STUDY ON THE DEVELOPMENT OF LEARNING ENVIRONMENT IN GENERAL EDUCATION IN SRI LANKA

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Study on Development of Learning Environment in General Education in Sri Lanka

A Research conducted for the National Education Commission

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Preface

The National Education Commission (NEC) commenced formulating National Education Policy for its third ten year policy reviewing cycle. As a part of the above policy formulating process NEC has commissioned ten research studies in order to identify the important policy issues in General Education System in Sri Lanka. The research teams were asked to recommend changes to the present policies where necessary and suggest new policies to the National Education Commission based on their findings.

The Standing Committee on General Education (SCGE) of NEC has identified ten different study areas in the General Education System and prepared relevant Terms of Reference (TORs) for these studies after several discussions at SCGE meetings. The research reports published in this study series were prepared over a period of around nine months by ten research teams selected for their expertise in the different aspects of General Education. The draft reports of research studies were reviewed by a panel of reviewers before finalizing the research reports.

The National Education Commission appreciates the support given by the World Bank in allocating funds from the Transforming School Education System as the foundation of a knowledge hub Project (TSEP) at Ministry of Local Government and Provincial Councils. The Commission also thanks Sri Lanka Institute of Development Administration (SLIDA) for their services provided in financial administration of the research studies.

It is hoped that the publication of these studies will contribute to the extension of the knowledge base necessary for educational change and will stimulate interest and participation in improving the quality of education in Sri Lanka. These studies can also provide points of departure for future researches.

Prof Lakshman Jayatilleke
Chairman
National Education Commission

Contents

1. Introduction 1

1.1 Background to the study 1

1.2 Significance of the study 2

1.3 Objectives of the study 3

1.4 Definitions of key terms 3

1.5 Conceptual framework of the study 4

1.6 Overview of the study 4

2. Learning Environments 5

2.1 Research perspectives 5

2.2 International best practices 7

2.2.1 Best practices of physical environments in schools 7

2.2.2 Best practices of psychosocial environments in schools 9

2.2.3 Best practices of academic environments in schools 10

2.2.4 Maintaining school discipline 12

2.2.5 Technology in the classroom 12

2.2.6 Assessing achievements of students 13

2.2.7 Best practices of inclusive leaning environments 13

3. Current Status of Learning Environments in Sri Lankan Schools 15

3.1 Physical infrastructure facilities 15

3.1.1 Increase of student population in schools and its impact 15

3.1.2 Distribution of resources 17

3.1.3 Availability of basic facilities 18

3.1.4 Higher-order learning spaces 19

3.1.5 Classroom composition and classroom arrangement 20

3.2 Social Environment 21

3.2.1 Teaching-Learning process 21

3.3 Academic Environment 22

3.3.1 Quality inputs in teaching and learning 22

3.3.2 Teachers and qualifications 24

3.3.3 Students and learning outcomes 26

3.3.4 Children with special needs 27

3.3.5 Out of school children 28

3.3.6 ICT in the Sri Lankan classroom 29

4. The Study 30
4.1 Methodology 30
4.2 Results 30
4.2.1 Stakeholder discussions – interviews 30
4.2.2 Informal observations 31
5. Conclusions and Recommendations 32
5.1 Summary of issues 32
5.2 Policy recommendations 33
References 34

1. Introduction

Education plays a key role in the development of a country. The learning environment plays a central role in the education of a learner as it provides the platform through which the learner acquires knowledge, skills and attitudes which results in lifelong learning. The learning environment is considered as the sum of the internal and external circumstances and influences surrounding and affecting a person's learning.

The design of a learning environment is complex as it has to address the needs of many learning orientations. For example, the highly motivated and committed learner (the transforming learner) requires a loosely structured mentoring environment which is challenging while, the conforming learners who like routine, structure and stability in the learning environment requires a safe and simple environment with low risk learning goals ordered in a linear fashion. In order to design such environments it is pertinent to look at the constituent parts of a learning environment.

Learning environments always have a physical, social (intellectual/psychological), technological and didactic dimensions (e.g. Pieters et al 1990; Manninen & Pesonen 1997). The social dimension of a learning environment refers, for example, to the group's role and interaction, as well as an atmosphere of mutual respect, cooperation and enjoyment. The physical atmosphere is typified by the layout of desks and chairs, the lighting, the comfort of the seats, and the significance of the physical environment generally. The teaching applications reliant on various technical and telematics tools demonstrate the technological dimension, whose criteria include user-friendliness of the tools, their reliability, their beneficial nature, their speed and their human-orientedness. The didactic atmosphere in the learning environment refers to the didactic approach on which the instruction and learning relies. Any environment contains the first three elements, but only the didactic dimension makes an environment a learning environment. The living room becomes a learning environment of it is associated with didactic objectives that support learning.

This report evaluates current practices of learning environments physical, psychosocial and academic learning environments in general education in Sri Lanka encompassing its didactic atmosphere. It will also review international best practices of learning environments and provide recommendations that could be implemented in the local context.

1.1 Background to the study

Sri Lanka has been well known in development policy circles as a country with good education attainment levels in basic indicators such as primary school enrolment and completion and adult literacy (World Bank 2005a). It has almost

achieved the Millennium Development Goals (MDGs) 2 and 3 and has one of the highest literacy rates in South Asia at 92.3 per cent for males and 90 per cent for females (UNICEF, 2012). Further, the completion rate in primary education is 89.9 per cent and the survival rate is 99.5 per cent for both girls and boys. Although the participation rates are high, they are not equitable across the country. For example, the participation in education in the highest income groups is around 97% whereas the same in the poorest expenditure quartile is around 90%. There were approximately 10,400 schools out of which 9410 were government schools, 70 were private schools, 700 were pirivena schools and 200-250 were international schools. Out of 4.1 million students, 3.9 m (92%) attend government schools and the rest attend private, pirivena and International schools (World Bank, 2011). The recent statistics (2012) show a decrease of government schools due to closure of small schools which had a lesser number of students and an increase of international schools. However, learning environments provided in these schools are of concern on the grounds of quality, relevance and equity.

The Ministry of Education in its attempt to provide conducive learning environments for all children has drawn the National strategic plan for the general education sector (2012) stipulating standards for both primary and secondary education. However, concerns have been raised in the same report about the quality of learning environments in general education. The report (2012) has highlighted the inadequacy of basic facilities, higher – order learning spaces and equipment in schools as one of the general challenges and issues in general education. All these challenges are connected with learning environments provided to our children.

1.2 Significance of the study

There is a wealth of research (Vandiver et. al. 2011, Brooks 2010, Pickeral et.al. 2009, Bunting, 2004, Hanrahan, 1998) on learning environments and how they affect students' academic performance and their social and emotional wellbeing. Research has shown that positive school environments make a huge impact on the teaching learning process. Therefore, educationists, parents and policy makes have increasingly recognized the importance of finding strategies to improve learning environments not only in general education but also in higher education. In developed countries much research has been conducted to identify effective learning environments and tools have been developed to use in assessing school environments (Fisher 2005). However, with regard to general education in Sri Lanka it's noteworthy that there is a dearth of research specifically on the area of this domain. Thus, it is believed that the findings of this study would provide insights to policy makers to facilitate decision making in general education in Sri Lanka.

1.3 Objectives of the study

The primary objective of the study is to investigate learning environments related to general education in Sri Lanka as well as international best practices of learning environments and to suggest recommendations for policy development

The specific objectives of the study are:

1. to review the current status of the learning environment in general education
2. to review the international best practices in respect of leaning environment
3. to provide recommendations for improving the learning environment with emphasis on quality, relevance and equity

1.4 Definitions of key terms

The key terms of this study are 'learning environments' and 'general 'education'

The idea of learning environment gives an idea of place and space, room to move and explore, and general access. The notion of learning environment resonates best with a the vision of knowledge as a meaning constructed by interaction with one environment (Wilson 1996). One of the constructivist definitions for learning environment is "A place where learners may work together and support each other as they use a variety of tools and information resources in their guided pursuit of learning goals and problem solving activities"(Wilson 1996). An essential feature of this definition is that the learning environment can be seen not only as a physical or virtual place or space but also as a human community forming a supportive, interactive network.

