

## **EDUCATORS' EVALUATION OF THE QUALITY OF THE LITERATE ENVIRONMENT IN CARIBBEAN CLASSROOMS**

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This study examines ratings of the quality of the classroom literacy environment by 47 graduate-level literacy teaching candidates (primarily classroom teachers enrolled in a master's programme) to determine the extent to which the teachers viewed the classrooms as literacy rich, and whether a link existed between the financial resources available to a country, as well as its human well-being rating, and such evaluations. Using the Classroom Literacy Environment Profile (Wolfersberger, Reutzel, Sudweeks, & Fawson, 2004), candidates provided quantitative evaluations of an observed environment. Means tests involving two One-Way ANOVAs were used to determine the extent to which candidates differed in their ratings based on the Economic Status (ES) of the country in which they worked, and based on the Human Development Index (HDI) of the said countries. Regression analysis was used to determine the influence of several variables combined: classroom level, school type, school locale, HDI, and ES, on teacher ratings. Qualitative comments by candidates were used to clarify findings from their quantitative ratings. The results are explored in light of how teachers can be assisted in navigating the difference between what the literature says works and the specific classroom situations they face.

### **Introduction**

A critical variable in student literacy learning and overall academic success is undoubtedly the quality of the literate environment in schools and classrooms (Hoffman, Sailors, Duffy, & Beretvas, 2004; Morrow, 2010; Mullis, Martin, Foy, & Drucker, 2012; Neuman, & Roskos, 1992; Nielson & Monson, 1996; Reutzel & Jones, 2010; Reutzel & Wolfersberger, 1996). In fact, a hallmark of effective schools is the extent to which a “culture of literacy” permeates a school context and the degree to which literacy is perceived as the foundation of the curriculum and the basis of all learning (McAnuff-Gumbs & Verbeck, 2012). Several studies cite the critical role of classroom set-up and the

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instructional events surrounding that set-up in fostering student literacy success (Krolak, 2005; Neuman & Roskos, 1992; Reutzel & Wolfersberger, 1996). However, for many Caribbean teachers, severe challenges exist in matching what the research demands with what their situation provides (World Bank, 2009). The current study presents the results of teacher ratings of the quality of the literate environment in the schools in which they served, after they had been exposed to the literature on exemplary classroom environments. It seeks to determine the extent to which the candidates rated the classrooms observed as literacy rich, and whether such ratings varied according to the economic status and human development index (HDI) of the specific countries in which the teachers worked. Possible intervening variables such as school type (public or private); school locale (urban or rural); and classroom level (emergent or later literacy) are also explored. Additionally, comments the candidates had made in a previous course regarding environmental quality are used to clarify findings from quantitative exploration of their responses; the aim being to determine, on a qualitative level, whether teachers' comments, made during discussion in their best practice course, matched with and supported their ratings, or whether training they had undergone as well as other encounters in the interim might have resulted in changes to their perspectives.

### **Background and Significance**

There have been some concerns with regard to the level of satisfaction teachers in the region have expressed regarding the quality of the classroom environment in which they must teach children to be literate (McAnuff-Gumbs, 2011). It is important to explore this concern, especially since research has established a link between teacher attrition and work conditions (Mullis, Martin, Foy, et al., 2012, p. 149). Concerns have been expressed in both high-income developed and middle-income developing countries across the Anglophone Caribbean (McAnuff-Gumbs, 2011; Schiefelbein & Schiefelbein, 2013). While some studies have focused on the comfort level of the indoor space (Pin & Sande, 2012), the majority have focused on the social and interactional climate (Blackman, 2010; Schiefelbein & Schiefelbein, 2013; Thompson, 2009). A few studies (Warrican, Down, & Spencer-Ernandez, 2008, for example) have raised concerns regarding the link among teaching orientation, organization of space, and the structuring of learning. The implications of a poorly provisioned classroom and, on another level, poorly utilized resources when available, are well known, especially where literacy achievement is concerned (Neuman & Roskos, 1992;

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Mullis, Martin, Foy, et al., 2012; Reutzel & Wolfersberger, 1996). Despite expressed concerns by Caribbean literacy educators regarding the quality of learning provisions in typical Caribbean classrooms, Francis and Iyare (2006) maintain that “public attempts” at furthering human development in Caribbean economies “have been decisively in favor of subsidizing education” and that policy makers have continually made education “a public spending priority” (p. 1). This claim regarding public investment is affirmed by the Human Development Department of the World Bank (World Bank, 2009) which maintains that “most countries [in the Anglophone Caribbean] have made significant public investment in education over the last decades, averaging 4–5% of GDP” (p. viii). Francis and Iyare, in a study of the link between education and human development, maintain that the “vast majority of the Caribbean countries have benefited from investments in education” and that such investments have had substantial payoffs in their HDI ranking (p. 1).

Human development index (HDI) is an alternative measure of national development that looks beyond the economic status of a country to focus on education and general well-being (UNDP, 2011). The Honourable Dr. Kenneth Baugh, Deputy Prime Minister and Minister of Foreign Affairs and Foreign Trade in Jamaica, refers to HDI as “a comparative measure of life expectancy, literacy, education and standards of living for countries worldwide” and as a “standard means of measuring well-being, especially child welfare” (“Caribbean Ranks High,” 2011). According to Baugh, the measure distinguishes “whether a country is developed, developing or underdeveloped, and also measures the impact of economic policies on quality of life,” with the focus being on quality of life (“Caribbean Ranks High,” 2011).

Francis and Iyare (2006) cite various benefits that have accrued as a result of government investment in education. Payoffs cited by the researchers include higher public school enrolments and improved literacy rates (p. 2)—factors considered crucial in calculating the HDI. Francis and Iyare, in their study of the link between development status and expenditure on education in the Caribbean, found a bi-directional link between the two in Jamaica in the short term (suggesting that educational expenditure in this country is highly influential on HDI status, and vice versa). However, the researchers found no apparent causal link in any direction between development and educational investment in either Trinidad and Tobago or Barbados, countries that enjoy a more favourable economic status. Is it that the link between investment in education and development is more apparent in countries with lower levels of income? The International Association for the Evaluation of Educational Achievement (IEA) (Mullis, Martin, Foy, et

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al., 2012, citing Lee & Zuze, 2011) gives us cause to wonder, maintaining that links between economic and human development are often “more [apparent] in developing countries than in economically developed countries, where adequate school structures and material resources can be taken for granted” (p. 147).

Given what seems to be a mismatch between concerns regarding the quality of the literate environment and claims in the literature regarding outcomes of consistent investment in education, a study that compares ratings of the quality of the classroom literate environment across countries of different economic status (as reflected in World Bank and the Development Assessment Committee (DAC) classifications) and HDI (based on 2011 rankings by the United Nations Development Programme (UNDP)) can expose much in terms of whether investments are demonstrating payoffs in environmental quality as teachers see it.

Another aspect of the study that adds to its significance rests with the fact that a matching of teacher qualitative evaluations to their later objective quantitative ratings, albeit after they were exposed to training in materials and resource design, can provide even a loose indication of whether any satisfaction or dissatisfaction expressed has been moderated by subsequent training.

An exploration such as the one undertaken in this study can also yield valuable insight into the specific focus of any possible dissatisfaction by teachers, and may point the way towards suitable remedies, including adjustments in teacher education, should such claimed dissatisfaction be deemed warranted. Findings can assist policy makers in understanding aspects of environmental support in need of remediation—whether through provisioning of materials and resources, through optimizing utilization of available resources, or both—and what role the government can further play in supporting the creation of a quality literacy environment in which teachers can conduct their practice with confidence, and in which students can access the necessary stimulation and support to progress in their literacy development.

### **Research Questions and Hypotheses**

The research seeks to answer the following questions:

1. *To what extent do participants rate the observed classroom literacy environment as literacy rich? How do they rate the quality of **literacy provisions**? How do they rate the quality of **use of provisions**?*
2. *Do the candidates' ratings differ based on the **economic status (ES)** and **human development index (HDI)** of their country?*

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3. *To what extent do the qualitative comments of participants from countries of different ES and HDI rankings mirror their quantitative ratings?*
4. *What extent of influence do economic status and human development index, when considered along with **classroom level**, **school locale**, and **school type**, have on the ratings of candidates?*

With respect to research questions 2 and 4, which will be addressed using inferential statistics, the researchers present the following null hypotheses:

1. Ratings do not differ based on economic status of the candidates' country.
2. Ratings do not differ based on the human development index of the candidates' country.
3. Economic status and human development index, when considered along with **classroom level**, **school locale** and **school type**, do not significantly impact the ratings of candidates.

### **Review of the Literature**

The quality of the literate environment in schools is related as much to the expertise of educators in designing, provisioning, and utilizing the space as it is to the socio-historical, socio-political, and economic climate outside classroom walls. In their model of literacy leadership, McAnuff-Gumbs and Verbeck (2012) refer to both the external and the internal environment of a school as being highly influential on the quality of literacy provisions and outcomes. In this section, we examine the role of a variety of factors (teacher expertise, economic status and human well-being rating of a country, school locale, school type, and classroom level) in predicting teacher ratings of the literacy richness of classrooms in general, and of Caribbean classrooms in particular. Since our focus is on environmental quality in literacy classrooms, we begin with a discussion of research-based dimensions of a literacy-rich environment. We then gradually transition into a discussion of variables that impact the extent to which research-based criteria for each dimension can be met within the Caribbean context.

