

School Effectiveness in Jamaica

What do Successful Schools Look Like?

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1. Introduction: Why the concern with School Effectiveness?

Education policy and planning are increasingly concerned with how schools function and how they organize themselves to achieve their primary objective of 'educating' children. This area is referred to as 'school effectiveness' research. The core of this area of education inquiry is the attempts to understand how the way schools are led, organized and resourced affect the quality of student outcomes. The research has focused on identifying the key factors that determine the 'success' of a school. 'Success' has been variously defined, but a common understanding is that schools exist to ensure that children receive the requisite knowledge and skills on which to build a productive life. This 'requisite knowledge and skills' and how the attainment of these are measured, will vary according to the social, economic, political and cultural context of each society.

Essentially therefore, an effective school is one that meets basic standards of education established by a particular society. These standards are ideally not all academic, but often, academic performance is used as the key measure of successful student outcomes. Though understood to be only a proxy for success, academic performance remains the main product which schools are expected to deliver and as such academic results are the single most important measure of effectiveness in a traditional school system.

For Jamaica, this is measured by performance in a range of assessments at the primary and secondary level, beginning with the Grade Four Literacy Test and culminating in the Caribbean Secondary Examinations (CSEC). Despite substantial public investment in education, low test scores in critical national examinations continues to be a concern of the Jamaican government and its citizens (PRAEL & CAPRI, 2012). In 2011, 69 percent of the 41,668 students who sat the first sitting of the Grade Four Literacy Test achieved 'mastery' and therefore, were certified as literate, while the results of 21 percent were classified as 'almost mastery' and the remaining 10 percent were classified as 'non-mastery' (Ministry of Education, 2011). More recently, nearly 40 percent of the 42,000 students who sat the Grade Six Achievement Test in 2013 performed below standard (Francis, 2013). As the recent

report card on education noted, these examination results are symptomatic of gaps in the education system (PRAEL & CAPRI, 2012). This is evinced by school inspections conducted by the NEI between September 2011 and March 2012. Only 44 percent of the 205 schools inspected were considered effective, which supports the recommendation for an examination of the effectiveness of educational institutions.

2. The Features of An Effective School: A Review of the Literature

School effectiveness research plays a major role in identifying the “effectiveness enhancing conditions defined at the school level” (Scheerens, 2005). School effectiveness has been defined as the “ unique characteristics common to schools in which children regardless of socio-economic background, race or gender, learn the essential skills, knowledge and concepts required to successfully advance to the next level” (Foster-Allen, 2010, Dwyer, 2013). However, Mott (1972) highlighted it as a process where coordination is essential. According to him, school effectiveness is “the ability of an organisation to mobilise its centres of power for action – production and adaptation”(Uline, Miller and Tschannen – Moran, 1998,p. 467). The inclusion of adaptation is a critical aspect of the definition as it relates to the capacity to change in response to variations in the environment.

While the primacy of students’ academic achievement as the litmus test for school effectiveness is both logical and inevitable, the import of social outcomes vis a vis the school experience is also acknowledged (Carasco, Munene, Kasente and Odada,1996; Foster-Allen, 2010, Uline et al, 1998). For Carasco et al. (1996), students’ behaviours, experiences and expectations were essential indicators of school effectiveness. Conversely, the experiences of other stakeholders such as teachers have been identified as useful means to determine whether schools are effective. Uline, Miller & Tschannen – Moran (1998) for example, explored and identified the importance of teacher’s perception of school effectiveness. Though selecting school effectiveness outcomes reflect the ideal results of educating

students, the means to realising these outcomes are influenced by the context and resources available (Riddell, 2008; Scheerens, 2004; Saleem, Naseem, Ibrahim, Hussain & Azeem, 2012). Thus, understanding the factors identified through school effectiveness research work is critical as they can be used as prescriptive guide to school improvement.

The Production Function: Input-Output Model of Effectiveness

The first wave of three waves of school effectiveness research, as outlined by Riddell (2008), utilised the economists' production functions approach in order to measure variables on academic achievement. Scheerens (2000) noted that the aim of economic approaches is to ascertain "which malleable inputs can increase outputs". Inputs referred to factors such as teacher experience, expenditure per student, while outputs meant academic achievement. Coleman (1966) exemplifies the work associated with this wave. Coleman examined the relationship between the academic performance and three types of school characteristics, namely, teacher characteristics, material facilities and curriculum, and students' socioeconomic status and ethnic background. This study found these school characteristic accounted for 10 percent of the variance in academic achievement. However, the Coleman report received criticism for its limited operationalisation of school characteristics (Scheerens, 2000). In his review of 377 studies aimed at examining the effect of key resources on student performance, Hanushek (1997 cited in Scheerens, 2000), found that that the results were inconsistent. Of the 277 studies that included teacher – student ratio as a potential malleable input, only 28 percent yielded statistically significant results. Furthermore, only 54 percent of studies that yielded statistically significant results, reported a positive relationship with student performance, and 46 percent found a negative relationship (Scheerens, 2000). Likewise, of the 24 studies that found teacher education to be statistically significant, 64 percent reported a positive relationship with student achievement while the remaining noted a negative relationship. The mixed results underscored the need to understand the 'why' as it relate to research findings and the interaction between different factors (Scheerens, 2000).

A Focus on Process

Hence, the rise of the second wave of research that focused on process variables, including those at the classroom level such as teaching style rather than the input-output approach. Researchers in this wave sought to identify how different attributes influence classroom practice. This level is a critical part of determining a workable model of school effectiveness as it includes the least distal explanatory variables, and therefore, likely to account for a greater proportion of the variance. As Creemers and Scheerens (n.d.) noted, this is an inevitable inclusion when conceptualising a causal model of effectiveness. However, researchers noted that school effectiveness research failed to capture the hierarchical nature of the schools and consequently, the complex interrelationship among variables and their impact on educational outcomes (Scheerens, 2000; Scheerens, 2004; Riddell, 2008).

Compositional Effect

In response, the third wave of school effectiveness research recognised the intricate web of factors that influence education quality and effectiveness. Riddell (2008) explained that the associated studies “focused on the interrelationship of variables across the typically clustered phenomena of schools, in which students, themselves of varying backgrounds, are taught in different classes, different schools, by different teachers, and with different resources in different parts of the countries in which they live” (p. 11). Analysis by the Programme for International Student Assessment (PISA) which examines school related factors of quality and effectiveness cross-nationally, found that the implications of compositional effect (for example socio economic background of students) is also relevant when examining effectiveness factors within a country. The results from the 2000 study indicated that 50 percent of the variance in reading literacy was due to student characteristics, 18 percent result from the school context and 6 percent by school climate policies and resources (OECD, 2000). However, depending on the socioeconomic context of schools and countries, variances may differ, and thus influence the extent to which they are relevant. School climate was noted as statistically significant and for the average OECD country, it accounted for 8 percent of the variance in reading literacy. However, for some countries this variable accounted for 15 percent of the variance. Similarly, on average,

resources was found to account for 2 percent of the variance in reading literacy, but for Hong Kong, China, this variable accounted for 32 percent of the variance. Furthermore, school context, school climate and student characteristics are said to jointly account for 31 percent of the differences in student performance (OECD, 2000). This PISA study highlight the need to consider context background of schools as well as their students when considering the applicability of school effectiveness models for school improvement.

Organisational Models of School Effectiveness

Uline, Miller and Tschannen – Moran (1998) sought to account for the complexity of school effectiveness by building on the work of Hoy and Miskel who amalgamated a goal model and system model of organisational effectiveness. “According to a goal model, schools are effective to the degree they achieve established goals” whereas “a system model speaks to individual actors and the organic nature of organisations within which they function” (Uline et al., 1998, p. 465). Factors such as trust, cohesion and commitment are included in the model as essential factors for fostering an organisational culture, which plays a critical role in coordinating staff and students to meet organisational objectives (Uline et al., 1998).

