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Editor

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Notes from the Editor

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Defining and Measuring Literacy – Implications for Policy and Programme

Manzoor Ahmed*

Abstract

The EFA targets for literacy, which can be interpreted as reflecting a narrow view emphasizing the mechanics of decoding symbols, have prompted many countries to adopt programme strategies accordingly and the simplistic conventional assessment approach. A proposed new mass literacy programme in Bangladesh targets 37 million young adults of age 11 to 45 years with the aim of “eliminating illiteracy by 2014.” The time-table, the design of the programmes, the teaching-learning content and approach, the articulation of objectives, the indicated assessment methods, and the lock-step targeting of large numbers in the programmes reflect too much a mechanistic view of literacy, despite the rhetoric and expressed intentions to the contrary. This paper reviews the evolution of the concept of literacy and the emerging new consensus about it. The policy implications for literacy programmes of the broadened definition and a new assessment approach are noted.

I. How is literacy understood?

The definition of literacy has evolved over time. Three statements of UNESCO at different times spanning five decades provide an indication of the evolution of the concept and definition of literacy:

a) A person is literate who can, with understanding, both read and write a short simple statement on his or her everyday life (UNESCO, 1958);

b) A person is functionally literate who can engage in all those activities in which literacy is required for effective functioning of his or her group and community and also for enabling him or her to continue to use reading, writing and calculation for his or her own and the community’s development (UNESCO, 1978);

c) Literacy is the ability to identify, understand, interpret, create, communicate and compute using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve his or her goals, develop his or her knowledge and potential, and participate fully in community and wider society (UNESCO, 2005).

The first, an obviously simple and simplistic definition, was adopted in the context of the initial effort more than half a century ago by UNESCO to establish the legitimacy of an

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international effort to promote literacy and garner support for cooperation in such an initiative.

Two decades later since the beginning of UNESCO’s effort in advancing literacy, the idea of functionality and the use of literacy in specific social contexts was introduced in conceptualizing literacy. It took almost three more decades before further elaboration was made of functionality of literacy in “varying contexts.” More significantly, the concept of literacy as “a continuum of leaning,” rather than a binary phenomenon, was also emphasized. Meanwhile, the notion of “plurality of literacy,” or the idea of different kinds of literacy in respect of acquisition and application of literacy in particular social contexts, came to be recognized (UNESCO, 2004). This social dimension of literacy - multiple literacies in varying social contexts - may be regarded as a further refinement of the concept of functionality postulated in the third version of the definition of literacy mentioned above. In this elaboration and refinement, literacy comprises diverse practices in relation to socioeconomic, political, cultural and linguistic circumstances. It is recognized that literacy competencies are acquired in diverse ways, in school and outside of school. Acquisition and use of literacy are also seen as bound up with family and community contexts, the spread of communications media and technologies, the need to perform in the world of work, and acquiring skills for further learning (UNESCO, 2004).

A widely agreed statement regarding the definition of literacy is obviously critical for laying the foundation for assessing literacy competencies of people and measuring literacy rates of populations. The first two (a and b) above indeed related to general guidelines on the development of education statistics approved at UNESCO General Conferences. The third (c) was the outcome of an expert meeting on the development of the groundwork for Literacy Assessment and Monitoring Programme (LAMP) under the auspices of the UNESCO Institute of Statistics (UIS, 2009).

Amazingly, however, prevailing practices in literacy measurement and the formally proclaimed and widely recognised results of such measurement continue to reflect the very first “simple and simplistic” definition of literacy. The evolution of thinking -- the recognition of the functional purposes of literacy, the complexities and nuances related to the functionalities, and the profound policy and operational implications both for assessing literacy competencies of individuals and communities and promoting literacy effectively – has not been reflected in the commonly used and widely accepted measurement methodology and its results.

Does it matter? Indeed, it does, because the simplistic approach seriously limits the effectiveness and outcome of literacy programmes of countries, especially where illiteracy still is a major problem. The simplistic and limited view of literacy has led to designs of literacy programmes confined to a focus on the mechanics of decoding the symbols (alphabet), which is only an initial step towards achieving the capability to use literacy in life
and further learning. Major literacy efforts in many developing countries thus have left large proportions of participants vulnerable to relapsing back into illiteracy, unable to make functional use of literacy skills or to develop these further. The neglect of the continuum of learning and multiple dimensions of literacy has served as a justification for the simplistic assessment of literacy and estimates of literacy rates which lack credibility.

As will be seen below, the inherent weaknesses in assessment and measurement of literacy, and the consequent policy and programme deficiencies, have put in jeopardy the achievement of all of 2015 EFA goals, to the extent literacy is a foundational element in all EFA goals. “Literacy is at the core of EFA as a learning tool, a learning process and a learning outcome, all contributing to the achievement of broader human development goals” (UNESCO, 2006, p. 216). Arguably, the education and other goals of poverty reduction and human development contained in the Millennium Development Goals for 2015 are being impacted negatively by the persistent deficits in literacy competencies of large segments of populations in poor countries (GCE, 2005). Indeed, as the EFA Global Monitoring Report 2006 points out, this phenomenon affects the developed countries as well, though not to the same extent (UNESCO, 2006).

**The contrasting perspectives**

Literacy efforts historically have been marked by a tension between two contrasting perspectives. A broad vision of literacy comprises a range of skills, competencies and awareness about self and the world that enables individuals and communities to exercise choices regarding fulfilling their human potential. A narrow view, on the other hand, confines literacy to acquiring the skills to decode written symbols as a means of communication. Paulo Freire succinctly expressed this dichotomy and asserted his own position when he said literacy is about reading the *world*, not just the *word*.

In the 1960s, the notion of ‘functional literacy’ was applied in literacy programmes linking literacy skills with those for productivity and improving quality of life. Since the 1970s, educators have emphasized literacy as an active process in different social and cultural contexts involving social awareness and critical reflection, that empower individuals and groups to promote social change. (UNESCO, 2006)

Literacy has indeed become a metaphor for many kinds of skills. It has been argued that the concept of ‘multiple literacies’ – related to technological, health, information, media, visual, scientific and other situations – is better suited to life in the twenty-first century. It has been suggested that a combination of multiple skills and their use and further enhancement in varying contexts are relevant to expanding people’s capability to the changing dynamics of life. (UNESCO, 2006)

Iironically, a recognition of the significance of literacy in human development and the prominence given to it as developmental goal as well as a human right, has led to launching of quick-fix campaigns and “movements.” The campaigns and large scale social mobilization
have contributed to positive outcomes, especially in the context of concomitant broader political and social movements. The lesson from history, however, is more nuanced. As the EFA Global Monitoring Report on literacy put it, “the spread of formal schooling, well-organized literacy campaigns and policies supporting adult learning opportunities have all played influential roles in expanding access to literacy. The broader social context is equally powerful: the motivations to become and remain literate are closely related to the quality of the literate environments found at home, at work and in society.” (UNESCO 2006. p.189)

The contrasting perspectives have influenced and have been a source of tension in the stance taken in literacy programmes about how literacy activities are linked or not linked with the lifelong learning perspective. This finds its reflection in the way literacy and adult learning are considered in EFA discourse.

The Dakar Framework for EFA set two goals related to adult learning and education – one on adult literacy (Goal 4) and the other on life skills and lifelong learning (Goal 3).

Dakar Goal 3 is about “ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes”. The commentary on this goal in the Dakar Framework document mentioned that “All young people and adults must be given the opportunity to gain the knowledge and develop the values, attitudes and skills that will enable them to develop their capacities to work, to participate fully in their society, to take control of their own lives and to continue learning.” (UNESCO, 2000) [“Expanded Commentary”, Dakar Framework for Action, 2000]

Dakar Goal 4, specifically about literacy, set the target of “achieving a 50 per cent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults.” (UNESCO, 2000)

A close reading of the two EFA Goals and their elaboration suggests an attempt to differentiate the purposes to be served by the two Goals – in terms of content, objectives and learners. This attempt seems to have created an untenable dichotomy. Goal 3 about life-skills and lifelong learning is not quantified. It refers to learning content and objectives – the learners should be able to acquire the values, attitudes and skills which would serve them throughout life and the learning process which would continue throughout life.

The adult literacy goal, on the other hand, emphasises the mechanics of literacy skills, equipping learners with literacy as an instrument. Having acquired this instrument, the learners may continue to participate in education. The somewhat narrow and restrictive view of literacy skills, and their separation as a goal from that for life-skills and lifelong learning, appear to have caused a lost opportunity to place literacy and adult education firmly within a common framework of lifelong learning that is purposeful for each learner.

The Education for All initiative proclaimed in Jomtien in 1990, and the subsequent Dakar Framework in 2000, have influenced policy-making and programme strategies in
developing countries. Countries which have long-established non-formal and continuing education programmes and strong government support for such programmes have overcome to a degree the apparent disjunction implied in Dakar between learning content to meet “the learning needs of all young people and adults,” on the one hand, and the acquisition of the mechanics of literacy, on the other. However, the weakness in coherence in definitions and concepts of literacy and its link with adult learning, widely prevalent with adverse consequences in many developing countries, shows in part the influence of what may be called the Dakar dichotomy. (Ahmed, 2009)

Indeed, the tension between a limited view of literacy and its place as a component of lifelong learning is more evident in countries where adult illiteracy remains a serious problem than in countries where major progress has been made in expanding basic education opportunities. (Ahmed, 2009)

CONFINTSEA V in 1997 had emphatically made the case regarding the critical significance of the lifelong learning approach for adult education including literacy programmes. The Hamburg Declaration saw literacy as “a catalyst for participation in social, cultural, political and economic activities, and for learning throughout life.” (CONFINTSEA V, p. 4). The position articulated in Hamburg apparently did not influence policies and programme strategies enough to bridge the contrasting perspectives in national literacy efforts.

It can be fairly argued that a narrow and restrictive definition of literacy has led to assessment of literacy that is not quite assessment in a meaningful way and is self-defeating for the lofty purposes of literacy as the means of personal self-realisation and the development of society and nations. Almost all countries included in UNESCO’s reporting of national literacy rates continue to accept a variation of self-reporting about the level of competency in literacy. Moreover, not all countries use the same definition to classify a person as literate, nor the same definition of the adult population. This has created confusion about the rates and meaning of what these officially-announced and widely-discussed numbers – often cited in international league tables – really mean, as far as the goals of education and development are concerned. Scholars and policy-makers have been expressing dissatisfaction since the 1980s about the way literacy is conventionally defined and measured. (UNESCO, 2006)

CONFINTSEA VI, held in Belém, Brazil, in December 2009, recognized the conundrum faced in many countries with high levels of illiteracy, despite the position articulated in favour of a broad vision of literacy, placed within the framework of lifelong learning more than a decade earlier in CONFINTSEA V. In the Belém Framework for Action, the participants committed themselves to “develop literacy provision that is relevant and adapted to learners’ needs and leads to functional and sustainable knowledge, skills and competence of participants empowering them to continue as lifelong learners.” (CONFINTSEA VI, p. 3)
Significantly, the Belém Framework also stipulated that all surveys and data collection should “recognize literacy as a continuum.” It requires that the achievement of literacy learners would be “recognized through appropriate assessment methods and instruments.” (p. 3)

- The community of non-governmental organizations active in the EFA movement represented by the Global Coalition for EFA (GCE) also gave a strong endorsement for a broader view of literacy and the assessment of literacy consistent with this view. GCE has attempted to formulate what is called International Benchmarks on Adult Literacy. Items included in the benchmarks include statements about the definition and measurement of literacy (GCE, 2005)

- Literacy is about the acquisition and use of reading, writing and numeracy skills, and thereby the development of active citizenship, improved health and livelihoods, and gender equality. The goals of literacy programmes should reflect this understanding.

- Literacy should be seen as a continuous process that requires sustained learning and application. There are no magic lines to cross from illiteracy into literacy.

