Title of Proposed research Project:

**Will school level decision making improve access to better education in Sri Lanka?**

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Abstract

Although Sri Lanka’s educational achievements, in terms of traditional indicators, are praiseworthy the equity and quality aspects of education has lagged behind over the years. The 1997 education reforms, which are now being implemented, attempt to improve upon the inequities in the education system by various policy measures. This study proposes to first evaluate the equity of distribution of financial resources across population groups in the country. Anecdotal evidence from preliminary interviews suggests that the educational resource availability can vary across schools, even when equal amount of per student financial resources are disbursed. This is especially so, when schools are given the power to identify resource needs and procure them, mainly due to differences in management capacity of schools and the constraints faced by them due to limited market access. Keeping this in mind, the study also proposes to analyze the factors affecting financial resource utilization under the Education Quality Inputs (EQI) scheme, recently introduced in Sri Lanka. The study then examines the importance of school quality on educational outcomes of schools. Lastly, the results of the study are used to examine the potential the proposed School Based Management (SBM) has in eliminating inequalities in the education sector in Sri Lanka.
Will school level decision making improve access to better quality education in Sri Lanka?

1.0 Introduction

Achievements in Sri Lanka’s Education sector are praiseworthy, in many respects. Formal education in the country is accessible – both geographically and financially -- to most. It is provided free of charge through an extensive network of schools, numbering more than 10,000, spread throughout the country. Mainly due to these efforts by the government to promote education, Sri Lanka’s literacy rate of 91.8 per cent, and a grade one enrolment rate of over 95 per cent are better than those in comparable South Asian and Developing countries. Furthermore, these statistics are comparable between males and females (Medagama, 1999). However despite these accomplishments, inequalities in the educational achievements across various geographic and socio economic sections of the population and problems with the quality and relevance of the education have plagued the system in the recent past. These differences in educational achievements have in turn contributed to national problems of unemployment, youth unrest, violence, and long-term poverty observed in the last several decades (MOE, 2004).

Since the enactment of the 13th amendment to the constitution in 1987, the provinces were given more power in the administration and management of education in the country. Although the main purpose of devolution of powers to the provinces was to improve the equitability of the delivery of education, anecdotal evidence suggests that due to various reasons quality of education available is not equitable to all in the country. This is partly due to inequitable availability of resources at the school level, despite policies that attempts to ensure fair distribution of educational resources across the country.

The “New Educational Reforms” proposed in 1997 and implemented since 1998,¹ planned several amendments to the education policy in the country to improve access to better quality education for all. Some schemes that are being proposed – e.g., the

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¹ Some revisions to the original proposals were made in the latter part of the 1990s.
education quality inputs (EQI) scheme and the school based management (SBM) scheme aim to decentralize education decision making to the school level, as a means of improving quality.

Under the EQI scheme, in order to improve the availability of resources at the school level, schools were authorized to make decisions regarding identification and procurement of educational quality inputs since year 2000. In this process, funds were allocated to all schools based on a “Norm Based Unit Cost Resource Allocation Mechanism” (NBUCRAM) formula. Schools were given the authority to identify and procure educational quality inputs. Although, according to anecdotal evidence, since the commencement of this program, there was an improvement in the availability of educational inputs at the school level, due to various reasons the intended equitable and efficiency outcomes were not obtained. Utilization of funds made available to the schools was not satisfactory. Some schools were unable to use the funds due to various procedural and procurement related problems. Also, efficiency of fund utilization was not equitable due to differences in the ability of school authorities to identify needs of quality inputs and their ability to procure these needs through the identified, somewhat complex, process. The problem is further aggravated due to the existing teacher shortage problem in rural areas, and limitations in access to infrastructure in these areas. For example, anecdotal evidence suggests that underprivileged schools with teacher shortages have reduced capability to identify and obtain education quality inputs. In such an environment although allocation of funds is equitable under the proposed NBUCRAM scheme the ability of the schools to utilize the funds is not be equitable.