Uline et al. (1998) examined this model of school effectiveness in 86 of New Jersey’s middle schools. In addition to students’ achievement scores in math, reading and writing, teachers completed a survey about the following factors: school health, trust in principal, trust in colleagues, and teachers’ perception of organisational effectiveness. The study provided evidence that all factors had a significant positive correlation with each other. In other words, the stronger these critical elements are evident in schools, the more likely they are to be perceived as effective and promote student achievement. Perceived effectiveness, measured by teachers’ perception of the quantity and quality of the instruction, school’s learning and extracurricular events, efficiency of the schools’ operation and its ability to adapt, had a strong, significant relationship with all factors measured including academic achievement. However, trust in teachers had the highest correlation with perceived organisational effectiveness ($r = .718, p < .01$), which highlights the significance of this factor to promoting optimal organisational functioning. Though trust in principal had a weak

significant relationship with student achievement, it had a significant, strong relationship with perceived organisational effectiveness. In addition, the model accounted for 72 percent of the variance in perceived organisational effectiveness (Uline et al., 1998). Thus, these factors are considered useful 'effectiveness enhancing conditions at the school level'.

Five and Nine Factor Models

Five of the most commonly mentioned school characteristics in research is often referred to as the five factor model (Scheerens & Creemers, n.d.; Scheerens, 2000). These include strong educational leadership, high expectations of student achievement, emphasis on basic skills, a safe and orderly environment and frequent evaluation of pupil's progress. Schweiter (1984), cited in Scheerens and Creemers (n.d.), found a strong correlation ($r = .58 - .79$) between academic achievement and the factors of this model in the American context. However, a replication study conducted in the Netherlands by Vermeulen (1987) cited in Scheerens and Creemers (n.d.) only yielded one significant relationship. Furthermore, a review of 11 Dutch studies that focused on school effectiveness factors, including those of the five factor model, yielded inconsistent results. Achievement orientation (high expectations of student achievement), frequent evaluation of students' progress and a safe and orderly climate were the factors that were most cited as being significant. These studies suggest that though these factors may be significantly correlated to student achievement, they do not inevitably present the best model of school effectiveness. Nevertheless, the correlation between these factors and academic achievement means they are promising factors that can contribute to models that will explain the total variance in educational outcomes.

Underlying the identification of these characteristics is the assumption that they can be replicated by other schools which wish to become successful. This assumption has been challenged on the grounds that school context greatly influences a schools ability to cultivate the 'effectiveness characteristics' and hence the assessment of schools on these elements in isolation of their 'unique' contexts is counterproductive. This led to the expansion of the five-factor model to a more expansive model, which identified nine key characteristics of successful schools

(Shanon and Blysm, 2007). These nine characteristics fall in three broad categories:

1. Goals and aspirations

- a) Clear and shared focus
- b) High standards and expectations for all students

2. Processes and actions

- a. High levels of collaboration and communication;
- b. Curriculum, instruction, and assessments aligned with national standards;
- c. Frequent monitoring of learning and teaching.

3. Supports and capacity building

- a. Focused professional development,
- b. A supportive learning environment
- c. High levels of family and community involvement

The ninth factor; **Effective school leadership**, is considered a transversal issue and therefore not limited to any one category, but rather influences all other areas.



School effectiveness within the Jamaican context

Within the Jamaican context, school effectiveness has been defined by the following characteristics: strong leadership, a clear school mission, a safe and orderly climate, transparent and effective monitoring of students' progress, high expectations and parental involvement (Dwyer, 2013). These factors align with correlates of school effectiveness identified by Lezotte (Kirk and Jones, 2004) and have garnered empirical support through educational research conducted locally and overseas.

Strong leadership

Strong leadership plays a major role in the management of schools' resources and therefore, is consistently identified as an effectiveness enhancing condition (Leithwood, 2005, Scheerens, 2000, The Wallace Foundation, 2010; Louis, Leithwood, Wahlstrom, & Anderson, 2010; Dinham, 2004). This emphasis is supported by Leithwood (2005), which found that the effect of school leadership is a statistically significant factor and accounts

for approximately 3 to 5 percent of variance in educational outcomes. Furthermore, the findings of research conducted by Louis et al. (2010) over a 6 year period observed that the influence of school leadership on student learning is second only to classroom instruction (cited in The Wallace Foundation, 2011). This observation is understandable because the "teaching takes place at the classroom level, whereas other levels of the organisation are providing the conditions necessary for these activities to take place" (Uline et. al., 1998, p. 464). Thus, the school can be described as a hierarchal institution where leadership is distributed among principals, grade supervisors, head teachers and classroom teachers who directly and indirectly influence educational outcomes. While individual leadership's influence on student achievement may be small, collective leadership, which encompasses all sources of leadership, tend to be stronger (Louis et al., 2010). Consequently principals are considered leaders of leaders and an effective one "acts as the instructional leader and effectively and continually communicates the mission

Box 1: Eight Key Performance Indicators for Jamaica Schools

1. How well the school is led and managed
2. How effectively does teaching support learning
3. Performance of students on national and regional tests and assessments
4. Student progress in relation to their starting points
5. How well Curriculum and Programme enhancements meets student needs
6. Student personal and social development
7. Effective use of human material resources to help students achieve
8. Safety, security, health and wellbeing of students and staff.

Source: National Education Inspectorate Handbook

of the school to staff, parents and students” (Lezotte (2001) cited in Kirk and Jones (2004) , p. ?). This helps to create a shared sense of purpose, which is supported by five key functions of school leadership. These include ‘shaping a vision of academic success for all students’, ‘creating a climate hospitable to education’, cultivating leadership in others’, ‘improving instruction’, and ‘managing people, data and processes to foster school improvement’ (The Wallace Foundation, 2011, p.2).

Within the Jamaican context, high performing principals were found to exhibit nine (9) characteristics based on qualitative research involving 125 high performing principals (Hutton, 2011). According to Hutton, they:

- 1) Articulate a philosophy of self and school’,
- 2) Emphasize the importance of personal characteristics, abilities and qualities’
- 3) Practice situational and transformational leadership behaviour’
- 4) Provided a supportive platform for student growth and development
- 5) Focused on student academic performance and achievement
- 6) Emphasize the need for strong staff involvement and support
- 7) Recognise the psychological benefits of a well-managed school plant
- 8) Engender broad-based community relationship”
- 9) Enjoy a cordial but sometimes fractious relationship with the Ministry of Education”

A clear school mission

According to the National Education Inspectorate, it is the principal’s duty “to create a common vision, build effective teams” (Dwyer, 2013, p. IX). A leader of leaders, principals are also responsible for “shaping a vision of academic success for all students”, which is key function that facilitates successful coordination of the teaching staff (Wallace Foundation, 2011). This is supported by Hutton (2011) that identified 9 characteristics of high performing principals, including articulating “the philosophy of self and school”. According to Hutton, it involves an emphasis on the role of education in developing the learner and preparing them for economic independence (The Wallace Foundation, 2011).

High Expectation for success

This factor refers to having the high expectations of students to succeed and that staff have the capacity to facilitate students' academic success. High expectation of students is a factor that has been cited in other research as having a significant relationship with student achievement and is considered one of the nine factor model of school effectiveness. Similarly, this factor has been identified as one of the 14 effectiveness enhancing factors (Bosker (1997) cited in Scheerens (2004)). Hutton (2011) found that high performing principals 'focused on students' academic performance and achievement", which relates to achievement orientation. High expectation of success is a manifestation of the social climate that is shaped by the relationships between teachers and students and among students, and plays a critical role in motivating students, and promoting student (Allodi, 2010).

Opportunity to learn: Time on task

OECD (2009) explained that "time on task is a central aspect of instructional effectiveness because it provides students with a maximum opportunity to learn" (OECD, 2009, P. 104). This results from being "actively engaged in whole-class or large group, teacher-directed, planned learning activity" for majority of this time which is dedicated to essential curricula areas (Lezotte, 2001, cited in Kirk and Jones, 2004). A review of five review studies noted this factor as one that was consistently referred to as a significant factor of school effectiveness.

Monitoring the progress of students

This factor involves the measurement of students' progress academically over time. As one of the five factor model of school effectiveness, this factor has received strong empirical support. In order to perform the key function of "improving instruction" or "provide a supportive platform for student growth and development", this is one of the classroom level factors that needs to be in place (The Wallace Foundation, 2010; Hutton, 2011). This factor is also key to the principal's ability to effectively manage 'people, data and processes to foster school improvement'.

A safe and orderly environment

The inclusion of this as part of the nine factor model indicates that it received strong empirical support. This factor relates to creating ‘a climate that is hospitable to education’ and is accomplished by establishing a social climate and physical space that is conducive to learning (PISA, 2009; Hutton, 2011). School effectiveness is facilitated when students operate in a classroom environment where “ better disciplinary climates, more positive behaviour among teachers and better student teacher relations” exist (PISA, 2009, P. 54). According to the PISA 2009 Report, even after socioeconomic status is counted for, these elements of the school environment tended to result in higher scores in reading.