- All policies and programmes should be defined to encourage sustained participation and celebrate progressive achievement rather than focusing on one-off provision with a single end point - It is important to invest in ongoing feedback and evaluation mechanisms, data systematization and strategic research. The focus of evaluations should be on the practical application of what has been learnt and the impact on active citizenship, improved health and livelihoods, and gender equality.

II. How is literacy measured?

What is currently measured?
Most countries at present produce statistics on literacy based on a single question posed in a population census or household survey, usually a variation of the words “Do you know how to read and write?” A literacy rate is regarded as the proportion of those in the population who answer “yes” to this question. The literacy rate of a population usually relates to those of at least 15 years of age.

The common national practices in the measurement of literacy have the following characteristics (UIS, 2009).

- Officially proclaimed literacy rates provide a single quantitative measure based on self-reporting, rather than the results of an objective assessment, that could capture achievements in different dimensions of literacy skills and their uses.

- These rates measure literacy as a dichotomous and non-continuous phenomenon; i.e., literacy is something that one either has or does not have.

- These rates look upon literacy as if it were a single domain of skills and competencies.
- These rates indicate how an individual perceives one’s own position in relation to literacy competencies of others in the population to which one belongs.

- These rates also may indicate how an individual positions oneself in relation to the distribution of educational opportunities; i.e., whether one perceives herself/himself excluded from educational opportunities.

It is evident that the widely used and accepted measurement methodology and the results derived from it do not provide credible information on what skills and competencies individuals have actually acquired. Nor do they say anything about what individuals are able to do with the knowledge and skills in varying situations they face where literacy skills are relevant. The measurement results also usually do not include numeracy skills.

**The tested literacy assessment applied in Bangladesh**

Bangladesh, applying a methodology of tested measurement of literacy on a nationwide representative sample in 2002, found that 41 per cent of the 11+ population had literacy skills at a very basic level, whereas the official rate for the same year was reported as 63 per cent. The Bangladesh survey also found that only half of those tested as literate, or 21 per cent of the adult population, had a level of skills that was found sustainable and self-sufficient, in the sense that this population could use literacy in simple transactions in their daily life and could use their skills for further learning without seeking assistance or attending courses to improve further their literacy skills (Ahmed et al., 2003).

A detailed quality control protocol was developed and applied to selection and training of field workers, supervision of field work, collection and recording of data, assessing responses to the literacy test, and analyzing all data, which generated valid and reliable estimates of the literacy status of the population.

Having been carried out entirely by national researchers, the total cost of the survey was under $100,000. The main cost was for the extensive field work to administer the literacy test to the nationwide sample.

The literacy status of the population was determined by administering a literacy test to a stratified random and clustered sample of the population 11 years and above. The 11+ age-group was chosen to capture the literacy outcome of all literacy efforts including primary education for which the designated age-range is 6 to 10 years. The literacy test was developed through consultation with national experts and pilot testing in six rural and six urban sites. Statistical analysis of pilot data and the item selection procedure enhanced reliability of the items finally selected for in the test.

A purposefully designed test instrument was used for the first time in Bangladesh on a nationwide sample to assess the national literacy situation - in contrast to the "self-reporting" method used in the population census and various household surveys. The test consisted of items on four essential skill components of literacy - reading, writing, calculation and use of these three skills (3Rs) in practical life situations.
Four skill levels, based on a composite score for items in all the four skill components, were: non-literate, semiliterate, literate at the initial level and literate at the advanced level. Those whose scores fell in the range of scores either for literate at the initial or advanced level were designated as literate.

The study covered all the 64 districts in the country. A total of 3,840 households from 268 villages/mahallahs were surveyed where 19,705 people lived. Of these people, 14,274 were aged 11 years and above; 13,145 of them could be brought under literacy test (52.2 percent females and 47.8 percent males). It was decided to draw samples from the rural population of six administrative divisions and the urban population of metropolitan cities and municipalities. Samples for the eight strata were selected by a four-stage random sampling of upazila, union, village and household in the rural areas, and municipality, ward, mahallah and household in urban areas. An adequate sample size for drawing valid conclusions for each stratum with male and female breakdown was calculated and adopted.

The following definitions of literacy and different levels of literacy skills were used.

**Literacy:** Possession of skills in reading, writing and numeracy related to familiar contents and contexts and the ability to use these skills in everyday life in order to function effectively in society.

**Non-literate:** Lack of ability to decode alphabet, recognise words, write words and count objects; and, therefore, inability to use literacy skills in life situations.

**Semi-literate:** Ability to recognise and write some words, to count objects and use numbers at a very basic level; extremely limited use of the literacy skills in life situations.

**Literate at the initial level:** Ability to read and write simple sentences in a familiar context; possessing skills of four basic rules of arithmetic; limited use of these abilities and skills in a familiar context in life situations.

**Literate at the advanced level:** Ability to read and write with fluency in varying contexts; competency in four arithmetic rules and mathematical reasoning; ability to use these skills in everyday life and independently in further learning.

Besides the literacy test instrument, three other questionnaires were used: (a) a household survey questionnaire, (b) a questionnaire for education, socio-economic and other information of the respondents, and (c) a questionnaire for information about the community.

Analysis of the data from the test and the concurrent surveys provided major findings regarding the literacy status of the population, means and methods of acquiring literacy, and people's perception and expectations.

The findings of the study present definitively the status of literacy of the population and benchmarks for future efforts in literacy based on the application of scientific and objective research methods. Not unexpectedly, the literacy status of the population manifested large
disparities in terms of gender, socio-economic attributes, and geography. Only one-in-five attained self-sustaining literacy skills. The advanced level in literacy skills, a level of self-sufficiency that permits people to apply the skills effectively in their life situations and use the skills on their own for further learning, was achieved by only 20.4 percent of the population.

The principal means of acquiring literacy, according to the survey, was primary education and schooling beyond primary education. However, only a prolonged exposure to primary and secondary education assured acquisition of literacy skills and their sustainability. Non-school means of acquiring literacy, such as, literacy courses and campaigns, according to the survey, were not found to be effective.

Significant findings related to people’s uses and perceived priority for literacy. Personal communication with family members and, relatives abroad and helping children in their study were listed as the most frequent use of literacy skills. Use of literacy skills was a function of the level of skills acquired and real and perceived opportunities for their use.

Livelihood related learning opportunities was a strongly perceived need, but this begged the question how this need could be fulfilled effectively, especially when at least half of the “literates” had literacy skills only at the initial level. The need was also expressed for multipurpose community centres offering a menu of different kinds of literacy and productive skills and learning programmes especially targeted at women.

The first tested literacy assessment in Bangladesh in 2002 was followed up through surveys undertaken in 2005 and 2008 which applied the same design, methodology and sample frames. The second survey in 2005 was undertaken by the research unit of the Dhaka Ahsania Mission, an NGO active in education, with financial support from UNESCO. (Mia et al. 2005). The 2008 survey was conducted by the government’s Bureau of Statistics (BBS), again with UNESCO’s support (Bangladesh Bureau of Statistics, 2008). The results obtained from these surveys indicated modest progress in literacy rates in a period of six years since 2002, and were consistent with the pattern of quantitative and qualitative findings of the first Education Watch assessment. The tested literacy rate for the population over 15 was 48.6 percent compared to 38.8 percent in 2002; however, the gender gap narrowed significantly, but the urban-rural gap persisted.

The initiatives and advocacy efforts of the academic and research community and civil society led by the Education Watch group generated government interest in a tested literacy assessment method. The involvement of BBS in the last survey implied an official status of the statistics produced by the survey, which were taken as the basis for reporting national literacy rate. Incidentally, government acceptance of the tested literacy results placed Bangladesh considerably lower in rank in the international and regional league table, since most countries continued to use the self-reporting method.
The national initiatives in a number of countries described above are examples of alternative literacy assessment methods which provide a reasonably nuanced and accurate picture of literacy competencies and which are not bound by strict externally imposed protocols, heavy dependence on external technical expertise, long lead time for development, and high development and implementation cost.

The national initiatives incorporate direct testing of literacy skills, based on sliding scales rather than dichotomous values; and looks upon literacy as multidimensional, comprising different skill domains, and as a learning continuum. They reflect a broader view of literacy and its place in a life long learning approach. More significantly, these initiatives can be regarded as promising nationally owned approaches to moving towards a broader view of literacy in terms of policy and programme strategies. They also indicate the attempts to reflect the broader literacy perspective in assessment of literacy, and national capacity building in a sustainable way for this purpose.

III. Concluding observations

UNESCO, the agency responsible for setting standards of assessment and tracking progress in literacy, routinely accepts national data reported by governments based on self-reporting. What the current numbers of adult illiterates (estimated as 759 million) in the world mentioned in UNESCO documents, showing a gradual decline over time at least in absolute numbers, and cited widely, really mean in terms of people’s skills and competencies is not clear at all. It can be argued that, if a reasonable measurement method and criteria are applied, the number would be at least double of this. Moreover, several rates based on levels of literacy competencies acquired and corresponding numbers would be appropriate to represent the continuum of skills.

The world today that is characterized by the knowledge economy and the information society has changed radically in the last six decades; so have the ideas and expectations about education, learning and adult literacy. As noted above, the term literacy has been broadened to become a metaphor for many kinds of skills. The notion of “multiple literacies” – related to technological, health, information, media, visual, scientific and other contexts – is not only not a novelty, but better suited to life in the twenty-first century.

Meeting learning needs of youth and adults, complementing formal education provisions, is now recognised as critical for personal development and society’s progress and a matter of human right and dignity. International agreements such as Education for All as well as national constitutions support this position. At the same time, specific goals of Dakar Framework and MDG appear to encourage the perpetuation of a narrow view of literacy and simplistic assessment of literacy in national literacy programmes.

The EFA targets for literacy, which can be interpreted as reflecting a narrow view emphasizing the mechanics of decoding symbols, have prompted many countries to adopt
programme strategies accordingly and the simplistic conventional assessment approach. Cases in point are the Sakshar Bharat (Literate India) programme launched in late 2009 and a proposed new mass literacy programme in Bangladesh. These countries facing a massive problem of illiteracy find themselves under great pressure to make a major headway in this respect and show results by 2015. The Indian programme aims to enable 70 million youth and adults, predominantly women and those from the disadvantaged scheduled casts, scheduled tribes and other “backward” groups acquire basic functional literacy by 2012. The Bangladesh proposal targets 37 million young adults of age 11 to 45 years with the aim of “eliminating illiteracy by 2014.” (Government of India, 2010; Government of Bangladesh, 2009).

The time-table, the design of the programmes, the teaching-learning content and approach, the articulation of objectives, the indicated assessment methods, and the lock-step targeting of large numbers in the programmes reflect too much a mechanistic view of literacy, despite the rhetoric and expressed intentions to the contrary. They raise the spectre of token or symbolic literacy competency, which may allow countries to claim certain literacy rates for the benefit of the international league table, but functionally meaningless.

A sense of urgency, high national priority, and government commitment represented by the programmes are laudable. Arguably, however, a programme design based on a broad view of the continuum of learning within the framework of lifelong learning has to move away from a reductionist view of literacy. The literacy objectives and numerical targets have to be defined in terms of achieving functional and meaningful skills, making these the first steps for lifelong learning, and bringing learners into a process of engagement in learning to enhance one’s life prospects. The programme design and the assessment approach have to recognize how the concept of literacy has evolved from the “alphabetization-centred” definition to one that emphasizes effective participation in a wide spectrum of lifelong learning.

The direct and important policy implication is that a definition of literacy reflecting the non-dichotomous learning continuum, and multiple contextual functionality characteristics of literacy should be adopted and promoted as the basis for assessing literacy competencies. This also makes it an imperative that tested levels of literacy skills should be the basis for reporting literacy achievements of countries and individuals. It would also mean that there would be several rates based on levels of skills rather than one adult literacy rate for a country. A general understanding and consensus has to be developed in this respect. UNESCO, UIL and UIS will have to play a lead role in this effort. The global and national goals and targets for literacy also have to be redefined accordingly, linking these with lifelong learning goals and strategies.
References
Promoting Adult Education Through Community Learning Centers (CLCs) in Nepal

Sultana Kaniz Fatema*

Abstract
This article is based on a part of a research paper prepared as a requirement for the Master’s degree in Environment Education and Sustainable Development at the Kathmandu University. It looks at the overall scenario of adult education in Nepal and examines how CLC has served or can serve as the institutional mechanism for effective and relevant adult and non-formal education.

