considered possible, this is to be achieved by involvement with the communities. McEvoy and Richards (2006) proposed critical realism as another viable single approach to conducting mixed methods research. Critical realists see the world as an open system and causal mechanisms as tendencies. Thus, for research, the ultimate goal is to develop deeper levels of explanation and meaning. Critical realists are comfortable with both methodologies and the philosophical approach is consistent with all forms of methodological triangulation.

Typology as "Mixing" Rule and Procedure

The complexity and diversity of mixed methods approaches means that definition and typology have become critical to good practice. According to Johnson, Onwuegbuzie, and Turner (2007), the term *mixed methods research* has gained ascendancy over alternatives like *integrative research* and *mixed research*. The *mixed methods* label suggests that it is the methodologies and not the methods that are mixed. Johnson et al. (2007) provide a synthesis of 19 definitions:

> Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration. (p. 123)

Johnson et al. also distinguished among three subtypes of mixed methods research—qualitative dominant, pure mixed, and quantitative dominant. Thus, the role of the qualitative in mixed methods research might be (1) equal or interlaced (Mendlinger & Cwikel, 2008); (2) lead or dominant (Ivankova, Creswell, & Stick 2006; Mason 2006); or (3) uniquely separated and later combined (Moran-Ellis et al., 2006). Relevant to the purpose of this paper, Johnson et al. defined qualitative-dominant mixed methods research as "the type of mixed research in which one relies on a qualitative, constructivist-poststructuralist-critical view of the research process, while concurrently recognizing that the addition of quantitative data and approaches are likely to benefit most research projects" (p. 124).

A research design addresses different aspects of the research procedure, from philosophical assumptions to data analysis. A design might be considered mixed if it employs qualitative and quantitative

approaches at any stage, including research questions development, sampling strategies, data collection approaches, data analysis methods, or conclusions (Creswell & Garrett, 2008; Tashakkori & Creswell, 2007). Mixed method designs are easily distinguishable from monomethod studies, which make use of a single approach. However, Teddlie and Tashakkori (2009) consider integration to be the primary criterion for determining mixed methods status. Thus, they defined *quasi-mixed methods research designs* as studies that make use of two or more approaches at some stage while failing to integrate the methods in any way. Such studies are relatively common (Bryman, 2006a; Moran-Ellis et al., 2006; Niglas, 2004).

Typologies are classification schemes used to describe various mixed methods designs, and are important to good practice because they include implicit rules, procedures, and criteria for mixing. Currently, there are several typologies in the literature. Teddlie and Tashakkori (2009) listed seven criteria commonly used in mixed methods design typologies: (1) number of approaches, (2) number of strands, (3) implementation, (4) stages of integration, (5) priority, (6) function, and (7) ideological perspective. Most current classifications address at least four of these core issues: (1) priority (QUAN or QUAL dominant or equal); (2) implementation (parallel, sequential, conversion, multilevel, or combination); (3) integration; and (4) theoretical perspective (implicit or explicit and related to purpose or research questions) (Creswell, Plano Clark, Gutmann, & Hanson, 2003).

The earliest typology by Greene, Caracelli, and Graham (1989) was based solely on research purpose and included five categories: (1) triangulation, (2) complementarity, (3) development, (4) initiation, and (5) expansion. Designs for expansion and initiation often give priority to the qualitative, which is able to identify paradoxes and contradictions and provide new insight or different perspectives on the issue under study. Another early classification scheme proposed by Tashakkori and Teddlie (2003) gave attention to the (1) number of methodological approaches, (2) number of strands or phases, (3) type of implementation process, and (4) level from which data are gathered. This classification is useful because it recognizes the possibility of multiple levels and strands, a common feature of more complex designs. More recently, Leech and Onwuegbuzie (2009) presented a three-dimensional typology based on (1) the level of mixing (partially mixed versus fully mixed); (2) time orientation (concurrent versus sequential); and (3) emphasis of approaches (equal status versus dominant status). The concept of level of mixing is also considered in Niglas' (2009) classification of typologies.

The Creswell and Plano Clark (2007)[1] typology provides a clear role for each component in terms of timing, weighting, and mixing and is thus especially useful for new researchers in the field. Creswell and Plano Clark (2007) proposed four main design types, with multiple variants: (1) the *triangulated* design, to obtain different but complementary data; (2) the *embedded* design, in which one data set provides a supportive secondary role; (3) the two-phase *explanatory* design, which builds or explains quantitative results; and (4) the *exploratory* design, which is also two-phased but led by the qualitative. Each set has multiple variants based on emphasis and purpose. Creswell and Plano Clark's (2007) embedded, triangulated, and exploratory categories all include *qualitative dominant design variants*, in which emphasis is placed on the qualitative and the constructivist-interpretive mental model governs.

Embedded or nested models are fully mixed designs (Niglas, 2009), which make use of different approaches at the design, implementation, and analysis levels, with one type of data embedded within the other set. In one variant, qualitative data are embedded within a quantitative design, for example, focus group or qualitative observation within an experimental study. In another variant, the quantitative data are secondary to the qualitative and the interpretation is qualitatively led (Lieberman, 2005). The qualitative leads in all three variants of the exploratory design (Kelle, 2006). One such is the instrument development model, which has long been used in the field of measurement for constructing quantitative instruments grounded in the experiences of participants (Creswell & Plano Clark, 2007). The taxonomy development model has also been used to build models and themes grounded in participant views. These themes may then be subjected to empirical measurement and validation (Plano Clark & Creswell, 2008).

Morse and Neihaus (2009) developed a unique classification scheme based on theoretical drive, which they defined as the overall inductive or deductive direction of the inquiry. This is a useful typology for qualitative researchers because it clarifies the primary intention and philosophy behind the overall study (Morse, Niehaus, Wolfe, & Wilkins, 2006). Morse and Neihaus (2009) considered three main approaches: (1) qualitatively driven mixed methods designs, (2) quantitatively driven mixed methods designs, and (3) complex mixed and multiple method designs. Each approach includes several variants with different combinations and relationships between the components. Qualitative methods often use an inductive approach and seek discovery, whereas quantitative studies frequently use deduction and focus on theory testing. Morse and Neihaus recognized that although a qualitative component

might have equal weighting, the overall project might still be deductively driven. Morse (2005, 2009) also identified the core component of the study, which is the primary method used to address the research question. Morse and Niehaus argued that some qualitative methods, such as grounded theory, should stand as a primary method and if another qualitative method were to be used, it must be as a secondary component. Thus, for these authors, the typology rules apply to both mixing methodologies and mixing methods.

Using Qualitatively Led Mixed Methods Research To Study Complex Issues

> *I suggest that a 'qualitatively driven' approach to mixing methods offers enormous potential for generating new ways of understanding the complexities and contexts of social experience, and for enhancing our capacities for social explanation and generalization. Such an approach can draw on and extend some of the best principles of qualitative enquiry. In the process, it can benefit from ways in which qualitative researchers have sought to develop constructivist epistemologies, and to engage with thorny methodological issues especially around questions of interpretation and explanation.* (Mason, 2006, p. 10)

Education has always been a core field for mixed methods research (Creswell & Garrett, 2008). According to Niglas (2004), however, the implementation of mixed methods research designs in education is not without its problems. In her review of education research, she found a diversity of approaches, but her classification suggests that 93 of the 142 studies (65%) included a dominant qualitative strategy in data utilization. However, not many studies offered a clear rationale for mixing. Those that did, tended to emphasize complementarity and expansion purposes; but where triangulation was the goal, the original meaning of the term was not fully captured. Additionally, most studies were integrated only at the data inference stage, where this essential aspect of mixing suddenly appeared.

