Mathematics Performance and Principal Effectiveness: A Case Study of Some Coastal Primary Schools in Sri Lanka

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This mixed method research study is situated in the school effectiveness research paradigm to examine the correlation between the effectiveness of urban, primary school principals and their students' performance in mathematics. Nine, urban, primary schools from Negombo, a coastal fishing area in Sri Lanka, were selected; their student achievements in mathematics were documented in a longitudinal study from 1998 to 2002. At the end of 2002, principals in these schools were interviewed to obtain evidence of their effectiveness in six areas: (a) school vision, (b) decision-making process, (c) curriculum process, (d) staff development, (e) community relations, and (f) managing changes and challenges. The results indicate a measurable correlation between school performance and principal effectiveness. However, these results should be cautiously interpreted since there are other contextual factors that affect the functioning of these schools. The results also illustrate some challenges faced by principals in their day-to-day activities in coastal, primary schools in Sri Lanka.

Cette recherche à méthodes mixtes se situe dans le paradigme de recherche sur l'efficacité scolaire pour examiner la corrélation entre l'efficacité des directeurs d'écoles primaires en milieu urbain et le rendement de leurs élèves en mathématiques. On a choisi neuf écoles primaires en milieu urbain à Negombo, une région du Sri Lanka où se pratique la pêche côtière et où le rendement des élèves en mathématiques avait été documenté dans une étude longitudinale de 1998 à 2002. À la fin 2002, on a passé en entrevue les directeurs de ces écoles pour obtenir des données sur leur efficacité dans six domaines: (a) la vision de l'école, (b) le processus décisionnel, (c) le processus impliquant le programme d'études, (d) le perfectionnement du personnel, (e) les relations avec la communauté et (f) la gestion des changements et des défis. Les résultats indiquent qu'il existe une corrélation mesurable entre le rendement scolaire et l'efficacité du directeur. Toutefois, il faudrait interpréter les résultats avec prudence compte tenu des autres facteurs contextuels qui affectent le fonctionnement de ces écoles. Les résultats illustrent également quelques uns des défis auxquels font face les directeurs au cours de leurs activités quotidiennes dans les écoles primaires de la côte du Sri Lanka.

There is a division between school improvement and school effectiveness research studies. At least in theory, school improvement studies are considered to be continuous processes to improve schools to reach the ultimate objective of achieving effectiveness. School improvement is mainly measured through quantitative techniques with an emphasis on the *value added*, but may include qualitative data to explore processes and the interpersonal dimensions. School effectiveness studies are carried out at a certain point in time to examine whether a school is effective or not by looking at various activities of the school. Smink (1991) contended that school

effectiveness is concerned with results and that it tries to describe certain variables in school success in measurable terms. On the other hand, school improvement contains a broad description of all the variables that play a role in school improvement projects. Some researchers contend that there is a convergence of these two paradigms. For example, Townsend (2007) said that the effective schools research had the underlying purpose of developing practical means for school improvement. Townsend further said that there are substantial similarities and differences between school effectiveness and school improvement. In this paper, I will not inquire deeply into this debate, but will explain a study that has a close resemblance to the school effectiveness research paradigm.

There is a shortage of research studies in the areas of school effectiveness or school improvement in Sri Lanka. The only large scale study was conducted by Victoria J. Baker, from the Netherlands, in 1988, for her Ph.D. study (Baker, 1988). This was a longitudinal study with extensive fieldwork in a disadvantaged area of the Monaragala District. Baker's research has been published as a book titled *Blackboard in the Jungle: Formal Education in Disadvantaged Rural Areas. A Sri Lankan Case.* Other than this study, there are some small scale studies conducted by the National Institute of Education in Sri Lanka. The focus of these studies was on the leadership of a single school.

My study, which is situated in the school effectiveness research paradigm, inquires into student performance in primary mathematics and the effectiveness of school principals in nine, coastal, urban schools in Sri Lanka. More precisely, I attempted to establish a correlation between the student performance in mathematics in these schools and the effectiveness of their principals. The study contained two phases: (a) a longitudinal quantitative phase to measure student performance in mathematics, and (b) a qualitative phase to examine the principals' effectiveness. The results explain the correlation between these two factors and some contextual influences that affect principals' performances. The results of this study also expose the hardships that principals undergo in carrying out their day-to-day educational and related activities in their schools.

The context

In Sri Lanka, compulsory education starts at six years of age and ends at 14 years of age. The school system is divided into three main phases: (a) Primary from Grades 1 to 5, (b) Junior Secondary from Grades 6 to 9, and (c) Senior Secondary from Grades 10 to 13. Except for a few private schools in the country, education is free throughout the three phases as well as at the undergraduate level at the university. The primary stage of education is divided into three key stages: Key Stage 1 comprising of Grades 1 and 2, Key Stage 2 comprising of Grades 3 and 4, and Key Stage 3 comprising of Grade 5. In all key stages, subjects in the curriculum are mathematics, religion, environment related activities, and language. Throughout all key stages, there are three main modes of instruction: guided play, activities, and desk work.