Case studies of two CLCs, 10 and 25 kms away from Kathmandu, illustrate the expectations, constraints and possibilities regarding the CLC as the institutional vehicle for providing and expanding adult and non-formal education, including literacy programs. The case studies show that clarity regarding roles and responsibilities of different actors, an adequate support system to ensure quality and relevance of a demand-based learning menu, and ensuring necessary resources on a sustainable basis will be necessary to turn CLCs into building blocks of a lifelong learning system for citizens.

I. Introduction
There are almost 800 million adults in the world, two-thirds of whom are women, who are illiterate. It is known that being without functional illiteracy skills is a significant problem in all countries, industrialized and developing. Moreover, more than one-third of the world’s adults do not have access to printed knowledge, new skills and technologies that could improve the quality of their lives (UIS, 2010).

Literacy is the foundation of education, including basic education. Literacy programs and various types of non-formal education programs are regarded as the means of fulfilling the right to basic education of adults and youth, allowing them to participate actively in continuing education, and enabling them to develop their capacities to participate fully in their personal and social development. Literacy through the non-formal education approach was seen as necessary in Nepal for those who have not gone to or have dropped out from primary school. (Ministry of Education and Sports [MOES], 2008).

Literacy programs in Nepal began in the 1950s. The adult literacy rate of 1% in the 1950s has increased now to over 54% with male and female literacy rates being 65% and 42.5% respectively. (CBS, 2001).

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Formal schools are the institutions responsible for education of children. In Nepal, schools have contributed significantly to the achievement of the goals of universal primary education. However, many limitations of the formal school still leave a large proportion of people reaching adulthood without basic education and literacy skills.

Non-formal education programs for adults include adult literacy, women’s literacy, post literacy, skills for income-generation activities and alternative basic education such as the open school. The Community Learning Centre (CLC) is the institutional vehicle for offering these non-formal education services. (Non Formal Education Center [NFEC], 2001).

II. Objectives and methodology
This article is based on a research paper prepared as a requirement for the Master’s degree in Environment Education and Sustainable Development at the Kathmandu University. The general objective of this study was to look at the overall scenario of adult education in Nepal and examine how CLC has or can serve as the institutional mechanism for effective and relevant adult and non-formal education.

An ethnographic and qualitative approach was adopted for this study focusing on two CLCs, one each in the districts of Kathmandu and Lalitpur. Personal observation and conversation and discussion with people involved in various capacities in the activities of two CLCs in two different communities were the main source of information for the study. This information was complemented by review of documents and reports, including government policy statements, monitoring and evaluation reports and studies related to non-formal and adult education, adult literacy and CLC in Nepal. A number of focus group discussions were conducted with people concerned with the two CLCs. Informant interviews were conducted at the central and district level so as to understand the design, development and implementation of relevant policies and actions to promote NFE through CLCs.

III. Policy on adult and non-formal education
The Tenth Five-Year Development Plan (2002-07) proposed implementation of NFE to extend educational opportunities to the adults of various disadvantaged groups including the poor, Dalits, Janajatis,¹ ethnic minorities, women and those in the remote areas (National Planning Commission [NPC], 2002). NFE has been seen as an effective vehicle for teaching literacy and creating critical awareness for social development, thus contributing to poverty reduction. The plan emphasized that the general literacy, post-literacy and continuing education programs should be implemented in an integrated way in order to achieve the enabling outcomes.

¹ Janjati and dalit refer to marginalized groups who are not in the mainstream of society. The definitions are not precise, but janjati is used to describe indigenous populations, while dalit indicates “untouchable” communities within the traditional Hindu caste system. Together, janjatis and dalits constitute more than half of the population of Nepal.
The Local Self-Governance Act made the provision of literacy and pre-primary education the responsibility of the local government bodies of Nepal (GON, 1999). The Village Development Committee (VDC), the Municipality and District Development Committee (DDC) have been made responsible for the promotion and management of schools and other educational programs at the basic level. According to the Act, VDCs and Municipalities are expected to design and implement adult education and NFE programs. The DDCs are expected to devise district level adult education and NFE related policies and guidelines for programs.

The School Sector Reform (SSR) of 2009-2015 Plan (MOES, 2008) also stated that:

Literacy and various types of non-formal education programs will affirm the right of the basic education of all adult and youth, allow them to participate actively in continuing education, and enable them to develop their capacities to participate fully in their society (p. 19).

Various line ministries are expected to be involved in providing literacy skill as a tool for improving performance in their respective sectors. For example, Ministry of Health, Ministry of Agriculture, Ministry of Forestry, and Ministry of Local Development may collaborate in NFE programs and utilize the CLC to support contents of adult education and literacy. But the possibilities in this respect have not been fully realized due to weaknesses in organizational and management capacity both in the sectoral ministries and the Ministry of Education. (Ministry of Education and Sports [MOES], 2007).

As there were no permanent institutions at the local level to provide continuous learning opportunities to the illiterate and neo-literate people, the government introduced the concept of CLC with technical support of UNESCO by establishing two model CLCs in Kathmandu and Achham. The Government of Nepal adopted the model of the CLC introduced by UNESCO and established initially five CLCs in different parts of country (Box 1). The Tenth five year plan had a target to establish a CLC in each electoral constituency. The target was revised later to provide for setting up a CLC under each Village Development Committee (VDC).

**Box 1. CLC as the vehicle for adult and lifelong learning**

UNESCO APPEAL (Asia-Pacific Program for Education for All) defines CLCs as “local institutions outside the formal education system for villages or urban areas usually set up and managed by local people to provide various learning opportunities for community development and improvement of people’s quality of life.” CLCs are for every citizen and are adapted to the needs of all people in the community through active community participation. The CLC is often located in a simple building. Its programs and functions are flexible. The main beneficiaries of a CLC are people with little opportunities for education; especially pre-school children, out-of-school children, women, youth, and the elderly.
Nepal’s population was estimated to be 28.8 million in 2008. The public administration structure consists of 14 administrative regions and 75 districts. In an effort to decentralize government functions, some 3,914 Village Development Committees (VDCs) and 59 municipalities have been formed with the population in each VDC ranging from 8,000 to 25,000. The goal is to make decentralization effective and meaningful by encouraging village people to take charge of their own development. The aim is to have a CLC in each VDC for carrying out non-formal and adult education including literacy courses. As of 2009, some 931 CLCs have been established throughout the country.

IV. Case studies of two community learning centers for adult education

As a part of the study to explore the role of community learning centers as the institutional mechanism for adult and non-formal education including adult literacy courses, two CLCs, 10 and 25 kms away from the city centre of Kathmandu were visited, their activities were examined and discussions were held with people involved in the activities of the two institutions.

As described below, one of them can be regarded as a positive example of CLC which benefited from a combination of favorable factors and conducted a successful program of adult learning and non-formal education. The other faced difficulties and constraints which were difficult to overcome and the educational program carried out by the CLC did not fulfill the expectations.

Shikharapur Community Learning Center

Shikharapur is the ancient name of Pharping. The Pharping village is situated 25 km south of Kathmandu. It was an independent Newar State in the ancient times with the Gopaleshowr temple at the centre of the village. Recalling the historical name of the village, the community learning centre in Pharping is called the Shikharapur CLC (Pharping, 2010).

Pharping has mixed demography which includes people of Newar, Brahmin, Chhetri, Tamang, Magar, Rai, Gurung, Dalit and other communities. Pharping is famous as the location of the 1st hydropower station, Chandra Jyoti Griha, of Nepal. Nepal’s first boarding school, Tri-bhuwan Adarsha Boarding School, is also located here. One Pharping attraction is the royal Summer Palace of the erstwhile Rana regime, which draws high tourist traffic.
Shikharapur CLC is situated in the Sheshnarayan VDC (no. 4) of Pharping. It is connected with Kathmandu city by asphalt road. The CLC building is attached to the Sheshnarayan temple which is one of four Narayana tempels of Kathmandu district and is surrounded by a small forest.

Shikharapur CLC was established in 2007 with initiatives of the community people including ethnic and minority groups. The community decided the name of the center as well as its objectives and management mechanism. The community people submitted their proposal to the District Education Office (DEO). With the DEO’s recommendation, the NFEC approved an annual grant of Rs. 50,000 for the CLC. NFEC also provided additional funds to cover cost of specific proposed activities, such as, alternative school program, literacy class, and open school program.

The CLC has always tried to develop plans for its activities through participation of people. Its objectives cover a broad range, including community development, assisting community health programs, and running various non-formal classes for deprived people. The major programs of CLC currently are: literacy program; alternative schooling program, including non-formal primary school; open school at lower secondary and secondary level; and educational support for community health program.

**Bungamati Community Learning Center**

Bungamati is a small Newar village 10 km south from the center of Kathmandu. The main occupation of the people is traditional farming. Wood and stone carving to make artifacts, one of the common traditional occupations, supplements the income of many families in Bungamati. The Newar is one of the oldest ethnic groups in Nepal who live in Kathmandu Valley. It has its own language, script, art, and architecture. Ancient monasteries, stupas, buildings and ponds built during the Malla regime (15th-17th century) can be found in the village. Sixty five percent of the population in Bungamati belongs to the Newar community.

The village is the home of the Hindu temple of Machhindranath, famous for its pagoda style roof and wood crafts decoration from the 16th and 17th century. Many of the family dwellings in the village are of the old type, made of mud and brick and clay tile roof. Some of the houses are being replaced by modern concrete houses (CBS, 2001).

Bungamati Community Learning Center (BCLC) was established in 2001, supported by UNESCO as a pilot project to promote literacy and income generation skills in the community. Three years later it was handed over to the local administration. A nine-member managing committee representing the community is responsible for managing the center.

Literacy and skill development courses have been offered by the center at different times, but currently it runs regularly only a day care center for young children. In the past, the CLC conducted awareness and training activities on preventing disasters from earthquake, flooding and landslides. It offered short courses in woodcarving and marketing of the products. It also provided training on other subjects on demand from the community, such as, electrical wiring, pickle making, and tree plantation.
The chairperson of the CLC committee expressed frustrations about the way the center functioned. He said that the center was “not getting enough support from the government for smooth running of income generation (IG) programs.” Training had to be discontinued for “lack of raw materials,” and the need to make a “high payment to relatively less efficient trainers.” The potential trainees also found it difficult to join training, because they did not want to take time away from “their jobs, which were their only source of income.”

The chairperson believed that basic literacy program was very important for the development of the community. However, he said he could not “make any program successful without the support and wish of the community people.” The community’s “feeling of ownership of CLCs has not taken firm roots.” The actual situation now, according to the management committee chair, is that “without the community’s support or sponsorship of the government, the CLC was helpless to provide the services to people.”

The management committee of Bungamati CLC noted that the legal status of the CLC was not clear. The CLC was established with the permission of NFEC as per CLC Management and Implementation Guideline, 2006. However, the management committee members said, the District Office of Cottage Industry and Poverty Alleviation Fund considered the CLC ineligible for support to run training activities. Apparently, establishment of CLC under NFEC was not sufficient to lend it a legal status for receiving support from other government agencies.

V. Key Elements of CLC operations

**Adult Education activities at the two CLCs**

*Alternative Schooling.* According to the School Sector Reform (SSR) plan and strategies (MOES, 2008), non-formal education would provide access to basic and continuing education for both school-age children and adults, who do not enroll in school or drop out early. CLC has been given the role of coordinating with concerned agencies for establishing alternative schooling in the community as required.