I would argue that in several instances, qualitatively driven or qualitative dominant mixed methods studies are best able to capture the complexity of some educational and social issues (Creswell, Shope, Plano Clark, & Green, 2006). For example, monomethod qualitative studies are often limited in transferability because of small sample size.

In situations of complexity and diversity, however, the lack of variation in a sample becomes a hindrance to fully capturing the nuances of a phenomenon. Moreover, when data from limited sample sets are used to inform educational policy, the problem is presented only partially and ignores the variation across contexts. Multiple qualitative methods can capture different perspectives, thereby enhancing the ability to represent complexity and multiple levels. More than that, however, combining different data sets in mixed methods strategies enhances transferability, generalizability, and practical significance (Onwuegbuzie & Leech, 2004). These arguments are illustrated by reference to two research studies conducted by the author in the period 2006 to 2009.

Two Illustrative Studies

Purpose, rationale, and design

Both studies were planned and implemented in collaboration with the Division of Educational Research and Evaluation (DERE) of the Trinidad and Tobago Ministry of Education (TTMoE). The projects presented a unique opportunity to gather high-quality data to inform critical policy issues. The first policy issue was secondary school choice in Trinidad and Tobago, for which there was little information at the time. Although empirical databases were available and could be mined using recently developed techniques, quantitative data alone would not provide answers to the question of "how choice was constructed" by stakeholders. Thus, qualitative information was also needed on how real families made decisions on secondary school choice in Trinidad and Tobago. Empirical international studies were widely available but would be of limited value because different rules and procedures in choice systems often lead to different understandings and impacts (De Lisle, Keller, Jules, & Smith, 2009). Special attention to variation in the qualitative sample would be necessary to accommodate possible differences in social class and geographical location (Willms & Echols, 1992).

Low performance among specific schools was the second policy issue in need of further research. Indeed, improving low-performing schools has become a concern throughout Latin American and Caribbean (Vegas & Petrow, 2008). Differences in school performance have been evident in the findings of both national assessments and international assessments, such as the Progress in Literacy Survey (PIRLS) (Mullis, Martin, Kennedy, & Foy, 2007). Recent local attempts at developing meaningful school performance measures had suggested that differential school performance might be linked to contextual factors such as rurality and socio-economic status. Thus, identifying low- and high-performing

high-poverty schools became an important research goal. However, to be useful in providing advice on school improvement, context-specific qualitative data on the nature of the challenge were also needed.

Table 1 summarizes the nine key steps of a research procedure. These steps follow the 13-stage Onwuegbuzie and Leech (2006) framework, and included: (1) mental models, (2) rationale and purpose, (3) research questions, (4) overall design, (5) sampling design, (6) data collection, (7) data analyses, (8) inferences, and (9) report writing. As shown, there were differences between the two studies, especially in the level of integration, timing, and weight of the qualitative component. The school choice study was designed primarily to achieve complementarity and triangulation. In the challenging school study, the research design was intended to serve both developmental and expansion purposes. Initiation was a secondary purpose in both designs. As shown in Table 1, both studies explicitly adopted a multi-method qualitative approach (Collier & Elman, 2008). The focus of integration was on the meta-inferences, which are the combination qualitative and quantitative findings (Tashakkori & Teddlie, 2003).

The School Choice Study (De Lisle, Keller, et al., 2009)

Using the typology of Creswell and Plano Clark (2007), the mixed methods research design for the secondary school choice study may be described as a *triangulated multilevel model.* This variant employs different methodologies (quantitative and qualitative) to address different levels (macro and micro) within a system. Figure 1 illustrates this research design. As shown, three levels of the system were envisioned. At the overall system level, the formal framework of rules and procedures for secondary school choice was evaluated in the quantitative descriptive study (Moe, 2002, 2008). Decision making at the level of the family was analysed primarily using qualitative methodology. In theory, system rules and procedures are filtered and interpreted by family members, so the qualitative data collection was intended to capture the system rules as perceived by parents and children. Using the Morse and Niehaus (2009) typology, it becomes clearer that this investigation is really three separate projects in one research programme, with each study meant to be independently published. The children and parent projects used an inductive drive, whereas the study of the system was deductively driven. In theory, however, the overall programmatic thrust was inductive because the focus was on the construction of choice from the perspective of the participants.

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Table 1. Basic Research Design Elements of the Two Mixed Methods Research Studies Conducted By the Author

Research Step	School Choice Study	Challenging School Study	Approach to Integration
1. Mental Model	Overall inductive drive, with postpositivism for the QUAN and interpretive-constructivist for the QUAL components	Postpositivism for Stage 1, interpretive-constructivist for QUAL	Complementary strengths/ Transformative-emancipatory for some projects in choice study
2. Rationale & Purpose	Initiation, triangulation, and complementarity	Development, expansion and initiation	Designs are explicitly mixed methods
3. Research Questions	Most were separate QUAN and QUAL questions, but a few mixed RQs	All mixed RQs	Mixed RQs facilitate integration
4. Overall Research Design	Multi-level triangulated	Sequential Explanatory with Embedded Qualitative in Phase 2	Attention to rules of typology
5. Sampling Designs	Concurrent Mixed - Full Cohort for QUAN/ Probability & Maximum variation for QUAL	Sequential - Full cohort for Phase 1 and Mixed method purposive for 2	Linkages across different samples
6. Data Collection	Secondary data for QUAN. Multiple for QUAL	Secondary data for QUAN. Multiple for QUAL	Use of multiple methods and methodologies for different levels of phenomenon
7. Data Analyses	Descriptive and logistic regression. Text analysis	Regression Analysis for QUAN and multiple approaches for QUAL, including data transformation	Separately conducted in parallel for school choice projects
8. Meta-inferences	Parallel findings with meta-inferences	Integrated findings	Meta-inferences are fully integrated
9. Report	Discussion organized around research questions-QUAN and QUAL data integrated in conclusion	Both phases reported separately to date. QUAL and quan of Phase 2 integrated	Attention to links between different types of data

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Figure 4. Visual ethnography as contradiction: Resources available but not utilized at one urban challenging school site.

In terms of emphases and pacing, the research programme may be annotated in the following manner: QUAN + [QUAL-quan] + [QUAL-quan].

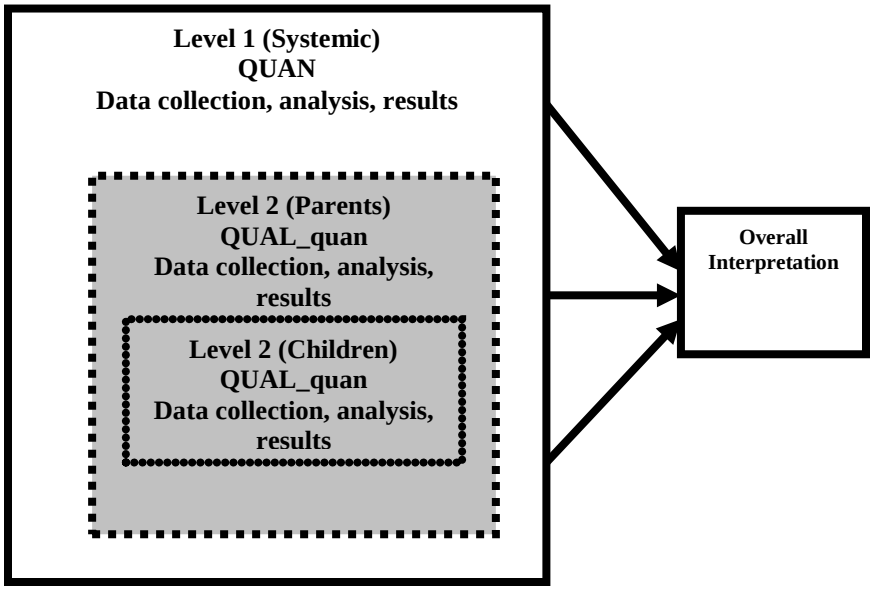

Figure 1. The multilevel triangulated mixed methods design in the school choice study.