#### **Context, Interaction, and Instruction**

Definitions of literacy processes often make reference to the interaction among reader, text, and context in meaning creation processes. Unfortunately, instructional provisions often privilege reader and text,

with little attention being dedicated to the context in which instruction occurs. This is a serious omission. Sommer (1977) refers to the non-verbal messages sent by arrangement of classroom spaces, by the types of interaction that are encouraged in those spaces, and by the differing instructional provisions afforded different groups of students in literacy classrooms. Sommer, bemoaning what the writer sees as a lack of design education in teacher training, maintains that although teachers often discount the relevance of the setting of instruction, the “physical and social context of classroom is related to relationship between students and teachers” (p. 175). Sommer indicates, for example, that use of chairs bolted down in a row promotes a ‘sit-and-git’ type of teaching where two-way interaction between teacher and students is restricted, and where interaction among students is almost non-existent. See Warrican et al. (2008) on the widespread use of this organizational pattern in the Caribbean. Sommer indicates that cluster tables with movable chairs communicate messages that group tasks and interaction will happen at some time, while two-person tables, often used with struggling readers, suggest a one-teach-one interaction. While there is no ideal arrangement, researchers recommend teachers experiment with different arrangements to see what works for their setting (Sommer, 1977). Teachers can mix arrangements in a single event or blend across events. This does not have to create confusion in the classroom since research indicates that rearrangement in most situations takes less than 60 seconds. What is important is that the arrangement is attractive, pleasant, and functional.

It was Jean-Jacques Rousseau (circa 1700) who initially referred to the environment as the third teacher, proposing that educators should provide a stimulating and inviting environment in which students’ literacy development can naturally unfold as they explore their curiosity and interest in an enabling environment. That idea was the foundation of work on the value of the classroom literacy environment by later researchers and philosophers (See McKenna, Walpole, & Conradi, 2010; Morrow, Tracey, & Del Nero, 2011; Smith, 2005.). Rousseau’s idea regarding the need for a stimulating environment to prompt and foster learning was later integral to the progressive movement (1890s to 1920s), to the constructivist philosophy, and to theories related to that school of thought, particularly inquiry learning (Dewey, 1929) and engagement theory (Guthrie & Wigfield, 2000). But what is it about the literacy environment that truly allows children to flourish in their literacy development?

### **Dimensions of the Literate Environment**

Reutzel and Wolfersberger (1996, citing Durkin, 1966, and Teale, 1978, 1980) maintain that “children's literacy learning is affected by the presence or absence of literacy tools” (p. 267). The Reutzel and Wolfersberger conceptual model for designing classroom literacy environment goes beyond the mere presence of tools and focuses on four key dimensions built on the notion that children's literacy learning is affected, not only “by the arrangement of space and the placement of literacy tools within the arranged space,” but also by the quality of “social interaction [the teacher fosters] using literacy tools” (p. 269).

The first dimension of their model—provisioning—involves creating a physical setting featuring a variety of tools and resources that foreground authenticity in literacy learning—a setting in which both tools and tasks have real-world application, and are concrete and personalized, yet still work to support the curriculum and learning. The second dimension—arranging—covers organizing the tools into clearly demarcated areas (preferably small spaces) in ways that make the resources attractive and accessible, and so their use is clear to learners. This dimension also addresses regularly refreshing tools to maintain the level to which they are inviting and sparking curiosity and interest, and so they match progression of the curriculum. A third dimension—gaining—surrounds prompting student use of and interaction with the space and tools. This might involve using props that are appropriate, authentic, and connected to the curriculum (aquariums, plants, classroom pets, and so on); and which prompt students to interact with and use them in learning. The fourth dimension—sustaining—addresses fostering ownership and continued involvement with the space and tools, as well as creation of a sense of community surrounding use of the tools and space. Students see their products on display and featured with even greater prominence than commercially published or teacher-created resources, and are prompted to work with peers and the teacher to create even more exemplary pieces for display. The teacher is sensitive to the role of the props, resources, and displays, and is able to use them in teaching demonstrations and to foster engagement. The word *tools* in the Reutzel and Wolfersberger (1996) model refers to textual materials, general and technological resources, as well as other provisions such as blocks, play dough, and other manipulatives that support literacy learning.

The Classroom Literacy Environmental Profile (Wolfersberger, Reutzel, Sudweeks, & Fawson, 2004) was developed based on the four dimensions discussed above. In the final iteration of the CLEP tool,

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Subscale 1 addresses provisioning the classroom with appropriate tools, while Subscale 2 addresses arrangement of tools and spaces, as well as gaining students' interest in literacy events and sustaining their level of engagement with the tools (p. 271). See Table 1 for a breakdown of these dimensions into the 33 items on the scale, and for a description of what is actually addressed by the 19 items on Subscale 1 and the 15 items on Subscale 2. All items correspond to recommendations made in the research regarding ways to optimize the environment in the literacy classroom.

### **Research Consensus on Dimensions of the Literate Environment**

Other researchers have presented the dimensions of the environment in ways that connect with those identified and explored by Reutzel and Wolfersberger (1996). Smith, Dickinson, and Sangeorge (2008), who were instrumental in devising the Early Language and Literacy Classroom Observational (ELLCO) tool—one that reports a high level of reliability—present dimensions of literacy that include the functional and interactional, as well as language, literacy, and broad support resources. That tool was not used in this study since its focus is only on emergent literacy environments. The TEX-IN3 is also based on an understanding that the physical environment and tools within it, the practices surrounding the use of space and tools, as well as the understanding and valuing of tools, are crucial. All three instruments indicate that consideration of the physical environment naturally flows into consideration of how such arrangement and provisions affect interaction, interest, and engagement and, ultimately, literacy achievement.

The International Reading Association (IRA) (2010) has added classroom climate as one of its core standards for the training of literacy professionals in exemplary practices. IRA and the National Council for the Accreditation of Teacher Education (IRA, 2010) refer to the environment in which literacy instruction and learning occurs (the literate environment) as comprising three core components: (1) *the physical*, which comprises use of space and classroom layout, texts of both a print and non-print nature, and technological resources as well as other materials and supplies; (2) *the socio-emotional*, which comprises interaction and communication; and (3) *the intellectual*, which refers to instructional provisions—scaffolding, differentiation, and grouping—designed to increase achievement and motivation to engage in literacy processes.

Being able to describe the requirements is excellent. However, being able to meet those requirements in the classroom is far from simple. We

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now discuss research exploration of forces within a teacher's context, including the teacher, which can impact the extent to which a classroom rates as literacy rich on the different dimensions. Factors explored include economic differences across context; differences in attention to human well-being; as well as classroom level, school locale, and school ownership.

#### **Factors Impacting the Richness of Provisions in Caribbean Classrooms**

The PIRLS 2006 study (Mullis, Martin, Kennedy, & Foy, 2007) provides a research-based rationale for exploring the role of several variables in determining the quality of educational provisions. Although the focus has not always been on literacy, several studies have explored the role of level of schooling, geographic locale, and school type in determining school condition in general, with a strong influence being cited for these variables. (See Lambert et al., 2001; Mullis, Martin, Foy, et al., 2012; Mullis, Martin, Kennedy, et al., 2007; UNESCO, 2008.)

In their review of literacy provisions and outcomes in Trinidad and Tobago (the only Anglophone Caribbean country that took part in the study at the time), Mullis, Martin, Kennedy, et al. (2007) noted that socio-economic factors were critical in explaining why some students from that country performed at the higher end of the spectrum in the 2006 PIRLS assessment while other students were situated at the lower end, thus resulting in mixed outcomes. The report maintains that the learning environment which a school provides "is a crucial factor in supporting reading achievement and [in] establishing a positive orientation toward reading," noting unequivocally that, internationally, "literacy resources are dependent to a large extent on economic considerations" (p. 122). The study affirms the role of urbanity, security, and discipline, as well as level of affluence, in conditioning the quality of resources and, ultimately, student literacy achievement. Noteworthy is the fact that the 2011 PIRLS study (Mullis, Martin, Foy, et al., 2012) later affirmed the interactive role of economics and geographical locale on quality of school conditions and school outcomes internationally as well as in the Caribbean. According to the 2011 Progress in International Reading Literacy Study (PIRLS) (Mullis, Martin, Foy, et al., 2012), "the most successful schools are likely to have more socioeconomically advantaged students and better resources," maintaining also that depending on the country, the location of the school (urbanity) can provide ready access to important additional resources (e.g., libraries, media centres, or museums); or, conversely, can mean that the school is

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relatively isolated (Mullis, Martin, Foy, et al., 2012, p. 136). Thus, in our exploration of the literate environment, we acknowledge the role of the material conditions and the school locale in which instruction occurs, and factor the role of economic status and HDI in influencing teacher rating of environmental quality.

**Economic differences, human well-being, and the physical environment in Caribbean classrooms.** Among the challenges in the Caribbean are the vast variations and extremes in availability of resources—the gap between rich and poor countries and between wealthy and less privileged schools. Typically, the wealthy schools are privately owned while the less affluent ones are owned by the government. Scheerens (2001) argues that in some developing countries, the availability or lack of resources is significant more than 70% of the times. Fuller and Clark (1994) contend, additionally, that the availability of resources is a significant factor in determining student success in developing nations. While instructional strategies and the sociocultural environment external to schools (community values and resources, for instance) were also flagged as important factors in that study, material conditions were found to be significant. The same conclusion was arrived at by Glewwe, Grosh, Jacoby, and Lockheed (1995), whose research focused on material conditions in Jamaican schools.