As close to 75 per cent of recurrent expenditure is spent on teachers’ salaries and a further 20 per cent on textbooks and uniforms, the percent of budget allocated for educational quality inputs is less than 5 per cent of recurrent expenditure. As a result, at present the schools have autonomy of financial decision making only over less than 5 per cent of expenditure allocated for their use.

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2 Quality inputs are defined to be “all materials, equipment, instruments and services used to add the quality of education to the students in the learning process and by the teachers in the process of imparting knowledge”. (FC, 2003)
3 The “Guidelines on Procurement and Delivery of Education Quality Inputs” instructs schools lacking in technical know how to get the assistance of other more able schools in the vicinity, when making procurement decisions. The transaction costs involved in doing this for these schools will be larger.
The Ministry of Education is hoping to further increase the decision-making powers of the schools by the introduction of SBM through establishment of School Development Boards (SDB) in 2006. The idea is to involve parents, teachers, past pupils and well-wishers in the running of schools through school development boards. Among other goals, it is envisioned that the school development boards will achieve the following: a) prepare plans for the development of schools; b) improve effective utilization of resources provided by the government and generated by the community; c) improve the performance in curricular and co-curricular activities; d) match needs of the school to investments in teacher training (MOE, 2004). In theory, the introduction of SBM will improve identification and procurement of educational resources at school level as schools will have more autonomy. However, in practice, the final goal of improving access to a good quality education for all will not be achievable through SBMs if problems similar to those experienced under the EQIs hinder the implementation of the programme.

The present study proposes to first examine the equity in financial resource allocation in the country across different population groups. But as discussed earlier, equal distribution of financial resources, always doesn’t result in equal availability of resources across schools, especially when the identification of needs, and procurement of resources are the responsibility of the schools. In order to better understand the determinants of utilization of funds, we next evaluate the factors affecting utilization of funds coming under the EQI scheme, to examine what complementary factors are needed to use available resources efficiently. Lastly, we examine how school characteristics affect educational outcomes, in order to examine the role played by school quality in determining educational outcomes.

The proposed analysis will provide information on the ability of the schools to undertake greater responsibilities in the management and development of schools. It is hoped that the findings of the proposed study will improve the understanding of issues relating to increasing decision-making powers to schools, and possible means of overcoming related problems in achieving greater equity in educational outcomes.
2.0 Specific Objectives of the study:

a) An analysis of equity in public spending at district/province and national levels in order to determine the efficiency of fund allocation across population groups

b) An analysis of how capabilities (in Zen’s terminology) at the school level affect fund utilization under EQI scheme

c) An analysis of the importance of school quality on educational outcomes

d) Recommendations on how to refine proposed policies – especially those aiming to decentralize decision making to the school level -- on improving access to educational resources at school level.

3.0 Scientific contribution of the research, including key references and knowledge gaps

Only a handful of literature evaluates the availability of human and physical educational resources at schools in Sri Lanka. Rannan-Eliya et al (1999) briefly examine public expenditures on education in the country and availability of facilities and educational inputs at school level. They find that per student expenditure on education is comparable across provinces, but that there are severe shortages in the availability of educational facilities and equipment across different types of schools.\(^4\) Their analysis on the availability of educational facilities and equipment is based on a sample of schools in the

\(^4\) Schools in Sri Lanka are divided into four groups according to the classes and subject streams they offer. These are namely, a) Type 1AB schools (classes up to grade 13 and including science education at the advance level), Type 1C schools (classes up to grade 13, but without science stream at advance level), Type 2 schools (classes up to grade 11) and Type 3 schools (classes up to grade 5). In addition, there is a set of schools denoted as ‘National Schools’, these are most often type 1AB schools, which are schools directly funded by the central government.
North Western Province, and the analysis only compares differences in availability of facilities across school types. As such, their analysis does not throw light on differences in accessibility to resources in schools across different geographic locations or socio-economic groups.