General education is defined as a programme of education intended to develop students as personalities rather than trained specialists and to transmit a common cultural heritage (Merriem-Webster Dictionary). According to Wijetunge (2006) the organizational structure of general education system of Sri Lanka consist of four major stages i.e. early childhood, primary, junior secondary and senior secondary. The status with regard to early childhood education is still ambiguous since it does not come directly under the Ministry of Education. Therefore in this study learning environments in general education is defined as education provided to students from Grade 1 to 13 in a physical or virtual place or space. It encompasses primary and secondary grades in Government, private and international school as well as pirivenas. The terms learning environments in general education in this study refers to physical or virtual place or space within the general education system where students work together with the aim of achieving educational goals.

1.5 Conceptual framework of the study

There are different models such as Lewin's Field model, Walberg Productivity model and Gardiner's Model of Conceptual Systematic Change that can be used in studying learning environments. Gradiner's Model includes overlapping circles of physical environment, Social environment which shows the outcome of individual interactions with others in the environment, and manmade learning environment. The most complex component in the system according to Gardiner is students in the middle (Amirul et al)

Gardiner's model has been adapted by Zandvliet and Straker (2001) to study the environment in technology rich classrooms to represent the three dimensions physical, psychosocial and IT teaching environments. Following these the models of Gardiner (1989) and Zandvliet and Straker (2001) this study uses the conceptual model consisting at physical, and psychosocial and academic environments.

1.6 Overview of the study

This study will initially look at how the learning environment has been conceptualized in different contexts. This will be followed by an examination of international best practices in relation to the physical, psychological, social and academic learning environments. Subsequently, a comprehensive examination will be made of the learning environment prevailing in Sri Lankan schools. Data from previous studies and reports as well as data from the present study will be presented in this section. The methodology adopted to collect data for the present study and the findings will be followed by a summary of the issues that came up. Policy recommendations which address the identified issues as well as recommendations for the enhancement of the learning environment to ensure better education will conclude the present study.

2. Learning Environments

2.1 Research perspectives

Lipman (2010) opines that the question of whether the "learners should adapt to the learning environment or whether the learning environment should adapt to them" is often debated by researchers and designers. He states that this question is arguably wrong and the right question is "how does the environment shape the learner and in turn how does the learner influence the learning environment". He further states that the learning environments in the 21st century are planned as places where the learner is engaged in self-directed and cooperative learning activities, and the physical environment is planned so that it can be routinely re-organized to mediate learning while 20th century constructivist perspective views the learner as active and the environment as passive. Therefore, he suggests that the 20th century perspective should be replaced with the 21st century perspective

Bransford, Brown, and Cocking (2003) identified four essential elements of effective learning environments; learner- centered, knowledge- centered, assessment- centered, and community-centered which might provide a base to evaluate the learning environments in our own schools. As they explained, in a learner-centered learning environment, teachers take the knowledge and prior experiences of individual learners into account in their teaching and try to accommodate learners' strengths and interests. In a knowledge-centered learning environment, teachers direct learning activities toward developing students' deep understanding which is necessary for learners to apply knowledge in a given situation and to transfer it to new ones. In an assessment-centered learning environment, teachers provide students with multiple opportunities to make their thinking visible and with feedback on their efforts. In a community-centered learning environment, students need not only to feel safe to ask questions and to reveal their ideas and difficulties they have in understanding the subject matter, but also to develop norms of behavior that contribute to successful learning in that learning environment.

According to Bernard (2012) the challenge for global initiative to this domain is to recognize its importance as a major factor in enhancing learning and to reach agreement on a relatively short list of variables and accompanying indicators for measuring their quality across cultures ideologies and political boundaries. For countries with limited material resources Bernard suggests the following:

1. Fulfillment of the national commitments to provide quality education for all through accelerated efforts to meet the basic requirements for learning environments specified in EFA Strategy 6 (Education for all strategy 8).
2. Within national education systems, adoption of a 'bottom up' approach that affords countries and regional networks increased opportunities to

provide inputs to the global initiative to meet the above basic requirements

3. Involving parents and community members on the revitalization of local (and/or indigenous) knowledge and communication systems that can inform the design and social climate of learning spaces.
4. Conducting on-going reflective, participatory research using customized methods and tools for conducting assessments that can inform teachers, parents and learners on the quality of the classroom climate, including its psychosocial dimension, with emphasis on equity and inclusion of girls and learners with special needs.
5. Using the findings of classroom and school-based research to develop effective strategies to address pervasive problems that threaten the health of the learning community, such as high levels of repetition and dropout, school-based violence and gender discrimination.
6. Encouraging education systems to establish links between stakeholders in school improvement and research communities actively involved in producing evidence-based studies of school effectiveness and learning environments.
7. Assisting in the development of context specific, system-wide guides and tools to improve schools based on processes of internal self-evaluation.
8. Creating an international, multilingual electronic clearinghouse to share research, tools and good practices in the measurement and improvement of learning environments
9. Development of a practical guide to research that would enable conditions of learning using mixed methodologies.
10. Incorporating prime examples of theory and practice from the international body of knowledge on learning environments research in teacher education curricula and professional development programmes.

Examining the literature related to this particular area Fisher (2005) opines that there is insufficient qualitative/deep research on the relationship between pedagogy and design of learning environments. He suggests that such research should be developed with classroom teachers to ensure its relevance to learning. According to Higgins et el (2005) the design process must be the focus of environmental change in schools so that teachers and learners might experience motivational and perspective-changing benefits beyond the specific problem solving.

A study conducted by Blackmore et al (2011) provides evidence based analysis of twelve innovative learning environments from across urban and regional Victoria. This study concludes that it was the impact of policy and neighborhood environments that disrupted the internal capacities to manage change in school. They suggest that innovative learning environments require attention to be paid to spatial practices (Use of architectural space etc.) ,temporal practices (time allocated for research etc.), structural practices (from minimal structures, looser

coupling, and more networking on a contingent basis within the organization and externally but seeing schools as nodes) communication practices (sharing experiences etc.) social practices (leading teaching and learning as a collective endeavor) and semiotic practices (discourses and the language that are mobilized to inform changing practices) . According to Blackmore et al (2011) these case studies offer to other schools and systems the ways of undertaking fundamental reforms based on how environments create the conditions, suggest the processes, identify the supports, and encourage the professional dynamics and synergies that produce the imaginings most conducive to innovative practices in teaching and pleasurable student learning.

2.2 International best practices

General education equipped with best practices of learning environments upholds a child's right to education mentioned in CRC (1989) and fosters development of children to their full potential. Safe, caring, participatory, and responsive school systems and homes support children to grow up to be healthy democratic citizens (Cohen, 2006). Developed countries strive to provide learning environments described by Cohen as safe, participatory and responsive. This section examines international best practices in relation to physical, psycho social and academic learning environments in general education as well as Inclusive leaning environments

2.2.1 Best practices of physical environments in schools

When student centered interactive teaching learning methodologies are implemented in learning environments school design has an important role to play (Organization for Economic Cooperation and Development, 2004). Miles (2004) has summed up research evidence on the connection between physical environment and learning outcomes in the following way.

- Capital investment in school buildings has the strongest influence on morale, pupil motivation and effective learning style (UK)
- Improving the physical environment leads to a marked improvement in students' performance (USA)
- New school environments with integrated ICT can improve the students rate of progression through the grades (France)
- Pupil performance, achievement and behavior is better in well-designed schools than in poorly designed schools(USA)
- Students with the most natural day lighting in their classrooms progress quicker on school tests in one year than those with the least natural light (USA)
- Improved test scores and child behavior are experienced in schools with more than 100 square feet of area per child; a result more noticeable in children with special learning needs (USA)

Therefore, students need to be provided with inspirational spaces, furniture, storage systems, and communication that improve their experience of learning. As Obe (2004) opines we have to design school buildings of the future to be permissive rather than prescriptive.

