

**Professional Identity and High-stakes Tests: What they tell us about
schools, teachers, and students**

By

Dorian Allan Barrow

School of Education

Faculty of Humanities and Education

The University of the West Indies

St. Augustine Campus

Trinidad and Tobago

ABSTRACT

The professional practice of teachers is shaped and directed by their sense of identity (Grootenboer & Ballantyne, 2010). All teachers have some conception of themselves as educators, but also have some identities which relate to the nature of the test accountability environment of the specific school context that they teach in. Here the author report on a qualitative multi-case study that explored the nexus of these identities with seven elementary school teachers who prepare students to sit a high-stakes examination. The Common Entrance Examination (CEE) is defined as a high-stakes examination administered to some students in the last year of primary education, governing admission to various types of secondary schools (De Lisle, 2008). The preliminary findings presented here suggest that when teaching a high-stakes examination class, teachers often select their test preparation strategies in ways that unconsciously reflect their professional identities, identity meaning “being recognized as a certain type of person in a given context” (Gee, 2001, p. 99). Three such strategies are supplementary tutoring, drill and practice, and reflexive pedagogical praxis. Beliefs teachers have about the fairness and the benefits of the high-stakes test, for example, appears to be related in complex ways to the modes of positioning their classroom test preparation strategies. It also appears that excellence in schools’ performance on the high-stakes test is associated with the level of alignment that the teacher has with the high-stakes test, with high levels of alignment being associated with high levels of reflexive praxis by the teacher and producing the best overall student test results. The study found that teacher identity-related-processes also provided insights into why some students’ underperform on standardize tests, especially in mathematics, and as to why students’ level of preparation on entering the sixth-grade is generally perceived to be inadequate.

Professional Identity and High-Stakes Test: What they tell us about schools, teachers and students

Introduction

High-stakes testing at the primary school level has been a part of the Anglophone Caribbean education landscape for more than fifty years (De Lisle, 2008). One outcome of the emphasis on high-stakes test is increased pressure on teachers to raise test scores (Gulek, 2003). Also, these pressures can lead to a distorting effect on teaching and learning if teachers cannot adopt their professional identities to adequately position high-stakes test preparations strategies in their classrooms (Rex & Nelson, 2004). Identity in this context mean “being recognized as a certain kind of [teacher] in a given context” (Gee, 2001, p. 99), that is, it refers to those committed relationships a teacher has between his/her beliefs and values, others expectations including school and parents, his/her future projections as a teacher, with his/her actions or behaviors in the classroom (Helm, 1998). Additionally, it refers to those powerful processes of negotiability, personal integration, modes of belonging and identification (Wenger, 1998) the individual teacher utilizes, in the context of schooling, in the construction of that ‘certain kind of person’. In a phrase, identity is the teacher’s professional habitus - a set of ideas he/she has developed through socialization in the field of schooling about how the world of educating a child works, what is to be valued in that world, what ones place in it is, and which actions are correct or proper ones (Bourdieu, 1993).

In the last two decades, teachers’ professional identity has emerged as a separate research area (e.g., Beijaard, Meijer, & Verloop, 2003; Bullough, 1997; Connelly & Clandinin, 1999; Helms, 1994; Husu, 2007; Knowles, 1992; Rex, & Nelson, 2004; Yamin-Ali, & Pooma, 2012). To explain what this concept means, several authors have drawn on the definition of identity used in the social sciences and philosophy, including those of Mead (1934) and Erikson (1968). Thus, while it is clear that teachers’ professional identity has emerged as a separate research area, it is equally clear that it is an area in which researchers conceptualize teachers’ professional identity differently, investigate various topics within the identity framework, and pursue a diversity of goals. Against this background, I felt the need to gain greater insight into this research area in the context of high-stakes testing learning environments, and through that, contribute to a better understanding of the purposes elementary schooling are currently serving in Belize – a small Anglophone Caribbean country in Central America -, the role or professional identities of

the teachers who operate these schools, and the impact this system of schooling is having on the growth and development of the students they serve.

This paper discusses the varied and complex ways grade-six teachers in Belize adapt their professional identities while preparing students for a high-stakes test, in terms of aligning with, or stymieing, pressures to raise test scores as an expressions of their own personal accountability (Rex & Nelson, 2004). It also suggests how looking at high-stakes testing through the lenses of teacher identity-related processes provides us some interesting insights into schooling, students and the educational research enterprise.

In carrying out this inquiry into how teachers utilized their identities to select their classroom preparation strategies when preparing students to sit the Common Entrance Examination (CEE), it was assumed that adequate and appropriate test preparation plays an important role in helping students demonstrate their knowledge and skills in high-stakes testing situations (Gulek, 2003). Norton and Park (1996) in their study, found a significant relationship between test preparation and academic performance. Chittooran and Miles (2000) also concluded that adequate test preparations significantly improves students attitude toward taking tests. And in a large scale study of test preparation, Miyasaka (2000) identified five types of test preparation practices that help students more fully demonstrate their knowledge and skills on high-stakes tests. These included teaching in the content domain of the area to be tested, using a variety of assessments and formats, teaching time management skills, fostering students' motivation and reducing test anxiety.

This qualitative multi-case study, aimed to explore and describe, the preparation practices teachers at four elementary school sites utilized when preparing students to sit the CEE, the role their identities played in positioning them in deciding on those preparation strategies, in order to better understand, from the teachers' perspective, why some schools performs better than others, and why the test affects some students negatively, a fact that is widely known. In an extreme case, in Jamaica in 1999, for example, one twelve year old student is said to have committed suicide after writing the CCC (Barnes, 2000).