According to the classification of schools by the Ministry of Education in Sri Lanka, there are five types of schools in the country. They are Type 1AB, Type 1C, Type 2, Type 3, and National schools. Type 1AB and 1C schools are considered to be large schools and they comprise Grades 1 to 13. Type 2 schools comprise Grades 1 to 10, and Type 3 schools comprise Grades 1 to 5. Type 2 and Type 3 schools are considered to be small schools. In most of the provinces, one large school has been converted to a National school in order to accommodate more students and to develop it with central government funds.

Negombo, the research site for this study, is an urban coastal fishing area about 40 kilometers away from the capital, Colombo. It is situated in the densely populated western province of the country. People in Negombo depend mainly on fishing and a small number of them also have jobs outside the fishing sector.

The role of school principals in Sri Lanka

Sri Lanka's National schools are directly administered by the central government while all other schools are administered by the provincial councils under the guidance of the central Ministry of Education. Therefore, the principals in all schools have to comply with the laws, rules, regulations, and instructions prescribed by the Ministry of Education. They also have to comply with instructions issued by the National Institute of Education which is the country's main body for curriculum development and in-service teacher education. The Department of Examinations is the central body for conducting examinations. All the instructions issued to principals from the above three institutions are relayed to them through the respective provincial directors of education, except for National schools. Hence, the educational activities have not yet been completely delegated to the school level in Sri Lanka and the principals have to carry out their duties in this context.

There are a number of ways to become a school principal in Sri Lanka. Many principals start with a General Certificate of Education (Ordinary Level) which is the terminal examination at Grade 11, or a General Certificate of Education (Advanced Level) which is the terminal examination at Grade 13, also called the University Entrance examination. After having one of these qualifications, those who are willing to become a teacher can enter into a Teacher Training College (TTC) and obtain a teaching certificate within a specialized subject area. Those who enter the university could follow two paths to become a teacher. They can complete a Bachelor's Degree in Education (B.Ed.) or a general degree in any area followed by a one year Post Graduate Diploma in Education (P.G.D.E.) with a practical teaching component.

With a certain number of years of experience in the education sector as a teacher, teachers can sit for a written examination to become a principal. Those who pass this examination will be offered a principals' grade as a professional qualification. All the other teachers are assigned a teachers' grade. Sometimes, teachers in the teachers' service with other educational qualifications also become principals when they have a number of years of experience. There is no clear cut way of appointing principals especially in rural areas with the exception of National and most popular Type 1AB schools. Appointments may be based on (a) education, (b) experience, (c) political influence/connections, (d) social status, and (e) acceptance in the community. Hence, this could have a direct impact on the school's effectiveness.

School effectiveness and school improvement in Asia

School effectiveness and school improvement initiatives in Asia experienced three waves in the past decades. They were (a) internal school effectiveness (1980-1990), (b) interface school effectiveness (1990-2000), and (c) future school effectiveness (2000 onwards; Cheng & Tam, 2007). The main aim of the first initiative was to enhance internal school effectiveness in achieving planned educational aims and curriculum targets. Some approaches were (a) school management, (b) teacher quality, (c) curriculum design, (d) teaching methods, (e) evaluation approaches, (f) facilities, and (g) environments for learning (Cheng, 1999; Kim, 2000; Tang &

Wu, 2000). One assumption of this paradigm was that the goals and objectives of school education are clear and various stakeholders in education do agree with them (Cheng & Tam, 2007).

In the second wave, school effectiveness was perceived as school quality and referred to the satisfaction of stakeholders with the education services of a school (Cheng & Tam, 2007). The key indicators of this paradigm were (a) school self-evaluation, (b) school monitoring, (c) quality inspection, (d) indicators and benchmarks, and so on. As a result of globalization, the third wave of school effectiveness and improvement research took a different turn demanding a reform of the aims, content, practice, and management of schools to ensure relevance to the future (Cheng & Tam). Although the above general framework guides the past and future directions of school effectiveness and improvement in Asia, the contextual factors in each country influenced the overall direction of the paradigm shift in those three stages.

There is a shortage of research in the area of school effectiveness or school improvement in Sri Lanka. Little and Sivasithambaram (1993) conducted a research study in school effectiveness in the Gonakelle Tamil Rural School in the central highlands of Sri Lanka. The school was located in a disadvantaged tea plantation area. This was a case study of one disadvantaged school for Indian Tamils in the context of broader educational and social change. The results reported that despite high teacher absenteeism and lack of resources, the school achieved considerably in mathematics and Tamil language during the years 1985 to 1987. The principal had delegated the responsibilities considerably to his staff.