A safe and orderly environment also refers to the school plant. According to Hutton (2011), high performing principals in Jamaica identified the shift system and overcrowding as the biggest challenges to having a well-managed school plant. Despite these and issues concerning maintaining order and safety of students, they sought appropriate workable solutions, irrespective of whether they receive the required support from the Ministry of Education.

Positive home school relations

This factor refers to parents as valued members of the community who is aware of the school’s mission, agree to it and provide support when needed to fulfill it (Dwyer, 2013). This is supported by Hutton (2011) who found high performing principals engaging the wider community in a symbiotic relationship. This factor was also supported by Carasco et al. (1996) that found that the best performing schools on the achievement test had the highest community involvement while the reverse was true of the three worst performing schools on the same test.

While the correlates above are “the means to achieving high and equitable levels of student learning” (Kirk & Jones, 2004, p. 2), the complexity of the relationship between variables must be examined as an integrated whole. As a result, the coalescence of school effectiveness factors must reflect the hierarchal nature of schools, be contextually relevant and embody three basic principles: “1) goal oriented behaviour 2) optimal choice between alternative means to reach given

goals and 3) recognition that alignment between individual preferences and organisational goals is a major issue in organisations” (Scheerens, 2000, p.74). If these principles are not manifested in the model, the mobilisation of resources, especially human resources, will be fraught with issues resulting from lack of shared vision, effective decision making and cohesion.

3. The Current Study

3.1. Rationale and Objectives

The current study is designed to assess the factors that determine school effectiveness in the Jamaican context. This is being done to assist the Ministry of Education to define quality standards in the sector and to more accurately target its support to schools across the island as part of its Education Transformation Programme. These transformation efforts are focused on improving student performance by addressing the operational and instructional issues facing the system, expanding access, improving teaching and learning and transforming the governance structures of the education system. Identifying the characteristics of effective schools, is a key starting point in helping to support less successful institutions to raise the performance of their students.

The Education System in Jamaica

The education system in Jamaica is divided into four levels¹, all involving both public² and private institutions. The early childhood level caters to children aged 3-5 years and is dominated by a network of privately run institutions, with only 10 per cent of students at this level attending public schools (MoE Education Statistics 2010). By the time children enter the primary level (age 6-11 years), over 90 per cent are enrolled in public institutions and the same is true for secondary schools (age 12-16, with provision for two additional optional years for ages 17-18). The tertiary level provides education for students aged 19 and above.³ The Education Act allows for the declaration of a compulsory education age by the Minister of Education and the

¹ The Education Act of 1965 recognises only three levels, primary, secondary and tertiary (section 7a)

² public schools account for 87 per cent of enrolment at all levels (JSLC 2010)

³ Jamaica recognizes 3-24 years as the official ‘school age’ for planning purposes.

last such formal declaration was in 1982, when the age was declared as 6-12 years (UNESCO 2010⁴ and CAPRI 2009).

Although Jamaica enjoys universal enrolment of children at the early childhood and primary levels and up to grade nine at the secondary level, enrolment at the higher levels of the secondary system, particularly of poor and vulnerable children, remains of concern. In addition, there are misgivings about the quality of education available to students and the high levels of underperformance at both the primary and secondary levels. This high level of underperformance exists alongside pockets of excellence, highlighting the extent of inequality among schools. Reducing, and ultimately eliminating this large achievement gap is the primary objective of Jamaica's education reform efforts.

3.2. Research Questions

The analysis of this data is intended to answer five key questions:

1. What are the main characteristics of an effective school in Jamaica?
2. How are the basic inputs given to the school related to school effectiveness?
3. Does the existence of a School Improvement Plan relate to the overall effectiveness of the school?
4. How accurate is the effectiveness measure used by the National Education Inspectorate (NEI)?
5. Is there any relationship between school effectiveness and student outcomes?

3.3. Research Design and Sample

The data for this report was provided by the IDB and was obtained from a Study on School Effectiveness⁵. The sample used a multi-staged sampling strategy involving: stratified, randomized cluster sampling (with replacement), which was used to select 97 schools and subsequently to systematically select 762 teachers on the basis of prescribed rules. Interviewers were mostly retired senior educators who administered the instruments to teachers, principals, and education officers.

⁴ UNESCO (2010) World Data on Education VII ed. 2010/2011.
http://www.ibe.unesco.org/fileadmin/user_upload/Publications/WDE/2010/pdf-versions/Jamaica.pdf (April 11, 2013)

⁵ Trevor Hamilton and Associates. 2012

A total of 96⁶ schools were included in this study because one school in the original study did not have an NEI rating. A total of 685 interviews were obtained for the enablers audit, and 646 for the students outcome. The distribution of the sample by school is shown in Table 1. Although primary schools were in the majority, more enablers and school outcome questionnaires were collected from secondary schools, probably because secondary schools have larger populations.

Table 1: Sample

School type	No. of schools	No. of enabler questionnaires	No. of Student outcome questionnaires
Primary	54	280	267
All-Age/Junior High	11	57	47
Secondary	30	339	323
Technical	1	9	9
Total	96⁷	685	646

3.4. Data Collection and Instrumentation

Six (6) data collection instruments/protocols were used to collect the required primary qualitative and quantitative data. However, this report used the data provided by:

- a) The Enablers' Audit Form (Appendix 1)
- b) Student Outcomes Review Form (Appendix 2)
- c) School Improvement Plan (SIP) Rating scale (Appendix 3)

The school effectiveness rating/score designated by the National Education Inspectorate was used as the dependent variable for this analysis.

The Enablers Audit Survey

⁶ 97 schools were sampled but there was no NEI score for one school, thereby reducing the useable sample to 96

⁷ There are 999 public schools.

This survey captured data on the structures, processes, procedures, and resources existing at each school that 'facilitated teaching and enable learning by students'⁸. The questions solicited information on the factors in the classrooms, the school, the activities of the community of stakeholders, and the policy and support environment, which facilitated the work of the teachers and therefore were seen as 'learning enablers'.

Randomly selected teachers and administrators in each of the ninety-seven schools completed the questionnaire. The number of questionnaires completed in each school varied according to the size of the school.

This instrument covered topics such as in-class support for students of varying needs, opportunities for students to share and demonstrate their learning, the use of the timetable to support achievement of key learning outcomes, use of assessments of students learning to improve academic outcomes, expectations and standards in the school environment, parent and community engagement strategies and also covers issues of adequacy of resource allocation and funding for the school.

The Student Outcomes Review

The teachers in each school who completed the Enablers Audit Survey also completed this questionnaire. The instrument collects information on the teachers' perception of the students' learning outcomes. It focuses on areas such as the students' ability to apply literacy and numeracy skills across content area, their ability to reflect on and adapt and refine ideas/concepts, clearly express their thinking, initiate help in pursuit of their own learning, effectively interact with adults and peers and set personal goals to improve their learning inter alia.

The School Improvement Plan Rating Scale

Completed by the research team, this rating scale assesses the quality of the School Improvement Plan developed and implemented by the school. The Plans are rated vis-à-vis the self evaluation mechanism in place in the school, the provision they

⁸ Preamble to questionnaire.

make for monitoring and evaluation and the use of data for planning as well as the strategies for engaging all major stakeholders to implement the plan.

All instruments employed a simple five-point Likert scale for response options.

3.5. Data Analysis

To analyse the data by school, the mean scores⁹ of each variable of interest was determined for each school.

3.5.1. Examining the enablers

Factor analysis was performed on the 107 variables in the Enabler questionnaire to determine which factors explained most of the variance. However, with a few exceptions, all the variables explained more than 60% of the variance and could not be eliminated. A discriminant analysis was performed to determine whether the results of the original study could be replicated to obtain similar dimensions of enabling; but the results were dissimilar. This does not necessarily invalidate the first findings because it referred to analysis based on school type, which was not done for this report, as it was felt that the sample size in each school type was too small to merit that level of analysis.

Therefore the decision was taken to perform analyses with alternative groupings as follows:

- 1) The Eight Dimensions of Enabling identified in the TH&A study
- 2) Enabling Factors /Categories used in Enabler Survey Instrument
- 3) Group 3. Enabling factors by Key Education Environments
- 4) Characteristics in the Shanon and Blyma Nine-Factor Model of School Effectiveness.