Arunatilake et al. (2004) analyzing education finance in the country note that due to several reasons the allotment of financial resources across schools results in inequitable outcomes. One, budgets are prepared according to historical trends, rather than according to actual needs due to procedural shortcomings and budget constrains. This has resulted in perpetuating historical discrepancies. Two, although attempts have been made to provide educational resources according to unit cost criteria, scarcity of resources and problems with implementation has limited the success of these attempts. Three, the present system of teacher deployment have resulted in wide discrepancies in the availability of qualified teachers across educational districts. Also, in the allotment of resources across schools, considerations have not been made to adjust costs according to differences across geographical areas. They note that although the Educational Quality Inputs scheme introduces in 2001, is an improvement upon the earlier system of resource allocation, the success of this scheme is likely to be constrained by the lack of complimentary resources such as teachers and buildings.

Very few authors examine the effectiveness of the proposed EQI scheme and the SBM scheme. Perera (1999) is one exception. He looks at whether School Based Management (SBM) can help achieve school autonomy based on a critical analysis of the present system and the proposed system and also based on qualitative information gathering through key informant surveys on the perceptions of the success of the proposed system. He finds that although many educationists favour the introduction of SBMs they all indicate the need for preconditions to ensure proper implementation of SBMs. In this regard, Perera (1999) emphasizes the importance of selecting, training and deploying school principals, as with the introduction of SBMs principals will have to play a significant role in making decisions regarding school development. Further, his findings show concerns over the ability of smaller schools to compete with popular more prestigious schools for educational resources such as teachers. His findings are based on structured interviews.
The proposed study, hopes to provide empirical evidence on the discrepancies in resource availability across schools, and examine the socio-economic reasons for these observed discrepancies. It finally hopes to identify problems associated with decentralizing decision-making regarding education in Sri Lanka and provides recommendations on how to overcome these problems in order to improve access to better education.

4.0 Policy Relevance

The proposed study aims to evaluate the success of the policy that gives greater powers to the schools in the identification and procurement of educational quality inputs in the country. It also hopes to extract lessons from the Educational Quality Inputs scheme to critically examine the potential success of the proposed School Based Management policy, that will further increase the decision making powers of the schools. As such the proposed study will be of direct policy relevance to the education sector in the country.

5.0 Methodology: specific techniques used to answer research questions; how they will be used

a) An analysis of equity in public spending at district/province and national levels.

*Benefit Incidence Analysis and measurement of inequality*

This component of the study will use a benefit-incidence analysis (BIA) methodology to assess who benefits from pubic expenditure on education in Sri Lanka. BIA combines information on unit costs of providing services with the information on use of those services, and imputes the cost of providing a service to a particular household that uses a service. In the case of public expenditure on education, for example, BIA estimates the cost of provision of public education – or the public education subsidy -- to a household that benefit from this service. BIA assumes that the cost of providing a service is equivalent to the benefit from it.
Graphical representation of benefit incidence by different income groups is a useful way to analyse the progressiveness of public expenditure. Lorenz curve and Concentration curves has been widely used in the literature for visual representation and analysis of inequality. Lorenz curves can be drawn to show the cumulative distribution of total household income against cumulative population ranked by income groups. Concentration curves are similar to Lorenze curves with the benefit of public expenditure substituted for income. Comparisons between these curves can be used to analyse the progressiveness of a subsidy. Concentration curves lying above the Lorenze curve are progressive -- they indicate that the benefit incidence is more equally distributed than income (Duclos and Araar, 2004; Demery, 2003).

Comparing the concentration curves with the 45 degree line shows the targeting of the public expenditure to poorer groups. If the curve lies above the diagonal, that means that the poorer income groups gain a higher share of the subsidy – e.g., the poorest quintile gains more than 20 per cent of the subsidy. (Duclos and Araar, 2004; Lopez-Acevedo and Salinas, 2000; Demery, 2003).

The analysis can be done at different levels of education -- such as primary, secondary and tertiary, to examine the equity in public expenditure on education by different levels of education. BIA can also be used to analyze the distribution of a subsidy across regions and other population groups.