The mixed methods sampling design was a concurrent mixed approach with independent quantitative and qualitative sampling strategies implemented in parallel (Teddlie & Yu, 2007). The quantitative phase employed full cohort secondary data for 11 years of Eleven Plus examinations (1995–2005). The qualitative sample was designed to ensure maximum variability by making use of both purposive and probability sampling (Onwuegbuzie & Collins, 2007). Four schools from each educational district were selected based on location and socio-economic context. Teams of researchers gained access to each site before interviewing parents and children. Saturation was reached with 10 sites across six districts.

We anticipated that children's decision-making processes would be significantly different from parents and might even be influential in the family's final list of choices (Reay & Lucey, 2000). Thus, a unique feature of this research programme was the inclusion of children's agency and voice, a feature omitted from several international studies. From this perspective, an emancipatory-transformative mental model was employed in seeking to understand how the primary participant, the

child, experienced the phenomenon. Each qualitative project employed multiple methods for exploratory and verification purposes (Brewer & Hunter, 2006). The main data collection tool was the focus group, but soft laddering[2] and individual interviews were also used to capture the heuristics of the decision-making process (Reynolds & Olson, 2001; Veludo-de-Oliveira, Ikeda, & Campomar, 2006). The focus group interview for children was enhanced by the use of a variety of information elaboration techniques such as mindmapping, storytelling, word association, and visualization methods (Bystedt, Lynn, Potts, & Fraley, 2003). These techniques were critical to obtaining information from children in the 8 to 10-year-old age group.

The Challenging School Study (De Lisle et al., 2008; De Lisle, Smith, et al., 2009)

The design of the challenging school study is shown in Figure 2. Based on the typology of Creswell and Plano Clark (2007), the overall design is *sequential explanatory*, beginning with a quantitative monomethod study and ending with a follow-up mixed methods QUAL-quan study designed to explain and expand on the findings. Notably here, Phase 2 is not a qualitative monomethod study, but a QUAL-driven or qualitative-dominant mixed methods research design, with an explicit focus upon qualitative themes to support explanation. The quantitative data in this project is qualitized (Morse & Niehaus, 2009; Tashakkori & Teddlie, 2009). From the standpoint of Creswell and Plano Clark (2007) typology, the Phase 2 study is an *embedded* or *nested qualitative dominant* design. The overall sampling strategy was sequential mixed methods, in which the qualitative sample was a subset of the quantitative sample (Teddlie & Yu, 2007). The quantitative study used full cohort data for all 557 primary schools coded, and included data from the National Schools Dietary Services Limited (NSDSL) on the percentage of the school population provided with free meals. Based on the criteria of 90% free school meals and an Academic Performance Index (API) placing the school in the lower and upper quartiles, 12 schools were selected. Six schools in the lower quartile were categorized as low-poverty, low-performing (lp2). From these, three sites were selected based on location and type of schooling (co-ed/single sex).

The embedded qualitative dominant mixed methods design of Phase 2 emphasized qualitative multi-method exploration and verification. The use of multiple qualitative methods enhanced the ability to reveal contradictions and paradoxes, thereby improving legitimation (Meijer, Verloop, & Beijaard, 2002). The multiple qualitative methods included

ethnographic field notes, document analysis, individual and focus group interviews, structured and unstructured observations of classrooms, and visual ethnography. None of these approaches are considered stand-alone methods according to Morse & Niehaus (2009). These multiple methods were intended to capture the reality and multiple facets of children's lives, another obstacle when studying complex issues in education (Creswell & Garrett, 2008; Hemming, 2008; Pink, 2001). These qualitative approaches were supplemented by quantitative surveys of stakeholders, standardized assessments of students by teachers, structured observations of classes, and collection of site records. Two types of surveys were conducted. The survey of teachers and parents used the qualitative sample in the focus groups, while the assessment of students by teachers and the student self-report engagement survey used a wider probability sample.

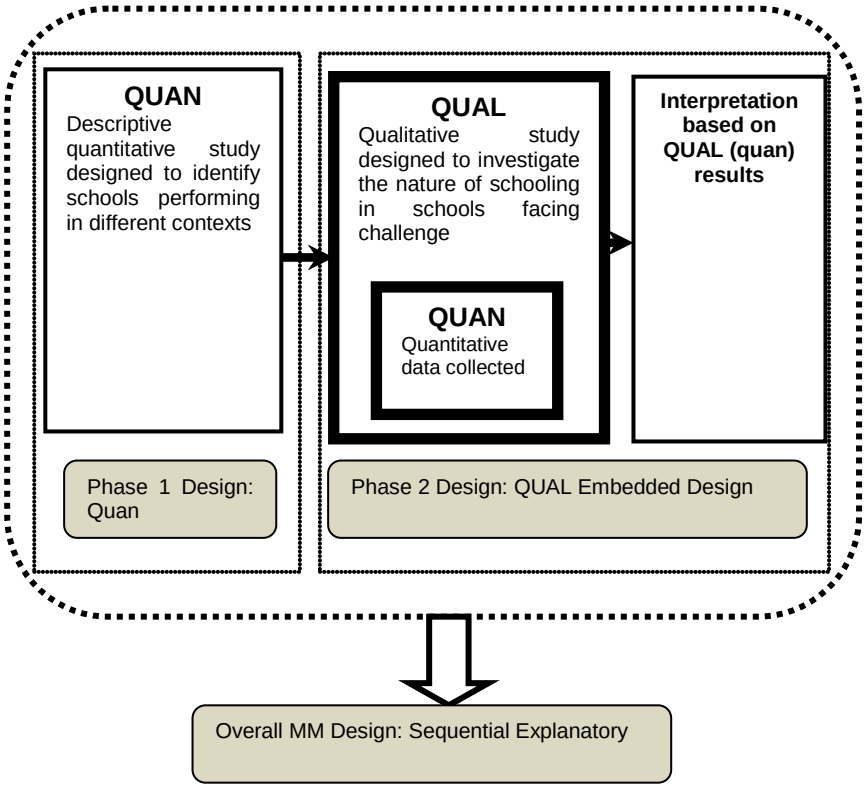

Figure 2. The mixed methods design in the challenging school study.