Group1. Eight Dimensions of Enabling

Variables were grouped according to the dimensions used in the original report as shown in Table 2. Consequently, there were 8 enabling dimensions and 3 dimensions of students' outcome.

⁹ The mean, rather than the sum, was determined to avoid the problem of missing values

Table 2. Enabler Dimensions

Factor	Reliability	Variable
Enabler Dimension 1: Classroom level programs & processes of instruction for learning	.987	AE05, AE03, AE02, AE09, AE01, AE10, AE07, AE06, AE08, AE04
Enabler Dimension 2: Curriculum & School level learning support programs	.988	BE01, BE02, BE08, BE03, BE07, BE05, BE06, BE10, BE09, BE04, DE03, DE04
Enabler Dimension 3: General Community Relations with the school	.971	CE04, CE05, CE02, CE01, CE07, CE11, BE11
Enabler Dimension 4: Resource availability, Use & Management	.949	DE09, DE08, DE07, DE05
Enabler Dimension 5: School plant & other Infrastructure & facilities that support instruction	.876	DE01, DE02
Enabler Dimension 6: Parental Support for & involvement in classroom processes	-	AE11
Enabler Dimension 7: Roles & responsibilities in character development	-	CE10
Enabler Dimension 8: Governance & community decision-making in schooling	-	DE11

Source: Trevor Hamilton and Associates (2012)

Group 2. Enabling Factors /Categories used in Enabler Survey Instrument

Enabler variables, whether in the classroom, the school environment, the community of stakeholders or the policy and support environment, were grouped into 11 broad areas in the questionnaire as follows:

- I. To cultivate culture of high expectations, be fully committed to learning & be highly confident
- II. To actively engaged in academically demanding skills which require competencies for critical thinking
- III. Institution is differentiated and needs driven to match students aptitudes, entry level & to infuse students prior knowledge / experience
- IV. To acquire mastery of, and culture for sustaining competencies in literacy and numeracy

- V. Operating structures exist to support working knowledge of literacy and numeracy
- VI. Operating structures to optimize the use of instructional time
- VII. School administrators, teachers & Board work as team to develop, implement and monitor a school plan for improvement of students
- VIII. Build the schools' staff teaching capacity.
- IX. Clearly defined mechanisms established and operating to analyze student data and for refining instructional practices
- X. Character development and sustainability must be a critical effectiveness friction.
- XI. Parents and community members having coaching mentoring counseling, communication & other skills & resources engaged in supporting the learning environment.

Group 3. Enabling factors by Key Education Environments

Enabler variables were grouped into 4 sub-groups as follows:

- Enablers in the classroom
- Enablers in the school environment
- Enablers in the community of stakeholders
- Enablers in the policy and support environment

Group 4. Enabling Factors in the Shanon and Blysmá Nine-Factor Model of School Effectiveness .

Enabler questions were grouped into 8 enabler variables according to nine factor model of school effectiveness as follows:

- i. Goals and aspirations - Clear and shared focus and High standards and expectations for all students
- ii. Processes and actions - High levels of collaboration and communication
- iii. Processes and actions - Curriculum, instruction, and assessments aligned with state standards
- iv. Processes and actions - Frequent monitoring of learning and teaching
- v. Supports and capacity building - Focused professional development
- vi. Supports and capacity building - A supportive learning environment
- vii. Supports and capacity building - High levels of family and community involvement.

For this approach, the researchers based on their assessment of relevance/fit, assigned questionnaire items to the variables. Variable assignments are shown in Table 3.

Table 3: Nine Factor Model¹⁰ Enablers and the Variables.

Enabler	Variables
Goals and aspirations	BEO1_1, BEO1_3, BEO4_3, BEO4_4, BEO10_1, BEO10_2, BEO10_3, BEO10_4, CEO7_1, CEO7_2, CEO7_3, DEO1_1
High levels of collaboration and communication	AEO8_1, BEO1_4, BEO2_1, BEO9_3
Curriculum, instruction, and assessments aligned with state standards	AEO1_1, AEO1_2, AEO1_3, AEO1_4, AEO2_2, AEO3_2, AEO3_3, AEO3_4, AEO3_5, AEO4_1, AEO4_2, AEO4_3, AEO4_4, AEO5_1, AEO5_2, AEO5_4, AEO7_1
Frequent monitoring of learning and teaching	AEO3_2, AEO3_6, AEO5_5, AEO7_2, AEO9_1, AEO9_2, BEO1_2, BEO5_3, BEO9_1, BEO9_2
Focused professional development	AEO5_3, BEO2_5, BEO8_1, DEO4_2, DEO5_2, DEO7_2, DEO8_1
A supportive learning environment	AEO2_1, AEO2_3, AEO3_1, AEO6_1, AEO6_2, AEO10_1, AEO10_2, AEO10_3, AEO10_4, AEO10_5, AEO11_1, BEO2_2, BEO2_3, BEO2_4, BEO3_2, BEO3_3, BEO5_1, BEO6_1, BEO6_2, BEO8_3, BEO10_5, DEO2_1, DEO5_1
High levels of family and community involvement	AEO11_1, BEO4_1, BEO4_2, BEO11_3, CEO1_1, CEO1_2, CEO1_3, CEO2_1, CEO2_2, CEO4_1, CEO4_2, CEO5_1, CEO10_1, CEO11_1
Resource Availability, Use and Management	DEO4_3, DEO7_1, DEO9_1, DEO9_2
Leadership	AEO8_2, AEO8_3, BEO3_1, BEO5_4, BEO7_1, BEO7_2, BEO7_3, BEO7_4, BEO8_2, BEO11_1, BEO11_2, DEO3_1, DEO3_2, DEO3_3, DEO4_1, DEO4_4, DEO11_1

3.5.2. Examining Students Learning Outcomes

The original report identified three learning outcome factors (Table 3) namely:

- Knowledge Related Outcomes (KRO),
- Psychomotor Related Outcomes (PRO)
- Value System & Personality Related Outcomes (VS&PRO).

¹⁰ Though not a part of the original schema, budgetary provision was added to this model for Jamaica, as this was an important area of interest for policymakers. Hence, clear and focused goals and high levels of expectation were collapsed into one enabler expressed as ‘goals and aspirations.’

Table 3. Student Outcome Variables

Factor	Reliability	Variable
Outcome Dimension 1: Knowledge Related Outcomes	.982	LO01, LO02, LO03, LO04, LO05, LO06, LO07, LO08, LO09,
Outcome Dimension 2: Physical & Psychomotor Related Outcomes	.978	LO10, LO11, LO12, LO13, LO14, LO15, LO16
Outcome Dimension 3: Value System & Personality Related Outcomes	.993	LO17, LO18, LO19, LO20, LO21, LO22, LO23, LO24, LO25, LO26, LO27, LO28, LO29, LO30, LO31, LO32, LO33, LO34, LO35, LO36, LO37, LO38, LO39, LO40, LO41

Source: Trevor Hamilton and Associates (2012)

A factor analysis of the 41 student outcome variables confirmed these findings/groupings.

3.5.3. NEI Scores

For the measure of effectiveness, the NEI scores (Appendix 4) were grouped into 2 groups:¹¹

- i. Effective: Where the schools attained a score of satisfactory, good or exceptionally high;
- ii. Ineffective: Where the schools attained a score of needs immediate support or unsatisfactory.

3.5.4. The School Improvement Plan

School Improvement data were available for 94 schools¹².

The questionnaire identified six broad areas in which the School Improvement Plan was evaluated as follows:

- i. **The imperatives for the school improvement plan**

¹¹ The original report used 3 groups but it was felt that this was too many because the total sample was only 96.

¹² There was no data for 2 high schools.