To facilitate learning OECD (2004) suggests that schools should have flexible spaces for group learning, individualized learning, open areas and space for specialized activities. Spaces for group learning will not only facilitate group work and cross curricular learning but also cater to students with different learning styles. Spaces for individual learning are the areas allocated for students to engage in personal study. Open areas serve for social purposes while specialized areas are used for sports, vocational training and performing arts. Spaces such as this could be adopted in Sri Lankan schools to facilitate harmony among different ethnic groups

Environment in a school should be safe and well-structured for students and teachers to focus on academic achievements. Blum (2007) opines that physical structure and appearance of a school send strong messages. A well maintained school with well-kept premises conveys respect for the school community. On the other hand schools should also provide physical safety, academic safety and emotional safety. Strategies to improve structure and safety according to Blum are

- Invest in school maintenances
- Create a disciplinary system with clear expectations and consequence
- Clearly and briefly state school rules
- Promote academic security by encouraging and rewarding participation of all students
- Emphasize constructive criticism
- Work toward policy that is fairly conceived and fairly applied to everyone.

In addition to physical facilities, safety requirements are also important in providing healthy learning environments. Many countries have set forth guidelines to ensure safe environments for students. Minimum standards, chemical safety, food safety, drinking water, noise, outdoor air quality, energy efficiency as well as possession of dangerous weapons are some of the aspects that are looked into by governments and school authorities to ensure healthy learning environments. National minimum standards for schools have been stipulated in many countries to safeguard healthy learning environments. According to the New Hampshire Education Department all school staff including custodians maintenance workers, food service workers, teachers, support staff and administrators shall receive training on their roles in maintaining clean healthy school facilities and the importance of quality indoor air (ED306, Minimum Standard for public schools). In the Guide to Minimum Standards and other Requirements document Victorian Registration and Qualifications Authority (2012) states that school buildings, facilities and grounds must comply with any laws that apply to the school including local laws and building, planning and occupational health and safety laws for school

registration. Sri Lanka can adapt these best practices to suit our context and make all the schools including international schools provide safe and healthy learning environments to our school children.

2.2.2 Best practices of psychosocial environments in schools

According to Blum (2007) the climate of the school environment is influenced by a broad range of factors, from disciplinary policies to instructional quality to students and teacher morale. Four major components examined by Blum in his monograph that discusses strategies to improve school environment are caring relationships, academic environment, structure and safety and participatory learning

Relationships among teachers can be promoted through common planning time, interdisciplinary work teams, and collaborative work opportunities. Citing Grand Street Campus in New York which was once regarded as one of the most dangerous high schools Blum states that the innovative leadership programme followed by the school has resulted in decreasing school violence incidents significantly.

Interpersonal relationships with teachers and peers determine the quality of care provided in the school. According to Blum among strategies to promote student-teacher connectedness are

- reviewing students cumulative files and use that information to support students,
- assign academic work that encourage students to talk about themselves, such as creating an autobiography, developing portfolios, or writing essays or poems about topics that are important to them,
- have a regular time each day or week to share thoughts and concerns;
- ask questions only when you can devote time to listen to the answers;
- continually diagnose students' learning strengths and weaknesses;
- schedule times to be available to students and parents outside of class throughout the year;
- welcome new students and families and make a special effort to connect with them;
- treat students with respect by giving public compliments and private criticism;
- empathize with and coach students when they face problems;
- elicit and act on students' recommendations for activities that occur in class;
- during class, minimize "teacher talk" time and increase "student talk" time by incorporating peer review, group work and student-to-student discussions;
- set a goal to highlight positive student contributions daily so that students know you notice their positive attributes;

- give students chances to correct their mistakes to show that you have faith in their capabilities and
- Develop family ties through communicating regularly with families regarding students' successes and challenges.

These practices will enhance teacher- student relationship as well as student- student relationships. All of these practices can be adapted to suit Sri Lankan schools.

Positive behavioral interventions and supports (PBIS) has proved as a best practice in creating safer more academic schools. PBIS includes code of conduct, social skill building, rewards, evaluation and mentors. According to Blum his approach enhances educational capacity through a framework that enables each school to design, implement and evaluate student specific, schoolwide discipline plans.

Involving students and parents in decision making planning is a good practice. Schools should provide opportunities for students, parents and teachers to contribute to the school's success. The following strategies are suggested by Blum to foster participatory learning.

- Involve teachers, students, parents and community members in decision making
- Create opportunities for contribution and responsibility,

Following these best practices Hudson High school has developed a civic engagement programme that featured core civics class for all ninth graders, service learning experiences integrated into many high school courses, innovative school wide governance structure that includes a cluster structure , town meetings and a Community council, including students in leadership roles (Blum, 2007).

2.2.3 Best practices of academic environments in schools

Academic environments not only focus on excellence in teaching and learning but also to communicate this objective to students, teachers and parents. According to Blum (2007) in an academic environment there should be academic pressure which holds firm to the notion that all students are capable in mastering essential skills and creative instruction which design class work that is relevant to students' lives and captures their interest. The following strategies are suggested for encouragement of academic excellence.

- Demonstrate through words and actions that academics are the focus of the school (freeing teachers from trivial non-academic tasks, remove obstacles to teaching, Reward innovation, provide teachers with in service training, reward students for academic achievement).
- Develop high expectations and support for learning (eliminate tracking which communicates low expectations, hold students responsible for

work completion, provide support for attaining academic goals, engage students in their future)

- Improve and diversify teaching methods(encourage a variety of teaching techniques, sensitize teachers to use effective teaching strategies with all students, select materials that suits students' interests and developmental needs, offer interdisciplinary and applied projects as well as service

Blum cites Crossroad School, Baltimore as an example for best practices in achieving academic excellence. The school has provided students with an extended academic day and summer programmes for intervention and enrichment opportunities. These students learn through in-depth investigations that integrate multiple disciplines, field work and collaboration with outside experts.

Balanced curricular, teacher qualifications and teaching and learning methods that provide opportunities for active learning are essential parts of the academic environment in general education. A balanced curriculum educates the whole child, prepares students for success in school and in life, includes all subjects versus those subjects tested, and creates active participants rather than passive observers, and allows children to use the whole brain (Public Schools of North Carolina (2003).

Best practices in teaching and learning promotes discussion between teacher and learner. For teaching and learning to be effective it should address the needs of the leaner. The following list of interlocking principles stated under three main clusters presented by Zemelman at al (2005) will help us to identify what is best in the teaching and learning process for our children.

Student centered **Experiential** **Holistic** **Authentic** **Challenging**	**Cognitive** **Developmental** **Constructivist** **Expressive** **Reflective**	**Social** **Collaborative** **Democratic**

Figure 1.

These clusters show how the academic learning environment could be organized to be student centered. Zemelman at el (2005) opines that more powerful learning occurs when children develop a true understanding of concepts through higher-order thinking associated with various fields of inquiry and through self-monitoring of their thinking. They emphasize that learning is always socially constructed therefore teachers need to create classroom interactions that scaffolds learning.

2.2.4 Maintaining school discipline

Disciplining methods used by teachers also affect the psychosocial environment of the school According to Bear (2010) there should be a comprehensive school-wide plan in relation to disciplining children. This plan consists of developing self-discipline, preventing misbehavior, correcting misbehavior, and remedying and responding to serious and chronic behavior problems.

To develop self-discipline, schools should consider infusing lessons and activities for developing self-discipline throughout the existing curriculum, such as in social studies, literacy, and health education. Schools should also provide multiple opportunities for students to apply skills of social and moral problem-solving and responsible behaviors.

The school-Wide Positive Behavior Support (PBS) model (Human Rights Watch, 2008) implemented at three levels in schools in 46 States around the US is a good example for positive disciplining. This model has been implemented in schools at the following three levels.

- Level 1-Universal: rules, routines, and physical arrangements for all students developed to prevent initial problem behaviors;
- Level 2- Secondary: small group or individual responses for students at risk of problem behaviors, such as mentoring programs and staff support teams for students; and
- Level 3- Tertiary: more intensive interventions tailored to meet the specific needs of individual students with patterns of problem behaviors.

2.2.5 Technology in the classroom

Technology has changed the traditional learning environments in the classroom. According to Derbel (2013) by bringing technology into the classroom, the teacher creates "new" learning conditions which require adjustment to the goals, objectives and style of course delivery. No matter where this technology-supported learning environment is being created, the teachers' learning objectives are conceived with "futuristic" educational imperatives in mind.