Hettige (2008) conducted a study on the factors that affect effectiveness of senior secondary schools in Sri Lanka. The data were collected using sample surveys, case studies, questionnaires, observations, interviews, and documentary analysis in two phases: quantitative and qualitative. Thirty-six schools from the Colombo District were used for the quantitative phase and case studies were conducted in six schools in the qualitative phase. The factors considered for school effectiveness were: (a) principal's leadership, (b) school mission and objectives, (c) school culture and environment, (d) curriculum, (e) teacher commitment, (f) school-community relations, (g) student-teacher welfare, (h) physical resources, and (i) extra-curricular activities. There were large disparities among schools in terms of their effectiveness.

1. Type 1AB schools were more effective than Type 1C schools.

2. National schools were higher in the rank than Provincial schools.

3. Male schools ranked higher in effectiveness than mixed schools, and female schools ranked higher than male schools.

4. Within mixed schools, there were disparities between Type 1AB and Type 1C schools, the former ranking higher.

5. Disparities were greater among schools in municipal areas than elsewhere.

6. Resources were a main problem in all the schools.

The study conducted in Sri Lanka by Baker (1988), with regards to school effectiveness and other related factors, belongs to the above first wave of research. She conducted 16 months of extensive fieldwork in 30 village schools in the Monaragala District in Sri Lanka for her Ph.D. study. Her research questions were:

1. What problems and constraints are confronting formal education in disadvantaged rural areas in Sri Lanka?

2. Why are some rural village schools functioning more effectively than others?

3. To what extent can the rural community be instrumental in developing the village school?

Baker's main focus was to study the leadership of the school and the resources to support the teaching and learning process. Capability of the school leadership to integrate with the community was found to be one of the main factors contributing towards school effectiveness. The results also showed the immense hardships experienced by these principals in their daily work in rural schools.

Some contributing variables to effectiveness

What are the factors that contribute toward some schools to be more effective than others? Variations among schools in their resources, policies, and teaching strategies contribute toward school effectiveness (Mortimore, Sammons, Stoll, Lewis, & Ecob, 1988). There are two categories of variables that influence school cognitive outcomes. They are (a) supply variables (Lowe & Istance, 1989), and (b) leadership and policy variables (Mortimore et al., 1988). Supply variables mainly include the physical and material resources in the school for effective learning. Leadership and policy variables include the leadership of the principal, school vision, policies, decision-making process, and relationships with the community.
Leadership and policy variables depend on the following:

1. an adequately qualified principal (Heneveld & Craig ,1996),

2. the principal's regular supervision to enhance effective management (Briault & West, 1990; Heneveld & Craig, 1996; Lowe & Istance, 1989; Mortimore et al., 1988; Preedy, 1993),

3. leadership of the principal (Heneveld & Craig, 1996; Sammons, Hillman, & Mortimore, 1995),

4. regular in-service training for teachers including school-based staff development (Heneveld & Craig, 1996; Lowe & Istance, 1989; Mortimore et al., 1988; Sammons et. al., 1995),

5. the principal's participative approach in decision-making (Mortimore et. al., 1988; Sammons et al., 1995),

6. school vision and goals (Lowe & Istance, 1989; Preedy, 1993; Sammons et al., 1995),

7. the principal's support to the curriculum process (Johnson & Yahampath, 2003; Lowe & Istance, 1989; Mortimore et al., 1988),

8. parents' and wider community involvement (Johnson & Yahampath, 2003; Lowe & Istance, 1989; Mortimore et al., 1988), and

9. ensuring adequate resource provision including teaching and learning materials (Briault & West, 1990; Johnson & Yahampath, 2003).

Vision

A focused vision is considered to be one of the requirements for an effective school. The vision reflects the intended purpose of the school and its future direction. Bush and Coleman (2000) state that defining a clear vision for the organisation is an important step. They write that

outstanding leaders have a vision for their organisation and that this vision must be communicated in a way which secures commitment among members of the organisation. "Communication of vision requires communication of meaning" (Bush & Coleman, 2000, p. 11). A vision includes strategies for obtaining the desired outcome and provides a picture of what schooling should look like (Perez, Milstein, Wood, & Jacquez, 1999). The five characteristics of an effective vision, according to Perez et al. (1999), are:

1. It attracts commitment while energizing and motivating people.

2. It creates meaning in people's lives.

3. It establishes a standard of excellence.

4. It provides a picture of what the future should be.

5. It transcends the status quo.

In total, a clear and focused vision that has been implemented and monitored effectively is considered to be important for effective schools.