*Sensitivity analysis – need for a service*

Demery (2003) explains that the benefit incidence analysis is sensitive to the demographic characteristics of different income groups. For example, if poorer households have a larger share of school aged children they are more likely to gain a larger share of the education subsidy, as their need for education is greater. The sensitivity of benefit incidence to differences in the characteristics of income groups.
can be observed by using a different means of ranking individuals, such as per adult equivalent of income rather than per capita income.

Sensitivity analysis – out of pocket expenditure

Households incur out-of-pocket costs when using a service. The benefits from public education can be greater for those households who are able to complement these services by out-of-pocket spending. Examining out of pocket spending per student in different income groups can reveal whether there are other types of inequalities in the system that are not revealed by benefit incidence of a public subsidy (Demery, 2003).

Data

The analysis will use available household data (e.g., SLIS survey and the Consumer Finance Survey) to construct income groups – proxied by expenditure of households - and use of education services by households. This data will also be used to obtain out-of-pocket expenditure on education. The education unit costs will be calculated at two levels. First, data obtained from the Ministry of Education will be used to obtain expenditures on education assigned to different levels of schooling (i.e., primary, secondary, tertiary) for each province. Second, school census data will be used to calculate expenditure per student at district and province levels. School census data does not provide comprehensive information on school budgets. But data does include information on teacher salaries, which constitute more than 90 per cent of recurrent education expenditures on schools. This information will be used to examine the equity in per capita expenditure on teaching across districts. The first estimate on unit costs of education expenditure will include expenditures on overheads, and other costs involved in channeling expenditures to schools. While the second estimate will only include the actual amounts spent at school level, which allows one to examine equitability of public spending at the beneficiary level.

b) An analysis of capability of schools to manage their funds

Issues relating to fund utilization
Anecdotal evidence suggests that the utilization of funds made available to the schools under the EQI scheme was not satisfactory in most schools. Some schools were unable to use the funds due to various procedural and procurement related problems. For example, guidelines require that quotations from three suppliers should be obtained before making purchases. Schools with limited access to markets find this difficult and expensive to comply with. Also, efficiency of fund utilization was not equitable due to differences in the ability of school authorities to identify needs of quality inputs and their ability to procure these needs through the identified, somewhat complex, process. The problem is further aggravated due to the existing teacher shortage problem in rural areas, and limitations in access to infrastructure in these areas. For example, anecdotal evidence suggests that underprivileged schools with teacher shortages have reduced capability to identify and obtain education quality inputs. Some schools lack proper storage facilities in which to store quality inputs -- especially in small schools. In such an environment although allocation of funds is equitable the ability of the schools to utilize the funds is not be equitable.

**Estimation methods**

Factors affecting fund utilization will be analyzed using an ordered probit model. Categorized percent utilization levels of EQI funds would be used as the dependent variable. School level characteristics such as teacher quality, teacher availability, and availability of other physical school resources along with community level characteristics, such as access to roads and markets and other socio-economic variables will be used as explanatory variables.

**Data**

Data for the study will come from three sources: utilization levels of funds allocated under the EQI scheme obtained from zonal education offices, information on community and household characteristics obtained from household and community level surveys using SLIS data, and school characteristics using school census data.

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5 The “Guidelines on Procurement and Delivery of Education Quality Inputs” instructs schools lacking in technical know how to get the assistance of other more able schools in the vicinity, when making procurement decisions. The transaction costs involved in doing this for these schools will be larger.
These different types of data will be matched using information on location of schools to construct the final dataset for analysis.

c) An analysis of school quality on educational outcomes

The theory on education production functions states that the educational attainment of students are dependent on student and family characteristics, community environment past achievements of students and school characteristics. Since educating a child takes place both inside and outside the school, adequate controls for family and community backgrounds and student preparedness are needed to isolate the effects of school characteristics on educational achievements (Hanushek, Rivikin, Taylor, 1996). However, lack of data at the student level does not permit us to estimate education production functions at that level. Instead, education production functions will be analyzed at the school level, with controls for school, community level and aggregated household level characteristics.