In Bungamati, however, there are no alternative schools despite a demand for it. To participate in alternative schooling, residents there have to go to another village, Shaibu Bhaisipati, which has become a disincentive for some of the potential participants. Discussion at Bungamati revealed that they wanted an alternative school program in their own community. The CLC, however, has not taken any initiative in this respect.

Shikharapur CLC, on the other hand, has run different types of alternative schools: a NFE primary school, Open School at lower secondary and secondary level and other flexible school-level courses for different kinds of beneficiaries. Even these initiatives were not enough to bring all the people into the mainstream of education. For example, it was found that the people of Danuwar community of Chhampi and Saukhel Setidevi did not have access to alternative schooling programs, because of difficult geographical access from these communities to the CLC.
**Vocational training and income-earning skills.** Bungamati CLC was found to have organized a few batches of training during the project period of UNESCO, but after phase-out of the project, all the activities ceased. The community people felt that occupational skills of people engaged in agriculture, animal husbandry, house building, carpentry etc. needed to be upgraded with appropriate training. The younger people also demanded training in ICT. CLC could also conduct programs for improving socio-economic status of women through legal literacy, health awareness, and skill-based training for income generation. The CLC management committee apparently did not have the leadership skills and motivation to take these initiatives to serve the community people. It appears that they also did not receive support and guidance from the VDC or the resource center at the district level.

The Shikharapur CLC organized training on agriculture, livestock, embroidery, boutique designing, running a beauty parlor etc for interested participants. However, discussion with participants revealed that some of the trainees found it difficult to use their skills because of the lack of market demand for their products or services. The women suggested that more market responsive training should be offered. Some examples cited were making jam with local pears, and pickle-making with local fruits, such as *titoura* or *lapsi*. It was also proposed that skill based training should be followed by provision for “seed capital” to support start-up of income-generating enterprises.

**Adult literacy.** The literacy volunteer of Bungamati VDC had a target to make 30 participants literate through a literacy course; however, only 12 persons were enrolled at the class and finally half of them (6 persons) completed the course. From the group discussion it was found that there was nobody in Bungamati to monitor the activities of the literacy volunteer and encourage her in her work. The young literacy volunteer was left pretty much alone to carry out her difficult mission by herself. (Box 2)

On the other hand, in Shikharapur CLC at Pharping, a volunteer was given a target to make 30 persons literate, but she managed to enroll 75 persons in her classes. Because of the large number of the participants, she divided them into three groups, taught them at different times in different places, and finally all of them completed the course. The VDC leaders, members of management committee and her parents encouraged the literacy volunteer to make more people literate with appropriate suggestions, support and encouragement (Box 3).

**Awareness programs.** One of the major functions of the CLC is to make the local people aware of the importance of education, health and sanitation, and other social developmental issues. The informants from the CLCs said that both CLCs had organized different awareness-raising activities in their catchment areas. These, as they said, brought some positive changes in the behavior of people, especially in respect of education and health.

The increase in school enrollment, use of toilets and use of *Jeevan Jal* (oral rehydration therapy for diarrhea) are some of the observed changes in the community as a result of the CLC activities.
Discussion in Bungmati indicated that conviction about the importance of adult literacy was weak. As one elderly dalit woman put it, “Morne belama hariyo kakro” (“It doesn’t make any sense after the time passed.”)

### Box 2. Gita: A Successful Adult Literacy Teacher

*Gita is one of the most successful NFE volunteers in Setidevi VDC. She is a dedicated, hardworking, and committed woman. She is well liked in her community for her contribution to the delivery of adult education through CLC in the community.*

Gita is a volunteer teacher of Literacy Class offered at Setidevi VDC, Ward Number 3, Saukhel. She is 21 years old and she has just taken the grade 12 examination. She comes from a Janajati background by ethnicity, being a native Newar. She lives near the historical Tri-Chandra-Jyoti Powerhouse which is the first electricity plant of Nepal. There are eight members in her family - grandparents, her parents, one brother and sister in law, their child and a younger brother. They all live together in her maternal grandmother’s house, as Gita’s mother was the only daughter of her parents. The community people love her and she feels very comfortable living in her community. At present, she is involved in training women in embroidery and has also started tailoring at her house.

When Gita was appointed as a volunteer teacher of literacy at Setidevi VDC, she thought she would not be able to teach adults as she was younger than the participants. But after five days’ training from resource centre, she learnt a number of new things that included collection of data of the illiterate people, counseling them to join the literacy program, teaching the adult participants and solving different problems related to teaching literacy classes. Gita got the responsibility from VDC to give literacy classes to the people of ward number three where she found 75 illiterate people. She selected 30 participants and planned for giving a literacy class at a nearby house that belonged to the uncle of her mother. She got various support from her grand-uncle. He provided electricity. Her mother helped her in arranging the mats for the class, since the learners sat on the earth floor. The CLC and VDC provided the teaching materials like charts, books, copies and pencils.

In the beginning, it was very difficult to convince the participants to join to literacy class. Only a few of them joined the class for the first time. Then her mother started to help her convincing the people to join the class. Her mother went door to door to convince the people. She also had support from her brother and the head teacher of Setidevi Lower Secondary School in convincing people. It became a team work for all of them. When they started working as a team, the number of participants increased day by day. Very soon they enrolled 45 participants in the literacy class. In fact, it was a very difficult task for her to manage a class of 45 people who were mostly regular in coming to the class.
As the word spread, other people also started to form groups to get literacy lessons. Gita started with the second group in the morning at Setidevi Lower Secondary School. The head teacher took responsibility for arranging overall logistics support. When she started the second class, people began to discuss if there were others in the community who were without literacy. They discovered that there were still 10 people who were not coming to any class. The remaining illiterate people mostly had some health problems. At this point, Gita’s mother insisted that a way should be found to bring these remaining people into the program. So, they made a third group for 10 participants and the program included every one in the community. Gita received payment for only one class, but she made it the mission to reach all in her community.

Gita’s sincerity and dedication was reciprocated by the response from the community, in awareness and collective responsibility by the learners themselves and all others in the community. Gita feels very lucky and proud to have such a noble opportunity. The head teacher has appreciated for her hard work. The CLC people are very happy with her performance.

Gita has completed the initial literacy course she organized. The community members are now literate and are happy with their accomplishment. They want to continue their classes now. Gita is planning to start a post literacy program and skill-based training for her participants.

**Box 3. Deepali: Fighting many odds at the CLC!**

*Deepali, the literacy volunteer at Bungamati, spoke of her experience. She wants to continue her adult literacy class of CLC, in spite of many odds.*

Deepali, a 29 year old woman, dropped out of school when she was in class 11 due to the burden of household and agricultural work. Soon after, she was married off by her parents. Her husband works as a mushroom farmer. Three years ago, he received training on mushroom growing from Bungamati VDC. They have one son. Deepali is thinking of taking the class 12 exam in order to have the school completion certificate.

Deepali applied for the post of volunteer literacy teacher at Bungamati VDC for ward number 9 in the Pharsidol area in 2009. Her neighbor was selected for the position, while Deepali was selected as an alternative candidate. Her neighbor was, however, frustrated that there were few participants in the class and did not want to continue the job. Deepali was then invited by the VDC to replace her.

After recruitment, Deepali was given five days’ training as a literacy volunteer in Adarsha Shaul, a higher secondary resource center. Her first assignment was to conduct a household survey to collect details about the number of illiterate people in the community. She got from Amrapuri CLC forms designed to get the information of literate and illiterate people of 15-60 age groups. Once she completed the household
surveys, she sent all the forms to Amrapuri CLC. She did not think of keeping copies and records of the surveys for her own use. Later, she was directed by the VDC to call the illiterate people to a literacy class, but she did not know how many people and who were literate and illiterate in Ward Nine, because she did not get any feedback from the survey. She tried her best to find participants for the class without proper information.

Deepali recruited participants from the community by interacting with them. Her first choice for the class’s venue was at Bakhel Kumari Primary School, but that proved to be too far from the community. The class was conducted in one of her neighbors’ house instead. She paid 300 rupees as rent for the classroom out of her own pocket from her allowance.

The class started on 18 March, 2010 (Chaitra 5, 2066). The VDC provided books, copybooks, paper, pencils, and sharpeners for 30 participants. In the beginning there were 12 female participants, but by the end of third month the number of participants dropped to six. While some materials were distributed to the participants, 18 sets of text books were still with her. So many illiterate people lived in her community, but she could not convince them to join the school. At the beginning of the course, a local supervisor came one time to supervise the class, but no one else came afterwards from DEO, RC, or VDC for supervision or to offer any technical support. Amrapuri CLC did conduct a meeting every 2-3 weeks with literacy volunteers, which she attended.

Because of the burden of farming work and looking after their households, the participants found it hard to attend the classes regularly and put in the necessary time and effort. In Deepali’s opinion, the classes should be run in the off season for agriculture work. Her experience shows that participants are more willing to join the class if they are provided skill based training. Some awards system and field trips also should be organized to motivate and encourage their participation. If the program is not reformed accordingly, Deepali thinks it would be difficult to hold the participants and continue the literacy program.

VI. Management, ownership and sustainability of adult education through CLC

The understanding of the management committee members about ownership of the CLC appeared to be less confident. Some considered CLC as one of the Government’s organizations, to be run and managed by the government. The VDC and DDC members did not seem to fully appreciate the significance of CLC.

In the case of Shikharapur, most of the respondents showed awareness about community ownership of CLC. However, the management committee was formed with the same people
who were involved from the very beginning, but other stakeholders remained left out, making the management less inclusive.

The planning officer of DEO Kathmandu said, in his view, CLC establishment should not be biased by only those who had political power and connections. According to one of the officers of NFEC, the CLC establishment guideline should be followed properly in many instances in giving approval to new CLCs for enhancing adult education in future.

**Networking and Coordination**

According to NFEC-2006 guideline, networking and coordination at the local level is one of essential tasks of CLC so as to link its beneficiaries with different kind of services to be offered by the local organizations. However, CLCs of both the places need to be performed actively for the betterment of adult education.

The management committee of Shikharapur was found knowledgeable about the importance of networking and coordination. CLC should develop a networking system with different development organizations and relevant government agencies, NGOs and CBOs, they said, so that CLC could help make the link between the services of these organizations and the learners. At Shikarapur, one local NGO was particularly adept in networking with other appropriate agencies and assisted CLC in this task.

The Health Inspector of Bungamati was categorical in his assertion that there was no practice of networking in the VDC or CLC with GOs and NGOs. According to some of the NGO respondents, VDC should play a pro-active role in promoting and encouraging a system of networking and assist CLC in this respect to make more scopes for adult learning.

District Education Officer of Lalitpur recognized the importance of coordination and networking among all concerned organizations, but said that CLCs themselves lacked the capacity and skills to do so. An NFE Committee at district level with representation of the different organizations can facilitate coordination and links. An official of NFEC noted that NFEC had developed a Networking Implementation Guideline which envisaged networking at the local, district and central level for NFE programs with concerned agencies; but personnel at all of these levels need to develop their skills for this purposeful in adult education.

It was evident that Shikharapur CLC has been more effective in networking which resulted in enhanced resources and support from local government agencies, NGOs and CBOs for their activities. One of its strategies was to offer its building and cooperation to other agencies for organizing their own meetings and training activities, all of which benefited the CLC participants especially for adult learners.

The Center for Education Research, Innovation and Development (CERID) at Tribhuvan University suggested that a strong national CLC policy need to be developed and a national level CLC coordination committee should be formed comprising representatives from the government, NGOs, I-NGOs, donor agencies and most importantly, the civil society. It also points out the importance of the district and village level coordination committees for
building harmony with the people in order to identify effective program interventions linked to their critical needs. It recommended assistance from the district level to CLCs to forge linkages with various people-centered organizations. It noted that local stakeholders had their own ideas as to what management structure and arrangements would be viable, which should be given due attention (CERID, 2007).