Decision-making

Democratic decision-making with the involvement of teachers, parents, and students is considered to be a prescription for the success of a good quality leader. According to Perez et al. (1999), individuals can be actively involved and participate in a shared decision-making process. The participants should be those affected directly or indirectly by the school improvement process. The principal's responsibility is to communicate effectively and activate a shared decision-making process. Blasé and Blasé (1994) made three assertions of facilitative democratic leadership:

1. The role of the principal should facilitate collaborative efforts among mutually supportive, trusting professionals.

2. The leadership should help others to recognize the complexities of schools as social organisations set in myriad conditions.

3. Constraining forces must be minimized or eliminated.

Support for the curriculum process

Supportive educational leadership of the principal is considered to be another important characteristic for a school to be effective. This includes supplying instructional materials, supervision and motivation of teachers, and providing other necessary support for an effective teaching and learning process. According to Borba and Ligon (2000), "supportive educational leadership is characterized as providing direction, structure, guidance, and resources through collaboration with instructional staff for the purpose of rethinking and improving the instructional delivery system of a school" (p.1). They further suggest that the principal can ask the teachers to reflect on their current teaching practices in order to consider new standards, criteria, and norms for instruction. However, the principal has to make decisions about instructional methods and activities, and monitor student progress.

Professional development of staff members

Staff development consists of any activity that directly affects the attitudes, knowledge levels, skills, and practices of individuals (Alvy & Robbins, 1998). This will assist individuals in improving their present or future roles. Providing opportunities to create a sense of purpose for professional development is considered to be essential for a good leader. This will provide opportunities for members of the school community to grow professionally in ways that will ultimately benefit both the teachers and the students (Alvy & Robbins, 1998). Blasé and Blasé (1994) suggest that (a) providing opportunities to visit other schools, (b) organising guest lectures, (c) providing teachers with articles and information, and (d) organising seminars and workshops are some of the opportunities. Availability of the principal to discuss instructional or other related matters is another requirement.

Relations with parents and the wider community

A school serves its community. Community aspirations could vary due to the location of the school. However, there is a need to create partnerships with different stakeholders. According to Alvy and Robbins (1998), a strong parent-school relationship is valuable. It is clearly the responsibility of all school personnel and the principal to communicate effectively with parents. Thus, schools need to take initiatives in this area. "Often, school leaders and teachers are reactive with parents, or view the relationship as a back-burner priority. This should not be the case. Schools need to be proactive when communicating with parents regarding all school issues. . . ." (Alvy & Robbins, 1998, p. 207). Commenting on the support of the wider community, MacBeath and Myers (1999) said that attitudes of the broader community, particularly the media, can also affect teacher motivation and their beliefs.

Managing changes and challenges

Changes in policies, management structures, and power relations are always happening in an organizational structure. School principals have to carry out some management activities such as planning and monitoring in their day-to-day work. Often, the management functions are routine, and the functions of the leadership are situational. According to MacBeath and Myers (1999), some of the management functions of a principal are planning and budgeting, controlling and problem-solving, and organising and staffing. Sometimes, both leadership and management functions are included in a single act. Therefore, a careful balance is necessary to execute the leadership responsibilities and management activities.

Methodology

This study, which is situated in the school effectiveness research paradigm, has two phases with a mixed method research design. The quantitative phase was conducted from 1998 to 2002 in nine, urban, primary schools in Negombo, a coastal area in Sri Lanka. A stratified random sample of three schools from each of the three educational zones in the Negombo area was selected. There were two boys' schools and seven mixed schools in the sample. In terms of religious composition, there were seven Catholic schools and two Buddhist schools. There were two Type 1AB schools, two Type 1C schools, three Type 2 schools, and two Type 3 schools.

In the quantitative phase of the study, mathematics achievement of the nine sample schools was monitored from 1998 to 2002. Thirty, Grade 1 students randomly selected from each school were tested every year from 1998 onwards using a test instrument. The instrument was an oral task-based procedure; Grade 1 pupils were assessed on five topics: sorting, position, conservation, understanding of numbers, and differentiating between curved and flat surfaces (Johnson & Yahampath, 2003). The tests were conducted at the end of the year. The mean percentage score for each school in each year was calculated. Based on the trend patterns of scores, the nine schools were categorized into five categories of performance.

The qualitative, second phase of the study was designed to examine the effectiveness of principals in the nine schools. The data were gathered using semi-structured interviews with principals on two occasions. Interview questions were formulated using six themes: (a) school vision, (b) decision-making process, (c) curriculum process, (d) staff development, (e) community relations, and (f) managing changes and challenges. Each interview lasted 30 to 45 minutes. In these interviews, the principals were probed to explore the reasons for the low or high achievement in their schools.