According to Kozma (2003) teachers are using ICT to change their role from that of primary source of information to one who provides students with structure and advice, monitors their progress, and assesses their accomplishments. This has made a drastic change in learning environments of modern classrooms. However Geoff and Mouza (2009) have presented four central factors that act as barriers to implementing technological innovations. These factors are 1) the contexts, 2) the innovator, 3) the innovation, and 4) the operator. From these factors the factor 1) context is directly linked to learning environments. Within the context of organizational culture, human infrastructure and technology infrastructure can hinder the success of technology in the classroom. However,

citing examples Klopfer et al (2009) that diplomacy in the classroom, levering simulations in the classroom and social networking have worked well in overcoming most of these barriers.

2.2.6 Assessing achievements of students

What are the 21st century skills we need to assess? Binkley at el (2010) have identified these skills under the following four broad areas

1. Ways of thinking. (Creativity, critical thinking, problem solving skills, decision making skills independent learning and metacognition).
2. Ways of working. (Complex communication ability, Collaboration)
3. Tools for working. (Information literacy and ICT literacy) and
4. Skills for living in the world. Good citizenship, life and career skills, personal and social responsibility

The learning environments that promote these skills encompass academic as well as social environments. Therefore, assessment of these skills is a part of learning environments that are provided in schools.

According to the National Forum on Assessment high quality assessment is essential for high quality education. They have presented seven principles to help transform assessment systems and practices as a part of wider school reform in the US. The seven principles are 1) primary purpose of assessment is to improve students' learning 2) assessment for other purposes support student learning 3) assessment systems are fair to all students 4) professional Collaboration and Development Support assessment 5) the broad community participates in assessment development 6) communication about assessment is regular and clear and 7) assessment systems are regularly reviewed and improved. According to the National Forum on Assessment these principles reflect an "ideal" but what they believe is the best that assessment can be and do. However, they stress that education systems must move toward meeting these principles if assessment is to play a positive role in improving education for all students (National Centre for Fair and Open Testing 2007).

2.2.7 Best practices of inclusive leaning environments

Inclusive education is gaining ground in the world and much has been talked about it in Sri Lanka. There are children with developmental disorder such as Autism attending schools but mostly not diagnosed in time. According to Martinez (2012) Autism is on the rise and school environments must be prepared to cater to students with such disorders. Individuals with ASD often rely on visual cues to understand their environment since communication can be difficult, however, sensory impairments can make the environmental cues difficult to understand (Paron-Widles, 2008); The National Autistic Society, 2012). Therefore, schools must think of such children with special needs when designing spaces. Workspaces should be provided within the classrooms to

minimize distractions and keep children focused on their work (Mostafa, 2008). Outdoor play and learning environments for children with Autism and special needs will help them to enjoy learning in a safe and accepting outdoor setting, connecting them with the restorative benefits of nature while building on the skills learned in the classroom (Sachs & Vincenta, 2010).

Essential best practices in inclusive learning environments can be discussed under some of the broad categories presented by Jorgesan et. al. (2002). These are termed as 'class membership', 'curriculum' and 'assessments'. Some of the indicators of best practices related to class membership are, the student is a member of an age-appropriate general education class, the student attends the school he/she would attend if he/she didn't have a disability, the student progresses through the grades according to the same pattern as students, without disabilities, the student participates in the graduation ceremony at the average age at which other classmates without disabilities graduate, the student receives a diploma when he/she is discharged from special education.

Among the indicators of curriculum based on common content standards for all students presented in a variety of accessible formats include written information at appropriate ,reading levels, and in formats as indicated by the student's sensory needs (video, picture/symbols, actual objects, demonstrations, orally, etc.), individualized through the development of personalized performance demonstrations for some students.

Assessments should be based on the present level of performance statements on the IEP reflecting the student's talents, abilities, skills, the student's learning styles, the student's preferences, the supports that the student needs to learn well, caution about the validity of assessment results if the student has communication difficulties, assessment reports reflect the student's abilities and needs rather than deficits, if the student has difficulty communicating, assessment tools and strategies are chosen accordingly, teachers and related service providers use ongoing dynamic assessments instead of discrete, one-time assessment tools.

3. Current Status of Learning Environments in Sri Lankan Schools

This section explores the current status of learning environments in Sri Lankan schools under the dimensions of physical, psychosocial and academic. In Sri Lanka, a network of government schools has been established to promote universal access to primary and secondary education. This objective has been achieved to a great extent with a comparatively even distribution of schools and teachers in relation to student enrollment across the country (World Bank, 2011). Basic education is compulsory and all children aged 6-14 are expected to complete nine years of education.

Primary education is universal and the net enrollment rate of 99 percent among boys and girls confirms gender parity. There is a steady growth in the survival rate of students through the compulsory basic education cycle due to activation of school attendance committees, school feeding programmes and strengthening of special education and non-formal education proogrammes for children with special needs (World Bank 2011).As stated in the same report, the participation in senior secondary education has also improved substantially during the past decade.

3.1 Physical infrastructure facilities

3.1.1 Increase of student population in schools and its impact

The actual status of school education can be understood by analyzing the number of schools, number of children and teachers and the teacher-pupil ratio (2012 Statistics, Ministry of Education).

Table 1

Student Population and Schools

No. of Students	No. of schools	percent age	**No. of Students**	No. of Schools	Percentage
1-50	1652	16.7	**1501-2000**	211	2.1
51-100	1537	15.5	**2001-2500**	120	1.2
101-200	1996	20.2	**2501-3000**	77	0.8
201-500	245	24.8	**3001-3500**	43	0.4
501-1000	1287	13.0	**3501-5000**	63	0.6
1001-1500	451	4.6	**5000 and above**	11	0.1

Table 1 shows how the students are distributed in a total number of 9905 schools all around the country. According to this, there are 74 schools which are overcrowded with more than 3500 students. There has been sharply increasing demand for popular, prestigious urban schools and decreasing demand for rural and less prestigious semi-urban schools (World Bank 2005). Wijesundara and Perera (1997) reported that this situation had affected the standards, discipline and created problems of management. Teachers in those schools had complained about lack of resources, large classes and time consuming record keeping and evaluation tasks (NEREC, 2002). On the contrary, 1652 schools have a fewer number of students and are considered as 'uneconomical units'. An NEC study on closure of schools (2003) had found that most of those schools had adequate buildings and trained graduates though nearly 55% of those buildings had not been utilized for any educational purposes.

Further according to the National Strategic Plan for the General Education Sector (2011) this situation highlights the gaps in the implementation of principles of equity and equality in educational opportunities especially in geographically disadvantaged areas. Further, there are concerns that the quality of education is poor in very small schools and that teachers in such schools are demotivated and demoralized. Schools with larger student numbers also face problems with overcrowded classrooms and inadequacy of basic facilities such as toilets and other requirements.

The survey of 20 schools and the observations of the research team also revealed a similar situation. Popular 1AB schools struggle with overcrowded classrooms where as unpopular schools (rural as well as urban) struggle to survive with a fewer number of students (Table 2). It was observed that some schools situated on the main roads of the Colombo Municipality area are also struggling to survive with a few students and newly built underutilized buildings. There is a tendency to hire these buildings for different community activities in order to support the maintenance of other basic facilities of the school.

Table 2- Student numbers, classes and teachers (survey data)

Student numbers	No. of schools	Classes	Teachers
Above 6000	01	136	302
2500-3000	07	55-70	98-150
500-1500	04	25-40	30-50
250-499	04	11-18	14-40
100-250	02	9 -10	07-15
20-99	02	05-10	5-10
Total	20		

3.1.2 Distribution of resources

Uneven distribution of resources among different types of schools and also among various provinces, zones and divisions is a visible feature in the education system of Sri Lanka.