**Human resources**
In Bungamati CLC, beside the Motivator, the management committee members were also involved in some of the activities. However, they recruited on a regular basis only a facilitator for a day care class for young children; there was no such facilitator for adult education or literacy, except a literacy volunteer recruited by the VDC.

Shikharapur CLC recruited five volunteers and eight facilitators apart from its motivator for its programs for running adult education smoothly. The CLC developed a roster of local human resources from which they could recruit persons according to need. Some of these recruits, however, were considered to be “not well trained” in line with their tasks. It was mentioned in the discussion with informants that teachers in NFE “behaved as if the learners were children.”

According to the Program Officer of Lalitpur DEO, CLC is a volunteer based local institution; so it needs to be run with the help of volunteers, although availability of enough volunteers with the right skills and motivation was a challenging job.

**Financial Resources**
Each CLC received Rs.50,000 per year as core support for its operations. This amount is intended for the salary of the motivator and maintenance of the center facility. It was recognized by all concerned that this amount was not adequate to run the CLC activities of adult education. The core support was expected to be augmented by generating resources in the community and from other sources to promote and support different aspects community and human development. The motivators and members of management committee are supposed to be trained on how to identify and generate resources for CLC activities for adult learners. Based on the observation of two centers, it can be said that one center was relatively successful in augmenting its core support, while the other was not.

**Use of physical facilities**
It is interesting that Bungamati CLC had better and more adequate physical facility for running adult educational activities, compared to Shikharapur. A member of the management committee at Bungamati pointed out that the building was constructed by UNESCO and it also provided computers, books for library, furniture etc. CLC could not use all the physical facilities due to the lack of their technical and managerial capacities and the necessary operating fund. For example, the toilet was found locked at the time of visit due to lack of water and the children at the day care class used the open yard for urinal and defecation.

However, Shikharapur CLC that had very limited physical facilities was using these at optimum level for its programs. A building, handed over to them by a local NGO, was being
used for their office and NFE classes, though it was not appropriate for class because of lack of proper lighting and ventilation. They added a few rooms for the NFE classes from their local resources.

Arguably, management and use of the physical facilities depend on the managerial skills and commitment of the members of the management committee. According to Planning Officer of Kathmandu DEO, for flourishing adult education most of the CLCs have difficulty in establishing a reasonably furnished physical facility for their activities.

Need for Clarity in Roles and Responsibilities
According to the guideline, the CLC has to be responsible for the overall NFE programs of adult education in the community; however, there was no clear indication regarding budget for the programs. The general expectation expressed was that apart from the core support of Rs. 50,000 per year from the central government, other resources would be mobilized at the local level. The role of VDC or DEO regarding their contribution or in assisting CLC in generating resources was not specified for sustaining adult continuous learning.

A member of management committee of Bungamati said that they could not participate in the National Literacy Campaign for adults, because the CLC was not invited to be a part of the campaign by the VDC. In the VDC’s own plan, there was apparently no recognition of the CLC’s overall responsibility in respect of adult and non-formal education in the community.

The CLC’s role in encouraging adult education and guiding overall NFE in community appears to have has been compromised in another way. In Bungamati VDC, another CLC was established with the initiation of a NGO, without any discussion or coordination with the Bungamati CLC. It was suggested in the discussion at Bungamati CLC that establishment of additional CLCs in a VDC under different auspices should be subject to consultation, coordination and agreed criteria regarding population size and accessibility.

A strong demand of local stakeholders was to have a common orientation and advocacy dialogue with various line agencies including DEO and VDC about overall goals, priorities of literacy, non-formal education, skill development and lifelong learning as well as roles and responsibilities of all concerned actors. The results of these dialogues should be reflected in appropriate amendments in the operational and policy guidelines in order to make CLC an effective vehicle of strengthening adult education and community learning.

CLCs’ Sustainability
As per the policy documents, the CLC needs to be sustained by the community people taking its full ownership, though the Nepal Government provides an annual lump sum financial grant continuing adult education. Has this been a realistic expectation?

Bungamati CLC, established with the financial support of UNESCO as the model CLC, was about to close after the UNESCO program was phased out. It appears that an exit plan was not developed and agreed during project period. Nor did the government have a specific plan for its continuation on a sustainable basis for adult learners.
DEO Lalitpur said that the District Office could not be expected to take responsibility for all CLCs established by the different agencies and NGOs as projects with time-bound support and funding. The CLC leaders, on the other hand, were of the view that some external organizations or government had to provide support for continuation of CLCs. It appears that the issue of sustainability of non-formal adult and continuing education, as a right of citizens and/or as a development imperative has not received due consideration of national policy makers and in international EFA discourse.

The experience of Shikharapur CLC may indicate a way of approaching the question of resources and sustainability. The management committee of Shikharapur was keenly aware of the sustainability issue from the outset and initiated early some activities towards sustainability of adult education. The management committee, the participants and the community as a whole together were concerned about continuation of the education activities, especially, the alternative schooling up to the school leaving level (SLC). The participants were eager to ensure that this opportunity is not taken away from them, since there was no other alternative available for basic general education for out-of-school young people in the community. They pleaded the case for developing a fund with the contribution of VDC, donor agencies, community people and participants themselves, so that the CLC can sustain the education program for adults. Their collective efforts bore fruit and they succeeded in mobilizing the necessary financial support, tapping various sources.

VII. Conclusions
Almost two out of every five adults in Nepal are still without literacy skills and even a larger proportion deprived of effective access to knowledge, skills and information that would improve their life and livelihood. A nationwide network of CLCs, eventually at least one for each of almost 4,000 Village Development Committees, is seen as the means of overcoming the deficits in adult learning and non-formal education opportunities. The case studies of two CLCs, one relatively effective and one burdened with numerous constraints, show both the possibilities and challenges.

The possibilities arise from the people themselves, the intended participants and beneficiaries, the volunteer teachers, and the community leaders and ordinary citizens, who have collectively built the social capital for learning, self-help and self-development. They have tried to take full advantage by their own efforts of the support provided by the government through the institutional structure of the village development committee and the community learning centre, the modest financial support, and the back-up from the district education office, the resource centre and the national non-formal education centre.

The challenges arise from the apathy and lack of motivation of some of the people who were entrusted the responsibilities for the VDC and for drawing up a village education plan, and community leaders who could encourage and inspire others, but did not. There are local officials of different sectoral agencies who fail to see the connections of their work with the learning activities of CLC. It is also hard for some of the potential learners to overcome the
grinding poverty and keep alive hope and confidence, to summon the energy for the extra effort to come to the learning center at the end of the long working day, or just to cast away habitual inertia in thoughts and action.

As the respondents in Bungamati and Shikharapur said in their own way, the roles and responsibilities of various government agencies, which need to contribute to make CLC a success, have to speak and act with a common understanding of the function of adult and lifelong learning through CLC. The question of necessary budgetary resources and sustainability for CLC activities have to be addressed by looking at all the potential sources of support. The legitimacy of claim of adult education and the CLC network on a reasonable share of the central government education budget has to be recognized and adequate budgetary provisions made on a regular basis.

As noted above, there is strong demand from local stakeholders to have a common orientation and advocacy dialogue with various line agencies of the government including DEO and VDC about overall goals and priorities of literacy, non-formal education, skill development and lifelong learning. Common understanding is also needed regarding roles and responsibilities of all concerned actors. The results of these dialogues should be reflected in appropriate amendments in the operational and policy guidelines of education, local government and other sectors in order to make CLC an effective vehicle of community learning specially adults, and thus the building blocks of lifelong learning for all interested citizens.

References


Research Centre for Educational Innovation and Development [CERID]. (2007). A Study on Community Ownership and External Intervention for Sustainability of Community Learning Centre in Nepal: Tribhuvan University


This study investigates on a pilot basis Bangladeshi secondary students' perceptions of their science classroom learning environment from a constructivist perspective. The Constructivist Learning Environment Survey (CLES) tool addressing five key dimensions of a critical constructivist learning environment (Personal Relevance, Uncertainty, Critical Voice, Shared Control, and Student Negotiation) was used to measure students' perceptions on a five-point Likert-type scale ranging from “Almost Always” to “Almost Never.” The sample consisted of 406 students in 12 secondary classes of eight schools in four districts of Bangladesh. Results of this research suggest that each of the constructivist dimensions measured by CLES exists to a notable degree in secondary science classes in Bangladesh. The research indicates validity and reliability of the Bangla-language version of CLES and that it can be used on a larger scale investigation in Bangladesh. It also suggests that the constructivist framework is relevant in improving science teaching and learning in Bangladesh. However, the limitations of a purposively selected small-sample pilot study and the methodology of opinion polling need to be borne in mind in interpreting the findings.

Keywords: constructivism, learning environment, scientific literacy

Introduction

One of the ten sections of the International Handbook of Science Education (Fraser & Tobin, 1998) is devoted to the field of learning environment, indicating the significance of this topic in science education. A significant body of research has focused on exploring the psychosocial environment for learning science in school over the past three decades.

Constructivist Learning Environment in Secondary Science Classrooms in Bangladesh

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Abstract

This study investigates on a pilot basis Bangladeshi secondary students’ perceptions of their science classroom learning environment from a constructivist perspective. The Constructivist Learning Environment Survey (CLES) tool addressing five key dimensions of a critical constructivist learning environment (Personal Relevance, Uncertainty, Critical Voice, Shared Control, and Student Negotiation) was used to measure students’ perceptions on a five-point Likert-type scale ranging from “Almost Always” to “Almost Never.” The sample consisted of 406 students in 12 secondary classes of eight schools in four districts of Bangladesh. Results of this research suggest that each of the constructivist dimensions measured by CLES exists to a notable degree in secondary science classes in Bangladesh. The research indicates validity and reliability of the Bangla-language version of CLES and that it can be used on a larger scale investigation in Bangladesh. It also suggests that the constructivist framework is relevant in improving science teaching and learning in Bangladesh. However, the limitations of a purposively selected small-sample pilot study and the methodology of opinion polling need to be borne in mind in interpreting the findings.

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Introduction

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Constructivism has become a powerful driving force in science education research and curriculum development process in recent decades. (Tobin, 1990, 1993). The power of constructivism in science education is that it provides a plausible, functional framework for interpreting experiences of science learning and teaching leading to maximizing student learning. Constructivism, in addition, encourages teachers to use students’ everyday experiences as a meaningful context for facilitating students’ science learning (Taylor, Fraser, & White, 1994). A recognition of students’ everyday experiences in science learning and enhancing their capability to use this learning in everyday context is associated with scientific literacy, which is advocated as a goal of science education in school, for example, in USA (American Association for the Advancement of Science [AAAS], 1993; National Research Council [NRC], 1996), UK (Millar & Osborne, 1998), and Australia (Goodrum, Hackling, & Rennie, 2001). In line with this global trend, one of the aims of secondary science education in Bangladesh is to promote scientific literacy by providing a good foundation in science, and encouraging students to make use of the knowledge of science in real life (National Curriculum and Textbook Board [NCTB], 1996). Constructivism, therefore, can be legitimately seen as a plausible and functional framework for science teaching and learning and for promoting scientific literacy in Bangladesh. Constructivism maximises students’ conceptual understanding of science (White & Gunstone, 1989) and, therefore, can help build a solid foundation in science for students and motivate them to go for further study in science.

To the best of our knowledge, there is a dearth of research exploring students’ perception of their science classroom learning environment from a constructivist perspective in South-Asian developing countries. There is no research that has explored Bangladeshi students’ perception on this issue. This study, therefore, aims at exploring secondary students’ perceptions in Bangladesh of their science classroom learning environment from a constructivist point of view. It further seeks to make a contribution to understanding of the issue in the context of South-Asian developing countries.