Such aggregation of data could introduce specification error that is sensitive to the level of aggregation. One such specification error arises from endogeneity of school selection. Since families that place more value on education are more likely to be in district with better education facilities, it is imperative to control for differences on family characteristics and family resources to isolate the effects of school quality on educational outcomes. Data will not permit us to control for these errors in specification fully. However, care will be taken to interpret the results of the analysis taking into biases introduced by such specification errors, arising from data limitations.

Studies that were done for other countries show mixed results on how school characteristics affect learning achievements. These differences are observed due to a variety of factors, such as measures used for determining school quality and the contexts in which (e.g., developed countries versus developing countries) the analysis were carried out (Hanusheck and Lavy, 1994; Betts, 1995; Hanushek and Somers,
Keeping in mind the findings of previous literature, we will employ a variety of measures of school quality in the analysis to understand how the results are sensitive to these different measures.

**Data**

Data on national level examination results will be used to measure educational outcomes of schools. School census data would be used to obtain information on school characteristics. Unfortunately, available secondary data in Sri Lanka does not provide household level information that can be directly matched to student populations in schools. To overcome this problem, household level data obtained from household surveys will be aggregated to district levels, and mapped to schools to obtain community level characteristics (this will introduce more noise to the estimation, however, in the absence of datasets which provides detail school characteristics, and information on student backgrounds, we are forced to approximate information on student backgrounds, by community level household information). The results of this analysis will be used to identify the importance of school quality in determining educational outcomes.

**d) Evaluation of EQI and SBM schemes in improving equity in school quality**

This will be a qualitative analysis. Based on the findings of the above three studies the EQI and SBM schemes will be analyzed, to the extend possible, to identify areas needing reconsideration taking into account the contexts (e.g., differences in capacity of schools and communities) in which these schemes are taking place.

6.0 Data Requirements and sources

Data requirements for the study are detailed in the previous section. This section describes the identified secondary data sources

Sri Lanka Integrated Survey was carried out across all provinces of the country between October 1999 and the third quarter of 2000. A total of 7,500 households were surveyed in 500 urban, rural and estate communities. The survey includes information at the household and community level on the following: socio-demographic variables of families, including information on educational attainment, housing and availability of utilities, economic activities of individuals, access to social and physical infrastructure, earnings, migration patterns of individuals and family assets.

School Census Data 2000 / 2003
The Ministry of Education and Higher Education collects detailed yearly information on student populations, teachers, and available resources at the school level. The information on teachers includes information on the qualifications, experience and salaries of teachers. This information will be used to obtain school characteristics in the before mentioned studies.

Examination Results
Children in Sri Lanka face three national level examinations during their student lives. These are: Grade 5 Scholarship Exam, and Grade 10, Ordinary Level exam. Results on these exams at the school level are available from the Examination Department of Sri Lanka. This data will be used to obtain school level education outcomes.

Education Quality Inputs data
Information on funds allocated and utilized for different schools under the EQI scheme at the school level are available through zonal education departments, who are responsible for the monitoring of this scheme. This data will be used as a proxy measure of school level capabilities in managing funds. Obtaining this information is a time consuming exercise, we have been promised this data from selected zones in two provinces. Each zone deals with roughly more than 50 schools. We will use this data in the analysis of capability of schools in the management of funds.
7.0 Dissemination Strategy: Academics, policy makers, the public

The results of the study will be presented to policy makers and academics at three stages. First, the findings of the secondary data analysis will be presented to a selected group of policy makers and academics for comments and insights for developing the second stage of the study. These comments will be incorporated to develop the methodology and questionnaires for the second stage of the study. The developed questionnaires and methodologies will again be circulated among selected academics, policy makers and educationists for comments. Finally, based on these results, the second stage of the study will be conducted. After the completion of the study, a final draft of the report would be presented to selected individuals of relevant ministries, and academics at a public seminar. After incorporating the comments and suggestions from this seminar, a final report will be prepared for publication.