Table 3 -Distribution of schools by province, school categories (national/ provincial) and school type (2011 statistics)

Province	Nat/Provincial	1AB	1C	Type 2	Type 3	Total
Western	National	68	01	01	01	71
	Provincial	94	267	585	316	1262
Central	National	41	13			54
	Provincial	58	325	525	499	1407
Southern	National	58	06	01		65
	Provincial	59	250	516	212	1028
Northern	National	12	02			14
	Provincial	57	122	298	399	890
Eastern	National	28	01			29
	Provincial	36	183	377	396	992
North Western	National	29	06			35
	Provincial	43	289	597	251	1180
North central	National	10				
	Provincial	23	162	328	253	766
Uva	National	29	07			36
	Provincial	21	205	350	226	802
Sabaraga muwa	National	28				28
	Provincial	30	211	490	346	1077
Total		715	2050	4068	2899	9732

(MoE 2011)

As illustrated in Table 3, the Western, Southern and Central Provinces have a large number of 1AB schools which offer all three streams (Arts, Commerce and Science) at GCE A/L. This situation deprives the rights of children who want to continue their further studies in more demanding streams. Further, the number of National schools in the Western, Central and Southern provinces is much higher than the same in the Northern and North Central provinces.

The discrepancy between government schools and private schools would be mostly on the infrastructure facilities and training of teachers. According to the World Bank (2011), this resulted in undertaking more ambitious development initiatives by well-established schools in the neighborhood of cities. On the contrary, the schools located in rural and estate regions are underdeveloped with less qualified staff, poor facilities, and academic and managerial systems and processes that are being still established (World Bank, 2011). The NEC (2003) also reported that inequitable allocation of resources widened disparities between ever expanding urban schools, rural schools and small schools that met with the educational needs of disadvantaged communities, thereby reinforcing the social exclusion of the poor and resulting in the virtual extinction of many small schools in the 1990's.

The Ministry of Education in its attempt to provide conducive learning environments for all children stipulated standards for both primary and secondary education (MoE, 2012). However, concerns have been raised in the same report about the quality of learning environments in general education. The report (MoE, 2012) has highlighted that inadequacy of basic facilities, higher – order learning spaces and equipment in schools as among the general challenges and issues in general education. It further reported that this polarization has resulted in increasing imbalance, resource wastage and inequalities in one hand and intense competition among parents to get their children admitted to the popular, large 1Ab schools on the other hand.

3.1.3 Availability of basic facilities

Unavailability of basic facilities in schools is a critical issue which needs the urgent attention of the authorities. It was surprising to find that adequate water and sanitation facilities and good hygiene practices are lacking in almost 50% of schools (World Bank, 2011) in the country. According to the School Census data, about 49% of schools did not have adequate toilet facilities and 18% were without adequate water supply (World Bank, 2011) which may have affected directly the rights to hygiene of the students in these schools. MoE (2011) also confirmed that the facilities are in a serious deficit in 18.3% schools while in 30.4% schools sanitary facilities are not adequate. The MoE (2011) stressed that irrespective of the minor improvements that took place during the past few years, the rural and plantation sector need further attention to fulfill these requirements to meet national norms. The survey carried out by the research team also revealed that

the basic facilities are not sufficient for the student population in schools and some facilities are in a very pathetic state.

However, it is noteworthy to mention that the Child Friendly School Programme (UNICEF) has provided support for improving the physical infrastructure facilities of nearly 5000 schools since 2012 (Ministry Statistics 2012/13) . Under this project the basic facilities of primary schools such as water, electricity, sanitary facilities and improving security of children by fixing fences , refurbishing halls, maintaining 'sellam midula' and activity rooms etc are somewhat improved. At the second stage, the focus will be mainly on the improvement of the teaching-learning process of primary classrooms.

3.1.4 Higher-order learning spaces

As a solution to some of the problems in the school system, the National Education Commission proposed the establishment of "centers of excellence" which was also not successful. Only 15 schools out of the 134 'fast tract' schools had shown a significant improvement (NEC 2003:23). The study conducted to evaluate this project (2002) found that the development of excellence in each Division was far from realization. It further reported that even though considerable investments had been made in construction and in rehabilitation of physical facilities since 1995, many schools still lacked adequate classroom space, electricity, water supply, laboratories, libraries, Principal's quarters, basic furniture, teaching aids and equipment, computers and play grounds and the physical facilities provided were often reported to be of poor quality (NEC, 2003:23) .

Gunawardena, Wijetunge and Perera (2003) found in their study on effectiveness of implementation of Educational Reforms that the supply of resources needed for the practical subjects which included specially designed workshops, activity rooms or laboratories and tools and equipment were far from realization. As they reported, only around 300 schools were provided with the activity rooms. The majority of schools did not appear to possess the tools needed for a common subject in the curriculum namely Practical and Technical Studies. The most disturbing situation was that the position was more disadvantaged in the case of type 1C and type 3 schools and in type 1AB schools. In another report, the disparities in the quality of infrastructure, equipment and qualified teachers and in particular the fact that only an unequally distributed 5% of the schools offered senior science education facilities were signed out for action. (NEREC Report 2002)

A similar situation was reported by the Ministry of Education (2011) which confirms that the situation has not been changed even after many attempts. According to the report, there are 72 Divisional Secretariat Divisions which do not have schools to deliver Science at GCE A/L and 100 Divisional Secretariat Divisions have only one 1AB School for the same purpose. Even at GCE O/L level, there are schools which teach science without having permanent laboratory

facilities (33%). At present, there are attempts to develop 1000 schools equipped with all the necessary facilities which might ease this problem up to a certain extent. However, there is a need for extending facilities to schools located in suburban and rural areas to ensure equality of opportunity and to increase the percentage of students following the Science stream.

3.1.5 Classroom composition and classroom arrangement

A study conducted by Wijesundara and Perera (1997) before the introduction of new Education Reforms revealed that a large number of schools in their sample did not have separate classrooms or partitioning of school halls, no adequate space in the classrooms or a sufficient play area within the classroom or outdoors. However, with the introduction of new education reforms in 1998, in order to meet the international standards, certain criteria and norms had been adopted. Especially with regard to Primary Education Reforms, the recommended space per child was 10 sq. ft. and the buildings to be enclosed and lockable. Providing facilities to display creative work of students, a book corner and a sand corner, a work table in the classroom were some other recommendations (Education Reforms, 1998). Further, an attempt has been made to change the teacher centered classroom structure to a student centered structure in order to provide an environment which is conducive for student learning. The NEC (2003) recommendation was that the class size should not exceed 35 students in grades 1-11 and 30 students in grades 12-13.

However, even after the implementation of reforms, a number of studies reported that the classrooms in Sri Lankan schools are overcrowded and congested, thereby stymieing activity-based learning. Some schools are reported to have more than 50 students even in primary grades. The study conducted by Gunawardena, Wijetunge and Perera to evaluate the effectiveness of the implementation of Educational Reforms (2003) revealed that teachers were of the view that they were not provided with the recommended classroom facilities and student numbers which may have led to difficulties in arranging classrooms to suit the teaching and learning process. Another study conducted by Lekamge and others (2008 :) had revealed the following with regard to grade 9 classrooms:

- Only 50% of the observed Sinhala Language classes had a conducive environment
- The majority of Science and Mathematics classes were conducted either in spacious laboratories or rooms and teacher could move comfortably.
- A typical classroom was described as follows: “Space in the classroom is inadequate. It is not possible for the teacher to go near the students and for the students to come to the front of the classroom. Desks and chairs are kept close together. No space for group activities. Number of students is large”

It was encouraging to find that after some time the situation in primary classrooms had been improved. As reported by Aturupana et al (2011) the classrooms have been re-arranged to facilitate guided play and active learning and school families have been arranged so that teachers from different schools can exchange ideas and learn from each other. Recent visits to urban as well as rural primary schools have also proved that the classroom conditions have been improved to suit the requirements of the children and the identifying the child programme is providing a positive start for children entering grade one. The survey carried out by the research team also found that the basic facilities in primary schools are somewhat satisfactory.