Theoretical underpinnings

Constructivist epistemology
The constructivist view suggests that meaningful learning is a cognitive process in which individuals make sense of the world in relation to the knowledge that they have constructed, and that this sense-making process involves active negotiation and consensus building (Fraser, 1998; Hand, Treagust, & Vance, 1997; Loughran, 2010). In a constructivist learning environment, students use their prior knowledge and reflect upon other students’ ideas in
developing their conceptual understanding. If students’ prior knowledge is inadequate or incorrect to explain a phenomenon, they will experience cognitive dissonance (Lorsbach & Tobin, 1993), impeding the process of conceptual change in students’ minds. White and Gunstone (1989) noted that conceptual change requires students to reassess their existing ideas against a new knowledge rather than just adding new knowledge to existing ideas. When students find their new knowledge more intelligible, plausible and fruitful than the previous one, they can reject or modify their old conception (Posner, Strike, Hewson, & Gertzog, 1982).

In a constructivist classroom, teachers act as facilitators who encourage students to engage in conceptual development. In such a classroom, the teacher’s role is more demanding, compared to a traditional classroom, requiring the teacher to promote “recognition, evaluation and reconstruction” of students’ conceptual development (Gunstone & Northfield, 1994, p. 525).

Duit and Confrey (1996) noted the following distinguishing characteristics of curriculum and teaching from a constructivist perspective: first, more emphasis is on the applicability of science knowledge in situations in which students are interested; second, curriculum includes the issues that address students’ needs; third, students’ own everyday conception regarding scientific phenomena is recognised and valued; fourth, the emphasis is on student-centred approaches; and fifth, the norms and patterns of classroom interaction are fundamental influences on the effectiveness of pedagogic reform efforts. These five aspects, as Duit and Confrey (1996) argued, are important in improving students’ science learning in school.

A basic premise of constructivist pedagogy is that learning is not only an individual activity but also a social process; learners make sense of the world and construct knowledge in a social setting. Also, science knowledge is produced as a result of human inquiry and is validated against the norms of the scientific community (Taylor et al., 1997). Taylor et al., therefore, argued that teachers and students need to be given more opportunities to “become critically aware of the influence of the repressive myths of objectivism and control that govern the social realities of schools and classrooms” (Taylor et al., 1997, p. 295). As the argument continues, a critical discourse between teachers and students needs to be established for developing a richer and more equitable educative relationship in classroom learning. These goals and principles of constructivist perspective on learning have been reflected in the revised Constructivist Learning Environment Survey (CLES).

The Constructivist Learning Environment Survey (CLES)
The Constructivist Learning Environment Survey (CLES) (Taylor & Fraser, 1991) was originally developed to assess the degree to which a classroom environment conforms to the psychosocial view of the constructivist epistemology and to help teachers reflect and improve their teaching strategies. The assumption behind this instrument is that the
constructivist approach is desirable, and that certain principles underpin this approach. One of these guiding principles is an understanding of knowledge as socially constructed, constantly changing and designed to deal with real-life problems. However, the original version of CLES failed to address these socio-cultural perspectives in cognitive constructivist learning and, therefore, was subjected to a revision (Taylor et al., 1997).

The revised version of CLES attempted to address the socio-cultural constraints to the cognitive constructive activity of the individual learner. It is designed to obtain measures of students’ perceptions of the frequency of occurrence of five key aspects of a critical constructivist learning environment, which are (Taylor et al., 1997): Personal Relevance, Uncertainty, Critical Voice, Shared Control, and Student Negotiation. These five scales having six items each add up to a total of 30 items in the revised CLES. The possible responses on the scale are Almost Always, Often, Sometimes, Seldom, and Almost Never. The focus of each of the scales in CLES and one sample item for each are shown in Table 1 (adapted from Taylor et al, 1997, p. 296).

Table 1: An overview of the CLES

<table>
<thead>
<tr>
<th>Scale</th>
<th>Focus</th>
<th>Sample items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Relevance</td>
<td>The connectedness of school science to students’ out-of-school experiences as a meaningful context for the development of students’ science knowledge.</td>
<td>In this class, I learn about the world outside of school.</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>The opportunities provided for students to experience science knowledge as coming from theory-dependent inquiry involving human experience and values, and as evolving, non-foundational, and culturally and socially determined.</td>
<td>In this class, I learn that science cannot provide perfect answers to problems.</td>
</tr>
<tr>
<td>Critical Voice</td>
<td>Establishment of a social climate in which students feel that it is legitimate and beneficial to question the teacher’s pedagogical plans and methods, and to express concerns about any obstruction to their learning.</td>
<td>In this class, it's OK for me to ask the teacher &quot;why do I have to learn this?&quot;</td>
</tr>
</tbody>
</table>
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<thead>
<tr>
<th>Scale</th>
<th>Focus</th>
<th>Sample items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared Control</td>
<td>Invites students to share with the teacher control of the learning environment, including the articulation of learning goals, the design and management of learning activities, and the determination and application of assessment criteria.</td>
<td>In this class, I help the teacher to plan what I'm going to learn.</td>
</tr>
<tr>
<td>Student Negotiation</td>
<td>The opportunities for students to explain and justify to other students their newly developing ideas, to listen attentively and reflect on the viability of other students’ ideas and, subsequently, to reflect self-critically on the viability of their own ideas.</td>
<td>In this class, I get the chance to talk to other students.</td>
</tr>
</tbody>
</table>

CLES has been used to explore the classroom learning environment from a constructivist view in Western (e.g., Taylor et al., 1997) and non-Western countries (e.g., Idris & Fraser, 1997; Kim et al., 1999). Taylor et al. (1997) validated the usefulness and statistical integrity of the use of CLES in large-scale studies conducted in the USA and Australia. Idris and Fraser (1997) examined the psychosocial environment of agricultural science classrooms in Nigeria. CLES has also been used in cross-national studies to compare students’ perception of learning environment in different cultural context, for example, in Australia and Taiwan (Aldridge et al., 2000). This research reported the cross-cultural validity of the use of CLES to explore science classroom environment.

Studies on the association between classroom environment and students’ achievements reveal that students perceive the classroom environment as associated with their cognitive and affective outcomes (Fisher et al., 1997; Fraser & Fisher, 1982; Idris & Fraser, 1997; McRobbie & Fraser, 1993), and, therefore, these studies imply that student outcomes can be improved by enhancing the classroom environment.

**Research methods**

**Instrument**

In this study, a survey with the CLES questionnaire was used for exploring science classroom environment from a constructivist perspective. We used a translated version (in Bangla) of the instrument discussed above, as we anticipated that due to the age (14–15
years) and language ability, participants of this study will be able to understand clearly the item statements if these are presented in their own language. In order to resolve any translation issue, the questionnaire was first translated by the researchers individually, and then reviewed as a group. A consensus was reached within the research team about the authenticity and legibility of the translation. This translated version was then piloted with 15 students to determine whether the respondents understood the items. Any ambiguities found during this piloting were clarified for the respondents and recorded for further revision of the translated CLES. This final revised version of the CLES was used with the participants.

Participants
For participant selection, 12 classrooms in eight schools in four districts of Bangladesh were purposively selected, considering proximity and convenience. Students studying in the Science group at secondary level (Grades IX–X) in these schools were invited to participate voluntarily in this study. In this manner, a total of 406 volunteer students (Grade IX, \( n = 329 \) and Grade X, \( n = 77 \)), with almost the same number of boys and girls, participated in this study as illustrated in Table 2.

<table>
<thead>
<tr>
<th></th>
<th>Urban</th>
<th>Rural</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>146</td>
<td>54</td>
<td>200</td>
</tr>
<tr>
<td>Girls</td>
<td>156</td>
<td>50</td>
<td>206</td>
</tr>
<tr>
<td>Total</td>
<td>302</td>
<td>104</td>
<td>406</td>
</tr>
</tbody>
</table>

Data collection and analysis
The participants were asked to respond to the final version of the instrument. On average, they took 30 minutes to complete the questionnaire. All data were collected in a time period of two months, October and November 2010. Data were analysed using SPSS version 17 to provide information regarding the reliability and validity of the instrument. The data provided a picture of students’ perceptions about their classroom environment from a constructivist perspective.

Findings

Validation of the CLES
In order to validate the instrument for its use in Bangladesh, factor analysis strategy and internal consistency measures were employed. As the sample of this research is greater than 300, factor analysis is reasonable to apply, as shown by Tabachinick and Fidell (2007, as cited in Pallant, 2007). The purpose of the factor analysis was to examine the internal structure of the set of 30 CLES items (Aldridge et al., 2000; Kim et al., 1999). In line with
these previous studies, a Principal Components Analysis followed by Varimax Rotation was used to generate orthogonal factors. A five factor solution was considered as the instrument was designed with five scales. Table 3 illustrates factor loadings for the CLES items executed in Bangladesh. The only factor loadings presented in this table are those greater than or equal to the conventionally accepted value of 0.30 (Pallant, 2007). Data in Table 3 confirms that nearly all CLES items had a loading of higher than 0.30, which indicates a strong factor structure of the Bangla-language version of the CLES.

Table 3: Factor Loadings for the CLES items

<table>
<thead>
<tr>
<th>Item number</th>
<th>Personal Relevance</th>
<th>Uncertainty</th>
<th>Critical Voice</th>
<th>Shared Control</th>
<th>Student Negotiation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>0.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>–</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>0.55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>0.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td>0.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td>0.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>0.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td>0.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td>0.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td>0.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td>0.73</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td>0.77</td>
<td></td>
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The sample consisted of 406 secondary students in 12 secondary classes in Bangladesh. Table 4 presents information regarding internal consistency of the CLES based on its use in Bangladesh. The Cronbach’s alpha coefficient was used as the index of scale internal consistency. Cronbach’s alpha coefficients for the CLES along with each of the five six-item scales were calculated considering the individual student as the unit of analysis.

Table 4: Internal consistency (Cronbach’s alpha coefficient) for the CLES scales

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<th>Scale</th>
<th>Cronbach’s alpha coefficient (α)</th>
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<tbody>
<tr>
<td>Personal Relevance</td>
<td>0.78</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>0.48</td>
</tr>
<tr>
<td>Critical Voice</td>
<td>0.86</td>
</tr>
<tr>
<td>Shared Control</td>
<td>0.82</td>
</tr>
<tr>
<td>Student Negotiation</td>
<td>0.77</td>
</tr>
<tr>
<td>Total CLES</td>
<td>0.89</td>
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</table>

As Table 4 shows, while like the previous research (e.g., Kim et al., 1999) the “Uncertainty” scale does not possess a satisfactory internal consistency (α < 0.70), the other four scales of CLES (for each scale α > 0.70) appeared to be internally consistent or reliable after Pallant
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**Students’ perceived constructivist learning environment**

In order to investigate students’ perceptions of the constructivist approaches present in their science class, mean scores and standard deviations were calculated for each of the CLES scales and are presented in Table 5. The responses to the CLES items were given respectively scores of 5 (Almost Always), 4 (Often), 3 (Sometimes), 2 (Seldom), and 1 (Almost Never), with the exception of item 6 which was scored in reverse. On a five-point scale, the mid-point is three (Sometimes); therefore, the mean score greater than three on the scale indicates that the particular attribute of the constructivist approach exists or occurs at least “more than sometimes” in the science class. The closer the mean is to five, the higher the extent of occurrence.

Table 5: Students’ perceptions on the CLES

<table>
<thead>
<tr>
<th>Scale</th>
<th>Number of items (N)</th>
<th>Mean (M)</th>
<th>Standard deviation (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Relevance</td>
<td>6</td>
<td>3.44</td>
<td>0.29</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>6</td>
<td>3.56</td>
<td>0.96</td>
</tr>
<tr>
<td>Critical Voice</td>
<td>6</td>
<td>3.41</td>
<td>0.31</td>
</tr>
<tr>
<td>Shared Control</td>
<td>6</td>
<td>3.10</td>
<td>0.23</td>
</tr>
<tr>
<td>Student Negotiation</td>
<td>6</td>
<td>3.58</td>
<td>0.28</td>
</tr>
</tbody>
</table>

The mean scores for each of the CLES scales were higher than three, suggesting that each of the constructivist dimensions measured by the CLES occurs more than “Sometimes” in science classes. In particular, “Student Negotiation” got the highest mean score (M = 3.58). It suggests that students are given opportunities to explain and justify to other students the viability of their newly developing ideas. The mean score for “Uncertainty” was also found higher (M = 3.56), suggesting that the revisionary nature of science knowledge (Lederman, 2004) is emphasised in science classes. It is also noteworthy that the mean score for “Shared Control” (M = 3.10) is lower than the other scales, suggesting that students perceive that their teachers are not sharing aspects of learning science with them.