Later, the interview transcripts were coded into the six themes by the extent of presence of evidence supporting each factor. When the answers needed more explanations, a second interview was conducted with a set of new questions based on the previous answers. This process helped to obtain more data and also to validate previous data. The format of the second interview questions was as follows, "Last time you mentioned _____; can you tell me more about that?" A typology of principals was constructed using the extent of evidence in relation to the six factors. The extent to which these factors were present within a school was grouped into a three-point scale—strong, moderate, or weak—on the basis of the interviews and researcher notes. The two examples below show how the data were categorized.

The principal's support for the curriculum process in the school was categorized as *strong* when the principal was highly involved in the curriculum process in the school. This was evidenced by the positive support for the pupils and teachers, regular supervision/ observation/monitoring of classrooms, and the presence of an annual work plan. When there was no work plan, infrequent class visits, and less support for teachers, this was considered as *moderate* evidence. When there was no support and feedback, except the principal only appointing substitute teachers when the class teacher was absent, this was considered as *weak* evidence (Egodawatte, 2004).

The principal's relationship with the community was categorized as *strong* when (s)he held at least three or more School Development Board (SDB) meetings per year, at least one or more meetings with parents to discuss the progress of their children, and encouraged the wider community to provide resources and participate in the activities of the school actively. When there were less than three SDB meetings, no meetings with parents, and a lack of interest to encourage the wider community to participate in school activities, this was categorized as *moderate* evidence. A *weak* category was allocated when there were no meetings due to poor or no attendance of parents, and also the principal was not able to encourage the community or the parents to participate in school activities.

The school achievement results were compared with principal types to examine whether there is any correlation between the principal's effectiveness and the school's achievement in mathematics. The position of each school in the achievement category, the typology of principals, and the correlation between these two areas will be discussed in the next section.

Table 1

Mean Percentage Scores and School Category

School	1998	2000	2001	2002	Category
1	61.1	61.8	69.5	66.4	High achieving, stable
2	60.3	53.1	62.7	66.5	High achieving, stable
3	33.5	45.6	51.8	59.4	Progressing
4	46.2	46.0	48.0	59.8	Progressing
5	35.4	33.2	29.0	31.9	Low achieving, stable
6	34.4	33.2	29.0	31.9	Low achieving, stable
7	38.9	53.9	56.5	54.5	Progressing
8	50.5	50.4	43.7	35.8	Declining
9	50.0	45.4	51.4	54.9	Medium achieving, stable

School performance

The results of the longitudinal phase of the research showed that two out of the nine schools achieved results of over 60% almost every year. These schools were categorized as *high achieving*, *stable* schools. Three of the 10 schools made progressive gains from 1998 onwards, from mean percentage scores of 33.5%, 38.9%, and 46.2% to mean scores of nearly 60% in 2002. These schools were categorized as *progressive* schools. Of the remaining schools, two schools indicated steady progress but were still achieving scores of below 50%. These schools were categorized as *low achieving*, *stable* schools. One school showed a worrying decline from 50.5% in 1998 to 35.8% in 2002; it was categorized as a *declining*school. Another school declined from 35.4% in 1998 to 31.9% in 2002; it was categorized as a *low achieving*, *stable* school. Table 1 shows the mean percentage scores by school category for the nine schools.

Table 2

Analytical Framework of Supporting Evidence for Each School

School No.	Principal implements and manages school vision/goals	Principal is involved in democratic decision-making/ accountability	Principal pursues high instructional standards	Principal is interested in staff development	Principal gets good support from parents and others in the community	Principal plays a key role in managing planned change
1	Weak	Moderate	Weak	Moderate	Strong	Strong
2	Strong	Moderate	Strong	Strong	Strong	Strong
3	Weak	Strong	Moderate	Moderate	Moderate	Strong
4	Strong	Weak	Strong	Moderate	Strong	Strong
5	Weak	Strong	Moderate	Moderate	Weak	Weak
6	Moderate	Weak	Moderate	Moderate	Strong	Moderate
7	Moderate	Moderate	Strong	Strong	Strong	Strong
8	Moderate	Strong	Strong	Moderate	Strong	Moderate
9	Strong	Moderate	Strong	Moderate	Strong	Strong

Typology of principals

The next step of the analysis was to examine the evidence for each school leader's effectiveness in terms of their contribution toward the six factors: (a) school vision, (b) decision-making process, (c) curriculum process, (d) staff development, (e) community relations, and (f) managing changes and challenges. As mentioned previously, the evidence obtained from interviews and field notes for each school was categorized as strong, moderate, or weak according to the strength of their presence in each of the six factors (*see* Table 2).

When there were more than four strong factors present for a school, its leadership was categorized as *developed*. Similarly, other categorizations were:

1. When there were three or four strong factors present, this was evidenced as *developing* principals.

2. When there were one or two strong factors and less than three weak factors present, this was evidenced as *emerging* principals.

3. When there were one or two strong factors and three or more weak factors present, this was evidenced as *marginal* principals (Egodawatte, 2004).