However, the situation is different at the secondary school level. According to a World Bank report (2011) there has not been a focused programme to improve quality education at the secondary school level and certain weaknesses had hampered the promotion of learning. The report emphasized the need for rationalizing construction activities in the school system, devoting greater resources to expanding and increasing urban schools, enhancing the allocation of resources to high level quality inputs, such as IT centers, science laboratories, libraries, workshops, activity rooms, multi-purpose rooms, computers, books, journals, audio-visual aids, educational software, equipment and tools in schools and universities, improving the supply of basic facilities, such as water supply, sanitation and electricity, in rural and estate schools. The survey also confirmed that many rural schools operate without separate classrooms, libraries, play grounds, laboratories, music room, IT room and other facilities whereas the popular schools have all the facilities they need in several numbers.

3.2 Social Environment

3.2.1 Teaching-Learning process

The teaching – learning process at primary school level has comprised a proper mix of guided play, activities and desk work in order to facilitate the holistic development of children. Mainly two studies reported about the existing status of teacher and student participation in the teaching-learning process at secondary school level. Gunawardena, Wijetunge and Perera (2003: 87) reported that discussions, assignments and group work had been used to a larger extent in the selected schools. They further reported that more interactive and participatory methods were being used by grade 6 teachers of Social Studies, Mathematics, Sinhala and English in Type 1C schools. In the study conducted by Lekamge and others (2008: 135) discussions and questioning emerged as two of the more successful areas of teacher performance which may have facilitated student-teacher interactions as well as student –student interactions. However, the overall conclusion of the study with regard to student participation was that the opportunities for student participation through peer interaction and interactions with the teacher were less than desirable in all classes. Jayaweera and Gunawardena (2004) also found that various teaching-learning factors such as

'uninteresting/poor teaching', 'apathy of teachers', 'harsh punishments such as ' making children kneel in the hot sun' and 'teachers not allowing children to play' had led to increase non-attendance of children in school. The study on out of school children (CENWOR, 2013) also revealed that the reasons given by care givers (25.4%) and children who had dropped out (22.3%) were related to 'lessons are boring', 'no interesting activities' and 'limited use of audio-visual teaching'. The report further mentioned that the reactions of the children reassured that the teaching learning process prevalent in the classroom was a one way passive process. Some children who were weak in studies had dropped out or were at risk of dropping out due to negative experiences such as punishments, ridicule and discrimination and lack of attention from teachers. The negative attitudes of teachers were attributed to the social distance between the teachers and families and their lack of empathy and understanding of their living conditions.

On the other hand developing social skills related to leadership, team work and building mutual trust among diverse ethnic, cultural and religious groups are the main areas in the social environment that need concern and attention. The examination oriented student behavior has hindered the expected goal of education i.e. total development of the child and has created too much of an academic bias (World Bank, 2007) and increased an undesirable competition and coaching for examinations among students especially at the secondary education level.

3.3 Academic Environment

3.3.1 Quality inputs in teaching and learning

In addition to providing education free of tuition costs in all government schools from grade 1-13, the government provides all children from grade 1-11 free schools and a set of free textbooks each year. Also students are entitled to subsidized transport in public buses and trains. Further, primary school children in poor and disadvantaged areas receive free meals. The need for supporting these children was further emphasized by the Family Health Bureau (2010) in their report that in all provinces, 14-20 % of school children were under-nourished and 4-8% of school children were stunted.

According to a NEC Report (2003: 13) there was consequently little provision for other quality inputs to enhance the micro level learning teaching processes, and the learning environment without donor assistance in recent years. Only a relatively small proportion of resources, less than 20%, is invested in quality inputs, such as equipment, technology, furniture and tools (World Bank, 2004). In the same report, the difficulty in enhancing the allocation of resources to high level quality inputs, such as IT centers, science laboratories, libraries, workshops, activity rooms, multi-purpose rooms, computers, books, journals, audio-visual aids, educational software, equipment and tools in schools and universities; and

improving the supply of basic facilities, such as water supply, sanitation and electricity, in rural and estate schools was emphasized (World Bank, 2004).

Textbooks remain as the chief quality input in the Sri Lankan school system. In recent years, the government has implemented an important policy initiative to increase the quality of textbooks and widen the choice of textbooks available to schools by dismantling a state monopoly and opening textbook publication to competitive private firms (World Bank 2004). However, a number of studies have reported the deficits in the text books used by school children. For instance, the study conducted by Gunawardena, Wijetunge and Perera (2003) revealed that the horizontal integration has been inadequately achieved in the secondary curriculum, material prepared for Buddhism and Life competencies are too abstract and not appropriate for the age levels. The Mathematics curriculum has neglected affective domain and no rationale given for inclusion of Technology in the curriculum. Lekamge and others (2008) reported that the percentage of learning outcomes and the activities focusing on Higher Order Cognitive skills was somewhat low in Science, Mathematics and Mother Tongue in instructional materials of Grade 9 and the emphasis of teaching was mainly on concept analysis. In another study, it was revealed that the Science curriculum is overloaded and cannot be covered during a school year (McCaul, 2007, Dissanayake and Sonnadara, 2011, NEREC study 2002) also found that material introduced under new Educational reforms were too teacher centered thereby stifling the creativity and initiative of teachers and students.

The study conducted by Gunawardena, Wijetunge and Perera (2003) had revealed that New subjects in the curriculum i.e. Environmental Studies, lack clear objectives are not integrated into science and social studies with no competent teachers to teach. With regard to Science and Technology, the limitations identified were that the two subjects have been hastily and artificially integrated and teachers were not clear why or how technology was included. Practical and technical skills in the curriculum have been seen as a positive change. Life competencies were introduced without clear objectives, syllabuses or curriculum materials. There was no integration within the subject or with other subjects.

Classrooms were found to be conducive to activity based learning (NEC, 2003: 37). The study found that the expected transformation in the learning-teaching process had not taken place in many schools. Many classroom activities were seen to be desk, blackboard, book and teacher centered with few opportunities for creative activities and flexibility in movement. It was further noticed that the teachers have not fully understood the competencies and competency levels and Teacher Instructional Manuals do not provide adequate guidance on the evaluation of competencies(SLAAED, 2010). Text books in many subjects have contained errors: especially in the English language and English medium test books (Perera, 2011).

With regard to resources available for the implementation of the subjects which are practical in nature such as Aesthetic subjects and Practical and Technical

Studies, the majority of the schools did not appear to possess the space or the tools needed. When the availability of eight types of equipment ranging from blackboard to computer was checked, in addition to the heavy use of blackboard (97.6%) none of the other types of equipment was used to a substantial extent by the teachers (Gnawardena, Wijetunge and Perera, 2003: 80).

In the recent past, the supply of quality inputs to schools has been supported by the World Bank and a streamlined mechanism has been proposed for effective utilization of these inputs. The thousand school project also has a strong emphasis on developing teaching –learning facilities including IT facilities of the selected schools. Therefore, the recent developments in the decentralization of responsibilities and funds to schools for the quality inputs might change existing situation in those schools.

3.3.2 Teachers and qualifications

According to the statistics of the Ministry of Education (2012) there are 223,333 teachers in the school system to be engaged in the teaching –learning process with 4,004,086 students. Thus the overall teacher-pupil ratio is 1: 18 which is comparatively high when compared with the other countries in the region. The majority (57.4%) of teachers are trained in different subject areas such as Primary, Science, Mathematics, English, Agriculture, PT etc. However, there are no minimum qualifications for teaching appointments and subsequently there have been deviations from policy of recruiting teachers with GCE/AL attainment and professional qualifications. The expectation on making teaching an all graduate profession is far from realization.

Further, these teachers are unevenly distributed in 9905 schools. According to recent statistics, in more than 4411 (44.53%) schools in the country only 10-25 teachers are being placed. More than 100 teachers are available only in 205 (2.07%) of schools (Statistics of the Ministry of Education, 2012). This situation was confirmed by a World Bank report (2011) that teacher deployment is a problem especially for teachers of subjects such as English, Science, Mathematics and IT. Rural schools in difficult areas find it extremely difficult to teachers in these subjects. The ministry of Education and Provincial Councils have introduced certain mechanisms such as giving faster promotions to teachers serving in disadvantaged schools, providing accommodation for those teachers and selecting candidates for trainee positions from the districts which experience teacher shortages.