The CEE is defined as a high-stakes examination administered to some students in the last year of primary education, governing admissions to various types of secondary schools (De Lisle, 2008). Because of this there is an intense competition among students to get into their first choice secondary schools (De Lisle, 2008) and because there is clearly defined relationship between test preparation and academic performance (Norton and Park, 1996), looking at the test preparation strategies teachers use to prepare students to sit the CEE was considered to be also important and worthy of study.

The study suggest that the purposefulness in the selection of test preparation strategies by those teachers who acquired agency and who stymied the external or internal pressures to raise test scores by focusing on improving on the quality of their teaching, took precedence over pressures from their peers, and other stake-holders. The teachers that responded in this way, came mostly from those schools in the sample that ranked higher on test performance. Whereas, students of those teachers who had challenges aligning their preparation strategies to accommodate the demands of the high-stakes test, did not fared as well in their performance. One of the implications of these preliminary results is that identity-related-processes (Esmonde, 2009) seem just as central in influencing teachers test preparation practices as those five strategies that helped students to more fully demonstrate their knowledge and skills on high-stakes tests that Miyasaka (2000) identified in his large scale study of test preparation practices. Another implication is the need for systemic education reforms on Belize's education sector if there is to come into existence the type of enabling educational environment that is to sustain a culture of praxis among teachers in elementary schools

In carrying out this project, both the data collection, and the case and variable analyses, were guided by the following four overarching research questions.

- What is the content and structure of the professional identities of teachers who prepare students to write high-stakes tests on a sustained basis?
- How do these identities develop over time?
- What is the role of high-stakes testing in shaping these identities? And
- How does a teacher's identity help to positioned high-stakes tests preparation strategies they select to use in their class-rooms?

This paper reports on data from the project generated in response to the last overarching research question (the identity/preparation strategies question). In operationalizing this overarching research question the following four sub-questions were generated:

1. Do you make any internal decisions at your school based on your CEE (PSE) results?
2. To what extent do you consider the PSE to be a 'fair' test?
3. What do you see are the benefits of the PSE high-stakes test? And
4. How prepared are the students to begin the final leg of preparation for the PSE when they enter your grade-six classroom and how does that affect how you position yourself as a teacher in preparing them for the test?

As a researcher my primary interest is in segueing how our systems of schooling functions at the micro-political level, because I have always felt like Donna Haraway (1996) that there is good reason to believe that vision is always better from below ‘the brilliant space platforms of the powerful’ (p. 255); and have always placed a premium on establishing the capacity to see schooling from the peripheries. This report is therefore an argument for the situated knowledge of practicing teachers and an argument against various forms of ‘unlocatable, and so irresponsible knowledge claims’ (p.255) made by some researchers in their name. I of course am also fully cognizant that there lies in this stance the serious danger of romanticizing and/or appropriating the visions of the less powerful while claiming to see from their positions. This notwithstanding, a subjugated standpoint is preferred because it seems to promise more adequate, sustained, objective, transforming accounts of the world of education.

This article is therefore written from the perspective of someone who has identified himself with the politics of education in Belize for over forty years suggesting that I bring an “optics that is a politics of positioning” (Haraway 1996, p. 257). Hence, the answers the participants provided to these four sub-questions forms the basis of this preliminary report, what Clark (2007) calls a ‘postcard’ from an extended project on high-stakes testing. My positioning of the subjugated is not exempt from critical re-examination, deconstruction, interpretation or any of the other modes of critical inquiry, nor is it an innocent positioning. On the contrary it is preferred because in principle it is least likely to allow the denial of the critical and interpretive core of all teacher knowledge.

Specifically, the project is a multi-country study of the impact the Common Entrance Examination on the education systems of countries in the Anglophone Caribbean, namely Trinidad and Tobago, Barbados, St Lucia, Jamaica and Belize. This report on how teachers in Belize position their classroom preparation strategies in response to pressures to raise test scores on the Common Entrance Examination (PSE), is structured as follows.

As a preliminary to a discussion of some of the findings of this study, I present briefs on the literature and the conceptual framework that guided the study. These include a brief overview of socio-cultural theory of learning and situated learning theory’s view of identity. I then argue for the importance of the identity-related processes in understanding how teachers position their classroom preparation strategies when preparing students to sit high-stakes test. I go on to review briefly what we know of teachers’ responses to high-stakes testing in the context of teacher professional identities, present the major findings and conclude with a set of open questions for further investigations.

Teacher Identity and the Micro-politics of Positioning: Content, structure and process

Socio-cultural and situated learning theorists' posits that learning to teach happens through any one of four facets. They contend that the principal form of learning happens through participation (Lave and Wenger, 1991; Rogoff, 2003; Wenger, 1998). It may also occur however in relation to social ecology (Bronfenbrenner, 1999; Erickson, 2004), through communication about the subject matter (Lerman, 2000; Vygotsky, 1978; 1986) and through a process of identity development (Martin, 2000; Walshaw, 2005; McAdams and Bowman, 2001; and Sfard and Prusak, 2005). The identity development conception allows one to use terms like learning, identity, identification, subject position and positioning, interchangeably (Gee, 2001).

Socio-cultural theory also posits that whether identity is conceptualized as a set of beliefs about oneself (Martin, 2005), as a subject-position in relation to other people within a practice (Lave and Wenger, 1991), or as a narrative told about oneself (Sfard and Prusak, 2005), one's identity changes within the context of practice as one becomes adept at the practice, that is, as a result of ones learning (Esmonde, 2009). Learning, or positioning, or identity development therefore happens all the time and in all contexts, through markers such as the language we speak, the way we dress, whom we interact with and how, and so on (Holland, Lachiotte, Skinner and Cain, 2001).