**Discussion and implication**

This research undertaken as a pilot with a relatively small, purposively selected sample, aimed at investigating Bangladeshi secondary students’ perceptions of their science classroom learning environment from a constructivist perspective. Results of this research suggest that each of the constructivist dimensions measured by the CLES occurs to a notable degree in secondary level science classes in Bangladesh. As constructivism has been argued
in this paper as a plausible and functional framework for science teaching and learning to promote scientific literacy and to prepare future science professionals, results of this research suggest that science classroom learning environments in Bangladesh are somewhat in line with these two curricular aims.

Consistent with the students of Taiwan, Australia (Aldridge et al., 2000) and Korea (Kim et al., 1999), students of Bangladesh in this research, also say that they enjoy the opportunities to explain and justify to other students the viability of their newly developing ideas. Also like Taiwan, Australia (Aldridge et al., 2000) and Korea (Kim et al., 1999), this research found a notion of emphasising the revisionary nature of science knowledge in science classes. This finding may be associated with some previous studies, which show that the revisionary nature of science knowledge is reflected in Bangladeshi secondary school science textbooks (Siddique, 2008) and science teachers in Bangladesh also acknowledge this characteristic of science knowledge (Sarkar & Gomes, 2010). Teachers play a vital role in classroom teaching-learning in any educational context (Goodrum et al., 2001) and often teachers in Bangladesh depend on the textbook to gain an understanding of the science topic and guide their classroom strategy (Sarkar, 2009, 2010). It is, therefore, reasonable to argue that if textbooks are designed from a constructivist point of view and if teachers have an informed notion of this view, a greater extent of constructivist approach would be present in science classrooms in Bangladesh.

However, consistent with the previous studies (Aldridge et al., 2000; Kim et al., 1999), this research finds a lower mean score for “Shared Control” comparing with the other aspects of constructivist learning environment. This suggests that students could participate more together with their teachers in controlling and monitoring the classroom learning environment than they do currently, including in the articulation of learning goals, the design and management of learning activities, and the determination and application of assessment criteria. Examination-driven curriculum in Bangladesh (Holbrook, 2005) might be a probable reason for this less shared control as found in Taiwan (Aldridge et al., 2000). Further research, specifically qualitative investigation, could help explore this issue from both teachers’ and students’ points of view.

This research also reveals that the Bangla-language version of the CLES is found to be valid and reliable. Thus, the Bangla-language version of the CLES can be used by science teachers and researchers to improve science teaching and learning in Bangladesh. In addition, this instrument can be used in further research to explore students’ preferred learning environments and differences between preferred and actual learning environments present in science classrooms in Bangladesh.

However, the limitations of a pilot study with a small and purposefully selected sample (for convenience of access) and of the methodology of opinion survey using the Likert scale (with the tendency sometimes of responses to be bunched around the mean) need to be borne
in mind in interpreting the findings of the study. This problem may be resolved if a study is carried out with a larger randomised and representative sample of schools and students.

References


Notes on the “Digital Textbook”

Mike Douse*

A gigantic problem facing countries such as Bangladesh is that of regularly providing sufficient and suitable textbooks and learning materials nationwide. It has been clear for some time that a technological solution would emerge in the foreseeable future. The textbooks printed for free distribution in 2009 were put on the website of the Ministry of Education for the first time in Bangladesh. These were available to download and print one’s own copy. This may be considered only the first step in moving towards the “digital textbook.” Will the other necessary steps be taken to enrich teaching-learning by harnessing the potential of the digital technology? This article looks at some recent developments with the expectation that this prospect will be given serious consideration.

There have been relevant developments recently. India is on the verge of mass-producing computers at around US$ 35, which will put a laptop-like device within the reach of students on a large scale. Electronic books are gaining popularity in the developed countries. Rich countries, now required by economic circumstances to cut the costs of schooling, have started to look seriously at digital solutions – notably in California, as described below. It involves several steps:

**STEP ONE** would be simply to put existing textbooks on to existing kinds of computers.

**STEP TWO** would be to revise or re-write existing textbooks in order to make them much more suitable for digital presentation.

**STEP THREE** would be to develop computers much more suitable for digital textbooks. Each child might use just the one e-reader or ‘learning pad’ for the entire primary cycle.

**STEP FOUR** would be to make the ‘learning pad’ interactive with a keyboard and other sophistications.

**STEP FIVE** would be to re-invigorate the learning process with a pedagogy that incorporates these interactive learning pads.

The Californian Initiative

In mid-2009, California Governor Arnold Schwarzenegger announced a “Proposal To Save Money And Stretch Resources During These Difficult Times”. It would, he claimed, “reduce education costs... and help ensure every California student has access to a world-class

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* Mike Douse is a Visiting Fellow at the University of East Anglia’s School of Education in the United Kingdom and International Advisor to the Bangladesh Directorate of Primary Education. The ideas set out in this paper are his own and not necessarily those of the DPE. Comments, corrections, new information and suggestions would be welcome and should be directed to the author on: mjndouse@gmail.com
education." It was a ‘first-in-the-nation digital textbooks initiative’ described as providing “schools and students (with) a new way to access textbooks that is less expensive, easier and lighter”. This would “put California on the road to a technologically advanced, higher quality and lower cost education system”.

A set of standards-aligned digital textbooks for subjects such as geometry, algebra, trigonometry, calculus, physics, chemistry, biology/life science and earth science courses was released in August 2009. [The emphasis on the secondary grades may be noted.] Phase two of the initiative, now on-going, includes making digital textbooks available for all grades, incorporating interactive content and eventually creating a state-wide website highlighting available books. Governor Schwarzenegger claimed that “this initiative has the potential to save California’s schools millions of dollars. The average textbook costs about $75 to $100 per student. For a school district with about 10,000 high school students, the use of free digital textbooks in just science and math classes could save up to $2 million dollars”.

Well into Phase Two of Governor Schwarzenegger’s Free Digital Textbook Initiative, it is clear that a vast majority of the books submitted for digital inclusion are of high quality."In five years, I think the majority of students will be using digital textbooks," claimed one superintendent of schools catering for 500,000 students. "They can be better than traditional textbooks." In addition to the substantial projected cost savings, it is claimed with some justification that digital textbooks:

- are entirely acceptable to youngsters familiar with and already getting information from the Internet, iPods and Twitter feeds;
- will allow students to learn on new and multiple levels and thus, will better prepare California’s students to compete in the global economy. Knowledge is power – the more students have, the greater opportunity they have to succeed;
- can be updated much more easily, allowing students to learn about current discoveries and technological advances as they happen. Traditional hardbound textbooks are adopted in six-year cycles, meaning six years of missing information.
- open the door to more interactive learning. Students will be able to read about a science experiment then watch a video demonstration – giving them more than one way to digest the information;
- are better for the environment;
- are more easily searched; and
- are easier to lug around than antiquated, heavy, expensive textbooks.
Observers differ on how this innovation will affect equity among United States students. On one hand, digital textbooks can be cheap or free; on the other, under present arrangements, users need computers or smart phones and an Internet connection to access them, unless they pay to print the materials. Will better-off, technology-rich districts adopt digital textbooks, while poorer ones are left behind with outdated print textbooks? Worse, will digital textbooks mean some students can study after hours, while classmates without home computers only review "textbooks" at school? Or will digital textbooks prove a boon for poorer districts, providing savings they can put toward technology?

One teacher reported:
"By using digital texts in my class, my students said that it helped them read and write and that with the digital tools (auto-summarize, online dictionary and thesaurus, text to speech, copy and paste, readability statistics, change of font type, change of font size, and background colour) they achieved better results. It was easier for me to adapt the text for readers because the text was digital."

However, another California teacher commented:

Some of my students are embarrassed to say that they don't have a computer or internet at home, so they say things like "My printer is broken", or "We're out of ink" or "We've just bought a new computer and it's not hooked up yet". They can't use school computers before school because they ride the bus and it doesn't get them there early enough. They can't stay after school because they ride the bus and they have to leave immediately. The others know if one child does not have a computer or has parents who fear technology. Technology is great and it offers a lot to those who can afford it. Unfortunately, it's just the newest area where poor students don't have equal access to the best educational tools. Despite this, diverse districts say digital texts are the future; "living textbooks" are part of 21st century learning.

Even in California there are homeless children living in shelters and cars. Where will they read digital books? One California district used funds normally allocated for textbooks and instead purchased laptops with digital versions of the texts loaded on the hard drives.
Students use the laptops every day in English class, were allowed to take them home to complete homework, and use them to complete group projects. Along with laptops, the school purchased computer carts to charge and safeguard computers. The cost of both student laptops and the carts totaled approximately $30,000 – textbooks would have cost significantly more.

"Kids are wired differently these days," said a chief technology officer for one primary school system. "They're digitally nimble. They multitask, transpose and extrapolate. And they think of knowledge as infinite. They don't engage with textbooks that are finite, linear and rote". In another California district, a Beyond Textbooks initiative encourages teachers to create –and share – lessons that incorporate their own PowerPoint presentations, along with videos and research materials they find by sifting through reliable Internet Sites. Textbooks have not gone the way of the scroll or slate as yet, but many educators say that it will not be long before they are replaced by digital versions – or supplanted altogether by lessons assembled from the wealth of free courseware, educational games, videos and projects on the Web.

Other Interventions and Issues
The online onslaught – and the competition from open-source materials – poses both a real threat and a fascinating challenge to traditional textbook publishers. Fighting 700 years of human familiarity with paper does not come easy. Equally, establishing the progress by particular educational publishers from traditional to digital products is often limited due to commercial considerations. However, it is known that several of the USA's largest houses have submitted texts to the California initiative, most of them already available online. McGraw-Hill, for example, which is one of the major textbook publishers in the United States, publishes nearly 95% of its books electronically. Off-the-record conversations with managers in London publishers such as Longmans, Arnold and Macmillan suggest that they too are fully aware of the digital textbook challenge and are responding to it seriously.

Many of the digital texts now available come from a non-profit group, the CK-12 Foundation, which develops free "flexbooks" that can be customized to meet government standards, and added to by teachers. A group founder commented:

"The good part of our flexbooks is that they can be anything you want. You can use them online, you can download them onto a disk, you can print them, you can customize them, you can embed video. When people get over the mind-set issue, they'll see that there's no reason to pay $100 a pop for a textbook, when you can have the content you want free."

The move to open-source materials is well under way in higher education across the USA – and may be accelerated by President Obama's proposal to invest in creating free online courses as part of his push to improve community colleges. Around the world, hundreds of universities, including the Massachusetts Institute of Technology and King Fahd University of Petroleum and Minerals in Saudi Arabia, now use and share open-source courses.
Digital textbooks are indeed a potential game changer, and they are likely going to be a major part of the future of academia. A year from now, the National Associated of College Stores estimates that digital textbooks could account for 15% of all textbook sales in the United States. Textbook publishers will always have overhead costs (they must still compensate authors, editors, typesetters/designers, proofreaders, indexers, etc.), but the costs associated with physically printing, binding, warehousing, and shipping the book are eliminated when going digital. One advantage of the initiative, and of using digital over paper textbooks, is the ability for publishers quickly to react and improve their books based on review results. And, for American higher education students who spend an average of over $700 annually on course materials, mostly textbooks, the prospect of going digital is an appealing one.

Providing educators with a complete package that includes a teacher’s edition and a variety of supplemental materials will help further open source textbook acceptance and adoption. As with traditional items, the digital textbooks will ideally and in time come with PowerPoints, an instructor’s manual, student resources like a study guide, flash cards electronic testing software, interactive tutorials, videos, a solutions manual and all the other things that the other textbooks come with. Teachers must also be provided with professional development support that enables them to integrate the books and support materials into their classrooms.