- Hierarchy of the Level of Impact of Each Enabler on the Effectiveness Factor
- The Hierarchy of the Effectiveness Deficits
- The Possibilities for Optimizing Effectiveness Within resource Limitation

ii. SIP - expected impact on students

- Knowledge
- Attitude
- Predisposition
- Skills
- Aptitude

iii. SIP - Planned programme of enablement of students

- Culture for High Expectations and Full Commitment To Learning
- Aptitude for Critical Thinking
- Responsiveness To Special Attributes
- An Environment for Acquiring Comprehensive Knowledge in Literacy and Numeracy
- Operating Structures and Processes For Facilitating Working Knowledge of Literacy and Numeracy
- Operating Structures to Optimize the Use of Instructional Time
- School Administration, Teacher and Board Engaged in Implementation and M&E of the SIP
- Continued Building of School Staff Teaching Capacity
- Institutionalized Mechanisms in Operation To Produce Effectiveness Data and Support Timely Decisions
- Character Development
- A Multifaceted Learning Environment Engaging All Stakeholders in Reinforcement Activities

iv. Implementation plan for SIP - role and specific accountabilities at:

- The Class teacher Level
- The School Administrator Level

v. Monitoring and Evaluation of the Plan

vi. Sustainability Mechanisms

3.5.5. Analyses performed

The main types of analyses used were:

- T-tests of significant differences between mean scores between effective and ineffective schools. This was done to determine whether there were statistically significant differences between the means scores in various enabler dimensions for effective and ineffective schools.
- Cross-tabulations: to examine the interrelation/interactions among the variables.
- Linear regression: in an attempt establish a predictive relationship between the 'enabler variables' and school effectiveness. The NEI raw score was used as the dependent variable.
- Logistic regression with all independent variables recoded into two groups – high and low score to determine the likelihood of effective schools receiving high scores for the various measures of enablers.

4. Main Findings of the Study

4.1. Description of sample

In the final sample, approximately 50% of schools of the schools were effective and this distribution was similar for each of the school types, although it was slightly lower for All-Age/Junior High schools (Table 4). It is important to note that this distribution is not similar to what was observed nationally as the NEI data found that approximately 65% of schools were effective based on the data available for this study. However, the distribution of the samples provided sufficient numbers in each of the 2 groups to allow statistical analysis.

Table 4. Distribution of sample schools by whether effective and nationally

School type	No. of schools	% Effective Sample	% Effective Nationally
Primary	54	50.0	65.5
All-Age/Junior High	11	45.5	60.4
Secondary	30	50	68.3
Technical	1	100	100
Total	96	50	64.6

4.2. The Characteristics of Effective Schools

This section examines the four groups of enablers as discussed earlier. However the remainder of the section on finding more fully discusses the model s presented in Groups 1 and 4, that is, the eight enabling dimensions and the nine-factor model.

Group 1: Eight Enabling Dimensions

When the enabling factors are examined by whether the schools are effective or not, the results show that effective schools had significantly higher scores than those that were not effective and this was true for all dimensions (Table 5).

Table 5. Mean scores for the eight enablers for effective and ineffective schools

Dimension	School effectiveness	N	Mean score
	Classroom level programs & processes of instruction for learning*	Not effective	48
	Effective	48	3.86
Curriculum & School level learning support programs**	Not effective	48	3.41
	Effective	48	3.78
General Community Relations with the school**	Not effective	48	2.49
	Effective	48	3.03
Resource availability, Use & Management**	Not effective	48	2.26
	Effective	48	2.75
School plant & other Infrastructure & facilities that support instruction**	Not effective	47	3.08
	Effective	48	3.64
Parental Support for & involvement in classroom processes**	Not effective	48	1.88
	Effective	48	2.60
Roles & responsibilities in character development**	Not effective	48	2.68
	Effective	48	3.28
Governance & community decision-making in schooling*	Not effective	47	2.80
	Effective	48	3.17

When each dimension was regrouped into two groups i.e. high score and low score, the results show an interesting pattern (Table 6). Classroom level programs & processes of instruction for learning, Resource availability, Use & Management and Governance & community decision-making in schooling were not significantly associated with school effectiveness. General Community Relations with the school, and Parental Support for & involvement in classroom processes were both significant enablers, with, 71% and 75% respectively for effective schools receiving high scores compared with 35% and 31% for ineffective schools.

Similarly, over 70% of effective schools received high scores for Curriculum & School level learning support programs, School plant & other Infrastructure & facilities that support instruction and Roles & responsibilities in character development with less than 50% of ineffective schools doing so.

Table 6. Level of Enabler Dimensions by whether School is Effective

Enabler Dimension		School effectiveness	
		Not effective %	Effective %
Classroom level programs & processes of instruction for learning ^{NS}	Low	54.2	35.4
	High	45.8	64.6
Curriculum & School level learning support programs*	Low	60.4	27.1
	High	39.6	72.9
General Community Relations with the school*	Low	64.6	29.2
	High	35.4	70.8
Resource availability, Use & Management ^{NS}	Low	58.3	41.7
	High	41.7	58.3
School plant & other Infrastructure & facilities that support instruction*	Low	55.3	22.9
	High	44.7	77.1
Parental Support for & involvement in classroom processes*	Low	68.8	25.0
	High	31.3	75.0
Roles & responsibilities in character development*	Low	52.1	25.0
	High	47.9	75.0
Governance & community decision-making in schooling ^{NS}	Low	48.9	31.3
	High	51.1	68.8
Total	N	48	48

*p<0.01; NS = not significant

Using a logistic regression only Parental Support was independently significant and schools that were effective were 3.97 (CI – 1-46-11.03) times more likely to have good Parental Support for and Involvement in Classroom Processes.

Group 2. Eleven Enabling Factors according to the questionnaire

When the eleven enabling factors are examined by whether the schools are effective or not, the results show that effective schools had significantly higher scores than those that were not effective and this was true for all eleven enablers (Table 7).

Table 7. Mean scores for the eleven enablers for effective and ineffective schools

Enablers	School effectiveness	N	Mean
To cultivate culture of high expectations, be fully committed to learning & be highly confident**	Not effective	48	3.41
	Effective	48	3.77
To actively engaged in academically demanding skills which require competencies for critical thinking**	Not effective	48	3.30
	Effective	48	3.65
Institution is differentiated and needs driven to match students aptitudes, entry level & to infuse students prior knowledge / experience*	Not effective	48	3.60
	Effective	48	3.84
To acquire mastery of, and culture for sustaining competencies in literacy and numeracy**	Not effective	48	2.89
	Effective	48	3.32
Operating structures exist to support working knowledge of literacy and numeracy**	Not effective	48	3.35
	Effective	48	3.67
Operating structures to optimize the use of instructional time*	Not effective	48	3.71
	Effective	48	3.96
School administrators, teachers & Board work as team to develop, implement and monitor a school plan for improvement of students**	Not effective	48	3.22
	Effective	48	3.65
Build the schools' staff teaching capacity**	Not effective	48	3.09
	Effective	48	3.41
Clearly defined mechanisms established and operating to analyze student data and for refining instructional practices**	Not effective	48	3.17
	Effective	48	3.53
Character development and sustainability **	Not effective	48	3.45
	Effective	48	3.74
Parents and community members having coaching mentoring counseling, communication & other skills & resources engaged in supporting the learning environment**	Not effective	48	2.60
	Effective	48	3.09

*p<0.05; ** p<0.01

When each of the eleven enabler was regrouped into 2 groups i.e. high score and low score, the results a similar pattern emerged with all the enablers being significantly associated with whether the schools are effective or not (Table 8).

In the logistic regression Operating Structures Exist to Support Working Knowledge of Literacy And Numeracy was the only significant enabler with an odds ratio of 6.97 (CI – 1.22 – 39.79). In other words, only those enablers relating to numeracy and literacy were significant predictors of a school being effective and schools which had the structures to support numeracy and literacy were 7 times more likely to be effective than those which did not.

Table 8. Level of Enabler by School is Effectiveness Status

Dimensions of Effectiveness		School effectiveness	
		Not effective %	Effective %
To cultivate culture of high expectations, be fully committed to learning & be highly confident**	Low	65.9	34.1
	High	38.2	61.8
To actively engaged in academically demanding skills which require competencies for critical thinking**	Low	68.1	31.9
	High	32.7	67.3
Institution is differentiated and needs driven to match students aptitudes, entry level & to infuse students prior knowledge / experience*	Low	61.4	38.6
	High	40.4	59.6
To acquire mastery of, and culture for sustaining competencies in literacy and numeracy**	Low	67.3	32.7
	High	26.8	73.2
Operating structures exist to support working knowledge of literacy and numeracy**	Low	71.2	28.8
	High	25.0	75.0
Operating structures to optimize the use of instructional time*	Low	60.0	40.0
	High	39.1	60.9
School administrators, teachers & Board work as team to develop, implement and monitor a school plan for improvement of students**	Low	72.2	27.8
	High	36.7	63.3
Build the schools' staff teaching capacity**	Low	69.7	30.3
	High	39.7	60.3
Clearly defined mechanisms established and operating to analyze student data and for refining instructional practices**	Low	65.2	34.8
	High	36.0	64.0
Character development and sustainability **	Low	65.9	34.1
	High	38.2	61.8
Parents and community members having coaching mentoring counseling, communication & other skills & resources engaged in supporting the learning environment**	Low	70.0	30.0
	High	28.3	71.7

*p<0.05; ** p<0.01

Group 3. Enabling Factors by Areas

The enabling factors were grouped according to the four (4) broad areas of the school and supporting environments: e namely – a) the classroom, b) the general school environment, c) the community of stakeholders and, d) the policy & support environment. For all four areas, the mean scores were significantly higher for effective schools (Table 10).