Though these constructs are different labels that essentially refer to the same idea, their connotation and usefulness may be different. For example, whereas identity may carry the connotation of an enduring, static and centralized self, positioning point to ways in which one does not have one identity, but rather inhabits or invokes multiple identities or identifications. These identities may shift in salience and in meaning as one move from one context to the next (Esmonde, 2009).

However, just because ones identity, identification or subject-position, are constructed in the moment, and are therefore not predictable, does not mean that individuals have perfect freedom to construct their identities or subject-positions any way they choose. Instead, practices are built around "a socially accepted association among ways of using language, of thinking, feeling, believing, valuing, and acting" (Gee, 2000, p. 103). Jenifer Helms (1998) captures this image of the content and structure (Kearney, 1984) of ones subject-position or identity in her visual model of identity shown below (Figure 1).

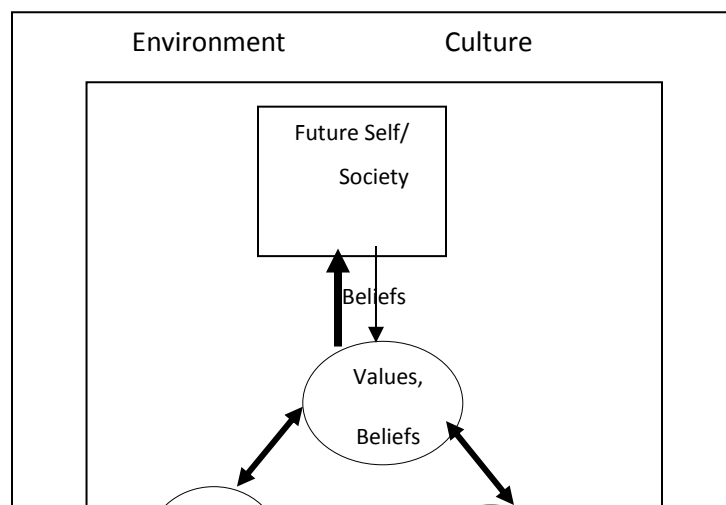


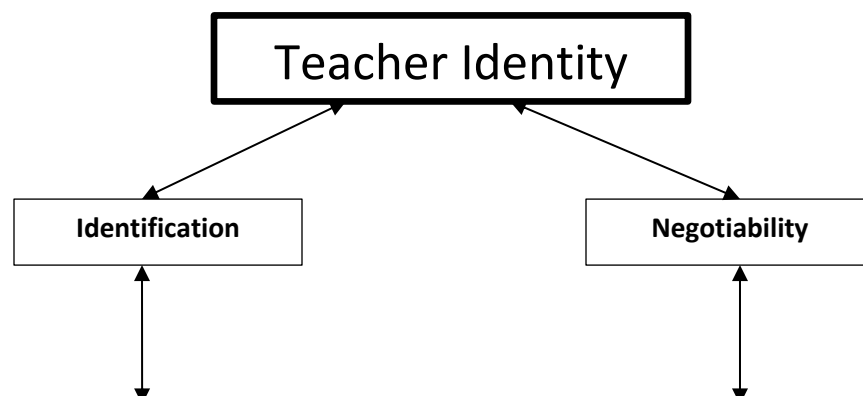
Figure 1 Model of Identity (Helms, 1998)



It is

Participation	Non- Participation	Forms of Belonging	Participation	Non- Participation
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important to note that the teacher's classroom learning is not so much about the individual's acquisition of bytes of knowledge in the traditional book-sense of knowing, but is learning how to behave appropriately, read the context of the lesson, use the right language, and how to be perceived as a good teacher (Salomon, 1998; Black, 2004). Adopting these modes of belonging or ways of being may be easier for some teachers than for others. For example, in schools where there is a high level of alignment to the pressures to raise test scores, a teacher whose view is to resist this pressure may find adopting to the valued discourse of the school difficult, but may still teach in ways which are consistent with the cultural expectations of the school. The processes through which these modes of belonging, forms of membership, and levels of meaning occur, are captured well in Wenger's model of identity formation shown below (Figure 2):



		Engagement		
		Imagination		
		Alignment		
Forms of Membership			Levels of Meaning	

Figure2:Wenger's Model of Identity Formation

Wenger's (1998) model complements Helms (1994) in that the focus of the latter is about the content and structure of one's identity, whereas the former describes the dynamics of the process of identity formation. A teacher's professional identity is sculptured by two key processes that Wenger (1998) called identification and negotiability. Identification is the process of the teacher becoming a member of the school community, the extent to which he or she participates (or does not participate) in the practices of the school and the form, or modes of belonging, that the participation takes, whether it is through direct engagement, alignment or imagination. For Wenger, participation in any one of its manifestations is 'energy in action', where the focus is on the connection between the learner and the activity and the patterns of behavior indicative of sense-making and answer-making. Indicators of participation are therefore behavioral, emotional and cognitive.

Negotiability, on the other hand, refers to process of acquiring power and influence (or not acquiring power and influence), in the school community. Negotiability, like identification, is also done through processes of direct engagement, imagination or alignment, and in this regard are held to the same standards. When what a teacher says in the school carries 'weight', for example, that teacher is said to have a higher form of membership in that school community than the teacher who hardly anybody listens to or bothers about how he or she feels about an issue. The latter is said to have a low economy of meaning in the school. These Wenger (1998) contends are the dynamics involved in teacher identity formation. These frameworks will be used to explain why some teachers position certain strategies over others when preparing students to write high-stakes tests.