The two-way classification of schools in terms of their achievement and the effectiveness of principals appears in Table 3.

Developed principal

This principal was in a Type 1AB, Catholic, boy's school. He was a Catholic priest serving as an acting principal in this school for seven years, as he did not have a principal's grade. His educational qualifications were a Teacher Training Certificate (T.T.C.), a Bachelor of Arts degree (B.A.), and a Post Graduate Diploma in Education (P.G.D.E.). He indicated his premeditated desire to become a principal as:

> I want to become a head. This is the need of the Catholic order. As religious leaders, they (the religious order) expect us to become principals and give leadership to the community (School no.2, Principal's interview).

This principal was clearly methodical in his work and had an annual work plan in his office. He regularly visited classes and provided support and guidance to teachers. Although, he mentioned that he likes to teach, he did not get time for this due to other administrative and

Table 3

Two-Way Classification of School Performance and Principal Type

School no.	Performance category	Principal type
1	High achieving, stable	Emerging
2	High achieving, stable	Developed
3	Progressing	Emerging
4	Progressing	Developing
5	Low achieving, stable	Marginal
6	Low achieving, stable	Emerging
7	Progressing	Developing
8	Declining	Developing
9	Medium achieving, stable	Developing

managerial tasks. He was keen to send his teachers for training programs. He also arranged school-based staff development programs. As a religious leader, this principal was an influential person in the area and received excellent support from the community. In making decisions, he believed in consultation, compromise, and consensus. Overall, he was well established in the school as a leader and was directing the school toward further development.

Developing principal

These principals were working hard to improve their schools. Their leadership was effective in certain areas and they were moving in a positive direction. These principals were especially strong in three areas: (a) support for the curriculum process, (b) obtaining community support, and (c) managing changes and challenges. One principal explained the way he contributed to student learning. He said,

> I am talented in music. Sometimes, when I do not have a substitute teacher, I personally visit the class and sing a song with the students or do some other musical activity, although I am not an expert in this area (School no. 8, Principal's interview).

Some principals used their abilities to work for the community and to help them. In return, the community also helped the school. The principal in School no. 7 was qualified with a Bachelor of Arts (B.A.), Post Graduate Diploma in Education (P.G.D.E.), Master of Education (M.Ed.), and a degree in law. She said,

> I serve in [sic] the village peace committee. I help the villagers in their legal matters free of charge. Also, a lot of helpless parents come to me for advice in their marriage or land problems (School no.7, Principal's interview).

Because there were no organized school-based staff development programs, these principals were categorized as weak or moderate in this area. In other areas, they showed an indication for improvement and were enthusiastic leaders. However, their school visions were broad and less focused. For example, the vision of School no. 8 was to produce a good citizen who was useful in society. There were no mechanisms in place to monitor the implementation of the vision. Overall, these principals were making every possible effort to sustain the school's development which had not yet been fully established.

Emerging principal

These principals were strong in two areas: obtaining community support and facing changes and challenges. But they lacked the necessary skills to administer the school properly in other areas. The principals in Schools no. 1 and no. 3 did not have a principal's grade. They both had the General Certificate of Education (Advanced Level) and both had attended the Teacher Training College (TTC). It is likely that they were political appointees. They were not hesitant to make commanding, up-front, and solitary decisions. The principal in School no. 6 said,

> Sometimes, I make my own decisions because I have no other options. The solutions to some problems are beyond my control. Amidst all of the problems, I have to carry out my duties as well (School no. 6, Principal's interview).

These schools had no school-based staff development programs. The principal in School no. 6 said that it is not his responsibility to organize such programs. He said,

> We are not experts in education. Higher authorities prepare and send us the curriculum and we implement it. It is their duty to train us (School no. 6, Principal's interview).

Another notable feature was that these schools had no clear visions. Without a proper vision, these schools were moving in multiple directions. The vision of School no. 3 was very general, broad, and difficult to achieve. The principal said,

> Human values are decaying from the present society. Many people possess knowledge and skills, but not attitudes. My school's vision is to give birth to a human with a heart. (School no. 3, Principal's interview)

Overall, these principals showed no apparent signs of moving into the developing category. In many ways, they were moving toward the marginal category.

Marginal principal

The marginal principal was weak in leadership and was still moving in a negative direction. As a whole, he was less motivated even to carry out the routine tasks and had left his school to function on its own. Although, some of his decisions were democratic, these decisions were taken due to political influence or in response to directives from the Ministry of Education. In the interview, he said that he did not have any intention to become a principal initially. He said,

> When the former principal assumed his duties, he appointed me as a deputy principal. He might have seen my capabilities or even he might have had some other reasons in his mind. I don't know. There are other people in this school who are qualified and having higher grades than me (School no. 5, Principal's interview).