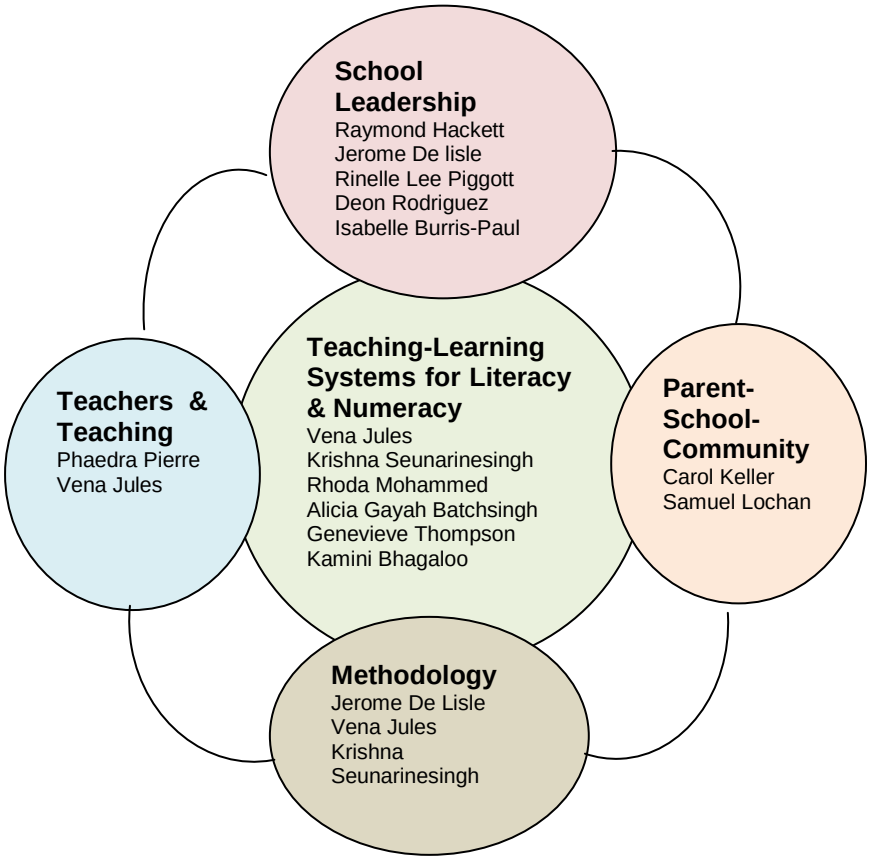

Figure 3. Organizations of teams by target area in the Challenging School Project.

Implementation and analysis

Creswell and Plano Clark (2007) suggested that research teams are needed to conduct concurrent mixed methods studies because both components must be implemented at the same time. Research teams were also used even in Phase 2 of the challenging school study because of the nested design. Individual members were classified as investigators and field assistants. Field assistants were postgraduate and senior undergraduate students with substantial experience in schools. The field assistants were provided with considerable formal training in methods and content. For the challenging school study, research teams were organized by both target area and methodology, with team leaders appointed for each. Figure 3 lists the target area teams in the challenging

school study. It is to be noted that several members spanned across the teams, facilitating the integration process.

A variety of mixed methods analytic approaches was used (Teddlie & Tashakkori, 2009). The school choice study made use of parallel mixed data analysis in which separate quantitative (descriptive) and qualitative (narrative) analyses were conducted. Findings from each analysis provided an independent understanding of the phenomenon, with attempts at integration in the meta-inferences. Each phase of the challenging schools study was reported as a separate study. The Phase 2 study was analysed using a conversion mixed data analysis approach that included qualitization of the numeric data. Qualitization included the creation of narrative profiles from the survey data from both the qualitative and quantitative samples (Tashakkori & Teddlie, 1998).

Findings and Lessons Learnt

An Explicit Mental Model and Typology Are Needed for Efficient Implementation

The philosophical orientation and theoretical drive of the study should be made explicit at the start and must be used as a guide for decision making during the process of implementation. An appropriate mental model was critical to efficient implementation because several choices had to be made throughout each implementation stage. An overriding philosophy was often the key to resolving thorny issues about the nature and intention of different data collection and analytic activities. For example, in Phase 2 of the school choice study, decisions had to be made about the nature of observation. Should the observation be structured or unstructured? Should an instrument be used to guide observations or should field assistants record what they observed using anecdotal records? Given a deductive drive, observational methods using checklists and standardized schemes would be expected; however, a constructive philosophy would give attention to unstructured approaches that might better capture the uniqueness of teaching/learning. In the end, the decision was to use a broad framework describing different levels of authentic teaching coupled with extensive field notes and video, allowing the primary investigators to capture and reinterpret the teaching/learning act. Although, in theory, a mixed methods researcher might adopt an a-paradigmatic stance, simply collecting quantitative and qualitative data without attention to the philosophical assumptions inherent in an approach could lead to inappropriate choices. A complementary strengths mental model seemed most appropriate in both studies because

it facilitated the multiple purposes of triangulation, expansion, and complementarity (Betzner, 2008).

In both studies, the research designs were aligned to specific models, with relationships and procedures clarified at the start. It appears that design rules from a typology are necessary for the logical and systematic development of a mixed methods research study (Onwuegbuzie & Leech, 2006). Although the current typologies are by no means exhaustive, they are useful because they provide rules and guidelines for mixing, thereby ensuring the distinctiveness of the field (Collins & O'Cathain, 2009). Using a typology appears critical to successful implementation because it prevented many of the problems often reported in pseudo-mixed methods studies. For example, paying attention to the design rules in the challenging school study enabled different parts of the study to articulate with each other. Likewise, although existing typologies did not fully describe the multi-component design of the school choice study, the explicit focus on an overall inductive thrust ensured that prominence was given to the overall goal of the programme, namely, to identify how participants on the ground constructed choice based on perceived system rules.

The Research Team is an Important Mechanism for Achieving Integration

Formal collaboration within and across teams proved critical to implementing the mixed methods research and achieving higher levels of integration, with dialogue and collaboration often leading to greater synergy and new insights into emerging issues (Hall & Howard, 2008). Formal and informal team meetings were the medium through which quantitative and qualitative findings were shared, and this process led to greater reflexivity for individuals and teams. The challenging school project employed multidisciplinary teams, in which members were able to draw on the skills and competencies of individual researchers in both substantive and methodological areas. Different investigators took the lead on social, teaching/learning, literacy, and methodology issues, and collaboration ensured that varying perspectives were shared.

The way in which team collaboration led to integration might be illustrated in the case of the school choice study in which the quantitative team initially analysed the data without regard to gender. As the qualitative team led by Vena Jules began to analyse the transcription data, they soon observed that several families in Central Trinidad made different decisions for male and female candidates. This qualitative finding led the quantitative team to re-analyse the empirical data for

males and females separately. This new empirical analysis was extremely fruitful and led to several new insights about differences in gendered choice patterns. For example, families often used the fifth and sixth choices provided by the Ministry of Education from 2001 to 2006 for females, but not for males. Interestingly, the Ministry of Education had taken the decision to eliminate the fifth and sixth choices in 2007, a policy decision that, this meta-inference suggests, would have impacted negatively on female opportunity in the St. George East Educational District. These findings point to the complexity of the issue and the need for multilevel studies using different methodologies. It suggested that even at the system level, small policy changes could impact severely on specific subpopulations.

The Qualitative Findings Often Provided a Different but Insightful Perspective

Findings from the different methodologies were not always complementary but captured different perspectives of the phenomenon. However, in describing the issue fully, both contradictory and complementary findings were needed to capture nuances and to inform education policy. For example, several of the qualitative findings, though unique, had important implications for the development of sustainable education policy. For example, in the school choice study, it was the qualitative interviews which suggested that family decision-making processes were complex and multistaged, involving both parents and child as well as extended family members and teachers. This is illustrated in the following extended narrative of an Eleven Plus candidate talking about the way she selected her schools of choice:

[Interviewer: How did you go about choosing your schools?] We sat together as a family and we chose all four schools. I had Holy Name Convent on my list but Miss [the teacher] made me put a secondary school instead. So I had to put in Woodbrook Secondary School because that is what my mother wanted. I wanted St. George's College as my first choice but I had to choose St. Joseph's Convent for my first choice instead. And I wanted Bishop's Anstey as my second choice. [Interviewer: So who decided that Holy Name Convent would have been the school to drop?]. My Mummy; that wasn't part of the discussion. . . [Later in the interview] There was only one school I did not agree with-which was Woodbrook Secondary. [This was] because I wanted either St Augustine Girls or Holy Name Convent [instead], but Miss [the teacher] made me take off Holy Name Convent. Actually, it was my

Mummy and Miss who made me take off Holy Name Convent and put in a Secondary school, although I wanted to put [as the secondary school], Diego Martin Secondary.