The publication and a policy brief on the research findings will be circulated among ministry officials, and academics.

8.0 Short list of key references


9.0 Expected capacity building for researchers and their institutions

The proposed research team for this study comes from the Labour, Employment and Industrial Policy unit of the Institute of Policy Studies (IPS) and the University of Colombo (UC). The team includes Nisha Arunatilake (IPS) and two young researchers -- Priyanga Dunusinhe (UC) and Roshini De Silva (IPS).

Nisha Arunatilake is involved in many research projects relating to public finance in the country at the Institute of Policy Studies. These include public expenditure on health, education and other welfare programmes. She is experienced in analyzing large scale household data sets using related statistical software packages. Although she has been exposed to the analysis of impact of public expenditures and welfare and the theory of measuring inequality, she has limited practical experience in this regard. She hopes to gain practical experience in this area, with the involvement in this project. Also she hopes gain from studying in depth the theory of measuring inequality and distributional impacts of public expenditure. She hopes to replicate the techniques used in this study to
measure the impact of public expenditure on education, on the public expenditure on health and other welfare programmes in the country.

**Roshini de Silva** was previously engaged in a project regarding the education budget and resource allocation processes in Sri Lanka. As part of this study she was involved in gathering information from local authorities regarding the formation of the education budget. In the process, the many problems encountered in resource allocation and utilization was also visible. By undertaking this study, she will be able to build on what she was briefly exposed to and carry out an in-depth analysis and identify possible causes and effects of such inequities and related issues. She hopes to be exposed to the theory of measuring inequality and impact of public expenditures and public expenditure reforms, through the involvement in this study. This study requires the use of many data sets. While Roshani has been exposed to different statistical software, being part of this research team will provide her an opportunity to utilize this software extensively and thereby improve her statistical and analytical skills. She will be introduced to new data analysis techniques that can be utilized to obtain a more comprehensive understanding of the data and thereby the subject as a whole.

Also, the opportunity to work and interact with faculty from the University of Colombo will be an enriching experience for her as it will provide an exposure to other areas of study in the field of education for possible investigation in the future.

Providing training of this nature to young researchers such as Roshani is an asset to our Institute. The development and advancement of research skills of our researchers, both qualitative and quantitative, will be a forerunner in the betterment of the individual concerned, their work and thereby the Institute as a whole.

**Priyanga Dunisighe** is a lecturer at the University of Colombo. The courses he teaches at the university includes Education and Development Economics. He is knowledgeable about the theory of measuring inequality and the distributional impacts of public expenditure. Like Roshini he hopes to gain experience in data handling and profit from
the practical experience gained through this study by putting theory in to practice. He hopes to include a practical module to his courses in order to expose his students to the use of statistical packages and experience in putting theory into practice. He feels that his students can gain immensely through exposure to practical experience, as this is an area that needs improvement in the study courses provided through his university.

10.0 Research Experience any ethical, social, gender or environmental issues or risks which should be noted

Low quality education is often shown to increase school dropouts and reduce learning outcomes. These problems are more apparent in poor localities. The findings of the study will, hopefully, enable policy that would improve access to a good quality education across different socio-economic groups of the population there by improving school completion and school achievements.

The databases that will be used in the proposed study are all designed to represent the entire population of Sri Lanka, with the exception of the Northern and the Eastern provinces for some data sets. The information contained in these databases allows the analysis to differentiate by gender to evaluate gender specific aspects of access to education.

The observed availability of educational inputs in the northern and the eastern provinces are especially low due to the on-going conflict situation in the country. The study will try to identify special issues related to these provinces in the proposed analysis.

11.0 List of past, current or pending projects in related areas involving team members

  Priyanga Dunusighe with Sanath Jayanetti, Janaka Wijesiri, and Bilesha Weeraratne

  Nisha Arunatilake and Roshani De Silva

GTZ: “Peace and conflict impacts of a vocational training programme in the central province”, 2002