His way of thinking was that the things could not be changed easily. Therefore, people should be allowed to work in their own way. Relying solely on his experience, he said that his students were unsuccessful due to their own unchangeable fate. Therefore, attempting to improve the standards of the school would not pay off.

According to him, he had to take non-democratic decisions because the people's attitudes in Sri Lanka had not yet developed fully when compared to some western societies. His own experience of being in a western country allowed him to make this comparison. He believed that people in Sri Lanka have low self-interest and low motivation to work. Therefore, democratic ways of working are not effective; rather, one has to impose rules on people and use direct commands to get the work done.

Discussion

The results show a wide disparity in mathematics achievement among coastal, urban, primary schools. There were five different achievement categories within the nine schools. Harber and Davies (2002) confirmed this finding by saying that the differences in achievement between schools in developing countries are much higher than in industrialized countries.

Many cases in this sample cast doubt on the assumption that effective leadership in a school produces better student results. For example, one would expect to find a developed principal in School no. 1 as this is a high achieving, stable school. Likewise, a developing principal would be expected to be in School no. 3 since it is in the progressive category. While School no. 8 is a declining school and would be expected to have a marginal principal, it in fact, has a developing principal. This disparity is obvious: I will discuss some contextual factors that might affect this disparity in the next sections. By looking at the overall picture, there is some consistency between the school performance and the effectiveness of leaders except in School no. 8 which is a declining school with a developing leader.

Is there a correlation between school performance and principal's effectiveness? In eight out of the nine schools in this sample, the answer is "yes." These eight schools either increased their student performance or maintained a consistent level of performance; these schools have developed, developing, or emerging principals. These results show that there is a visible correlation between the effectiveness of the leader and the student performance in mathematics. As mentioned before, School no. 8 does not show this correlation and instead shows an opposite trend. Therefore, it can be stated that in eight of the nine schools, this relationship is *correlational*; there is no evidence to say that it is *causal*.

The interviews revealed that School no. 8 faced a unique challenge which had an impact on its student achievement. Some students in this school had a problem with the language of instruction at the school. Their parents were displaced from the northern part of the country due to the escalating war situation and were temporarily settled in the area close to this school. They spoke Tamil at home, but their children were admitted to this Sinhala medium school due to the unavailability of Tamil language schools in the area. The parents were not in a position to help the children in their studies because of the language of instruction in this school. In the interview, the principal mentioned that the low achievement in this school was mainly due to this problem. To remedy this situation, he actually had taken several measures such as conducting additional language classes for those students during and after school. Hence, the principal in his part had taken appropriate steps to tackle the problem.

The results obtained in this study should be interpreted cautiously since there were other contextual factors such as political, religious, cultural, and social factors that would have an influence on the results. Some principals explained that they were embarrassed with political demands and pressures arising from other sources such as teacher unions. Since the sample schools were located in a coastal area, the male members of many student families do fishing for their living. Their long term absences from home meant that the female members were left to look after the family alone while the male members were away. Therefore, there was low participation in school meetings. Also, most of these parents were poor and ill-educated, which had a direct impact on their children's education.

Lack of resources was another issue. For example, two schools used churchyards as their playgrounds. The principals of the two Buddhist schools (Schools no. 1 and no. 4) complained that the locations of their schools appeared to be a problem when they were asking for resources. Since these schools were surrounded by popular Catholic schools, the community and the provincial ministry were more willing to help the surrounding Catholic schools. The popularity of Catholic schools in the area negatively influenced the ability of Buddhist schools to attract and hold good principals and teachers. This may have reciprocally affected student achievement.

In conclusion, although there were some burning issues that hindered the effectiveness of school leaders in an urban coastal context in Sri Lanka, education was taking place and the students were learning something. These schools were functioning reasonably well under these challenging circumstances. Although the sample was relatively small, the schools were randomly selected to represent a cross-section of the schools in the area. The schools were from all four school categories (Types 1AB, 1C, 2, and 3) with mixed and boys' schools. Although the geographical area consisted of mainly Catholic schools, the sample was represented by two Buddhist schools. Therefore, the results of this study can safely be replicated to the situation of any coastal area in the country.

In future studies, it would be suitable to include the achievement of other subjects in the curriculum when evaluating student performance. Similar studies in other areas of the country would provide better insights into how those results would compare with the current findings. In this study, there could be a loss of information due to converting qualitative data into a quantitative format to construct the typology of principals. Further, collecting data in one language and presenting the findings in another, sometimes, involves translation-related decisions that could have an unavoidable impact on the validity of the research (Birbilli, 2000).

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References

Alvy, H. B., & Robbins, P. (1998). *If I only knew: Success strategies for navigating the principalship*. Thousand Oaks, CA: Corwin Press.