Are teachers' ratings sensitive to such differences in material resources? The World Bank's Development Assistance Committee (DAC) and the UNDP provide indices that can help us understand the influence of economic and material conditions on teacher ratings. The World Bank/DAC (2013) notes that in categorizing countries into the "analytical economic categories" or income groups, its main consideration is Gross National Income (GNI) per capita. Nations Online (2011) defines *GNI* as the average income of an economy generated by its production and its ownership of factors of production, minus the incomes paid for the use of factors of production owned by the rest of the world, then converted into international dollars using purchasing power parity (PPP) rates, divided by midyear population. Income categories include *low-income* (GNI of \$1,025 or less), into which no country in this study falls; *lower middle income* (GNI of between \$1,026 and \$4,035), again into which no country fell at the time of the study; *upper middle income* (GNI of \$4,035 to \$12,475), a wide band into which six of the countries fell; and *high income* (GNI of \$12,476 and above), into which three countries fell. Other variables in determining economic status include educational expenditure or expenditure per student for public education, debt level, expenditure on the environment and social

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improvement, poverty level, literacy rate, ratio of trained teachers to students, as well as external resources available to support education. Still, GNI is the main consideration, and the focus is on macroeconomics (overall aspects and workings of a country's national economy).

Initially conceived by Mahbub ul Haq in the 1970s, the HDI attends less to country national income and more to access to knowledge, good health, and decent material conditions—variables deemed essential to a fulfilling life. The index, as initially conceptualized, includes the “ability to participate in decisions affecting one’s life, to have control over one’s living environment, to enjoy freedom from violence, to have societal respect, and to relax and have fun” (Measure of America, 2013). It pays attention to “institutions and conditions of society”; to whether people have “the tools needed to make their visions a reality,” to chart their own course and to seize opportunities (Measure of America, 2013). Variables considered in calculating HDI include educational attainment and school enrolment, both used to measure *access to knowledge*; median earning, used to measure *standard of living*, and life expectancy at birth, used to measure *long life and good health*. Other lenses used to examine human development include geography, gender, and race/ethnicity. It seems then that HDI would consider some of the intervening variables examined in this study, including school locale. HDI is really about improving life chances, and Williams (2009) links provision of an enabling classroom environment to improvements in the life chances of Caribbean children (p. 16).

Unlike economic status (ES), HDI appears to take a microeconomic perspective (represented by a focus on factors that affect the decisions made by organizations and individuals). It looks at standard of living and quality of life afforded the people within a specific country. One should note that it is possible for a country with relatively low economic status to have a relatively higher HDI index, as is the case with St. Lucia. It is also possible for a country with a high economic status to have a comparatively lower HDI. This might be true if a country, as in the case of India, does not attend to material conditions afforded people within the country. It seems also that HDI would be more sensitive to the quality of environments in classrooms in a country. This is because HDI is a quality of life and opportunity measure that places primary emphasis on human well-being, including knowledge and education (education up to the tertiary level, and gross enrolment rate, with the former carrying twice the weight of the latter); standard of living (including care of the environment and protection of civil rights); and longevity (life expectancy at birth). Sant’Anna, de Araujo Ribeiro, and Dutt-Ross (2011) maintain that the main purpose of deriving HDI is to call attention

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to dimensions “that may not be correctly appraised in the ranking of countries by traditional Production and Income indices” (p. 524). The alternative concept of *human development*, according to Measure of America (2013), refers to “the process of enlarging people’s freedom and opportunities and improving their well-being.” The term carries an underlying message that development really involves more than economic growth, and that economic growth is not necessarily the best yardstick for measuring people’s quality of life (Klugman, Rodriguez, & Choi, 2011). ul Haq (as cited in Klugman et al., 2011), in rejecting economic status as a measure of quality of life, maintains that any “measure that values a gun several hundred times more than a bottle of milk is bound to raise questions about its relevance for human progress” (p. 1). The writers affirm HDI as the more potent measure for evaluating the quality of provisions that affect people’s living conditions. Thus, we pay close attention to this measure as having a possibly stronger link with classroom provisions.

**Socio-historical forces, teacher expertise, and the richness of events and interactions in Caribbean classrooms.** How, though, do teachers rate the social environment in literacy classrooms in their context and what factors are linked to such ratings? Slack (2008) indicates that teachers must develop the understanding that the “physical setting has an active and persuasive influence on their activities and attitudes, as well as on those of the children in the classroom,” and that they must follow through with “appropriate and purposeful physical arrangement of furniture, careful selection of materials as well as appropriate attention to the aesthetic qualities of their classroom to provide a setting conducive to teaching and learning” (p. 9). Inan (2009) hones in on social interaction, stating that educators must be “cognizant of the importance of environment and relationships and their impacts on children’s gaining literacy skills” (p. 2510).

Several Caribbean writers have highlighted problems teachers face in creating enabling interactional classroom climates in which students can thrive in their literacy development. Thompson (2009), focusing on Barbados, highlights problems with a variety of disruptive classroom behaviours, particularly by students who struggle with learning tasks, as well as the tendency of teachers to assume deficit perspectives in assessing the sources of these issues. In fact, teachers worldwide often fail to examine their own practice and environment for the extent to which they truly prompt positive behaviours and affect, that is, educators often fail to consider what impact proactive positive behaviour support and an enabling environment can have in staving off disruptive

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behaviours, and instead blame poor parenting in their initial assessment of the source of undesirable classroom behaviours by students. This tendency toward blaming external sources is true for other countries of the Caribbean, not just Barbados (see McAnuff-Gumbs, 2006). Blackman (2010) highlights the problem of disruptive behaviours by students with language and literacy processing issues, and focuses on the role of thoughtful instructional grouping in combating such issues. Guardino and Fullerton (2010), in their intervention study, also demonstrate how changes to the physical environment, including configuring furnishings to facilitate specific kinds of interaction, can reduce disruptive behaviours and increase on-task time.

It is clear, however, that factors run much deeper than what obtains in classrooms. Warrican et al. (2008) also acknowledge the relationship between socio-historical influences, arrangement of the physical space, and the quality of the social environment in classrooms. Acknowledging challenges posed by a predominant and enduring whole-class instructional paradigm, the writers maintain that by far the most formidable obstacles “in Caribbean classrooms is the history of classroom organization” (p. 6). They note that “classrooms often exist as rigid structures [with] straight rows of desks and chairs... that impede the use of features such as flexible grouping and learning centers” (p. 6). The researchers also mention “rigidity of time,” that is, inflexible scheduling and the conception of teacher as sage, all of which make it difficult to “introduce a relaxed, print rich setting in which children are able to develop their literacy skills” (p. 6).

The physical set-up of a classroom space does affect students’ emotional reactions during learning, and excellent teachers recognize this fact. Warrican et al. (2008) maintain that excellent teachers “are [not only] able to create an environment that promotes reading and writing,” but are also adept at fostering “positive feelings of self-worth by valuing students’ efforts, and by displaying these throughout the classroom and in appropriate places” (p. 3). The researchers thus link the literacy richness of classrooms to teacher expertise. Exemplary teachers, the writers maintain, also pay “attention to the students’ preferences in reading material and classroom activities,” and respond to such preferences by “transforming their classrooms into print-rich environments, encouraging them [students] to take full advantage of these provisions” (p. 3). The attention in this study moves away from reactive responses to student behaviour and looks toward proactive ways of breaking away from tradition to fostering an engaging and affirming classroom environment that can stave off behaviour issues in the first place.

Gambrell and Marinak (2009), in introducing the concept of *proximal rewards*, maintain that tangible rewards not related to literacy tend to undermine intrinsic motivation to engage in literacy activities. Proximal rewards are incentives given in acknowledgement of literacy accomplishments or success, but which prompt students to engage in further literacy-rich activities. Marinak and Gambrell (2008), in research exploring their reward proximity hypothesis, found that students who were given proximal rewards were more motivated to engage in subsequent reading than were students who received a token. In a literacy classroom, students might, for example, be given books or electronic reading resources as rewards for accomplishing or for succeeding at literacy-related learning tasks. Another proximal reward might simply involve displaying a students' work as an exemplary piece. Think of the payoff in pride of having this as a part of classroom display! Gambrell and Marinak (2009) also encourage integrating motivation into materials selection (through selection of high-interest, high-quality reading materials) and into tasks (by attending to choice, authenticity, and connection with the real world). Hence, there is much that teachers can do with the environment that has payoffs in the quality of the socio-emotional dimension of the classroom environment.

In discussing the issue of inflexibility of classroom arrangement and its impact on interaction, Warrican et al. (2008) report on a project targeting 68 teachers in the English-speaking Caribbean (Belize, Guyana, Jamaica, St. Lucia, and St. Vincent and the Grenadines) who were being encouraged to, among other things, "transform their classrooms into literacy-rich environments by establishing libraries and using whatever other resources were available to them in their particular contexts" (p. 8). As part of a reflection exercise, the teachers had to record and share information on their school context, "describing the physical conditions, school culture, interpersonal relationships, and social issues" that they believed impacted their students (p. 13). Through participants' sharing, the researchers were able to capture the quality of care exhibited by teachers who were able to 'make something out of nothing,' and in so doing establish enabling climates that featured routines and rituals for classroom participation and interaction, mentoring of students in being responsible, opportunities for students to develop a sense of ownership of the classroom by helping teachers design the space, as well as guidance to students in use of resources such as the classroom library. Teachers also built on the rich oral tradition of the Caribbean and infused this into resources in the space. In short, the researchers, while exposing candidates to the nature of a truly enabling classroom environment, demonstrated what is possible even with limited material resources.

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There is an extended focus on fostering enabling climates that offset deviant behaviours and less of a focus on material acquisitions and perceived parenting limitations.

It is clear then that teacher expertise as well as other variables (both contemporary and historical) will likely have an impact on the quality of both the physical and social environment in classrooms, and that response to the physical environment by students is often mirrored in the social climate of a classroom.