Table 10. Mean scores for the four enablers for effective and ineffective schools

Areas of Education Environment	School effectiveness	N	Mean
Enablement in the classroom**	Not effective	48	3.64
	Effective	48	3.85
Enablement in the school environment**	Not effective	48	3.42
	Effective	48	3.77
Enablement by the community of stakeholders**	Not effective	48	2.48
	Effective	48	3.03
Enablement by the policy and support environment**	Not effective	48	2.72
	Effective	48	3.21

*p<0.05; ** p<0.01

However, logistic analysis, examining the relationship between school effectiveness and these broad areas, showed that the policy environment is independently significant. Schools that were effective were 2.96 (CI –1.144-7.671) times more likely to have a good Policy & Support Environment.

Group 4. Nine Factor Effectiveness Model

The findings for the previous categories of enablers are supported when the nine-factor effectiveness factors are examined by whether the schools are effective or not. Effective schools had significantly higher scores than those that were not effective for all factors except Curriculum, Instruction, and Assessments Aligned with State Standards (Table 11).

However, for the logistic regression, none of the variables were significant.

Table 11. Mean scores for Nine Factor Characteristics for effective and ineffective schools

Effectiveness Characteristics	School effectiveness	N	Mean
Goals and aspirations**	Not effective	48	3.23
	Effective	48	3.66
High levels of collaboration and communication*	Not effective	48	3.43
	Effective	48	3.72
Curriculum, instruction, and assessments aligned with standards ^{NS}	Not effective	48	3.74
	Effective	48	3.89
Frequent monitoring of learning and teaching**	Not effective	48	3.68
	Effective	48	3.95
Focused professional development**	Not effective	48	2.98
	Effective	48	3.42
A supportive learning environment**	Not effective	48	3.42
	Effective	48	3.71
High levels of family and community involvement**	Not effective	48	2.49
	Effective	48	3.03
Budgetary factors**	Not effective	48	2.20
	Effective	48	2.73
Leadership**	Not effective	48	3.25
	Effective	48	3.67

When examined in relation to level of scores, the data showed significant differences in scores for goals and aspirations, leadership, alignment of curriculum, instructions and assessments with standards, high levels of family and community involvement, focused professional development and frequent monitoring of teaching and learning between ineffective and effective schools (Table 12). With the exception of curriculum, all the differences were highly significant. The only differences that were not significant were those in scores for levels of collaboration and communication and budgetary factors. It is important to note however, that 41% of ineffective schools received high scores for curriculum, instruction and assessment and budgetary factors.

Table 12: Level of Nine-Factor characteristics by whether or not School is Effective.

Factors		School effectiveness	
		Not effective %	Effective %
Goals and aspirations**	Low	76.3	23.7
	High	32.8	67.2
High levels of collaboration and communication ^s	Low	56.5	43.5
	High	44.0	56.0
Curriculum, instruction, and assessments aligned with standards *	Low	63.2	36.8
	High	41.4	58.6
Frequent monitoring of learning and teaching*	Low	65.0	35.0
	High	39.3	60.7
Focused professional development**	Low	69.8	30.2
	High	34.0	66.0
A supportive learning environment**	low	66.7	33.3
	High	35.3	64.7
High levels of family and community involvement**	Low	70.7	29.3
	High	34.5	65.5
Budgetary factors ^{NS}	Low	59.6	40.4
	High	40.8	59.2
Leadership**	Low	69.6	30.4
	High	32.0	68.0

4.3. School Improvement Plans and School Effectiveness

The development and implementation of School Improvement Plans are important steps in the transformation of schools. The process of developing a SIP forces school self-evaluation (SSE), particularly when that process is highly inclusive/participatory and reflective (CfBT 2013). Studies have shown that the fact of self-evaluation alone can help to enhance school effectiveness (Demetriou and Kyriarides 2012¹³ and CfBT, 2013). However, best results are obtained where SSE leads to the development of a comprehensive SIP, which guides the implementation of programmes and interventions to improve performance. A useful SIP sets out changes a school needs to make to improve achievement and uses data to show how and when these changes are made (Beaumont 2011).¹⁴

This study used correlations to assess the relationship between SIP and school effectiveness rating of the NEI. Five schools recorded zero for all the SIP indicators,

¹³ Demetriou and Kyriarides (2012): The impact of school self evaluation on student achievement. Oxford Review of Education. Vol. 38 No. 2, April 2012, pp. 149-170.

¹⁴ Beaumont, J (2011): Using Assessment and Evaluation to drive School Improvement. Presentation made at Jamaica Independent School Association Principals Conference 2011.

suggesting that they did not have a SIP. All these schools were rated ineffective by the NEI. The SIP indicators correlated well with the NEI score, with Monitoring and Evaluation having the greatest correlation (Table 13).

Table 13. Correlation between SIP indicators and mean NEI scores

SIP indicators	Pearson Correlation
The imperatives for the school improvement plan	.218*
SIP - expected impact on students	.239*
SIP - Planned programme of enablement of students	.353**
Implementation plan for SIP	.293**
Monitoring and evaluation	.382**
sustainability mechanisms	.324**

*p<0.05; ** p<0.01

Effective schools had significantly higher scores for all the SIP indicators, except 'The Imperatives for The School Improvement Plan' (Table 14). 'Expected Impact on Student' was moderately significant, while for the rest, the difference in mean scores, between effective and ineffective schools, was highly significant. Regression analysis was not performed because the existence of a plan, in and of itself, would not be expected to directly determine whether a school was effective or not.

Table 14. Mean SIP indicator scores for effective and ineffective schools

SIP Indicators	School effectiveness	N	Mean
The imperatives for the school improvement plan ^{N.S.}	Not effective	48	2.60
	Effective	46	3.07
SIP - expected impact on students*	Not effective	48	3.11
	Effective	46	3.56
SIP - Planned programme of enablement of students**	Not effective	48	2.80
	Effective	46	3.50
Implementation plan for SIP**	Not effective	47	2.98
	Effective	46	3.67
Monitoring and evaluation**	Not effective	48	2.28
	Effective	48	3.18
Sustainability mechanisms**	Not effective	48	2.77
	Effective	48	3.66

*p<0.05; ** p<0.01

Relationship between SIP Indicators and Eight Dimensions of Enabling

This section examines the relationship between the eight enablers in Group 1 and the SIP indicators (Table 15). There was no correlation between Classroom Level Programs & Processes Of Instruction For Learning or Parental Support for & Involvement In Classroom Processes and any of the SIP indicators. Also, General Community Relations With The School only correlated with the Implementation plan of the SIP. The correlations between SIP indicators and Resource Availability, Use & Management were highly significant ($P < 0.01$). Roles & Responsibilities In Character Development also correlated with all SIP indicators. Governance & Community Decision-Making In Schooling correlated with all the SIP indicators except Monitoring and Evaluation.