Method, design and analysis

The study involved seven participants from four school sites. A typical case sampling technique was used to select the case sites whereby one typical primary school from the north, south,

east and west of the country were purposively selected. The four schools selected were then ranked on the basis of their overall performance on the PSE and labeled using their location and ranking as follows: E1 (school in the East has highest ranking); N2 (school in the north has second highest ranking), and so on (S3 and W4). In selecting the seven actors a convenient sampling technique was employed. Two actors were chosen from the schools in the north and south one from each being the teaching principal. The two actors from the school in the east were senior teachers and so was the sole teacher from the school in the western education district. All actors were grade-six teachers and are identified by their school location and ranking, for example, N2T was used to identify a teacher from the school in the Northern Education School District.

The design was a qualitative multi-case study (four cases) design. Each of the school sites constituted a case. The actors in each school context sampled were interviewed together and each interview was carried out on a separate day and ran for about two hours. Interviews were audio-taped and tapes transcribed. To commence the analysis a start list of thirty eight codes was generated mostly from the literature and the conceptual framework. Following coding of the transcribed texts, a series of matrices were developed beginning with the partially-ordered meta-matrix (Miles and Huberman, 2002). The first level of analysis used the matrices to generate themes. Variable and case themes were then compared and screened for redundancies. Finally, themes were clustered based on the domain or subject of the themes namely themes about the school, the teacher and the students. In this way the eight themes generated were clustered.

Case and variable data Analysis and Findings

This section presents the major findings of the study. It is organized around significant statements the teachers made in response to one of the four research sub-questions. The formulated meaning, or interpretation of the representational theme, was then generated from a category of similar or related significant statements. The representational themes, in part, reflect the interminable dialectic, or what Wenger (1998) calls the negotiability, occurring between the positioning of the grade-six teacher's identity and the demands of the high-stakes examination system, in the context of his/her local school culture. Twelve-case (within case) and fifteen-variable (across case) themes emerged from the analysis of the data. These twenty seven (27) themes were further reduced to eight – power, assessment literacy, reflexive praxis, drills, extra-lessons, unpreparedness, anxiety and alienation - by eliminating redundancies, and then finally bundled under three clusters namely issues about schools, teachers, and students.

The issues were not separate. Instead, the teachers from all four sites discussed them in quite an integrated manner, indicating the changes in their professional identities that they had to undergo as a result of their struggles between the forces of the culture of the school and the

high-stakes testing arenas (Bourdieu, 1993). The themes and clusters, together with the supporting texts from the interviews with actors from the four ranked case-sites (E1, N2, S3 & W4), are presented in the three tables below. A brief description of the analysis of the data excerpt follows each table containing the excerpt.

About Schools

Table 1

About Schools: An excerpt of the data analysis

Talk/text	Interpretations: :Representational themes
Q: Do you make internal decisions at your school based on the school's PSE results?	
W4T: "Yes I do use the results of the PSE to make decisions and have for years been trying to get administration to take a whole school approach with this but have not been successful to get them to buy in. For example, I always have a chat with them in administration on our weaknesses on the exam. I always tell them that the main weaknesses of our school are in the math and writing areas... with math I see that it's basically problem solving because of the same reason that students have challenges in the writing area: many of them can't read when they arrive at standard six!"	SCHOOL POWER: Levels of alignment with the high-stakes test and how the school responds to pressure to raise test scores are related in complex ways depending on the situated power of the grade-six teacher and the extent to which the school operates as a learning community.
Q: What do you see are the benefits of the PSE high-stakes test?	
E1T: "I don't think the PSE hold a lot of benefits. Frankly, no, because when the results are released I have never seen a parent or guardian who fully understands what the results say about our system of schooling beyond the top thirty (30) students who they see as representing the top thirty schools. They never seem to understand that that's a few or one student from a school and so the big picture of schooling in Belize is lost. The whole population of primary school students and our 300 plus primary schools are judged solely by the top 30 spaces on the PSE exam, which to me does not make sense."	SCHOOL ASSESSMENT LITERACY: High-stakes test results are used by the various 'publics' to classify schools as top or under-performing, based on limited or selective test-result data. This practice of rating schools is resisted by those school communities whose members' assessment literacy is high.

As the data examples in Table 1 show, in schools where the economy of meaning, or the institutional power of the grade-six teacher is low, both the levels of alignment of the school with the demands of the high-stakes test and the school's ranking on the exam, are low. Alignment here refers to the extent to which all the teachers in the school adjusts their

preparation strategies to meet the demands of the high-stakes test as judged by the students' performance on the test. In this case the grade-six teacher in the low performing W4-school, has been unable "to get administration to take a whole-school approach" in responding "to the main weaknesses of our school ... in the math and writing areas." This suggests that schools are action systems (Merton, 1967) in which the power to make changes to adapt to the external environment, and to set goals and allocate resources to achieve those goals, is concentrated in the hands of the administrators. Teachers, however, are not entirely powerless, since they can, through negotiation (Wenger, 1998), exert influence on administrators to act in certain specific ways that would bring the school in greater alignment with the demands of the high-stakes test. In this specific instance the degree to which they can influence their school administrators, or their situational power, is a function of their assessment literacy, that is, the extent to which they possess authentic knowledge of the purposes of large scale high-stakes assessment and its processes.

The manifest functions of high-stakes tests are to improve student learning and instructional programs and "to enhance public accountability, confidence and support in the services schools offer to students" (Gulek, 2003, p. 46). He goes on to suggest that teachers need to be assessment literate in order to respond to the demands of "the avalanche of high-stakes testing" (p. 49). Being assessment literate, he argues, broadens the teachers' prospective to view assessment as a dynamic process and utilize its outputs more effectively. The effective use of assessment results includes utilizing multiple modes of assessment and examining longitudinal data for educational decisions. The process involves taking snapshots over time and "constantly compiling a photo album about student learning and program effectiveness" (p. 49). The goal is to gather a variety of information to best inform their praxis rather than constrain their judgments to a single assessment.