#### **Is the CLEP Appropriate for Use in Caribbean Classrooms?**

Given concerns regarding material resources available for classroom improvement in some countries in the Caribbean, and with frustrations being expressed regarding the enduring presence of traditional whole-class paradigms in literacy classrooms in the region, one wonders whether a tool developed and validated in the North American context holds validity for measuring classroom environments in the region. Admittedly, resource and instructional teaching style differences do exist in many cases between the North American context (in which the Classroom Literacy Environment Profile (CLEP) was developed) and the various countries of the Anglophone Caribbean. Lambert et al. (2008) raise questions as to whether, despite “convergence of views by professionals across international contexts regarding what conditions support literacy development,” instruments for measuring the quality of the literacy environment developed and validated in North America hold validity for assessing environmental quality in the Caribbean. The researchers raised questions regarding the psychometric soundness and consequential validity of such assessment, especially in situations where results are used to make high-stakes decisions regarding the quality of programmes and settings. In their assessment of one such instrument, the Early Childhood Environment Rating Scale—Revised (ECERS-R, Harms, Clifford, & Cryer, 2005), in a study that applied the tool in 334 early childhood classrooms in Jamaica and Grenada as part of the HighScope initiative, the researchers uncovered two underlying factors accounting for the majority of the variance in ratings—factors that connect well with research-based dimensions of the CLEP.

Using factor analysis, the writers found a two-factor loading that accounted for a large percentage of the variance in outcomes. They labelled the two factors as follows: (1) language and reasoning *activities*, on which such items as conversation, sharing, and communication activities loaded at between .30 to .50; and (2) language and reasoning *materials*, on which items such as book selection, book organization,

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book rotation and book appropriacy, and material accessibility loaded at between .34 and .48, with most loadings being above .4. The mirroring of the CLEP, with its “provisioning” [of tools] and “arranging” [of tools], gaining and sustaining [engagement]” subscales, seems uncanny.

Still, even as researchers use the CLEP tool, they must recognize that what generally constitutes the literate environment may differ from one region to the next and from one historical moment to the next. Cheng and Mok (2008) observe that educational reforms, including those focused on literacy, go through different paradigm shifts, especially with regard to the nature of environments deemed most conducive to promoting student learning. Scheerens (2001) notes such shifts, indicating that for a significant amount of time, school effectiveness was measured in terms of organizational and leadership styles, from which researchers deduced aspects of instructional effectiveness and classroom control. Still, our conception of what constitutes an enabling climate has moved far beyond that conception, enjoys a high level of consensus across regions, and has stood the test of time, and the CLEP tool, at this point, is perhaps one of those most suited to capture current conceptions of quality literacy learning environments at both the emergent literacy and primary levels.

There are merits in using the CLEP tool beyond its ability to capture current research dimensions of the literate environment. As with many regions in the world, the Caribbean monitors school effectiveness in terms of the extent to which literacy in the region compares with other parts of the world. Such a tendency to compare Caribbean outcomes with results from the rest of the world is exemplified in the participation of Trinidad and Tobago in the PIRLS since 2006, and with Belize getting on board in later years. Not only does the region assess itself against the rest of the world, but the World Bank and other international agencies also monitor trends among countries, and sometimes make recommendations for improvement based on such comparisons. Even so, within the agendas of the World Bank and other development agencies, the effectiveness of an educational system is often determined by results as compared or contrasted with resources available in a country.

So what can the CLEP tool tell us about how educators view the quality of the physical and interactional environment in classrooms in the schools in which they serve?

## **Methods**

This primarily quantitative study uses a census sampling procedure in seeking to explore teachers’ ratings of the quality of the classroom environment in a typical classroom in their school. Ratings from

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different participants are statistically compared in terms of whether they differed based on the economic status of the participant's country (as determined by the World Bank and DAC), and based on the country's HDI (a UNDP measure that considers education, child welfare and income). Some exploration of the mediating role of school type, classroom type, and geographic locale is also done. Additionally, the candidates' qualitative comments are used to illuminate findings from the quantitative analysis. In this section we describe the design underlying the study.

#### **Sample**

All 47 Caribbean literacy professionals enrolled in a literacy leadership course at the Open Campus of The University of the West Indies (UWIOC) were asked to evaluate the quality of the literacy environment in their own classrooms and schools using the Classroom Literacy Environment Profile (Wolfersberger et al., 2004). The candidates, representing reading specialists, English language arts teachers, and grade-level classroom teachers, were enrolled in the Master of Education (M.Ed.) in Literacy programme and represented nine countries of the Caribbean: Antigua and Barbuda (1); the Bahamas (3); the Cayman Islands (1); Dominica (4); Grenada (2); Jamaica (10); St. Lucia (9); St. Vincent and the Grenadines (2); Trinidad and Tobago (15). Of the nine countries represented in the study, three were considered to be of High Income status (H) by the World Bank (2009), while the remaining six were considered to be of Upper Middle Income (UM) status. In terms of HDI rankings, three were deemed High (not the same three as in economic status), while six ranked as Low. Thirty-eight percent (38%) of candidates (18) lived and worked in a High Income country while 62% (29) lived and worked in an Upper Middle Income country. For HDI, 55% of candidates (26) represented countries with an index of 80 or above; while 45% (21) came from countries with an index below 80. For all in the Low group, the HDI index was 60 or below.

#### **Instrumentation, Data Collection, and Data Analysis**

For the CLEP survey, candidates assessed the quality of a select "typical" classroom in their school. The scale contains two subscales previously described. Each of the 34 items on the scale (19 on Subscale 1 and 15 on Subscale 2) allowed students to rate an aspect of the environment—the physical (its extent of provisioning with tools) and interactional (the quality of organization of space and tools, as well as the environment's potential for gaining and sustaining interest and

engagement)—on a 7-point scale from *impoverished* to *enriched*. On both the physical and interactional/social dimensions, outcome categories were the same: impoverished (1.0–2.4); minimal (2.5–3.9); satisfactory (4.0–5.4); and enriched (5.5–7.0), although the descriptions of what the category and score meant for the two subscales were different. (See Wolfersberger et al., 2004, pp. 271–272.) These categories were instrumental in understanding what the findings from the survey meant. The focus of each item on the CLEP is presented in Tables 2 and 4 later in the paper when we discuss the results.

Qualitative comments (made by the candidates in a regular forum discussion as part of a literacy best practice course) were also available for scrutiny. At the time the comments were made, the discussion was in no way linked to a study, and the students, the three facilitators who worked directly with them, and the coordinator who oversaw the course (and who functioned as one of the researchers in this study) did not foresee that the current study would be conducted. It seemed fit, given the availability of the data, to explore whether candidates' perspectives at that time would be mirrored in the rating they were undertaking after the six-month lapse in time during which they had taken a materials design course.

Strauss and Corbin (1990) maintain that while quantitative research tends to seek causal determination, prediction, and statistical generalizability, qualitative research seeks illumination, understanding, and extrapolation (analytical generalizability). The aim of “reaping” and matching qualitative comments to the statistical data was to expose candidates' thinking and to further illuminate possible reasons the candidates responded the way they did in the numerical ratings. To get exemplars from the quotations, the researchers conducted an electronic search of the Word document into which the entire conversation in each of the three different forums (one for each facilitator's group) had been downloaded. The researchers undertook the search using keywords from each scale item (including their derivatives and synonyms used in the literature review, e.g., “library,” “classroom library,” and “libraries” from Item 23; “areas” or “spaces” for items 20–22). Identifiers (students' names, URLs, and ID numbers) had been removed from the Word document so it would not be apparent who had said what. The quotations highlighted by the “Find” function were extracted, then sorted based on whether they adopted a negative or positive tone regarding conditions in their context. Generally, comments connected less with the negative-positive dichotomy and reflected more a weighing of both sides, that is, the quotations tended to cite the negatives of the environment then featured either a positive or negative reaction to that challenge. A

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comment that saw the environment as limited and envisioned little chances for changing this situation would be categorized as negative-negative, while one that proposed a solution would be categorized as negative-positive. The categories used in the analysis thus became negative-negative, negative-positive, and positive-positive to capture the link between evaluation and reaction. Where more than one quotation was found, selection for inclusion took place after a process of deliberation between the two researchers.

Strauss and Corbin (1990) recommend such a process of comparison, matching, and labelling during what is really an open-coding process, since their research indicates that raw data are not sufficient for illumination. As the researchers indicate, it is only by “comparing incidents and naming like phenomena with the same term” that we can achieve solid analytical generalizability. In short, to use a specific quotation as typical of a group’s point of view, a researcher must sort the comments and label them based on the perspective of the speaker.

We now present the results from analysis of the quantitative ratings and use candidates’ qualitative comments to clarify possible thinking behind these ratings. We present the result of the exploration according to our research questions and according to the dimensions and subscales of the instrument.

## **Results**

The data from the CLEP tool were analysed using the SPSS 21 (IBM, 2012) statistical package. Reliability analysis conducted on the data using Cronbach’s Alpha revealed a reliability level of  $\alpha = .969$  for the 34-item scale, indicating high reliability. The provisioning subscale (physical environment) comprising 19 items demonstrated a high level of reliability ( $\alpha = .940$ ), as did the arranging, gaining, and sustaining (interactional/social environment) subscales which comprised 15 items ( $\alpha = .934$ ). The subscales also proved to have a significant, positive correlation with each other ( $r = .88, p = .000$ ), suggesting some level of unidimensionality to the scale. Factor analysis with Varimax rotation confirmed the unidimensionality of the instrument since two subscales both loaded at .947 onto one component.

In terms of tests of assumptions of the ANOVA, the Kolmogorov-Smirnov normality test, run on the data for the two subscales and for the overall ratings, demonstrated that the distributions did not deviate significantly from the normal distribution for Subscale 1 ( $p = .20$ ), Subscale 2 ( $p = .20$ ), or for overall ratings ( $p = .20$ ) (see results in Table 1).