[Fifth Standard Female in Coeducational Primary School in Port of Spain and Environs Educational District]

The data from soft and hard laddering led to the discovery that participants might use both compensatory and non-compensatory rules in the multistage decision-making process. In non-compensatory decisions, good and bad attributes do not balance out and a school might be rejected or accepted simply based on one attribute. Non-compensatory rules were often used to eliminate schools in the early stages of decision making. Some factors such as geographic location were used disjunctively, whereas other factors such as safety and academic achievement were used conjunctively. For example, a family might choose only from schools meeting some minimum or maximum value on one or more variable, as illustrated in the following quotation:

My choices were really simple for me because I have segmented [them] towards my salary and this traffic congestion into Port of Spain. I think about all of these things - I have to get up 4 o'clock in the morning to go to Port of Spain and I have friends and their children who have to go to school with pillows and when they reach to school, they can sleep before school start. All these things you have to think about. I think that schools in Central here are just as good as [any] Port of Spain school. [Schools like] Presentation, Couva Sec. [For example], Couva Sec get nine scholarships last year, so they are ranking above the schools in Port of Spain and all the stress for my son to go to school early in the morning and [there is] real traffic which should be easing up these couple of years.

[Parent in Focus Group, Caroni Educational District]

These findings were important to policy generation because it suggested that simple linear universal models of choice (such as a ranking of factors) were inadequate for explaining the way families chose schools in Trinidad and Tobago. It is also apparent that the variation in the decision-making heuristics could not be captured by any quantitative method, including hard laddering. It was hypothesized that given a survey listing of school factors, families might rate some characteristics as more important, but in real decision-making contexts, these factors were likely to be weighted and used within some complex

decision-making heuristic. The non-sequential, multiple-phased decision-making strategy employed by parents and children in choosing secondary schools was best assessed by data collected from focus group and soft laddering interviews, the latter requiring extensive interaction and probing of the participant. This meta-inference suggested that the Ministry of Education must be cautious about crafting new rules for school choice, even if seemingly based on patterns in the empirical data. Moreover, as revealed in the quantitative data, school choice was considered gendered activity and so some factors were applied differently for males and females. An example was school location, which was often used conjunctively for females, with distant schools eliminated in the early decision-making rounds.

The meta-inferences were an important vehicle integrating quantitative and qualitative findings, but the nature and relationship between the quantitative and qualitative inferences varied. Integration did not mean the absence of conflict because the quantitative and qualitative captured different aspects of the same phenomenon (Slonim-Nevo & Nevo, 2009; Teddlie & Tashakkori, 2009). The relationship between findings from the different components in both studies are classified in Table 2 as (1) initiating; (2) conflicting; (3) confirming (complementary); or (4) explanatory and expansion (infuse or modify). Findings were considered initiating if revealed in Phase 1 of a sequential study or in one phase only of a concurrent study. For example, in the school choice study, only the time-sequenced full cohort data highlighted the changing nature of the local education market as choice rules and the perceived value of schools changed. In other instances, however, an initial finding was matched by later findings using a different methodology. In some instances, the later inferences acted in a confirmatory or complementary manner. In other instances, the findings were conflicting. For example, in the challenging school study, the empirical data suggested that there was a correlation between resources and school achievement, but the case study did not bear out this pattern, with all sites well resourced and the rural school staffed with highly qualified teachers. Findings from other approaches could also provide explanatory value by expanding on an initial finding or by adding deeper insight.

Table 2 shows 17 meta-inferences developed for the two illustrative studies. Ten of these meta-inferences were described as initiating. The 10 are equally divided between quantitative and qualitative findings. The large number of initiating findings from the quantitative component was possibly due to (1) the sequential explanatory design in the challenging school study, and (2) the high-quality multiple cohort census data in both

studies. Nevertheless, the qualitative data added significant value because inferences often had significant and direct implications for education policy. For example, the implications of gendered patterns in school choice and the complex nature of decision-making heuristics have already been noted in the school choice study. Another useful qualitative inference from the challenging school project was the mechanism for limiting the opportunities for learning for students. These appear to be directly related to high teacher and student absenteeism, along with the nature of teaching/learning. Moreover, high levels of training and resources might not directly lead to high-quality teaching for economically and socially disadvantaged students, because even when teachers were trained and resources were readily available, these resources might not be used in teaching/learning. This is revealed in the photographs of one of the sites in Figure 4, where despite teacher protestations about limited resources, teaching materials remained locked away in a resource room. Thus, it might be that beliefs about the students, families, and communities, and the nature of teaching/learning were more influential in classroom practice. Additionally, the salience of nutrition issues and student absenteeism in the early grade levels of the school had important implications for future schooling and school improvement policies.

The Challenge of Implementing High-Quality Mixed Methods Research

The three lessons highlighted—use of typologies for implementation, teams for integration, and the value of the qualitative findings for meta-inferences—point towards the value of qualitatively led mixed methods variants. However, mixed methods research should not be considered inherently valid (Bazeley, 2004); instead, trustworthiness and credibility must be assured through the application of rules and procedures and attention to quality criteria. Indeed, the development of quality criteria has been a concern for the mixed methods community for some time. Onwuegbuzie and Johnson (2006) argued that the most salient validity issues faced by mixed methods research were representation, legitimation, and integration. *Representation* is the difficulty of representing lived experience through text and numbers; *legitimation* refers to the trustworthiness of inferences; and *integration* to the multiplicative and additive threats that result from combining methods. This leads to the crux of the problem in producing high-quality mixed methods research, namely, that some mixed methods studies are

fundamentally flawed at the start because they combine and multiply threats to validity and trustworthiness within each methodological approach.

Table 2. Different Types of Findings and Meta-inferences Derived From the Mixed Methods Research Studies

Research Programme	Finding Type	Method/ Methodology	Meta-inferences
School Choice	Initiating	QUAN	The pattern of school choice and the nature of the education market varied significantly across geographic space.
	Initiating	QUAN	Families from non-Christian or non-traditional Christian religions often preferred either their own schools or government-managed institutions to schools managed by Christian denominations.
	Initiating	QUAN	Some schools drew from a wider range of circuits compared with others.
	Imitating	QUAL	School choice is gendered, with school factors and choices weighted differently for male and female candidates.
	Initiating	QUAL	Parents and children used a variety of decision rules based on simple ranking, disjunctive, conjunctive, and compensatory combinations of factors.
	Initiating	QUAL	For most parents, location is a factor in choosing schools even when those schools are perceived to be high achieving.
	Confirming	QUAL/ QUAN	Measures of academic school success and correlates have the highest valence among the school factors.
	Explanatory	QUAL	The qualitative findings explained the root reasons for stakeholders highly valuing specific school factors and schools and strongly rejecting some schools in the education marketplace.
	Explanatory/ Expansion	QUAN	In the period when the 5th and 6th choice was offered, this option was important for parents from well-populated districts such as St .George East and Caroni and for female candidates.