The data examples in Table 1 suggest that the levels of assessment literacy of teachers in a school community with respect to high-stakes testing as defined by Gulek, and the school's ranking on the PSE examination, seem to be directly related. It is clear from the comments made by the teacher from the high performing E1-school that she has a broad perspective view of high-stakes assessment and can articulate that view quite persuasively:

When the results are released I have never seen a parent or guardian who fully understands what the results say about our system of schooling beyond the top thirty (30) students who they see as representing the top thirty schools. They never seem to understand that that's a few or one student from a school that may have entered 100 students and so the big picture of schooling in Belize is lost. (E1T).

The more assessment literate teachers the school has in its community of practice, the greater the potential pressure that could be brought to bear on the school administrators to bring the

whole school in greater alignment with the demands of the high-stakes test. In this way high-stakes test results can be used to bring about both the intended outcome of greater alignment with test demands and unintended consequence of changes in the school culture.

One of the potential dangers of this latent function (Merton, 1993) of a large scale high-stakes testing system is that such an assessment system can transform the cultural spaces of schools from places where meaningful student learning occurs to one of a place where there is a mad rush only for students to do well on these exams, sometimes at the expense of meaningful learning (Foodun, 1992). In this regard, the grade-six teachers function as gate-keepers in the sense that they can either embellish this type of cultural transformation that tends to make elementary schooling more dysfunctional as a result of the mad rush to get a few students among “the top thirty (30) performers”, or they can resist such tendencies by positioning their test preparation strategies in ways that enhances their reflexive pedagogic praxis (Rex & Nelson, 2004).

About Teachers

Table 2

About Teachers: An excerpt of the data analysis

Talk/Text	Interpretation:Representational Themes.
Q: Do you make internal decisions at your school based on your PSE results?	
E1T: “When we get back the results we analyze it immediately. I especially focused on the math results since that was one of our weakest subjects. I went to the master sheet since that would give you a break- down of where they went wrong on the problem solving paper and made notes of what I needed to do for next year in terms of different methods of teaching and how much more time I needed to spend on a topic”	TEACHERS REFLEXIVE PRAXIS: Teachers use the high-stakes test results to position how they prepare students by improving their praxis.
N2T: “Each year we review our PSE results and use that review to help us set our personal goals and plan for the next year’s cycle. First of all we want to remain at least as competitive as we were the previous year and to improve on that. The focus is on gradual sustainable improvement in students’ performance on the test. For us having one or two students pass in the top ten is not as important as having all our students improve on their test performance each year regardless of their disability. So we use the test results mainly to show us the weak areas that need more strengthening. I have my paper right here and it’s showing us that next year we need to work on problem solving more, again. Yes, problem solving, because our children did	TEACHERS REFLEXIVE PRAXIS: Teachers use the high-stakes test results to position how they prepare students by improving their praxis.

excellent in English.”	
S3T: “I am one of those teachers who believe that the real problem with problem solving is that in a lot of cases the student cannot comprehend from the written text what the problem is. So we did a whole lot of comprehension exercises with our Standard VI class. I had them write stories, read stories. I had them answer questions from stories. I did a whole lot of drills in extra-classes in the evenings, and on Saturdays, in order for them to come up with ideas. In addition, I brought in a math expert from the community to provide extra help to us in addressing this math problem.”	TEACHERS DRILL-AND-PRACTICE: Teachers use the high-stakes test results to position how they prepare students to take the test. The strategies some teachers frequently select are Extra-lessons and ‘drill and practice’.

As the data examples in Table 2 shows, improving praxis – “each year we review our PSE results and use [it] to help us set our personal goals and plan for the next year’s cycle” [N2T] - tends to be the preferred positioning strategy for test preparation by the teachers operating in the high and medium level performing schools (E1 & N2), whereas the teachers in the two underperforming schools (S3 & W4) seem to prefer the ‘drill-and-practice’ test preparation strategy – “I did a whole lot of drills in extra-classes in the evenings and on Saturdays, in order for them to come up with ideas” [S3T]. According to Freire (1987), praxis, or what Bourdieu (1967) has labeled habitus, is a form of practice or actions that are the outcome of the dialectical relationship between structure and agency. Structure in this context refers to the patterned interactions and persistent relationships between the teacher, the local school community and the high-stakes examination system; whereas agency is actions that are perpetuated by actors, in this case, teachers. It is important to note that when teachers function as agents, “whatever action that occurs would not have occurred in that way were it not for the fact that [the teacher] intervened and took the action in question” (Freire, 1987, p. 269). Praxis, or habitus, as a form of teacher positioning is therefore not objectively determined, nor is it the product of free will (Bourdieu, 1993).

Praxis can be thought of as a type of practice grounded in a set of ideas a teacher has developed through socialization in the field of schooling about how the world of educating children works, what is to be valued in that world, what one's place in that world is, and what didactic and pedagogical approaches are the correct or proper ones. In this context, praxis translates notions of agency and power into strategies useful for test preparation, while at the same time challenging the constraints and inequities of the high-stakes examination system:

... for us having one or two students pass in the top ten is not as important as having all our students improve on their test performance each year regardless of their disability [N2T].

In other words, praxis as a form of positioning, emphasizes the role of the individual teacher in understanding and creating, his/her own solutions to the problems the students face with the high-stakes test free from the mediation or definition of good practice by the school or other education agencies.