Additionally, the Levine Test for homogeneity of variance indicated that the variances on the subscales and overall ratings were equal, and thus inferences could be made from the data for HDI ( $p = .290; .245; .410$ , respectively) and for economic status ( $p = .292; .289; .376$ ).

**Table 1. Results of Normality Tests**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Subscale 2: Sustaining	.110	47	.200	.957	47	.081
Total Average Rating	.099	47	.200	.976	47	.452
Subscale 1: Provisioning	.105	47	.200	.964	47	.159

Based on positive findings from tests of the assumptions, a means test consisting of two One-Way ANOVA tests was run on the two subscales, the overall scale, and on the various items to determine the extent to which participants' ratings of the quality of the literate environment in their schools varied by their country's World Bank/DAC economic status and by the country's 2011 HDI as provided by the UNDP. The results of the tests are presented in Table 2. For confidentiality and to reserve the anonymity of individuals and countries participating in the study, no country or individual participant names are linked to the results.

### Research Question 1

*To what extent do participants rate the observed classroom literacy environment as literacy rich? How do they rate the quality of **literacy provisions**? How do they rate the quality of **use of provisions**?*

Overall, participants rated the general environment (both the physical and interactional/social) as moderate or minimally rich ( $N = 47$ ,  $M = 3.56$ ,  $SD = 1.02$ ). The physical environment (provisioning) was rated as minimal ( $N = 47$ ,  $M = 3.64$ ,  $SD = 1.0$ ), as was the social environment (gaining and sustaining engagement), though the latter rated slightly lower in the minimal range ( $N = 47$ ,  $M = 3.44$ ,  $SD = 1.16$ ). The rating of minimal on the physical dimension, based on scale descriptors, meant that candidates thought the environment had several "different types of literacy tools...in moderate amounts" and that there were "enough literacy tools to support the number of students in the classroom" (Wolfersberger et al., 2004, p. 271). Their minimal rating for the

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interactional setting suggested that the environment was not such that it would capture students' interest or "communicate that literacy was a valued goal," and that while tools were present they were really not featured (Wolfersberger et al., 2004, p. 272).

#### **Research Question 2**

*Do the candidates' ratings differ based on the **economic status (ES)** and **human development index (HDI)** of their country?*

Overall, in terms of the connection between economic status and participants' ratings of the **overall environment**, results revealed, surprisingly, that participants from the High Income group tended to rate the overall classroom environment at a much lower level on the minimal range ( $N = 18, M = 3.15, SD = 1.162$ ) than did the Upper Middle Income group ( $N = 29, M = 3.81, SD = .846$ ); and that the difference was significant,  $F(1, 4.792) = 5.012, p = .030$ . Mean score difference in this instance indicate that candidates from the UM group rated their environment at a higher level. Thus, the researchers rejected the null hypothesis that overall ratings do not differ based on economic status of the candidates' country. The surprising finding was that those from countries with lower income rated their environment more favourably.

In contrast to the ratings for the overall environment, it was clear from the results that even though the participants from Upper Middle Income countries tended to score the observed **physical environment**—its resource contents and arrangement—at a slightly higher level on Subscale 1 than did the High group, their ratings ( $N = 29, M = 3.768, SD = .889$ ) did not differ significantly from that of the High Income Group ( $N = 18, M = 3.424, SD = 1.67$ ),  $F(1, 12.481) = 13.540, p = .260$ .

It was on the **social environment** (arranging, gaining, and sustaining student interest and engagement) that the difference reflected in the overall rating lay. The gap between the ratings of Upper Middle Income Group ( $M = 3.862, SD = 1.243$ ) and the High Income Group ( $M = 2.757, SD = .897$ ) was much more apparent on Subscale 2, resulting in a significant difference in the ratings of the two groups,  $F(1, 1.302) = 1.312, p = .001$ . The ratings were in fact quite near the opposite ends of the minimal scale. The Upper Middle Income group was, as in overall ratings, far more positive than were their more economically prosperous counterparts, and it is the result of this subscale that tipped the total rating so that there was a significant difference overall.

See Table 2 for mean ratings for the High Income and Upper Middle Income groups. The level of significance of differences in mean ratings is presented for the two subscales and for the instrument as a whole, as

well as for each item, so that further exploration of possible focus of differences in ratings can be explored. Significant outcomes are highlighted in green. The ANOVA results are presented in Table 3. As can be seen, while there is no significant difference in ratings on the first subscale, there are significant differences in ratings on both the second subscale and on the scale as a whole. As such, while the null hypothesis could be rejected for the overall ratings and for rating on Subscale 2, it had to be retained for the subscale addressing the physical environment (Subscale 1).

Table 2 demonstrates that, in terms of ratings on individual items, while participants from the two economic brackets did not differ significantly in ratings on all but one item on Subscale 1 (*written communications* [ $p = .03$ ] which does have an interactional implication), they did differ on all but two items on Subscale 2—types of literacy classroom areas, and the authenticity of the classroom settings—both of which seem linked to physical setup. Both groups seem in agreement that these were minimal at best. Noteworthy is the fact that the UM group felt that some interactional elements in their context went beyond minimal and were, in fact, satisfactory. Ones that were statistically significant from the ratings of their more prosperous peers included classroom library, grouping of literacy tools, accessibility of literacy tools, and teacher encouragement of participation in literacy events. In short, the UM group thought the classroom library was satisfactory and that teachers were doing well enough in organizing and utilizing what they had. Ratings for the H group seemed to be leaning toward impoverished.

For the second analysis, which focused on HDI and participants' ratings, we present the results of statistical analysis for the overall scale, for each subscale, and for each item. The results of the second ANOVA are presented in Table 4. In terms of **overall ratings**, participants from the Low HDI group ( $N = 21$ ,  $M = 3.24$ ,  $SD = 1.162$ ) did tend to rate the overall environment slightly lower than did participants from the High HDI group ( $N = 26$ ,  $M = 3.81$ ,  $SD = .871$ ), though the difference was not significant,  $F(1, 3.681) = 3.75$ ,  $p = .059$ . Note, however, that in terms of writing utensils, furnishings, and technological resources, the group with lower HDI did rate their environment slightly higher than did the high group, though not significantly so. Thus, the null hypothesis that candidates' rating did not differ based on the HDI of their country was retained for the overall scale.

**Table 2. Differences in Ratings on Individual Items by World Bank/DAC Economic Status**

Subscale 1 – Item # and Descriptor		Mean		P-Value	Subscale 2 – Item # and Descriptor		Mean		P-Value
		High Income (18)	UM Income (29)				High Income (18)	UM Income (29)	
1	Quantity of Tools	3.9	4.3	.268	20	Boundaries of Areas	3.1	3.7	.015
2	Utility of Literacy Tools	3.8	4.2	.322	21	Size of Areas	2.8	4.0	.051
3	Appropriacy of Tools	4.2	4.6	.432	22	Types of Areas	3.1	3.7	.235
4	Quantity of Texts	2.9	3.0	.678	23	Classroom Library	3.2	4.3	.005
5	Text Genres	3.8	4.1	.560	24	Grouping of Tools	2.9	4.1	.016
6	Levels of Texts	4.0	4.17	.307	25	Accessibility of Tools	3.2	4.4	.023
7	Format and Content of Texts	3.1	4.0	.067	26	Participation in Events is Encouraged	3.0	4.0	.005
8	Print for Organization	3.6	4.3	.168	27	Participation in Events is Inviting	2.7	3.7	.004
9	Literacy Displays	3.7	4.2	.283	28	Authentic Settings	2.6	3.2	.098
10	Reference Materials	3.0	3.4	.362	29	Authentic Events	2.3	3.8	.000
11	Written Communications	3.6	4.3	.03	30	Interactions with Tools	2.3	3.2	.032
12	Writing Utensils	3.6	3.4	.761	31	Record-Keeping of Interactions	2.3	3.5	.027
13	Writing Surfaces	3.8	3.9	.833	32	Variety of Products	2.4	4.1	.001

Subscale 1 – Item # and Descriptor		Mean		P-Value	Subscale 2 – Item # and Descriptor		Mean		P-Value
		High Income (18)	UM Income (29)				High Income (18)	UM Income (29)	
14	Publishing Materials	2.7	3.0	.456	33	Sharing Products	2.7	3.7	.027
15	Technological Resources	2.4	2.4	.953					
16	Furnishings to Support Events	3.4	3.3	.810					
17	Storage and Display Provisions	3.7	4.1	.324					
18	Accessories to Support Events	2.8	2.8	.989					
19	Location of Classroom Areas	3.3	3.9	.322					
<b>Results for Subscale 1: Provisioning</b>		<b><u>3.4</u></b>	<b><u>3.8</u></b>	<b><u>.260</u></b>	<b>Results for Subscale 2: Sustaining</b>		<b><u>2.8</u></b>	<b><u>3.9</u></b>	<b><u>.001</u></b>
<b>Results for Total Scale: <u>.030</u></b>									

**Table 3. Rating of Classroom Physical and Social Environment by Economic Status**

			SS	df	MS	F	Sig.
Subscale 1: Provisioning	Between Groups	(Combined)	1.312	1	1.312	1.303	.260
Arranging * World Bank	Within Groups		45.324	45	1.007		
DAC Status	Total		46.636	46			

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			SS	df	MS	F	Sig.
Subscale 2: Gaining	Between Groups	(Combined)	13.540	1	13.540	12.481	.001
Sustaining * World	Within Groups		48.817	45	1.085		
Bank DAC Status	Total		62.357	46			
Total Average Rating *	Between Groups	(Combined)	4.792	1	4.792	5.012	.030
World Bank DAC	Within Groups		43.019	45	.956		
Status	Total		47.810	46			