The government of Sri Lanka invested heavily, over the past five years to construct, staff and equip a complete network of National Colleges of Education (NCOEs) to provide pre-service teacher education and Teacher Centers (TCs) to deliver continuing teacher education. Virtually all school teachers are now trained, and enjoy opportunities for professional development during their career (World Bank 2004). The Ministry of Education in its report (2011) revealed the improvements of teacher training as follows:

Table 3 – Qualified Teacher Ratio (2006-2011)

Category	2006	2007	2008	2009	2010	2011
Percentage of trained teaches out of total number of non-graduate teachers	97.63	96.95	92.87	92.55	92.66	92.62
Percentage of professionally qualified graduate teachers out of total number of graduate teachers	77.12	73.97	65.0	61.29	61.77	61.70
Percentage of trained and professionally qualified graduate teachers (all qualified teachers)	90.82	89.04	83.26	81.43	81.43	81,24

MoE (2011)

As the Table 3 illustrates the total percentage of qualified teachers has decreased gradually during the past six years due to large scale recruitment of non-graduate and graduate teachers. The effectiveness of the actions taken at the provincial level to provide professional training to graduate teachers by providing a refresher course of 300 hours is to be explored in the future. It was evident that the Programme for School Improvement (PSI) and the School Based Teacher Development Programme were somewhat successful in fulfilling the training needs of teachers (World Bank, 2013). The underlying idea was that the schools themselves should identify their strengths and weaknesses and develop a mechanism within the school itself for development of professional skills of its' teachers . However, there is an urgent need to implement suitable measures for expanding training opportunities for these teachers.

Another important factor that affects the learning environment of students is the absenteeism of teachers. Even though the student- teacher ratio has improved substantially with the high recruitment of teachers, teacher absenteeism has become a serious issue in the school system. According to MoE statistics (2009) the average casual / sick leave per teacher is 21.61 and average leave per teacher is 30.68. Teacher absenteeism has a direct impact on student discipline, student performance and administration and management of the schools.

3.3.3 Students and learning outcomes

Free education, free text books and free school uniforms along with the subsidies for transport and food programmes has improved the student participation at the primary education level (1-5) and basic education level (1-9) up to 97% and 83% respectively there by ensuring the compulsory education for all (World Bank, 2004). However, their participation would be hampered due to many social, economic and health problems they are faced with.

The Family Health Bureau (2010) identified that school children in Sri Lanka experience complex health and nutritional needs. The data analysis of school inspections covering about 682,800 children across all provinces revealed that obesity (overweight) is a problem especially in the Western province and is seen alongside under-nutrition and pallor which are particular problems in the Northern Province. However, food pogrammes are underway to support school children in difficult areas, children of low income families and the schools with more than 30% of malnourished children. Both lice infestation and dental caries are also displayed as pervasive issues affecting a large number of school-age-children in Sri Lanka (World Bank, 2011: E13). The needs for interventions to improve health of adolescents and young adults and to support maximizing their educational achievements were also highlighted.

Student learning outcomes as measured by the national assessments have been rising in recent years. As highlighted by the World Bank in 2004, primary school children showed substantial shortfalls in mastery of fundamental language and numeracy skills towards the end of the primary cycle. In the first language (Sinhalese and Tamil), average mastery was only 37%. English language skills were extremely low. Only 10% of primary children had achieved the targeted level of mastery. In mathematics achievement, too, overall mastery was only 38%. Mastery of mathematical concepts was 45%, procedures 51% and problem solving only 34%. The low level of cognitive achievement among primary students was especially worrying, from a policy perspective, as primary education forms the foundation upon which secondary and tertiary education and various types of skills training are built. In addition to these low overall achievement levels, there were significant disparities in student achievement between urban and rural areas and among the nine provinces. The Central, Uva and North- Central Provinces, tend to perform poorly on language and Mathematics scores. Such regional and urban-rural differences were attributed to a combination of factors, such as the lower quality of education services in disadvantaged provinces and rural areas, weaker parental capability and support, and poorer opportunities for child activities that promote learning (World Bank, 2004).

However, there are several studies carried out after 2004, which yielded the following general conclusions:

- Achievement scores have improved in all provinces between 2003 and 2009
- The best performance can be seen among students from Type 1AB schools while the poorest performance is seen among students from Type 2 schools.
- Students from urban schools perform better than students from rural schools though there has been a reduction in the disparity between urban and rural schools between 2003 and 2009.
- Female students outperform male students in all three subjects. (NEREC (2007) (2008)Aturupana (2008) Madagama and Sonadara (2011).

The unsatisfactory state of education quality was evident at the level of secondary education. The proportion of students passing the GCE O/L was low, only 37%, implying that about two out of every three students taking the examination failed. A substantial majority of students seemed to struggle with subjects such as mathematics, English language, Science and Social Studies. At the GCE A/L examination, pass rates had been around the 50- 55 percent level since 1998 (World Bank 2011) and it remained consistent till 2009. Among subject streams, the pass rates varied from 65 % (Arts and Commerce) to 36 % (Mathematics) and some students who had obtained three As at the examination were unable to get into the Universities, (to study in the programme of heir choice)

English Language learning outcomes in primary education have risen over the period 2003-2009 (NEREC, 2003) though with regard to writing, a low performance has been reported. Only 35-40 percent of students pass at the GCE O/L examination and a recent study conducted with regard to achievement of learning outcomes in English has revealed that 47% students scored between 10-39 percent in the tests (Lekamge et al, 2010).

3.3.4 Children with special needs

According to Mendis (2003) inclusive education policy has benefited the children with disabilities. The emphasis on activity based child centered learning and continuous assessment are of special benefit to these children who would otherwise be marginalized in the traditional classroom setting. The study identified the following issues which need to be considered as important

- Non entry of many children with disabilities to schools and their high dropout rates
- Lack of adequate numbers of teachers who have been trained to identify and teach children with disabilities
- The absence of measures to facilitate the access of these children to school activities outside the classroom (NEC 2003)

The study conducted by the research team revealed that in all schools in the sample no special unit or special facilities for special needs children existed.

3.3.5 Out of school children

Through the introduction of the 5E model from grade 6-11 it was expected that the students would enhance their exploratory, investigatory and reasoning abilities and critical thinking thereby supporting them to become more independent learners. However, the 5E model cannot be applied to all lessons and the schools are facing a lot of practical difficulties in implementing this model. As summarized by the NEC (2003) the junior secondary curriculum content tended to be heavy, the learning-teaching process teacher dominated and limited largely to conventional techniques such as dependence on the blackboard, with minimal efforts to promote activity based learning experiences as envisaged in the reforms.

The school based assessment mechanism introduced as a part of the new education reform has not been successful in achieving its main expectations. According to the NEC (2003) this scheme has been accepted as a modality to assist the development of students, to improve teaching and learning and to provide feedback for all stakeholders. However, there has been criticism of some issues and in the implementation, shortcomings of the current SBA practices. As a result, the NEC (2003) had proposed a common and coherent SBA scheme for junior and senior grades to avoid disjuncture and confusion among students, teachers and parents, which has yet to become reality .

Introduction of the Bilingual education programme from grade 6-13 has aggravated the problems in the teaching–learning process. Lack of competent teachers to teach subjects like Science and Mathematics in the English medium, ad-hoc procedures adopted by the authorities to train teachers, interim mechanisms used by schools to teach English medium classes and lack of teacher educators had resulted in lowering the standard of students studying in the bilingual education programme. The educational material developed for the bilingual education programme has been criticized for their poor quality and detachment from CLIL framework (World Bank, 2011).

Tuition classes play a very significant role in preparing students for national examinations. Evaluation studies have pointed to the extensive practice of students enrolling in private tuition classes, particularly in grades leading to public examinations (NEC, 2003). The demand for private tuition is arising from two main factors: limited opportunities available for higher education and the dissatisfaction of parents and students with the quality of teaching in formal schools. An evaluation study reported that 87% students in Grades 12-13 felt the need for private tuition but 30% wanted it only if teachers did not complete the syllabus. In a study conducted recently (Fernando, 2013) it was revealed that students attend tuition classes by spending a lot of money and traveling long distances mainly because they directly focus on examinations, provide up to date material, cover the syllabus and do revisions and adopt attractive speaking styles. Students strongly believed that tuition classes help them to achieve their expectations despite the spacious classrooms, advanced technologies, well

trained and experienced teachers etc. available in schools. Teachers and principals in schools are very concerned about having tuition classes during the school time which has a negative impact on student attendance and their commitment and motivation towards school activities.