‘Drill and practice’, on the other hand, whereby students experience the same phenomenon repeatedly as in an algorithm, is a much more mechanical and disempowering form of action when utilized as a test preparation strategy. Doing “a whole lot of drills in extra-classes in the evenings and on Saturdays [S3T]”, seems a limited but non-transformative way to get students “to come up with [novel] ideas” to solve word problems in mathematics. Furthermore, this form of positioning seems to give priority to rote learning and to reinforce a type of action that does not have the potential to help students solve the type of contradictions they face in high-stakes testing, especially in mathematics, and may instead be contributing further to the alienation of students from the education system through their ‘learned helplessness’ (Sarason, 1983).

Additionally, current literature on problem solving suggests that students dependence on algorithms impedes as oppose to help their problem solving process, in that the student who rely heavily on using algorithms in most cases lack deep conceptual understanding (Lorenzo, 2005). Algorithmic approach to problem solving has been shown to limit their abilities to adopt and apply their previous knowledge to unfamiliar problems (Bodner, 2003). As far back as 1984, Frazer and Sleet had provided empirical evidence of this in their study on students’ abilities to solve science problems whose solutions required more than one step to solve. These researchers, and others since then for example Lorenzo (2005) and Gunderson (2011), determined that some students were able to successfully solve the sub-problems at individual stages but could not manage to solve the complete problem when it was presented to them as a whole. They ascribed this to the learners’ inability to plan a solution to the problem. Hence, drill-and-practice as a stand-alone strategy, will not “get students to come up with novel ideas” to solve word problems in mathematics, in the way S3T is endeavoring to do.

Furthermore, the way students employ their problem solving strategies may detract from their ability to solve complex problems. The two tools most commonly employed by students during problem solving are the algorithms we discussed above, and heuristics (Bodner, 1987; Frank, 1987; Gunderson, 2011). Algorithms as we pointed out are straight forward procedures that students select, almost automatically as a result of drills in their use, and apply to produce an answer. For example, in the context of the high-stakes PSE test, an algorithmic unit analysis may be used to solve multi-steps profit-and-loss problems. The use of algorithmic or drill-and-practice methods helps to provide learners with problem solving practice and gives them a repertoire of tools that can be used with heuristic type problem solving. Heuristic are general

procedures that may or may not lead students to a solution to the problem. When a learner is faced with a problem for which there is no apparent solution or adaptable algorithm, they are forced to develop and test a new model to arrive at a solution. In preparing students for the high-stakes test, instead of focusing on drills or algorithms only, teachers' foci should have been on increasing students' awareness to using heuristics in their problem solving process.

About Students

Table 3

About Students: An excerpt from the data analysis

Talk/text	Interpretation: Representational Themes
Q: How prepared are the students to begin the final leg of preparation for the PSE when they enter your grade-six classroom and how has that affected how you position yourself as a teacher in preparing them for the test?	
N2T: "Despite our efforts at 'holistic' education, because this is an inclusive education school where we do social promotion, the special needs children arrive at grade-six sometimes less prepared than the regular children and so we try to give them as much individual help as we can. To catch up, they have to participate in extra-lessons, and even though some of them complain of us pressuring them, they see that the preparation strategy has some advantages. Many of the schools in the Orange Walk education district are complaining about having to do extra-classes with their students in their grade-six classes, even though they have no special needs children. I would say that generally students are not as prepared as they should be when they begin grade-six and the general response to deal with this has been extra-lessons, outside of regular school time."	STUDENTS EXTRA-LESSONS FOR THE UNPREPARED: Students arrive at grade-six less prepared than they should be, even in inclusive schools, and have to do 'Extra-lessons' outside of regular school hours to catch up.
W4T: "For the first few weeks that you have them, you already know that you have to work hard on some of these things they should have learned before they got here, if you want to maintain at least your pass-rate levels of the past. So for me it is a lot more like pressuring them and stressing them out. Put my boot on their corns, so to speak. Some of them ask me "miss, why do we have to take the PSE? Why do we have to do all this meaningless work? ... I am tired." And every year I complain to administration that the main weaknesses of our school are in math and the writing areas. Yet it is only when students are in standard-five in the last term you see them writing a paragraph, writing a story and putting writing processes in place, when they should have been in place from standard one, or even infants."	STUDENTS ANXIOUS AND ALIENATED: Students arrived at grade-six not adequately prepared and are placed under much 'pressure' and 'stress' by the teacher to catch up. Many students are not in support of high-stakes testing in part because of the preparation strategies teacher employs.

As the data examples in Table 3 show, generally students are not as prepared as they should be when they begin grade-six. This unpreparedness also helps to determine what teaching strategies will be deployed in test preparation. The most common teaching strategy adopted is extra-lessons, that is, additional classes after school and on Saturdays, usually provided by the grade-six teacher “to help the students to catch up”. The extensive supplementary tutoring literature (Bray, 2009; Barrow and Lochan, 2011; 2012) does not cite this – inadequate preparation in pre-extra lessons classes – as one of the reasons why students access supplementary tutoring or the shadow education system (Stevenson and Baker, 1994) of a country. This may also account for why in the Anglophone Caribbean region the extra-lessons tutors are almost always the grade-six teacher, whereas at the secondary level the extra-lessons tutor is almost always some other teacher than the mainstream teacher. Furthermore, it may also help to explain why supplementary tutors do not, at this level, insist on collecting a fee for their services from those students who may not be able to afford it, since the act of providing this service is an expression of teachers’ own personal accountability in response to high-stakes testing (Rex & Nelson, 2004).