**Table 4. Rating of Classroom Physical and Social Environment by Human Development Index**

			SS	df	MS	F	Sig.
Subscale 1:	Between Groups	(Combined)	1.001	1	1.001	.987	.326
ProvisioningArranging	Within Groups		45.635	45	1.014		
* HumanDev IndexR	Total		46.636	46			
Subscale 2:	Between Groups	(Combined)	10.433	1	10.433	9.042	.004
GainingSustaining *	Within Groups		51.924	45	1.154		
HumanDev IndexR	Total		62.357	46			
Total Average Rating *	Between Groups	(Combined)	3.681	1	3.681	3.753	.059
HumanDev IndexR	Within Groups		44.130	45	.981		
	Total		47.810	46			

**Table 5. Differences in Ratings on Individual Items by Human Development Index**

Subscale 1 – Physical Environment		Mean		P-Value	Subscale 2 – Social Environment		Mean		P-Value
		Low (21)	High (26)				Low (21)	High (26)	
1	Quantity of Tools	4.0	4.2	.493	20	Boundaries of Areas	3.5	4.2	.173
2	Utility of Tools	3.5	4.1	.680	21	Size of Areas	3.0	3.9	.128
3	Appropriacy of Tools	4.2	4.9	.510	22	Types of Areas	3.2	3.6	.433
4	Quantity of Texts	2.9	3.0	.870	23	Classroom Library	3.1	4.4	.002
5	Text Genres	3.6	4.2	.267	24	Grouping of Tools	3.4	4.0	.076
6	Levels of Texts	3.9	4.6	.162	25	Accessibility of Tools	3.4	4.3	.119
7	Text Format and Content	3.23	4.2	.117	26	Participation in Events is Encouraged	3.2	3.9	.042
8	Print for Organization	3.7	4.2	.316	27	Participation in Events is Inviting	2.9	3.6	.039
9	Literacy Displays	3.8	4.0	.562	28	Authentic Settings	2.6	3.1	.188
10	Reference Materials	3.1	3.3	.760	29	Authentic Events	2.4	3.8	.000
11	Written Communications	3.7	4.2	.180	30	Interactions with Tools	2.3	3.3	.020
12	Writing Utensils	3.8	3.2	.158	31	Record-Keeping of Interactions	2.3	3.4	.031
13	Writing Surfaces	4.0	3.7	.478	32	Variety of Products	2.7	3.6	.020
14	Publishing Materials	2.8	2.9	.767	33	Sharing of Products	2.8	3.8	.006
15	Technological Resources	2.4	2.4	.960					
16	Furnishings for Events	3.4	3.2	.548					

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Subscale 1 – Physical Environment		Mean		P-Value	Subscale 2 – Social Environment		Mean		P-Value
		Low (21)	High (26)				Low (21)	High (26)	
17	Storage and Display	3.7	4.0	.553					
18	Accessories to Support Events	2.8	2.760	.996					
19	Location of Classroom Areas	3.5	3.680	.766					
<b>Results for Subscale 1: Provisioning</b>		<b><u>3.5</u></b>	<b><u>3.7</u></b>	<b><u>.326</u></b>	<b>Results for Subscale 2: Sustaining</b>	<b><u>2.9</u></b>	<b><u>3.8</u></b>	<b><u>.004</u></b>	
<b>Results for Total Scale: <u>.059</u></b>									

In terms of Subscale 1 addressing the **physical environment**, the Low HDI group ( $N = 21$ ,  $M = 3.47$ ,  $SD = 1.12$ ) and the High HDI group ( $N = 26$ ,  $M = 3.77$ ,  $SD = .91$ ) also did not differ significantly in their ratings,  $F(1, 1.001) = .987$ ,  $p = .326$ . It is in regard to rating of the **social environment** (gaining and sustaining authentic student engagement) that the difference between the Low HDI group ( $N = 21$ ,  $M = 2.92$ ,  $SD = 1.22$ ) and the High HDI group ( $N = 26$ ,  $M = 3.86$ ,  $SD = .941$ ) proved significant,  $F(1, 10.433) = 9.042$ ,  $p = .004$ . The difference in ratings was significant, but not so much so that it tipped the overall rating as with ES. (See ANOVA result in Table 4.) The table includes data on the level of significance for the two subscales and for the instrument as a whole. Ultimately, the null hypothesis for HDI was retained for the overall scale and the physical environment, but had to be rejected for the subscale addressing the social environment. Candidates from countries with different HDI did differ in their rating of the social environment. After all, HDI is not so much about the resources one has, as it is about the quality of life the resources afford. Still, ES seems more influential on overall rating and on rating of the social environment.

A look at results for individual items shows that while participants from the two HDI brackets did not differ significantly in ratings on the items on Subscale 1 measuring the physical environment or on the overall scale, they did differ on items where interaction was explicitly mentioned and on ratings of library resources. These items are indicated in green, and it can be seen that all significant differences in item ratings are on Subscale 2. Participants were in agreement that the size and types of spaces, boundaries between spaces, and the accessibility of and grouping of tools, as well as the level of authenticity of the setup, were mediocre. What the High HDI group seemed more impressed with was the variety in tools (perhaps linked to what was in the library) and with the quality of interaction that surrounded those tools.

Table 5 outlines the results for individual items, and demonstrates that items on which the groups differed centred on the quality of teacher facilitation of interaction in the setting and the extent to which provisions were made for choice and authenticity in tasks (participation in literacy events is encouraged,  $p = .042$ ; participation in literacy events is inviting,  $p = .039$ ; authenticity of literacy events,  $p = .000$ ; interactions with literacy tools,  $p = .020$ ; record-keeping of literacy interactions,  $p = .031$ ; variety of literacy products,  $p = .020$ ; sharing literacy products,  $p = .006$ ). Items on which they did not differ actually seemed more tied to the arrangement of the physical environment despite their potential impact

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on motivation, engagement, and relationships in the classroom. Participants in High HDI countries seemed particularly impressed with the quality of classroom libraries since this is the only score for HDI that was significant and fell within the “satisfactory” range for quality.

#### **Research Question 3**

*To what extent do the qualitative comments of participants from countries of different ES and HDI rankings mirror their quantitative ratings?*

Comments by participants from countries with less economic resources tended to fall in the negative-positive category, suggesting that these candidates understood that resource limitations were a reality of their practice (“*My classroom is contained within a building that holds four classes... divided by blackboards.*”), but that they also recognized that they must ‘make do’ (“*...there is still quite a bit of room.*”). They were resolved to be creative in meeting the challenges (“*When the noise becomes overbearing I usually take my class outside where we do our lessons. Having individual student chairs makes it a lot easier to move to different locations.*”). Peers noticed and commended this positive disposition amidst the obstacles and, in addition, made suggestions as to how to make the best of a difficult situation:

*Despite the noise levels, you seem to be able to do a lot with your classroom. I noticed that you mentioned not having enough space to hang charts. One suggestion for alleviating that problem is to make your charts into a series of cards, about the size of a legal paper - a bit wider though. These can be placed in decorated boxes on tables, seeing that you have the space. What do you think?*

In another posting, a participant made specific mention of resource limitations, again with an affirmative tone:

*Language Arts does not have its own room which we share with other subject areas. [We do] not have the appropriate/necessary infrastructure to secure the material/equipment used, the physical layout aspect is not at this time feasible. Of course we do try at this point to ensure that the classroom is print rich by using charts, posters, etc., and we do rearrange the classroom to facilitate different reading or writing instruction. In terms of the instructional procedures, I have already begun to incorporate many of the procedures and the benefits have also begun to be evident.*

*Michelle McAnuff-Gumbs & Mark Malisa*

In the Caribbean, as in other places across the world, the implication is often that there is a link between abundance or quality of provisions and teacher satisfaction with the setting in which they work. This is a reasonable assumption. However, one of the participants remarked, “*At my school I always say to my teachers we can be very creative and make effective use of the limited resources that we have.*” Such perception of the power of creativity might account for findings regarding higher ratings by students from middle-income countries. Faced with the challenge of providing an engaging learning experience in unequal economic conditions, participants foregrounded their adeptness at maximizing learning through creativity (“*Teachers are creative and that is why we are able to endure...*”).

Training initiatives, such as the Caribbean Centres of Excellence for Teacher Training (C-CETT) and HighScope, conducted in many of these middle-income countries (usually at government expense or through international funding) may have helped frame both affect and creativity in teachers:

*Your centre can be as big as a classroom or as tiny as a ziplock bag. It doesn't matter. If space is an issue, that should not be a deterrent. Use what you have. Use shoe boxes, plastic bags, or storage containers and create your centres.*

Even before they had undergone training in materials design, the candidates were expressing such resilience and affirmative stance.

Some teachers in countries with lower ES had even gone beyond merely making do with what is available to, on their own, soliciting funding to make desired improvements in their classroom:

*My room is the only room in the school with computers for now. We are in the process of setting up a computer lab for the school. I did the remodeling of my classroom as my project for B Ed. It was quite costly. I got some donations but I also had to raise funds to undertake the project.*

In contrast to the affirmative reaction of candidates from UM countries, comments from those from the High Income countries tended to fall within the negative-negative category. There seemed to be a high level of complaint, but there were also voices expressing dissatisfaction with what teachers were doing to enrich their classrooms. A specific candidate living and working in a high-income country of which the candidate is a native expressed a perception that teachers in the country were in fact taking what they had for granted. The candidate chided

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teachers for their apparent lack of initiative even amidst administrative support:

*...at my present school there are individual classrooms and it is very spacious... I only wish that all teachers can take the initiative and create centres in their classrooms. The administrator has been constantly appealing to teachers to create class libraries in the classrooms; however, there have been several excuses about overcrowded classrooms. Teachers must realize that they are supposed to be at the forefront in creating a positive learning environment.*

While this candidate saw possibilities, the indication was that, generally, teachers were not doing their part in creating a welcoming and stimulating space. The candidate echoes the words of the UNDP regarding provisions being taken for granted in such contexts.