(continued)

Table 2 (continued)

Research Programme	Finding Type	Method/ Methodology	Meta-inferences
Challenging Schools	Initiating	QUAN	Some schools are able to perform adequately despite economic and social disadvantage in the school population.
	Initiating	QUAN	Low-performing, high-poverty schools are found in both urban and rural areas.
	Initiating	QUAL	Significantly reduced opportunities to learn occur through reduced time on task (in classroom and school) and teaching that keeps students disengaged.
	Initiating	QUAL	Poor nutrition and student absenteeism are significant issues in schools facing challenge.
	Conflicting	QUAL with QUAN	Some low-performing, high-poverty schools have qualified staff.
	Conflicting	QUAL with Component QUAN	In the interview data, teachers rationalized their expectations for student performance and considered their judgement justified. Therefore, in the component quantitative, teachers did not report low efficacy beliefs.
	Conflicting	QUAL observation and video ethnography with focus group QUAL	Teachers had access to a great deal of resources, but non-use or misuse became significant issues, possibly related to the nature of teaching/learning. However, teachers often claimed not to be well-resourced.
	Conflicting	QUAL parent focus group with QUAL teacher focus group	In the rural low-performing school, some parents were very unhappy with the quality of education, but teachers thought that the parents were not concerned or comfortable with the climate and work ethic.
	Confirming	QUAN with Component QUAN and QUAL	The free school meal index was an accurate assessment of social and economic disadvantage in schools.
	Explanatory	QUAL and component QUAN	Social and economic disadvantage operated through several mechanisms, including limited family resources, time spent with student in the home, and inability to help student or actively interface with the school. The school's response to the parent and child was often alienating and negative.

Teddlie and Tashakkori (2003) considered *inference quality* and *transferability* (for some studies) to be at the heart of the quality issue. Inference quality derives from both design quality and interpretive rigour, and includes (1) within-method consistency, (2) conceptual consistency, (3) interpretive agreement, and (4) interpretive distinctiveness. For mixed methods research, Onwuegbuzie and Johnson (2006) put forward the unique term *legitimation* instead of *validity* and argued for nine types of evidence: (1) sample integration, (2) insider's views, (3) weaknesses minimization, (4) sequential relationships, (5) conversion, (6) paradigmatic mixing, (7) commensurability, (8) multiple validities, and (9) the political dimension. A central question for any mixed methods study, then, is whether the methodologies are simply conducted in parallel or whether integration is attempted at one or more stages (Yin, 2006). The work of Bryman (2006a) and Kinn and Curzio (2005) suggests that very few mixed methods studies achieve high levels of integration. This study suggested that integration works best when planned and effected by a team; a finding confirmed in Jang, McDougall, Pollon, Herbert, and Russell (2008). Collaborative mixed methods research conducted by groups of researchers working within different approaches and disciplines must be structured to ensure dialogue on the findings. Contradictions and confirmations might be clarified early and then subjected to further discussion, investigation, and analysis. A fully integrated design would be difficult to manage, but could yield unique insights (Teddlie & Tashakkori, 2003). There is certainly, then, a greater need for protocols on fully integrated designs, such as in found in the work of Mendlinger and Cwikel (2008) and Lieber (2009).

Reflecting on the Future of Mixed Methods in the Caribbean

The Caribbean certainly needs more indigenous knowledge to direct successful education reform (Jules, 2008; Louisy, 2004). If intelligent policy making is to be encouraged, data management systems with high-quality information from sound research must be developed (Sanderson, 2009). Perhaps, in the past, there has been an over-reliance on decontextualized and transferred innovation, with little exploration of implementation and evaluation processes within the local context (Jules, 2008); however, such insensitivity could have contributed to the frequent implementation failures. Holmes and Crossley (2004) pointed to the value of qualitative research in such a context, but large-scale empirical data is also required because of significant variation across contexts (De Lisle, Smith, & Jules, 2010). Mixed methods research presents an opportunity to explore both worlds by allowing in-depth discovery of

indigenous patterns, practices, and traditions, while at the same time benefitting from the advantages of high generalization through large-scale empirical research.

Poorly designed mixed methods studies of the past should not prevent researchers working either in the quantitative or qualitative paradigms from seeking out the benefits of using high-quality mixed methods studies for initiation, expansion, and triangulation. However, in studying complex issues, there are important advantages to selecting research designs in which the qualitative has the lead role. Qualitative researchers might be keen to include mixed methods in their repertoire, rather than trying to head off some future "sucker punch" by post-positivistic opponents. Mixed methods research represents a unique way of seeing and investigating the world; an approach that is congruent with philosophies used in naturalistic inquiry. Moreover, in the study of complex and multiplex social issues, mixed methods can add to the repertoire of both qualitative and quantitative researchers, enabling them to achieve important legitimation goals, such as greater transferability. To be sure, the qualitative has always been multiplistic, iterative, interactive, dynamic, and open to new approaches, as seen in the case of crystallization (Ellingson, 2009). Both case and ethnographic research have traditionally made use of multiple methods, with some approaches even crossing the methodology boundary. Dialectical mental models, therefore, have a foundation in the qualitative paradigm. The use of mixed methods research will also enhance the quality, impact, and meaning of education research in the Caribbean. With the low levels of statistical literacy in the population, the qualitative findings in a mixed methods study may have greater utility and influence for some consumers. Moreover, the explanations provided by the qualitative component can provide extended explanation grounded in the data, along with deeper insight into recurring processes and repeated patterns identified in large-scale empirical data.

However, there is also a word of caution from these findings. As mixed methods research advances in the Caribbean, greater attention must be paid to the use of typologies and the application of quality criteria. Attention to mixed methods protocols that describe systematic development and implementation must include a special focus on the generation of integrated meta-inferences, the gold standard of quality. Unfortunately, institutions of higher education in the Caribbean have often been slow to prepare students for some new methodological trends; and, sadly, there have been very few seminars and workshops in the area of mixed methods research. It seems appropriate, then, to introduce

formal teaching in postgraduate courses in education and the social sciences, especially in the discipline of evaluating social and educational programmes. Such training will help novice researchers and postgraduate students to exercise greater caution as they maximize the many opportunities provided by the mixed methods research agenda (Collins & O'Cathain, 2009; Morse 2005).

Notes

1. Creswell and Plano Clark (2011) revised the typology of 2007, consolidating frameworks, changing labels, and introducing new designs.
2. Soft laddering is a qualitative interviewing technique designed to explicate reasons behind particular choices.

References

Bazeley, P. (2004). Issues in mixing qualitative and quantitative approaches to research. In R. Buber, J. Gadner, & L. Richards (Eds.), *Applying qualitative methods to marketing management research* (pp. 141–156). Basingtoke, UK: Palgrave Macmillan.

Bergman, M. M. (2008). The straw men of the qualitative-quantitative divide and their influence on mixed methods research. In M. M. Bergman (Ed.), *Advances in mixed methods research: Theories and applications (*pp. 11–22). London, UK: Sage.

Betzner, A. (2008). *Pragmatic and dialectic mixed method approaches: An empirical comparison* (Unpublished doctoral dissertation). University of Minnesota, Minneapolis.

Brannen, J. (1992). Combining qualitative and quantitative approaches: An overview. In J. Brannen (Ed.), *Mixing methods: Qualitative and quantitative research* (pp. 3–38). Aldershot, UK: Avebury.

Brannen, J. (2009). Mixed methods for novice researchers: Reflections and themes. *International Journal of Multiple Research Approaches, 3*(1), 8–12.

Brewer, J., & Hunter, A. (2006). *Foundations of multimethod research: Synthesizing styles.* Thousand Oaks, CA: Sage.

Bryman, A. (1984). The debate about quantitative and qualitative research: A question of method or epistemology? *British Journal of Sociology, 35*(1), 75–92.