How the student respond to the pressures of an expanded school day in this effort to cover loss ground in their education experience, that is, their levels of anxiety and alienation, is in part related to how the teacher presents the option to the student. When students are involved meaningfully in the negotiation process they end up “[seeing] that the preparation strategy [extra-lessons] has some advantages [N2T]”. When they are not as involved in this negotiation process, as was the case at W4 where the teacher admitted that,

So for me, it’s a lot more like pressuring them and stressing them out. Put my boot on their corns, so to speak [W4T],

students become not only more anxious about spending more time at school doing school work, time which they would have normally spent enjoying their childhood, but also become more ambivalent about, and more alienated from, the high-stakes test itself:

Miss, why do we have to take the PSE? Why do we have to do all this meaningless work? ... I am tired. [W4T]

Positioning test preparation strategies can therefore generate some unintended consequences, in this case having the students questioned the very purposes of the test for which the strategy was selected to better prepare them for.

In summary, utilizing the identity-related process as our analytic lens, the data examples from the four cases brought light to three core dimensions of teacher knowledge (Beijaard, Meijer

&Verlop, 2003) that are engendered by a high-stakes testing learning environment. These includes knowledge about schools as action systems (i.e. schools as places where power can be acquired by teachers becoming (Wenger, 1998), for example by becoming more assessment literate); practical knowledge about agency (i.e. knowledge about themselves as actors or agents who can make a real difference in the lives of children by utilizing their acquired power and agency to position strategies that are more useful for high-stakes test preparation); and knowledge about how their actions can have a direct effect on their students' characteristics, that is, knowledge about the relationship between what a teacher does in his/her particular school with his/her particular students and the students' levels of anxiety, alienation and unpreparedness to sit the high-stakes test.

The seven teachers who participated in this study took stances in each of these dimensions as they responded to the overarching research question: how does teacher knowledge or identity helps to position the test preparation strategies they select to use in their classroom? By taking different stances teachers were more, or less, successful than others in responding to the need to better align the school's test preparation practices to the demands of the high-stakes tests. Students that came from those schools where teachers had acquired more agency and power, and were more assessment literate, tended to do better on the test since the preparation strategies they were exposed to were better aligned to the demands of the high-stakes test. What then are some of the implications these initial findings have for schooling, teachers, students and education research?

Implications of high-stakes testing for school communities, teachers identity and student growth

As JukkaHusu (2007) has pointed out, "Caution requires modesty in claiming what can be generalized from the case data. Nevertheless, even case examples can urge us to take into account the nature of teachers professional identities due to their comprehensive power they exert over instruction" (p. 57). As presented, the notion of identity can be used as an analytic lens for studying the practice of teaching and how that practice is shaped by the social milieu from which it emerges. The notion of identity as an intellectual tool has been around for a long time and we now know a lot about it and what it means in various social contexts. First introduced by D. J. Mead in 1934 in his classic symbolic interactionist work on mind, self and society, the notion of identity was given further impetus in the work of psychologist Erikson in the 1960s. Erikson's (1968) work focused on identity in social context and on the stages people go through owing to biological and psychological maturation, whereas Mead had used the concept of identity in relationship to the concept of self, whereby he described in detail how the self had developed through transactions with the environment.

In the last two decades, teachers' professional identity has emerged as a separate research area. To explain what this concept means, several authors have drawn on the definition of identity used in the social sciences and philosophy, including those of Mead (1934) and Erikson (1968). Thus, while it is clear that teachers' professional identity has emerged as a separate research area, it is equally clear that it is an area in which researchers conceptualize professional identity differently, investigate various topics within the framework of teachers' professional identity, and pursue a diversity of goals.

Against this background, I felt the need to gain greater insight into this research area in the context of high-stakes testing learning environments, and through that, contribute to a better understanding of the purposes elementary schooling are currently serving in Belize, the role or professional identities of the teachers who operate them, and the impact that system of schooling is having on the growth and development of the students these schools serve. Based on this study the following features emerged.

First, Teachers' professional identity is an ongoing process of interpretation and re-interpretation of their experiences with preparing students to sit the high-stakes test. This notion corresponds with the idea proposed by Kerby (1991) and Day (1999), that teacher development never stops and can be best seen as a process of lifelong learning. From a professional development perspective, therefore, teacher identity formation is not only an answer to the question "what kind of a teacher I am?" that Husu (2007) posed in his study, but also an answer to the question: "what kind of a teacher do I want to become?", which is inline with what Helms (1998) called "future orientation" (see figure 1: a model of the structure and content of teacher professional identity). An implication of this is that an extensive amount of professional development is needed for teachers. This includes a significant intervention of knowledge development in assessment that would make these teachers more assessment literate. Also, professional development must include extensive practice in the use of reflexive pedagogical praxis as a source of personal knowledge development about teaching and learning.

Second, teacher professional identity implies both person and context. These teachers' professional identity is not entirely unique as they are all affected by the high-stakes test environment in which they are currently operating. Although all these teachers are expected to assume certain professional roles and are expected to think and behave professionally, to practice their craft effectively they cannot do so simply by adopting those traditional teacher characteristics, including those knowledge and attitudes that are prescribed. Agency has therefore become an important element of some of these teachers' professional identity, meaning that some of them have chosen to become active in the process of the academic

development of their students and of their own professional development (Caldron & Smith, 1999), whereas others have not, as this teacher who has acquired some level of agency shows:

Despite our efforts at 'holistic' education, because this is an inclusive education school where we do social promotion, the special needs children arrive at grade-six less prepared than the regular children and so we try to give them as much individual help as we can. To catch up they have to participate in extra-lessons, and even though some of them complain of us pressuring them, they [eventually] see that the preparation strategy has some advantages. ... [Our] focus is on gradual sustainable improvement in students' performance on the test. For us having one or two students pass in the top ten is not as important as having all our students improve on their test performance each year. [N2T].