Table 15. Correlation between Eight Dimensions of Enabling and SIP Indicators

Dimensions of enabling	The imperatives for the school improvement plan	SIP - expected impact on students	SIP - Planned programme of enablement of students	Implementation plan for SIP	Monitoring and evaluation	Sustainability mechanisms
Classroom level programs & processes of instruction for learning	N.S	N.S	N.S	N.S	N.S	N.S
Curriculum & School level learning support programs	N.S	0.22*	0.23*	0.29**	0.23*	N.S
General Community Relations with the school	N.S	N.S	N.S	0.24	N.S	N.S
Resource availability, Use & Management	0.40**	0.42**	0.43**	0.50**	0.43**	0.40**
School plant & other Infrastructure & facilities that support instruction	0.26*	N.S	0.22*	0.25*	0.27*	N.S
Parental Support for & involvement in classroom processes	N.S	N.S	N.S	N.S	N.S	N.S
Roles & responsibilities in character development	0.26*	0.29**	0.26*	0.33**	0.25*	0.21*
Governance & community decision-making in schooling	0.23*	0.24*	0.22*	0.30**	N.S	0.21*

* $p < 0.05$; ** $p < 0.01$

Relationship between SIP Indicators and Enabling Factors

A similar analysis was done using the nine-factor effectiveness framework. These were correlated with the six SIP indicators (Table 16). Both Focused Professional Development and Budgetary Factors were highly correlated, while Leadership was correlated, with all SIP indicators. Goals and Aspirations correlated with Implementation Plan of the SIP and Monitoring and Evaluation, while High Levels of Family and Community Involvement correlated with Implementation Plan, Monitoring and Evaluation as well as The Expected on Students. Three factors, High Levels Of Collaboration and Communication, Curriculum, Instruction, and Assessments Aligned with State Standards, and A Supportive Learning Environment did not correlate with any of the SIP indicators.

Table 16. Correlation between Effectiveness Factors and SIP Indicators

Effectiveness Factors	The imperatives for the school improvement plan	SIP - expected impact on students	SIP - Planned programme of enablement of students	Implementation plan for SIP	Monitoring and evaluation	Sustainability mechanisms
Goals and aspirations	N.S	N.S	N.S	0.25*	0.21*	N.S
High levels of collaboration and communication	N.S	N.S	N.S	N.S	N.S	N.S
Curriculum, instruction, and assessments aligned with state standards	N.S	N.S	N.S	N.S	N.S	N.S
Frequent monitoring of learning and teaching	N.S	N.S	N.S	0.21*	N.S	N.S
Focused professional development	0.32**	0.34**	0.35**	0.43**	0.33**	0.31**
A supportive learning environment	N.S	N.S	N.S	N.S	N.S	N.S
High levels of family and community involvement	N.S	0.21*	N.S	0.24*	0.21*	N.S
Budgetary factors	0.36**	0.42**	0.42**	0.47**	0.39**	0.38**
Leadership	0.27*	0.26*	0.28*	0.35**	0.27*	0.22*

*p<0.05; ** p<0.01

Finally, the relationship between NEI, an overall enabling factors score, the SIP overall rating along with other physical factors such as location of school, teacher student ratio, location of school (whether urban or rural), crowding (the ratio of enrolled to capacity) was examined.¹⁵ Of the physical factors, only school attendance was significantly correlated with NEI scores ($r=.356$, $p<0.01$). In the regression analysis, using the overall enablers score, the overall SIP rating and the attendance, only the two latter factors were significant explaining 20.6% and 2.7% respectively of the variation in NEI scores. It is interesting to note that the SIP ratings explained more of the variance in NEI rating than did the attendance rate. This further underscores the importance of SIP to schools' successful functioning.

4.4. Effectiveness and Student Outcomes

When the dimensions of student outcome are examined by whether the schools are effective or not, the results show that effective schools had significantly higher scores than those that were not effective for Knowledge Related Outcomes and Value System & Personality Related Outcomes (Table 17).

Table 17. Mean scores for the dimensions of students' outcomes for effective and ineffective schools

Dimensions of Students Outcomes	School effectiveness	N	Mean
Knowledge Related Outcomes*	Not effective	47	2.90
	Effective	47	3.27
Physical & Psychomotor Related Outcomes	Not effective	47	3.58
	Effective	47	3.74
Value System & Personality Related Outcomes*	Not effective	47	2.80
	Effective	47	3.21

* $p<0.01$

When each dimension of students' outcome was regrouped into 2 groups i.e. high score and low score, a similar pattern emerged (Table 18). Some 60% of effective schools reported high Knowledge Related Outcomes compared with only 36% of ineffective schools. For Value System & Personality Related Outcomes, 85% of

¹⁵ These variables were not a part of the original dataset but were added to the analysis. Data for these variables were obtained from the Ministry of Education 20xx School Profile.

effective schools received high scores, compared with only 55% of ineffective schools. Physical & Psychomotor Related Outcomes were not significantly different between schools.

Table 18. Level of Dimensions of Students Outcomes by whether School is Effective or not

Dimensions of Students Outcomes		School effectiveness	
		Not effective	Effective
Knowledge Related Outcomes*	Low	63.8	40.4
	High	36.2	59.6
Physical & Psychomotor Related Outcomes	Low	44.7	40.4
	High	55.3	59.6
Value System & Personality Related Outcomes**	Low	44.7	14.9
	High	55.3	85.1

Relationship between Enablers and Students Outcomes

It can be expected that students' outcomes are dependent on an enabling environment at school especially when the role of the parent and the community is measured as part of that enabling environment. Tables 19 and 20 present the correlations between the Students outcomes and the Group 1 and Group 4 variables, respectively. All enablers were significantly correlated with student outcomes, except Resource availability, Use & Management and Budgetary Factors both of which only correlated with Value System & Personality Related Outcomes. Neither Governance & Community Decision-Making in Schooling nor Focused Professional Development correlated with Physical & Psychomotor Related Outcomes. For all the correlates, the higher the score for the enabler, the greater the student outcome scores. In other words, student outcomes are positively associated with an enabling school environment.

To determine whether there were any independently significant relationships between an enabling environment and the student outcome variables, the latter being the dependent variable, linear regression analyses were performed and the results shown in Table 21. For all four measures of student outcomes and using the eight dimensions of enabling, the enabler of significance was Classroom level programs & processes of instruction for learning, while General Community Relations with the school was significant for Knowledge Related, Value System & Personality Related and Overall Student outcomes. Parental Support for &

involvement in classroom processes was significant only for the Value System & Personality Related student outcome. The regression models explained between 38% and 58% of the variation in student outcomes.

Table 19. Correlation between Eight Dimensions of Enabling and Students Outcomes

Dimensions of Enabling	Knowledge Related Outcomes	Physical & Psychomotor Related Outcomes	Value System & Personality Related Outcomes
Classroom level programs & processes of instruction for learning	0.53**	0.55**	0.55**
Curriculum & School level learning support programs	0.49**	0.42**	0.54**
General Community Relations with the school	0.56**	0.42**	0.61**
	N.S.	N.S.	0.28**
School plant & other Infrastructure & facilities that support instruction	0.31**	0.21*	0.45**
Parental Support for & involvement in classroom processes	0.48**	0.32**	0.53**
Roles & responsibilities in character development	0.46**	0.37**	0.59**
Governance & community decision-making in schooling	0.23*	N.S.	0.22*

Table 20. Correlation between Nine- Factor Model and Students Outcomes

Nine Factors	Knowledge Related Outcomes	Physical & Psychomotor Related Outcomes	Value System & Personality Related Outcomes
Goals and aspirations	0.51**	0.42**	0.56**
High levels of collaboration and communication	0.42**	0.49**	0.51**
Curriculum, instruction, and assessments aligned with state standards	0.51**	0.53**	0.53**
Frequent monitoring of learning and teaching	0.52**	0.49**	0.52**
Focused professional development	0.30**	N.S	0.41**
A supportive learning environment	0.56**	0.50**	0.56**
High levels of family and community involvement	0.58**	0.43**	0.63**
Budgetary factors	N.S	N.S	0.22*
Leadership	0.45**	0.34**	0.53**

A similar pattern emerged using the Nine-Factor model with Curriculum, Instruction, and Assessments Aligned with State Standards being significant for all measures of student outcome and High Levels of Family and Community Involvement being significant for all except Physical & Psychomotor Related. The regression models explained 37-50% of the variation in student outcomes.