Bryman, A. (2006a). Integrating quantitative and qualitative research: How is it done? *Qualitative Research, 6*(1), 97–113.

Bryman, A. (2006b). Paradigm peace and the implications for quality. *International Journal of Social Research Methodology, 9*(2), 111–126.

Bryman, A. (2007). Barriers to integrating quantitative and qualitative research. *Journal of Mixed Methods Research, 1*(1), 8–22.

Bystedt, J., Lynn, S., Potts, D., & Fraley, G. (2003). *Moderating to the max: A full-tilt guide to creative, insightful focus groups and depth interviews.* New York, NY: Paramount Market Publishing.

Collier, D., & Elman, C. (2008). Qualitative and multi-method research: Organizations, publication, and reflections on integration. In J. M. Box-Steffensmeier, H. E. Brady, & D. Collier (Eds.), *The Oxford handbook of political methodology* (pp. 779–795). Oxford, UK: Oxford University Press.

Collins, K. M. T., & O'Cathain, A. (2009). Ten points about mixed methods research to be considered by the novice researcher. *International Journal of Multiple Research Approaches, 3*(1), 2–7.

Creswell, J. W., & Garrett, A. L. (2008). The "movement" of mixed methods research and the role of educators. *South African Journal of Education, 28*(3), 321–333.

Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage

Creswell, J. W. & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks, CA: Sage.

Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 209–240). Thousand Oaks, CA: Sage.

Creswell, J. W., Shope, R., Plano Clark, V. L., & Green, D. (2006). How interpretive qualitative research extends mixed methods research. *Research in the Schools, 13*(1), 1–11.

Datta, L. (1994). Paradigm wars: A basis for peaceful coexistence and beyond. In C. S. Reichardt & S. F. Rallis (Eds.), *The qualitative-quantitative debate: New perspectives* (pp. 53–70). San Francisco, CA: Jossey-Bass.

De Lisle, J., Keller, C., Jules, V., & Smith, P. (2009). When choosing might mean losing: A mixed method study of secondary school choice in the Republic of Trinidad and Tobago. *Caribbean Curriculum, 16*(1), 131–176.

De Lisle, J., Smith, P., Bhagaloo, K., Gayah-Batchsingh, A., Mohammed, R., Hackett, R., . . . Lochan, S. (2009, May). *Schooling the poor child: Learning experiences of primary school children in institutions in the context of challenge*. Paper presented at the "First They Must be Children Conference: The Child and the Caribbean Imagi/nation," The University of the West Indies, St. Augustine.

De Lisle, J, Smith, P., & Jules, V. (2010). Evaluating the geography of gendered achievement using large-scale assessment data from the primary school system of the Republic of Trinidad and Tobago. *International Journal of Educational Development, 30*(4), 405–417.

De Lisle, J., Smith, P., Lewis, Y., Keller, C., McDavid, P., Jules, V., . . . Seunarinesingh, K. (2008). In the context of Trinidad and Tobago, how do we identify schools that are succeeding or failing amidst exceptionally challenging circumstances? In L. Quamina-Aiyejina (Ed.), *Reconceptualising the agenda for education in the Caribbean: Proceedings of the 2007 Biennial*

Cross-Campus Conference in Education, April 23–26, 2007 (pp. 547–562). St. Augustine, Trinidad: School of Education, UWI.

Denscombe, M. (2008). Communities of practice: A research paradigm for the mixed methods approach. *Journal of Mixed Methods Research, 2*(3), 270–283.

Denzin, N. K., & Lincoln, Y. S. (2005). *The Sage handbook of qualitative research* (3rd ed.). Thousand Oaks, CA: Sage.

Denzin, N. K., & Lincoln, Y. S (2007). *Strategies of qualitative inquiry*. Thousand Oaks, CA: Sage.

Ellingson, L. (2009). *Engaging crystallization in qualitative research: An introduction*. Thousand Oaks, CA: Sage.

Gage, N. L. (1989). The paradigm wars and their aftermath: A "historical" sketch of research on teaching since 1989. *Educational Researcher, 18*(7), 4–10.

Giddings, L. S. (2006). Mixed-methods research: Positivism dressed in drag? *Journal of Research in Nursing, 11*(3), 195–203.

Giddings, L. S., & Grant, B. M. (2007). A Trojan horse for positivism? A critique of mixed methods research. *Advances in Nursing Science, 30*(1): 52–60.

Greene, J. C. (2006). Toward a methodology of mixed methods social inquiry. *Research in the Schools, 13*(1), 93–98.

Greene, J. C. (2007). *Mixed methods in social inquiry*. San Francisco, CA: Jossey-Bass.

Greene, J. C. (2008). Is mixed methods social inquiry a distinctive methodology? *Journal of Mixed Methods Research, 2*(1), 7–22.

Greene, J. C., & Caracelli, V. J. (1997). Defining and describing the paradigm issue in mixed-method evaluation. In J. C. Greene & V. J. Caracelli (Eds.), *Advances in mixed-method evaluation: The challenges and benefits of integrating diverse paradigms* (pp. 5–18). San Francisco, CA: Jossey-Bass.

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11*(3), 255–274.

Guba, E. G. (1990). Carrying on the dialog. In. E. G. Guna (Ed.), *The paradigm dialog* (pp. 368–378). Newbury Park, CA. Sage.

Hall, B., & Howard, K. (2008). A synergistic approach: Conducting mixed methods research with typological and systemic design considerations. *Journal of Mixed Methods Research, 2*(3), 248–269.

Hemming, P. J. (2008). Mixing qualitative research methods in children's geographies. *Area, 40*(2), 152–162.

Holmes, K., & Crossley, M. (2004). Whose knowledge, whose values? The contribution of local knowledge to education policy processes: A case study of research development initiatives in the small state of St Lucia. *Compare, 34*(2), 197–214.

Howe, K. R. (1988). Against the quantitative-qualitative incompatibility thesis or dogmas die hard. *Educational Researcher, 17*(8), 10–16.

Howe, K. R. (1992). Getting over the quantitative-qualitative debate. *American Journal of Education, 100*(2), 236–256.

Howe, K. R. (2009). Positivist dogmas, rhetoric, and the education science question. *Educational Researcher, 38*(6), 428–440.

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods, 18*(1), 3–20.

Jang, E. E., McDougall, D. E., Pollon, D., Herbert, M., & Russell, P. (2008). Integrative mixed methods data analytic strategies in research on school success in challenging circumstances. *Journal of Mixed Methods Research, 2*(3), 221–247.

Jick, T. D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly, 24*(4), 602–611.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14–26.

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research, 1*(2), 112–133.

Jules, D. (2008). Rethinking education for the Caribbean: A radical approach. *Comparative Education, 44*(2), 203–214.

Kelle, U. (2006). Combining qualitative and quantitative methods in research practice: Purposes and advantages. *Qualitative Research in Psychology, 3*(4), 293–311.

Kinn, S., & Curzio, J. (2005). Integrating qualitative and quantitative research methods. *Journal of Research in Nursing, 10*(3), 317–336.

Leech, N. L., & Onwuegbuzie, A. J. (2009). A typology of mixed methods research designs. *Quality and Quantity, 43*(2), 265–275.

Lieber, E. (2009). Mixing qualitative and quantitative methods: Insights into design and analysis issues. *Journal of Ethnographic and Qualitative Research, 3*(4), 218–227.

Lieberman, E. S. (2005). Nested analysis as a mixed-method strategy for comparative research. *American Political Science Review, 99*(3), 435–452.