3.3.6 ICT in the Sri Lankan classroom

ICT was introduced to Sri Lankan schools in 1982 as a pilot project. Currently, there is an ICT policy which is being implemented in Grades 10-12. There is Schoolnet which is being managed by the Education for Knowledge Society Project and the Ministry of Education. Schoolnet is connected to more than 1500 schools island wide (http://www.schoolnet.lk/). The Ministry of Education has taken measures to establish Mahindodaya technical laboratories in 1000 schools to foster ICT in secondary education. The first stage of this project is over and the Ministry has launched the second stage recently.

According to a study conducted by the Secondary Education Modernization Project (.worldbank.org/etools/docs/library/243154/day1Session 2_Sri Lanka.pdf) 12% of schools have internet facilities, 59.3% of teachers have computer awareness and 40% of schools have computers, Among the challenges identified by the project are lack of human resources, administrative regulations to establish a separate ICT teacher cardres in schools, more funds for the implementation and maintenance of ICT labs, cost of equipment and components and adequate knowledge in English. .These challenges may intervene in providing positive academic learning environments in the 21st century classrooms in Sri Lanka. In this context Sri Lanka has much to do in using ICT to enrich learning environments in general education.

4. The Study

4.1 Methodology

This study used mixed methods in gathering information. In addition to reviewing relevant documents and literature, questionnaires, informal observations, and interviews (face to face and via telephone) were used in collecting data for the study.

The questionnaires were administered to teachers in 20 selected schools. Teachers were asked to observe their school environment and fill the items in the questionnaire that reveals the actual situation in the schools. In addition, informal observations conducted on government, private and, international schools provided valuable information on the existing situation. Interviews conducted with a purposive sample of principles, teachers and students also revealed their views on the prevailing situation in the country.

4.2 Results

Results of the data gathered from questionnaires revealed that popular 1AB schools struggle with overcrowded classrooms whereas unpopular schools (rural as well as urban) struggle to survive with a fewer number of students (Table 2). It was observed that some schools situated on the main roads of the Colombo Municipality area are also struggling to survive with few students and newly built underutilized buildings. There is a tendency to hire these buildings for different community activities in order to support the maintenance of other basic facilities of the school.

4.2.1 Stakeholder discussions – interviews

Several interviews were held with secondary school teachers in the Galle district prior to compilation of the report. Further the authors' extensive interactions with teachers through curriculum development workshops held at the NIE are also used to formulate the core ideas proposed in this report. Furthermore the comments from the general public received in lieu of the paper advertisement is also included for completion. Some of the common opinions are listed below.

1. One key issue highlighted by the general public is the lack of time for extracurricular activities for the students.
2. The current curriculum and the examination methods encourage the students to memorize the facts. A more practical use of the material taught is also a suggestion made by the general public.

4.2.2 Informal observations

Results of informal observations revealed many gaps in the physical environments provided to students even in international schools. Some of the international schools are located in places not conducive for learning. For example one international school in the suburbs is surrounded by a canal which stinks. It is unfortunate to witness international schools mushrooming without proper space inside as well as outside. Locations of Government schools are satisfactory although space pose a problem for some schools. Primary classrooms up to grade 3 are arranged to foster child centered group activities. But the rest of the classrooms are arranged in a teacher centered way in rows. In some popular schools however, lack of space in the classroom restricted the movements of students as well as teachers.

Outside space was available in most Government schools and Pirivenas. Some teachers used outside space for selected subjects since parallel subjects such as religion could not be conducted in limited classrooms. It was noted that outside learning environments could be more effective (provided the teachers are efficient) since students seem to be relaxed and enjoying the lesson. Methods such as role play could be used in outside spaces.

Some 1AB schools observed have libraries and students often use these libraries. However, it was observed that library facilities are not available in some schools including international schools. There were libraries in the international schools observed. But informal discussions with teachers in one school revealed that the library is being used for other activities as well.

Observations also revealed that children are mostly provided with academic environments. In some schools lack of space prohibit social learning but in others teachers seemed not be paying enough attention to social learning environments. Training students to face examination has become the prime objective of education. The short interval they receive is inadequate for children to mix up.

Cooperation of the community with the school was visible in many schools and parents and others especially in primary grades visit schools quite often. Some schools encourage G.C.E. A 'Level students to carry out community development programmes as projects which promotes learning environments in homes. Some schools have societies to help their own needy students (E.g. Vincent De Paul Society). However, observations revealed that although parents of most of the schools participate in fulfilling the needs of the school, there are no programmes implemented by schools to promote learning environments in the family or community.

5. Conclusions and Recommendations

5.1 Summary of issues

1. The competition which exists in the current school system to move to better schools at any cost is generating disharmony and violence in schools due to the pressures of learning (). One serious consequence of this competition is while producing a limited number of success stories, it also generates a large number of failures. This has led to a high degree of frustration of students who are unable to cross over to the next logical step via national examinations. Equity should be addressed at the skill level rather than at the resource level if this needs to be arrested.
2. The formal school environment provides many facets of learning to students. For example, emotional wellbeing, physical wellbeing, and cognitive wellbeing are some aspects which are fostered in this environment. School curricular are geared to impart knowledge, skills, attitudes as well as practice to its learners. Due to the pressures of passing national examinations and the competition therein, the learning environment within the school is affected. This has led to the cumulative effect of learners only gathering knowledge which is the primary area required to face national examinations. As a result the learners seek knowledge gathering form tuition classes which primarily concentrate in imparting only the knowledge aspect of learning.
3. Creativity and imagination requires a flexible learning environment which can only be provided within the formal education system. However with the current curriculum overload, the learner is left with no option but to concentrate only on the knowledge aspect which is required to pass examinations. As tuition classes mainly address the knowledge component, they have become more popular as opposed to the school as a source of information. As a result the creativity and problem solving skills are lacking in students these days.
4. In Sri Lanka the career paths for students are generally chosen by their parents. With the limited knowledge they have about the market place, the selections made are very often restricted in the fields of mathematics and science. Educating the parents about the options available to students at the secondary level can improve the learning environment.
5. Overloading the student with curriculum content will lessen the time available for student-teacher and student-student interactions which will enable them to gain problem solving and collaborative skills. Lessening the curriculum content will also lessen the student dependency on the tuition culture which will allow them to focus on the school learning environment and provide much more than knowledge to the student.
6. Studies have shown that the classroom setting plays an important role in fostering collaboration between students. Having flexible classroom

settings is one way of ensuring social interactions and improving the learning environment.

5.2 Policy recommendations

1. Reduce the knowledge component in the curriculum to a manageable state.
2. Study international curricular and design a framework for curriculum development which takes into account the maturity level of the student to arrive at the relevant and necessary content rather than arbitrary alignment of topics (content overload is ruining the learning experience by turning students to followers rather than explorers of knowledge)
3. Limit the classroom size to 25-30 students if possible.
4. Curtail tuition classes from being held during school time.
5. Up to grade 5 the classroom arrangement should be in the social format (horse shoe or in clusters). This will enhance communication and negotiation skills in students at a young age.
6. Schools should be encouraged to develop a studio type learning environment to do group work for higher classes. When students are moved to this learning space the mindset will change.
7. Shift the grade 5 exam to a position which matches the maturity level of the students.
8. Provide guidelines to use ICT for specific topics which are hard to explain. A special room for multimedia is recommended.
9. The learning environment can be improved if the teachers with good instructional design ability are incentivized.
10. A minimum of 20 hours of social responsibility work study should be made a requirement for secondary school graduation.
11. Disjoint the Advanced Level Examination from university entrance. Universities will provide an examination such as GRE for its entrance.
12. Provide teacher assistants (other teachers from the same school) for each class so the assessment workload can be reduced.
13. Community should organize parent education programs with schools acting as moderators when it comes to career guidance for students.

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