Baker, V. J. (1988). *The blackboard in the jungle: Formal education in disadvantaged rural areas – A Sri Lankan case*. Delft, The Netherlands: Eburon.

Birbilli, M. (2000). Translating from one language to another. *Social Research Update, 31*. Retrieved from http://sru.soc.surrey.ac.uk/SRU31.html

Blasé, J., & Blasé, J. R. (1994). *Empowering teachers: What successful principals do*. London, England: Sage.

Borba, J., & Ligon, C. N. (2000). Supportive educational leadership: A requirement for rethinking and improving instructional delivery. *National Forum of Educational Administration and Supervision Journal, Electronic, 17E*(4), 121-131. Retrieved from http://www.nationalforum.com/Electronic%20Journal%20Volumes/Borba,%20John%20Supportive%20Educational%20Leadership%20A%20Requirement%20For%20Rethinking%20And%20Improving%20Instructional%20Delivery.pdf

Briault, E., & West, N. (Eds.). (1990). *Primary school management: Learning from experience. Case studies by primary and middle school head teachers*. London, England: Nfer-Nelson.

Bush, T., & Coleman, M. (2000). *Leadership and strategic management in education*. London, England: Paul Chapman.

Cheng, Y. C. (Ed.). (1999). Recent education developments in South East Asia: An introduction [Special issue]. *School Effectiveness and School Improvement, 10*(1), 3-9.

Cheng, Y. C., & Tam, W. (2007). School effectiveness and improvement in Asia: Three waves. In T. Townsend (Ed.), *International handbook of school effectiveness and improvement* (pp. 245-268). Dordrecht, The Netherlands: Springer.

Egodawatte, G. (2004). *A study of "enabling conditions" in primary schools in Negombo Education Zone in Sri Lanka with special reference to effective leadership and physical & material resources*. Unpublished master's thesis, University of the West of England, Bristol, England.

Harber, C., & Davies, L. (2002). *School management and effectiveness in developing countries: The post-bureaucratic school*. London, England: Continuum.

Heneveld, W., & Craig, H. (1996). *Schools count: World Bank project designs and the quality of primary education in Sub-Saharan Africa*. Washington, DC: The World Bank.

Hettige, A. M. (2008). *A critical study of the effective schools in Sri Lanka*. Unpublished doctoral dissertation, University of Colombo, Colombo, Sri Lanka.

Johnson, D., & Yahampath, K. (2003). *Primary mathematics project: Final evaluation report*. Maharagama, Sri Lanka: National Institute of Education.

Kim, Y. H. (2000). Recent changes and developments in Korean school education. In T. Townsend & Y. C. Cheng (Eds.), *Educational change and development in the Asia-Pacific region: Challenges for the future* (pp. 83-106). Lisse, The Netherlands: Swets & Zeitlinger.

Little, A., & Sivasithambaram, R. (1993). Improving educational effectiveness in a plantation school: The case of the Gonakelle school in Sri Lanka. In H. M. Levin & M. E. Lockheed (Eds.), *Effective schools in developing countries* (pp. 87-107). London, England: Falmer Press.

Lowe, J., & Istance, D. (1989). *Schools and quality: An international report*. Paris, France: Organisation for Economic Co-operation and Development.

MacBeath, J., & Myers, K. (1999). *Effective school leaders: How to evaluate and improve your leadership potential*. London, England: Prentice Hall.

Mortimore, P., Sammons, P., Stoll, L., Lewis, D., & Ecob, R. (1988). *School matters: The junior years*. Wells, England: Open Books.

Perez, A. L. V., Milstein, M. M., Wood, C. J., & Jacquez, D. (1999). *How to turn a school around: What principals can do*. London, England: Sage.

Preedy, M. (1993). *Managing the effective school*. London, England: The Open University & Paul Chapman.

Sammons, P., Hillman, J., & Mortimore, P. (1995). *Key characteristics of effective schools: A review of school effectiveness research*. London, England: Institute of Education, University of London. Retrieved from http://www.mp.gov.rs/resursi/dokumenti/dok132-eng-SESI_Key_characteristics_of_effective_schools.pdf

Smink, G. (1991). The Cardiff conference, ICSEI 1991 (International Congress for School Effectiveness and Improvement). *Network News International, 1*(3), 2-6.

Tang, X., & Wu, X. (2000). Educational change and development in the People's Republic of China: Challenges for the future. In T. Townsend & Y. C. Cheng (Eds.), *Educational change and development in the Asia-Pacific region: Challenges for the future* (pp. 133-162). Lisse, The Netherlands: Swets & Zeitlinger.

Townsend, T. (2007). 20 years of ICSEI: The impact of school effectiveness and school improvement on school reform. In T. Townsend (Ed.), *International handbook of school effectiveness and improvement* (pp. 3-26). Dordrecht, The Netherlands: Springer.

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