Louisy, P. (2004). Whose context for what quality? Informing education strategies for the Caribbean. *Compare, 34*(3), 285–292.

Mason, J. (2006). Mixing methods in a qualitatively driven way. *Qualitative Research, 6*(1), 9–25.

McEvoy, P., & Richards, D. (2006). A critical realist rationale for using a combination of quantitative and qualitative methods. *Journal of Research in Nursing, 11*(1), 66–78.

Meijer, P. C., Verloop, N., & Beijaard, D. (2002). Multi-method triangulation in a qualitative study on teachers' practical knowledge: An attempt to increase internal validity. *Quality & Quantity, 36*(2), 145–167.

Mendlinger, S., & Cwikel, J. (2008). Spiraling between qualitative and quantitative data on women's health behaviors: A double helix model for mixed methods. *Qualitative Health Research, 18*(2), 280–293.

Mertens, D. M. (2003). Mixed methods and the politics of human research: The transformative-emancipatory perspective. In A. Tashakkori and C. Teddlie, (Eds.), *Handbook of mixed methods in social and behavioral Research* (pp. 135–164). Thousand Oaks, CA: Sage.

Miyata, H., & Kai, I. (2009). Reconsidering evaluation criteria for scientific adequacy in health care research: An integrative framework of quantitative and qualitative criteria. *International Journal of Qualitative Methods*, *8*(1), 64–75.

Moe, T. M. (2002). The structure of school choice. In P. Hill (Ed.), *Choice with equity* (pp. 179–212). Stanford, CA: Hoover Institution Press.

Moe, T. M. (2008). Beyond the free market: The structure of school choice. *Brigham Young University Law Review, 2008*(2), 557–592.

Moran-Ellis, J., Alexander, V. D., Cronin, A., Dickinson, M., Fielding, J., Sleney, J., &. Thomas, H. (2006). Triangulation and integration: Processes, claims and implications. *Qualitative Research, 6*(1), 45–59.

Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research, 1*(1), 48–76.

Morse, J. M. (2005). Evolving trends in qualitative research: Advances in mixed-method design. *Qualitative Health Research, 15*(5), 583–585.

Morse, J. M. (2009). Mixing qualitative methods. *Qualitative Health Research, 19*(11) 1523–1524.

Morse, J. M., & Niehaus, L. (2009). *Mixed method design: Principles and procedures*. Walnut Creek, CA: Left Coast Press.

Morse, J. M., Niehaus, L., Wolfe, R. R., & Wilkins, S. (2006). The role of the theoretical drive in maintaining validity in mixed-method research. *Qualitative Research in Psychology, 3*(4), 279–291.

Mullis, I. V. S., Martin, M. O., Kennedy, A. M., & Foy, P. (2007). *PIRLS 2006 International Report: IEA's Progress in International Reading Literacy Study in primary schools in 40 countries*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Niglas, K. (2004). *The combined use of qualitative and quantitative methods in educational research* (Unpublished doctoral dissertation). Tallinn Pedagogical University, Tallinn, Estonia.

Niglas, K. (2009). How the novice researcher can make sense of mixed methods designs. *International Journal of Multiple Research Approaches, 3*(1), 34–46.

Onwuegbuzie, A. J. (2002). Positivists, post-positivists, post-structuralists, and post-modernists: Why can't we all get along? Towards a framework for unifying research paradigms. *Education, 122*(3), 518–530.

Onwuegbuzie, A. J., & Collins, K. M. T. (2007). A typology of mixed methods sampling designs in social science research. *The Qualitative Report, 12(*2), 281–316. Retrieved from http://www.nova.edu/ssss/QR/QR12-2/onwuegbuzie2.pdf

Onwuegbuzie, A. J., & Johnson, R. B. (2006). The validity issue in mixed research. *Research in the Schools, 13*(1), 48–63.

Onwuegbuzie, A. J., & Leech. N. L. (2004). Enhancing the interpretation of "significant" findings: The role of mixed methods research. *The Qualitative Report, 9*(4), 770–792. Retrieved from http://www.nova.edu/sss/QR/QR9-4/onwuegbuzie.pdf

Onwuegbuzie, A. J., & Leech. N. L. (2006). Linking research questions to mixed methods data analysis procedures. *The Qualitative Report, 11*(3), 474–498.

Patton, M. Q. (2006). Foreword: Trends and issues as context. *Research in the Schools, 13*(1), i–ii.

Pink, S. (2001). *Doing visual ethnography: Images, media and representation in research*. London, UK: Sage.

Plano Clark, V. L., & Creswell, J. W. (2008). *The mixed methods reader*. Thousand Oaks, CA: Sage.

Reay, D., & Lucey, H. (2000). Children, school choice and social differences. *Educational Studies, 26*(1), 83–100.

Reynolds, T. J., & Olson, J. C. (Eds.). (2001). *Understanding consumer decision making: The means-end approach to marketing and advertising strategy*. Mahwah, NJ: Lawrence Erlbaum.

Ridenour, C. S., & Newman, I. (2008). *Mixed methods research: Exploring the interactive continuum*. Carbondale, IL: Southern Illinois University Press.

Rogers, P. J. (2008). Using programme theory to evaluate complicated and complex aspects of interventions. *Evaluation, 14*(1), 29–48.

Rolfe, G. (2006). Validity, trustworthiness and rigour: Quality and the idea of qualitative research. *Journal of Advanced Nursing, 53*(3), 304–310.

Sanderson, I. (2009). Intelligent policy making for a complex world: Pragmatism, evidence and learning. *Political Studies, 57*, 699–719.

Slonim-Nevo, V., & Nevo, I. (2009). Conflicting findings in mixed methods research: An illustration from an Israeli study on immigration. *Journal of Mixed Methods Research, 3*(2), 109–128.

Tashakkori, A., & Creswell, J. W. (2007). Exploring the nature of research questions in mixed methods research. *Journal of Mixed Methods Research, 1*(3), 207–211.

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches* (Applied Social Research Methods, No. 46). Thousand Oaks, CA: Sage.

Tashakkori, A., & Teddlie, C. (Eds.). (2003). *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: Sage.

Tashakkori, A., & Teddlie, C. (2009). Integrating qualitative and quantitative approaches to research. In L. Bickman & D. J. Rog (Eds.), *Handbook of applied social research methods* (2nd ed.; pp. 283–317). Thousand Oaks, CA: Sage.

Teddlie, C., & Tashakkori, A. (2003). Major issues and controversies in the use of mixed methods in the social and behavioral sciences. In A. Tashakkori &

C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 3–50). Thousand Oaks, CA: Sage.

Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Thousand Oaks, CA: Sage.

Teddlie, C., & Yu, F. (2007). Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research, 1*(1), 77–100.

Vegas, E., & Petrow, J. (2008). *Raising student learning in Latin America: The challenge for the 21st century*. Washington, DC: World Bank.

Veludo-de-Oliveira, T. M., Ikeda, A. A., & Campomar, M. C. (2006). Discussing laddering application by the means-end chain theory. *The Qualitative Report, 11*(4), 626–642.

Willms, J. D., & Echols, F. (1992). Alert and inert clients: The Scottish experience of parental choice of schools. *Economics of Education Review, 11*(4), 339–350.

Yanchar, S. C., & Williams, D. D. (2006). Reconsidering the compatibility thesis and eclecticism: Five proposed guidelines for method use. *Educational Researcher, 35*(3), 3–12.

Yin, R. K. (2006). Mixed methods research: Are the methods genuinely integrated or merely parallel. *Research in the Schools, 13*(1), 41–47.

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