One would expect that participants from countries with a greater emphasis on investing in education, higher adult literacy rates, and greater tertiary educational level attainment, as well as a greater focus on child/human welfare (factors considered in calculating HDI), would be more satisfied with the social climate created in the classrooms. A greater emphasis on social policies at a micro level might well translate into more enabling classroom environments. Greater consideration of forces considered by the HDI might result in greater teacher satisfaction with the climate of classrooms. This might account for findings described by Francis and Iyare (2006) regarding the relationship between development and education in Jamaica, a country that maintains a high expenditure on public education despite economic challenges and a low economic status, and thus has attained a relatively high HDI. The same might hold true in St. Lucia and Dominica. As one student from a country of lower economic status but higher HDI indicated:

*At my school we have begun the process: Our classrooms are print rich; centres have been created for listening, writing and reading. I am still working on the effective use of these centers by children and teachers. Our constitution has rules governing the rights of the child in terms of the socio-emotional. During our service training sessions we always sensitize our teachers on respecting these rights. Training sessions have been on going in order to teach the teachers how to scaffold instruction in writing and reading.*

The candidate comments on at least two dimensions of the environment that echo components figured in HDI calculations, and it is amazing that

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the student would have mentioned these although HDI was not even mentioned in either course. First, the student mentions the intellectual environment, including levels of scaffolding and differentiation of instruction—aspects of the socio-emotional and intellectual environment featured in the IRA's dimensions of the classroom environment. Secondly, the student mentions the rights of the child and links this to the classroom socio-emotional environment, thus spotlighting child welfare.

Candidates in Low HDI countries tended to be a bit harsher in their comments on the disparity between what the research suggests and what their teaching situation presents, blaming “unhealthy” environments on perceived low government expenditure and attention to schools:

*Wow! The Ministry Officials need to read these research studies so that they can build schools and provide furniture to cater to the environment that promotes healthy learning. After knowing this, how do I return to my classroom where every move I make I get bruises on benches and the children are hostile to each other if there is any form of contact with each other. It's appalling.*

The high level of dissatisfaction with the physical environment and the tendency to blame poor relationships on the physical environment are apparent. Teachers in such settings readily compared the resources they had against other settings, such as pre-schools where the government had started making changes to meet international standards, and felt that the government or someone else was paying more attention to other settings than to theirs.

#### **Research Question 4**

*What extent of influence do economic status and human development index, when considered along with **classroom level**, **school locale**, and **school type**, have on the ratings of candidates?*

Regression analysis was used to test the extent to which the factors together significantly influenced participants' ratings of the **overall classroom environment**. The results of the regression indicated that the predictors together accounted for only 18% of the variance on overall rating ( $R^2 = .18$ ,  $F(5, 1.816) = 8.67$ ,  $p = .13$ ), and that, as such, their influence was not significant in this study. Additionally, the factors together were not found to significantly predict rating of the **physical environment** for Subscale 1 ( $R^2 = .13$ ,  $F(5, 1.229) = 6.080$ ,  $p = .31$ ). Limited sample size might have been a factor in these results. Only school type (private versus public ownership) approached significance for overall rating ( $p = .053$ ), and proved significant for the physical

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environment ( $p = .036$ ); the variables together did not. Thus, the type of school (which might be seen as a proxy for affluence in the Caribbean context) did impact how teachers rated the quality of the physical environment in their classroom, so that teachers from private schools rated their schools more favourably. In terms of the impact of the factors together on ratings of the **social environment**, the variables together *did* prove significant for Subscale 2, accounting for 28% of the variance in ratings ( $R^2 = .278$ ,  $F(5,3.166) = 17.371$ ,  $p = .017$ ) (see Table 6). Thus, the null hypothesis that the five factors do not significantly impact the ratings of candidates was retained for the overall scale and for the subscale addressing the physical environment, but was rejected for the subscale examining the social environment.

**Table 6. Role of the Various Factors on Ratings of the Classroom Social Environment**

	<i>Model</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
1	Regression	17.371	5	3.474	3.166	.017 <sup>b</sup>
	Residual	44.986	41	1.097		
	Total	62.357	46			

We discuss the implications of our findings below.

### **Conclusions, Discussion, and Recommendations**

Overall, our results revealed that participants from countries with different economic ratings and human well-being rankings were generally in agreement that the overall environment of the classroom observed was minimally rich on both the physical and social dimensions. Overall, participants thought the classroom environment observed had the right amount of provisions for the students housed and that it provided “some support to literacy acquisition.” However, they thought that, generally, the social climate had “a neutral feeling,” did “not capture the observer’s interest,” and that the space, though it had “a narrow range of literacy tools and products,” these were “present but not featured” (Wolfersberger et al., 2004, p. 272). This is essentially the definition of a minimally rich environment according to the Wolfersberger et al. guidelines.

While participants from countries falling in the two economic groups did not differ in their rating of the physical environment, they did differ in their rating of the social environment as well as in their rating of the overall classroom environment. In general, those from the Upper Middle Income group rated their social environment much higher within the minimal range. Participants from the Upper Middle Income group seemed more satisfied with what teachers were doing with the space and resources than were their more affluent counterparts, and were more satisfied with the classroom libraries they had. They also rated accessibility and grouping of tools as well as the quality of student interaction using tools more highly than did their affluent peers.

The qualitative comments illuminated the possibility that participants in UM-income countries were more resolved to work with what they had and to be creative, while those from High-income countries tended to compare what they had with others and to look to the government to take care of the physical space, hoping that such fixes would address issues with social interaction.

In our exploration of HDI and candidate ratings, we found that participants from countries with Low HDI seemed less satisfied with the library resources they had and with the general state of the social climate. As such, they tended to rate their social environment much closer to the lower end of the minimal range. In contrast, the ratings of those from High HDI countries moved beyond minimal in some areas, particularly with regard to classroom libraries and accessibility of tools. In fact, their rating on some items on the social scale edged into the satisfactory range (4.0 and above). It is interesting that none of the countries of High income actually made it into the High HDI group. Hence, the participants in the High HDI group who rated their social environment as satisfactory actually came from the Upper Middle Income group, and one can see in the qualitative comments a leaning toward attending to students' socio-emotional well-being and to the rights of the child, and how these were catered for in the environment. This is interesting since students had made these comments at least six months before taking the survey and neither they nor the researchers had any idea that this study would be conducted.

Why is it that candidates from countries of lower economic status would be more, not less, satisfied with their social environment? It might be that the candidates from low-income countries understood why resources were limited (the country could not afford more), but that those from high-income countries felt that their country was in a position to provide a more enabling environment than what was provided. This conclusion mirrors the IEA's (Mullis, Martin, Foy, et al., 2012) claim

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that provisions in high-income countries can be taken for granted. The organization also maintains that a higher national income does not always translate into better material conditions on a micro level, so it is also possible that there might be a mismatch between the wealth of a country and the extent to which that wealth translates into greater human well-being. Hence, teachers in high-income countries are probably not less grateful; the reality might be that social policies are not keeping up with improvements in economic growth. So, are teachers in high-income countries less grateful or are policy makers paying less attention to non-pecuniary variables, including educational provisions, than to economic improvement?

Results of further correlation analysis on our data indicate a .88 correlation between ES and HDI ( $p = .000$ ) for our sample. The relationship is certainly positive, significant, and high, but not perfect. Choi, Heger, Pineda, and Rodríguez (2011) give us an additional explanation for our findings as linked to that correlation. They maintain that “at high levels of income, the capacity of further income increases to deliver improvements in human development is limited” (p. 9). This suggests that there might be something akin to a law of diminishing returns in operation where, after a specific level of GNI has been attained, the return in human well-being tends to taper off. Note the case of a country such as Qatar, which while it is 2<sup>nd</sup> in the world in income level, is nowhere to be found in the top 10 countries in general HDI and in non-income HDI. Cuba, on the other hand, ranked 17<sup>th</sup> in the world in 2011 in HDI, and 1<sup>st</sup> in non-income HDI in 2010. This is impressive given Cuba’s well-known economic hardships (Choi et al., 2011). Cuba’s high ranking in HDI is no doubt influenced by its high education standards and solid investment in the education of its people.

Anomalies such as that represented by Cuba are in no way unique. In fact ul Haq (1995, as cited in Klugman et al., 2011) indicates that, in 1995, only four countries had HDI equal to their economic rankings. The majority had a 20-point difference in rankings. See Choi et al. (2011) and Klugman et al. (2011) for further details. Klugman et al. maintain that “patterns [of difference between ES and HDI] still hold true today” for countries around the world as well as for those within Latin America and the Caribbean. Barbados is perhaps the only Anglophone Caribbean country that boasts both a very high HDI (47<sup>th</sup> in the world in 2011) and a comparatively high ES, although ES was three ranks higher (44<sup>th</sup>).

One must recognize the role of funding agencies such as USAID, which allocate money based on economic status to countries that qualify, and that these provisions have led to educational improvement in countries of lower income levels in the Caribbean. Such funding has

tended to focus on resource and practice improvements in schools with disadvantaged populations, and might have served to offset disparities in resource as well as restrictions in responding to innovations, which poorer countries or even less privileged areas within a country might face, especially since rural areas are often targeted in such projects. Thus international funding might have an equalizing effect so that candidates would not differ on ratings of the physical environment.