Table 21. Regression of Enabling Variables with Student Outcomes

	Knowledge Related *		Physical & Psychomotor Related		Value System & Personality Related *		Overall Student outcome score	
	Beta	P	Beta	P	Beta	P	Beta	P
Enabling dimensions -Group 1 R²	.487		.380		.577		.454	
General Community Relations with the school	.444	.000	NS		.328	.003	.597	.001
Classroom level programs & processes of instruction for learning	.341	.040	.902	.000	.459	.004	1.190	.002
Parental Support for & involvement in classroom processes	NS		NS		.146	.047	NS	
Enabling factors - Group 4 R²	0.499		0.373		0.39		.476	
High levels of family and community involvement	.463	.000	NS		.731	.000	.880	.000
Curriculum, instruction, and assessments aligned with state standards	.356	.032	.405	.009	.594	.000	.990	.000
Resource Availability, Use and Management	NS		-.183	.001	NS		-.246	.05
High levels of collaboration and communication	NS		.309	.004	NS		NS	
Goals and aspirations	NS		NS		-.363	.000	NS	

5. Discussion/Implications of Findings

5.1. Characteristics of Effective Schools in Jamaica

The main objective of this study is to identify the characteristics of effective schools in Jamaica. Becoming an effective school requires sustained effort and implementation of strategies that actually make a difference in the performance of the school. Hence, understanding the characteristics that separate the effective from the ineffective is crucial. This knowledge provides a basis on which schools and policy makers can map a path, target specific areas for focus, act on these decisions and take corrective steps where necessary.

One key finding from this study is that regardless of the enabler grouping/category used, the results show that effective schools had higher scores than those that were not effective and this was true for all dimensions. Nonetheless, the discussion on the characteristics of school effectiveness will focus on the results the analysis of the variables/characteristics/enablers from Groups 1 and 4.

The results suggest that the main characteristics of effective schools in Jamaica accord with those identified in the international literature. Effective schools in Jamaica are those which have:

- 1. Clear and Focused Goals and Aspirations.** These schools set very ambitious performance targets, communicate these targets to the school community, provide rewards and recognition for achievement, particularly in the areas of literacy and numeracy and character development. In addition, effective schools have the support of the community of stakeholders in the development of their SIPs.
- 2. High levels of Collaboration and communication:** In effective schools teachers work collaboratively to solve problems and there is widely practiced co-teaching to transfer knowledge and instructional practices.
- 3. Frequent monitoring of teaching and learning:** The use of data garnered from assessments and test as well as to drive instruction and teacher evaluation. In these schools, tests accommodate a range of entry points and

teachers use extensive student data to determine instructional strategies and gaps in achievement are used to plan specific interventions.

4. **Focused professional development:** In these institutions there is ongoing professional development of teacher, funding for professional development programmes as well as provisions for in-school professional dialogue and on-going performance appraisal of teachers.
5. **A supportive learning environment:** In this environment interactions are respectful, students are encourage to think and ask questions, learning sessions are inclusive, there is sufficient time on task and both instruction and assessment are related to the diversity of students and culture of the school. The findings also showed that the policy environment forms part of the overall supportive environment of effective schools, indicating the importance of support from the central policy making body. Schools that were effective were almost 3 times more likely to have a good policy & support environment However, to the extent that both effective and ineffective schools operate in the same policy environment, the data confirms that this supportive policy environment has to be complemented by internal policies, which allow the school to operationalize/ maximize the potential of the overall policy framework. In other words, central policy making, cannot create effective schools without the presence of school level structures to implement/support the policies.
6. **High levels of family and community involvement:** This finding confirms what has long been established in international research on effective schools and the impact of parental involvement on school outcomes. In this study, effective schools were almost four times more likely to have high levels of parental involvement than ineffective schools. In effective schools, parents actively support teachers and students, the school community is aware of the goals and the importance of literacy and numeracy, there are ongoing programmes of parent engagement and the community responds to opportunities to partner with the school. These schools involve parents and the community of stakeholders as partners in performance reviews and the school improvement planning processes and this helps to build the

confidence of the public in the school. Schools that actively promote parent and involvement benefit from parental support for learning and other interventions, such as character development for students. Although community and parental involvement are important features of effective schools, community involvement in school decision-making is not. In the Group 1 analysis “governance & community decision-making in schooling’ were not significantly associated with school effectiveness. This suggests that it is the support schools receive for the implementation of their decisions, more than the involvement of partners in these decisions that is most important.

7. **Strong Leadership:** This is the cornerstone of an effective school. This strong leadership is manifested in innovation and risk taking and the application of unconventional methods of achieving school goals, insistence of harmonised practices across classrooms and facilitating on going strategic interventions as agreed by parents, students and teachers. These strong leaders also pay significant attention to the teacher accountability, the development and implementation of their SIPs, observe classroom activities in their schools and provide supports to staff for the achievement of goals and targets.
8. **Budget:** While this features showed a significant difference in the scores for effective and ineffective schools (Table xx), further analysis shows that both effective and ineffective schools struggle with the adequacy of the fiscal provision for education. Approximately 40% of effective schools received a low score and 40% of ineffective schools received a high score on this factor. This suggest that schools are generally finding it difficult to provide adequate fiscal resources to support their operations, regardless of level of effectiveness.

Although effective schools had higher scores on Curriculum, Instruction and Assessment aligned to national standards, the difference was not statistically significant. This suggests that this was not, in this model, a distinguishing factor of effective schools. However, what seems to be important is the existence of programmes to support the curriculum (Group 1: Table 5).

5.2. School Effectiveness and Student Outcomes

The findings of this study confirm that student outcomes are positively related to school effectiveness. The student outcomes measured related to a range of 'taxonomies' which include students ability to apply their knowledge, exhibit independent thought, communicate their ideas, take responsibility for their learning as well as to perform well on national tests and assessments.

Students' knowledge related outcomes as well as their value system and related outcomes were found to be positively related to the level of effectiveness of their school. This is consistent with the aspects of effective schools, which concentrate on the importance of teacher accountability, ongoing professional development, parent involvement and curriculum supports. The findings also show student outcomes as being related not just to school effectiveness, but also to an enabling school environment. Hence, schools in which there is flexibility in curriculum implementation, availability of adequate and a wide variety of teaching resources and purposeful planning, students' outcomes are better than in schools without these features. The enabler of greatest significance was 'Classroom level programs & processes of instruction for learning', providing evidence that classroom level improvements in teaching and learning are what are most needed to drive improvement in student outcomes. This suggests that deliberate efforts to effect process improvements and improve teacher quality through ongoing professional development and to increase some inputs in schools can have a positive effect on student outcomes – the ultimate aim of education reform in Jamaica.

It is important to note that there was no significant correlation between budgetary factors and student outcomes, underscoring the fact that variations in schools effectiveness is not linked to the level of fiscal resources available to the schools. Improvements in areas that require minimal financial investments, can significantly affect the student outcomes. Areas such as family and community involvement, frequent monitoring of teaching and learning, high levels of collaboration and communication and leadership, are all highly correlated with student outcomes and

do not require large financial investments. Rather, these factors are a result of purposeful target setting and planning based on evidence of their impact on outcomes.

5.3. School Improvement Planning and School Effectiveness

School Improvement planning is key to school effectiveness in Jamaica. The study validates the notion that the mere fact of a SIP does not significantly affect school effectiveness. The critical aspects of the SIP process which effective schools share are the focus on implementation, monitoring and evaluation and the design of mechanisms to ensure that the key aspects of the plan are integrated into the routine management and become part of the normal way of doing business in the school. SIPs which focus on the expected impact on students are also a feature of effective schools.

It is important to note that budgetary factors and resource availability use and management were strongly correlated to all aspects of the SIP, suggesting that those schools which plan, are able to better allocate their financial resources to support their goals.

5.4. Areas of Special Interest

While 50 per cent of the schools in this study were adjudged ineffective, data on these schools point to some important issues for monitoring and consideration.

- i. Some ineffective schools achieved high scores in some dimensions of effectiveness. Some 44 % of ineffective schools received high scores for high levels of communication and collaboration and 41% for the alignment of curriculum and assessments with national standards , approximately 40% for the frequent monitoring of teaching and learning and 40% for building capacity of their staff. Some 51% of these schools had high scores for governance and community involvement in decision making in schooling and 48% for efforts in character development. Importantly too, 46% achieved high scores for classroom level programmes and processes of instruction for learning.
- ii. These areas of high scores indicate that ineffective schools have some areas of effective practice and need to be supported to improve areas in which

they have scored poorly. This further underscores the fact, which has been highlighted in the literature, that school effectiveness results from a convergence of a series of good practices in a wide range of areas and is not driven by any one factor in isolation.

5.5. The NEI Effectiveness measure

The data validated the NEI measure as all schools rated effective by the NEI scored higher on all the effectiveness dimensions used in the study, regardless of how the variables were grouped. This provides strong evidence that the ratings of the NEI accurately reflect the effectiveness of Jamaican schools.

6. Conclusion

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