Also, teachers have to develop competencies in argumentation – “[I] have for years been trying to get administration to take a whole school approach to [the weaknesses of our school on the exam] but have been unable to get them to buy in” [W4T] - as it is through the process of negotiability (Wenger, 1998) that they will be able to utilize the power of their newly acquired knowledge to influence the school's culture in directions that they think will ultimately benefit students.

Third, more of our primary school teachers in Belize must shift their beliefs systems from what they are currently, which is one that is primarily didactic in nature – “I did a whole lot of drills in extra-classes in the evenings in order for them to come up with [novel] ideas” [S3T] -, to one that has a foundation in constructivism. As already Nespor (1987) and Pujares (1994) had emphasized, understanding teacher beliefs is fundamental to improving teaching practices. If teachers have beliefs that are constraining their practice, efforts must be made to get them to deconstruct such beliefs with the aim of replacing them with more appropriate ones, despite the many challenges of doing so.

One of the strengths of Identity-based research is that it has been spawning this educational philosophy of constructivism. Constructivism “refers to engaging students in constructing their own knowledge” (Loepp, 1999, p.2). Rather than asking students to follow steps of procedure algorithmically through drill-and-practice, “students [should be allowed to] work together to discover knowledge, applying their knowledge as they solve real world problems” (p. 5). That is, teachers have to begin to adapt the view that learning – individually as well as in collaboration – takes place through the activity of the learner in solving real world problems and not through this over-emphasis on algorithms alone. This is not to say algorithms has no place in the preparation of students to sit the high-stakes test, but its optimal usefulness is when it is used as part of the larger heuristics teaching strategy. As the literature on how to

best teach problem solving strongly indicates, students' dependence on algorithms alone impedes their problem solving process (Lorenzo, 2005).

Fourth, effective high-stakes test preparation requires that more of these teachers become members of learning communities. At one level this means working with their peers to improve students' preparation levels. At another level, more of our teachers must begin to work meaningfully with their students especially in developing heuristics for solving those mathematics problems that have multiple answers or multiple ways to arrive at a solution. This is important since when students arrive at grade-six teachers found them to be "not as prepared as they should be" [N2T], which implies that teachers' of students below grade-six "are not doing what they should be doing" [E1T]. Situated learning theorists such as Lave (1991) and Wenger (1998) and identity based researchers Britzman (1991), Coldron & Smith (1999), Gee (2001), Goodson & Cole (1994), and others, have been clamoring for schools to adapt the vocational metaphor of schools as learning communities wherein teachers would function at the two levels identified above as a "habit of mind or habitus" (Bourdieu, 1993). This study suggests that most primary schools in Belize have not yet fully transitioned to this model of schools as learning communities.

Fifth, this study suggests that some of the teachers did not have a deep understanding of the purposes and processes of high-stakes testing as a form of accountability to the nation. Many simply view the high-stake test taken by students at the end of primary schooling as a rite of passage, that is, as a ceremony or event marking an important stage in a child's educational life. More of our teachers in Belize simply have to become more assessment literate, that is, they need to broaden their perspective to view assessment as a dynamic process and utilize its output more effectively. Also, they need to learn to use authentic assessment strategies, such as portfolios, performance exams, and especially analytic rubrics (Bodner, 2003) to document student progress as they are being prepared to write the high-stakes test.

Finally, administrators and boards of primary schools in Belize, as well as local communities and parents, needs to be oriented to these constructs including assessment literacy, constructivism, school culture, cultural change and teacher agency, so the necessary resources and ongoing support can be provided to our teachers and schools. A public information strategy need to be implemented in order to inform these stake-holders of some of the unanticipated consequences of high-stakes testing and how these are affecting their children, including test anxiety, learned helplessness and in some cases even alienation. This is especially important, since in Belize the current expectation is for education to be provided as it has always been, and unless the public is informed of the changes that need to be made to meet with the challenges the country's high-stakes testing system is posing for teachers and students, there is likely to be resistance to any suggested changes that would ultimately improve the system.

Conclusion

Creating the type of enabling educational environment described here requires systemic reform, if that enabling environment is to ensure that high-stakes tests are fair, are seen as fair to teachers and students. Also, if the national testing system as Belize has is to achieve its manifest functions of improved student learning, enhance public accountability, restore confidence and support in the services our schools offer students, systemic education reform is critical. Such reform include changes in the way teachers are prepared, certified and assessed; how schools are resourced; how administrators, parents and community are oriented; and how students are supported.

Given the implications listed above the prospects of the creation of such an enabling education environment on a nationwide basis in Belize, is bleak. This is likely to be case for other educational jurisdictions where the experience with a national system of high-stakes testing is the same or similar to that of Belize, as appears to be the case in many Anglophone Caribbean countries. On the other hand, research in the area of teachers' professional identity suggests in some schools some form of adaptation (Merton, 1967) is constantly occurring by a few teachers whose professional identity's content and structure include a habitus of praxis (Freire, 1987), that is, teachers who have cultivated a professional sense of agency and have translated their situational or local power into strategies useful for high-stakes test preparation, while at the same time, challenging the constraints and inequities of the current high-stakes examination system, doing so primarily as an expression of their own sense of personal accountability (Rex & Nelson, 2004). Furthermore, it is only through small scale, in depth, identity-related research that we will continue to receive "postcards" (Clark, 2007, p.242) like this report that attempts to document the life and work of this extra-ordinary group of teachers.

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