Additionally, environmental improvement initiatives such as HighScope, instituted in many Caribbean nations (Antigua and Barbuda, St. Kitts and Nevis, Grenada, Dominica, and Jamaica, for example), and built on an already embedded cultural and teacher-training tradition of using “found materials” to improve classroom environments, might have no doubt influenced teachers’ response to and rating of the physical environment in their context (Schweinhart & Weikart, 2010).

There is the possibility also that teacher training and funding related to such training might have put teachers in Upper Middle Income countries at an advantage, by bolstering their expertise and resolve so that they tend to be more creative in overcoming challenges. Since 2000, several such countries in the Caribbean have benefited from training through Centres of Excellence for Teacher Training (C-CETT) established in those countries. While high-income countries were slow to join this wide impacting initiative, and while governments in High Income countries have had to “foot the bill” internally for participating in the initiative, countries in the Upper Middle Income range enjoyed external funding and were early in joining the initiative. Hence, training of reading specialists in best practice and environmental transformation in countries such as Jamaica might have put such countries at an advantage. The training model used in C-CETT (train-the-trainers) facilitated a high level of diffusion of practice and ideas, and we can see teachers in C-CETT countries, through their comments, mentally negotiate a stance on whether their environments can reasonably work, with creativity on their part, in support of effective practice and successful student learning. The disparity between country types with regard to access to timely and innovative training seemed to have further disadvantaged some countries, and it seems training to build teacher expertise and agency is needed in high-income countries so that teachers understand they have a role to play in environmental transformation.

We can see indications from the results that while governments can provide resources, it is what teachers do in harnessing these resources and in orchestrating interactions and engagement around what is available that truly counts.

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One can reasonably conclude from our data that the forces which shape teacher ratings in this study are complex and warrant deeper exploration. We do know that teachers consider provision minimal in general, but are split primarily in their ratings of the social environment and the quality of interactions in the classroom space. We also found that school type (private or public), which is directly related to level of affluence, impacts teachers' general ratings, and we can see that ES was so highly impactful on teacher ratings of the social environment that it influenced difference in overall rating. Such a finding is affirmed by the research of Schiefelbein and Schiefelbein (2013). The researchers propose that resource inequities are at the root of teacher disgruntlement in high-income countries, especially as evident between public and private. They propose also that differences in professional expertise afforded students in public schools and density of classroom spaces due to class overpopulation are some of the issues at the heart of teacher displeasure in these contexts. Other variables cited by Schiefelbein and Schiefelbein include limited time for learning due to reliance on frontal or whole-class teaching method as a response to high student-teacher ratios; poor staff allocation since the best teachers tend to move to private schools where salaries may be five times higher than in the public system; time wasted with discipline issues and annual strikes in public schools; and waste of time due to school double shifting.

Our findings did reveal that teachers were in fact comparing their settings with others and that they felt that the government was not doing enough to reduce gaps in resources. In their discussion of ways in which schools can meet human development expectations, and in their recommendations that governments target greater levels of resources to schools serving disadvantaged population, Schiefelbein and Schiefelbein (2013) maintain that the economic status of a school (whether it is publicly or privately owned) and the socio-economic status of students who attend it predicted by far the quality of education students receive. Citing findings from the 2006 PIRLS for Latin America and the Caribbean (as represented by Belize, Trinidad and Tobago, and Venezuela), Schiefelbein and Schiefelbein maintain that there are serious equity problems in terms of allocation of resources, which precipitate considerable attrition of teachers from public schools, as well as lower achievement scores for students in marginal urban and rural public primary schools—scores that are equivalent to only half the scores of wealthy students.

The complexities involved in untangling the real issues behind teacher ratings especially as far as socio-economic considerations go, seem apparent, but findings do suggest future directions, especially for

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teacher training in classroom design, and in agency and creativity in management of the learning environment. In fact, it seems that teachers from high-income countries can learn much in terms of agency and creativity from their less privileged peers.

### **Recommendations**

It seems desirable that countries match their human development expenditure with their economic status (as far as laws of diminishing returns dictate). Where a country has high economic power but does not match this with suitable expenditure on human development, including educational improvement, there might be greater teacher dissatisfaction with the environment in which they work, greater hopelessness and attrition, and ultimately lower student outcomes (Ingersoll, 2003). Where disparities exist between the wealthy and those who must access public learning facilities, and where other factors such as income disparities, social conditions, work conditions, and geographical locale compound issues, it seems that teacher dissatisfaction might be high and become even higher when teachers believe, and can actually see in privileged areas of their country, that better is possible. While governments should do as much as possible to improve material conditions (within the limits of what is truly impactful)—and they can through their funding policies strive to facilitate enhanced teacher training in maximizing use of the physical resources in strengthening students' engagement in literacy processes—much can also be done by teacher training institutions in mentoring teachers toward adopting a more agentive and affirming role in seeking improvements to the social climate of their classroom. Teacher training institutions do need the backing of school leaders and policy makers to ensure that training appropriately translates into practice. What is the sense, for example, in training teachers in applying flexible instructional configurations and a gradual release of responsibility control of learning to groups and individual students when classroom furnishings support a more rigid, teacher-fronted instructional paradigm? We know that design of space can make a difference for social interaction, and that change is not so much a matter of getting a bigger classroom but of attending to appropriate principles in resource grouping and space design. Space design also involves planning for and engineering social interaction around tools and resources available in the space.

Participant qualitative data were quite illuminating and suggested some stability in their views despite intervening training. This is a bit troubling since candidates from high-income and low HDI countries

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seemed to have passed through the materials design course still holding non-agentive views, especially in terms of their own role in conditioning the social environment of classrooms. It might be that design training offered to teachers is really not making the link between design of the physical space and the interactional and socio-emotional context of learning. Such links must be made in more explicit ways so that space planning and design are shown to impact interaction and learning behaviours.

Neuman and Roskos (1992) suggest principles for early learning, some of which have already been mentioned. Additionally, Guthrie and Alao (1997), instrumental in developing Concept-Oriented Reading Instruction (CORI), provide eight principles from that constructivist-oriented model for designing classroom social interactions and instruction so as to increase the level of engagement of later literacy learners. These include organizing instruction around broad interdisciplinary themes and using multiple genres to enhance learning relevance; engaging students in real-world interactions; allowing for student self-direction (choice of text and personal goal setting); providing interesting learning materials and texts; fostering social collaboration during learning; allowing for self-expression; providing students with cognitive strategy instruction with gradual release of responsibility to foster independence; and ensuring curricular coherence so that students can see the link among learning activities. Our findings suggest that these are the very elements that teachers were most dissatisfied with. (See results from Subscale 2 for both ANOVA analyses.) There are numerous Caribbean studies that recommend similar principles for designing space and social interaction so as to increase learning motivation and avert student aberrant behaviour in literacy classrooms. (See Blackman, 2010; Thompson, 2009; Warrican et al., 2008.) Blatchford, Kutnick, Baines, and Galton (2003) recommend attending to the design of instructional groupings, in addition. It is clear to see from the recommendations how design of space flows into interaction then into learning possibilities.

Training literacy professionals in consistently monitoring the quality of the classroom environment as requested by the Human Development Department of the World Bank, encouraging them to be reflective on both space and interaction, and creating a culture of grant writing to solicit funds from private entities are other ways to help teachers improve their classroom environment. While being creative in terms of resource procurement is a good idea, teachers need not only make do; they can also use knowledge from their training to solicit funds to fill gaps they recognize. Training them in grant writing and advocacy for the

poor and underserved would be an important step. One candidate, quoted earlier in the study, had already begun making fund solicitation attempts and was actively engaged in advocacy so as to outfit a poorly provisioned classroom with needed technological resources. The Caribbean has a funds solicitation tradition, so the possibility of garnering funds through grant writing is not far-fetched. With efforts from the top (policy makers), and with an agentive stance from teachers at the grassroots, much improvement can be realized.

Our findings do suggest that policy makers should examine the roots of teacher discontent in high-income countries, and that addressing non-pecuniary dimensions of development might have payoffs in teacher satisfaction with the literate environment in classrooms (Klugman et al., 2011). One such dimension is teacher education and training in classroom design. One can see that socio-historical influences leading to the continued presence of a whole class paradigm have not been totally eroded, but training seemed to have helped erode this force in UM and High HDI countries. It might prove successful in High Income, Low HDI countries as well.

The UNDP (2007) notes that the measure (HDI) “challenges the common view that poverty is purely a deprivation of income, and underscores that human beings [must recognize that they are] both agents and beneficiaries of development” (p. 34). Teachers, administrators, and policy makers have a role to play in environmental improvements (teachers through application of the knowledge they have accessed; policy makers by promoting enabling educational and social policies). When efforts work in tandem, positive change can be realized beyond what mere economics can bring.

Despite the reality of gaps in resource allocation to schools of different types in their context, disgruntled candidates can learn much from less privileged colleagues who strive to make something with nothing. Still, while teachers are willing to improvise and while it is great that they are being trained to improvise, there are limits to ingenuity. Both the Government and the private sector have a social responsibility to assist in levelling the playing field between the wealthy and those who must access public education, by improving the physical conditions of the environment, as our findings suggests a potent role for school type when all factors in the study were considered. Schools of Education in the region should aim to make design education more widespread so that a broader spectrum of candidates understand that the physical, social, and intellectual dimensions of the classroom environment are all linked, and that students who learn in classrooms where this link is acknowledged do better on average than do their peers in classrooms ruled by a traditional

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paradigm (Guthrie et al., 1998). We suggest also that researchers try to establish links between these three classroom dimensions and learning outcomes.

Finally, we recommend that further exploration be done on the link between human development indicators and educational provisions in different countries in the region so that the basic message that development is more than monetary growth can impact educational and teacher training policies, and, ultimately, the functioning of literacy classrooms in countries in the region.

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