The latest educational trend in some parts of some industrialised countries is to jettison textbooks in a quick switch to alternative technology. At Empire High School in Arizona, students use computers provided by the school to get their lessons, do their homework and hear podcasts of their teachers' science lectures. A school in Massachusetts has proudly announced the dismantling of their entire school library in favour of digital books. Perhaps this is moving just a little bit ahead of the game.

Some fundamental questions have yet to be answered about how students learn with highly interactive materials and how to take full advantage of the features of digital textbooks. By creating new technologies, researching their effectiveness and developing and supporting exciting technology-enhanced curricula, new ways for technology to support teaching and learning are being demonstrated. As the action moves towards STEP FOUR and STEP FIVE (see page 1, above), the development of the coming generation of digital texts, delivered through enhanced and inexpensive hardware, may be allied with a child-centred pedagogy, allowing the software to integrate deeply and effectively with the best that technology has to offer and effectively to support teachers and students far into the future.

**Hardware Simplifications**

Mention has already been made of the increasing availability of low-cost computers. Today I am invited to purchase a high specification Netbook (“the fastest growing computer category in the industry”) for under US$ 120. Four million units of Apple’s shiny new iPad, with its bright screen and ability to deliver video, music and games as well as books, were
sold in its first few months of availability. But, for present purposes, probably the most relevant devise in the Kindle.

Marketed by Amazon, the international on-line bookstore plus, some 7 million are already in readers’ hands worldwide: Amazon now sells about twice as many Kindle books as it does hardbacks. A Kindle can run for about two weeks on its rechargeable batteries, weighs just 0.3 kg. and costs just $189, with that figure likely to fall. It enables 930,000 books to be accessed, with that number rising monthly. Of particular interest for present purposes, Amazon are already moving into the production of Kindle textbooks in order to capture part of the $5.5 billion USA market but these publications are, for the present, predominantly in English and mostly aimed at the secondary and university market. That will change.

From a Pupil’s Prospective Perspective

Technology-Assisted Child-Centred Learning

Jessi Asongo is a Grade 3 pupil in a remote West African primary school. Like all her 43 classmates, she has her own Learning Pad, accessible through her own personal password. It contains all of the learning materials, in English, covering nearly all of the subjects for primary school grades 3 through 6. [It does not include Grades 1 and 2 lessons which were delivered through Fanti, the local language, nor does it include vernacular studies in grades 3 through 6.] Her Learning Pad resembles a Kindle e-reader save that it has a keyboard and other sophistications as it is an interactive device. She takes it home each night and, although
By 2015, not only will the original deadline for the Millennium Developments Goals (‘quality education for all our children’) have passed, but digital textbooks will be in use in any countries across the world. Hopefully, these will not only save scarce resources but also support the drive towards Education for All.

How does a developing country achieve these potential benefits? Eventually, a thoroughgoing comprehensive approach to ICT-enabled learning in schools would involve a review of the organisational design (for example duty outlines and the way work is organised) and the revisiting of policies (including promotion criteria, employment criteria and workload allocation). From the outset, it may be observed that children not only teach themselves how to read and write and to use computers but also teach their parents to read or write and to use computers. At the post-primary levels, students can be used to mentor other students in ICT use (in some cases students have mentored the teachers).

At the primary stage, the learning materials will mostly be in Bangla. Virtually all of the

Potential Pathways forward for a Country such as Bangladesh

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there is no electricity in her hut, its internal lighting enables her to complete the homework. This time it was self-marking: the Pad indicates that most of her answers were correct and, for those few that she got wrong, there is an explanation – it provides encouragement and advice.

Her teacher, Gabreil Mensah, delivers lessons using a child-centred teaching scheme based around each pupil’s use of their Pads. Although he sometimes uses the blackboard, he knows that diagrams and pictures may readily be accessed and referred to. Today he is teaching about the River Nile. Each pupil can see the map of its source through to the delta; there are also photographs and, when he has finished his explanation, there are ten questions to be answered by his pupils. Once again, the Pad corrects Jessi’s work and provides a model answer for those two items answered incorrectly.

Every Tuesday morning, each pupil connects her or his Pad to the teacher’s Master Pad, transferring in seconds a record of all work done, the time taken and the marks achieved. Gabriel can then see which pupils are performing well and who needs extra support in which subjects. The Learning Pads are sturdy, easier to take care of than textbooks, much less costly (a saving of some 70% over the 6-year primary cycle) and of no use to anyone but the particular pupil to whom each one is allocated.

And, while we still talk of ‘subjects’, many lessons straddle several disciplines and, as their Guides are teacher-friendly, Gabriel and his professional have no pressing necessity to become ‘subject specialists’.

West African Primary Education Review, February 2014
action will occur in schools and homes with no computers and, indeed, no electricity or
relevant power sources other than the sun. Consequently, the immediate priority is to
ascertain precisely what is going to become available, and when, and to consider its
feasibility, including costs and benefits, in each national primary context.

While the temptation might be to establish a pilot, the economies of scale associated with a
major intervention are an undoubted factor. For example, putting sets of mathematics,
science and social science texts on to machines – possibly in a language or languages other
than English – covering the entire primary cycle – along with a range of reading materials,
might well necessitate a nation-wide target population. One immediate question is how this
would dovetail with the planned development of improved printed materials over the
coming period.

But of course a paramount challenge would be to locate appropriate hardware. Are there
inexpensive laptops around that would be suitable? Are there any that are solar-powered? Or
that may run on batteries which may somehow be re-charged at local centres? Let no-one
suppose that these matters may be answered easily. And, indeed, we are still focussing on
STEP ONE of the five steps suggested on the opening page of this paper: ‘re-invigorating the
learning process’ is some distance down the road.

And yet it is a road that should be taken and a journey that demands to be embarked upon
forthwith. Perhaps the realistic recommendation is to do nothing now other than to become
fully informed and keep the options open (and to watch what is happening in the secondary
and tertiary sectors). Conceivably a major medium-term initiative would be to prepare the
way for a wholehearted nationwide transformation to digital textbooks, accompanied by a
pedagogic renewal and vast cost savings, sometime during the 2015-18 period. Whatever
happens in practice, and whenever it occurs, these are exciting possibilities with vast
potential for financial and educational benefits, for both the nation and for all our children.

References, Acknowledgement and Contacts
These notes were drafted in August 2010 by Mike Douse. While any inaccuracies are solely
the author’s responsibility, the comments on an earlier draft and the ideas received from
Amir Chowdhury of the Bangladesh Directorate of Primary Education, Australia-based
educational technology guru Dr Philip Uys, Prof. Kenneth King of the University of
Edinburgh and Meera Ria of the Gates Foundation are acknowledged and appreciated.

Numerous websites (readily reachable by googling ‘California digital textbooks’) present
descriptions and critiques of the California initiative. Vast numbers of sites address digital
textbooks specifically and even more deal with education technology generally. One
interesting and informative weekly newsletter is eSchool News This Week and a free
subscription may be obtained at CustServ@eSchoolNews.com

Another interesting initiative is the Concord Consortium which, “to hasten the day when
courses that take better advantage of technology can be created, refined and studied”, has just
launched a ‘Deeply Digital Texts Initiative”. This consortium may also be contacted through the internet: its President, Dr. Chad Dorsey, is oncdorsey@concord.org. The internet will also lead easily to Marcia Linn’s relevant research group at the University of California, Berkeley.

Mention has been made of free and freely available materials, in English, for the upper secondary and tertiary sectors. Most of the digital texts submitted for review in California came – as noted above – from the CK-12 Foundation that develops free "flexbooks" that can be customized to meet official standards, and added to by teachers. This Foundation, and several similar sources, may readily be located through the internet. There is already an open-source textbook project going on at http://cnx.org/from which university teachers can choose which modules they want to include in their courses – all of these materials are free.

The author is continuing to gather information and assess strategies in relation to digital textbooks and their application in developing countries. Members of the Network for Policy Research Review and Advice on Education and Training (NORRAG) are being invited to share with him their experiences of relevant initiatives (see www.norrag.org for details).
Research Abstracts

Inspiring Educational Leaders to be Learners: IED-BRACU’s M. Ed in Educational Leadership, Planning and Management

Monica Gomes*

The Institute of Educational Development, BRAC University (IED-BRACU) in collaboration with the Ministry of Primary and Mass Education has developed a unique M. Ed program in *Educational Leadership, Planning and Management* with the goal of creating leaders with a vision for change needed to promote quality and equity in education in Bangladesh.

The M. Ed program is targeted mainly towards government education officers and instructors playing leadership roles at different levels of primary education in Bangladesh. The emphasis of this program is to combine cutting edge education concepts with field level practices and innovations, along with a focus on activity-based learning and qualitative and action research methodologies. The team of faculty includes national and international education specialists and professors.

We wanted our M. Ed graduates to be critical thinkers and able to conceptualize a holistic vision of what education is really about and how to go about enabling this to happen. While choosing course content, effort was made to interface education with development, and learn from international as well as regional country experiences and contexts. Along with the latest research and theoretical advances in education, the course was grounded in the contextual realities and sensitivities of our own historical and cultural context, acknowledging the legitimacy of our indigenous knowledge, values, and socio-cultural perspectives and worldviews.

The underpinnings of the M. Ed is the desire to create a powerful program that will help inspire its learners in understanding how education must be released from all its narrow boundaries and work to create a more just and equitable society that promotes social harmony and human freedom. The curriculum of the M. Ed program enables the learners to liberate their minds and simultaneously be responsive to the socio-cultural and historical context of Bangladesh. The pedagogy maintains a balance between academic rigor and activity-based joyful teaching-learning. It strives to inspire a learning culture among educational leaders, encouraging them to be curious, open, reflective, and analytical. It caters to the learner’s individual educational needs, and at the same time, challenges their preconceived notions and mindset, educational beliefs and practices. It connects with the learners’ experiences and promotes hands-on learning environment.

* Institute of Educational Development, BRAC University
Leadership is viewed as an overarching theme that is integrated into ten courses and a thesis over a one-year intensive program of study. The content ranges from educational theories, alternative viewpoints, relationship between international and local context, curriculum development, supervision, and policy formulation. The thesis component examines the role of educational leaders in response to critical issues in Bangladesh.

The program offers a stimulating academic environment where educational leaders are encouraged to reflect upon their field experience and develop implementation plans collectively. The unique approach combines conceptual analysis with fieldwork and inspires educational leaders to carry out change.

The first cohort of 21 M. Ed students graduated in August 2010. Each graduate submitted a thesis based on a field research on key issues in education in Bangladesh, guided by the national and international M. Ed Faculty members.

The following abstracts have been selected from among the M. Ed theses, which are available at the IED-BRACU library.

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**How Teachers’ and Parents’ Effective Partnership Improve Children’s Education in Rural Primary Schools of Bangladesh**

_Sanzida Akter_

This paper explores the role of partnership between parents and teachers to improve children’s education in rural primary schools of Bangladesh.

The study followed a qualitative approach; the required data were collected from teachers, parents and PTA members of two different government primary schools (GPS) of Munshigonj district through interviews and FGDs. The teachers, parents and PTA members provided the necessary information by their participation in formal and informal interviews and group discussion guided by structured encounters based on a conceptual framework for the study. Some relevant information from the PTA could not be collected, because the PTA was not operational and existed only on paper.

The literature review showed that many studies have been done in this field about various aspects of parent-teacher collaboration and partnership and its role in supporting children’s learning and performance in school, although evidence-based findings are limited in the context of Bangladesh. This study is aimed at establishing a knowledge base about teachers’, parents’ and PTAs’ views on the role of their partnership to improve children’s education in the Bangladesh context.

The findings of the study indicate that parents play a crucial role in their children’s academic achievement, although many parents do not have adequate understanding about
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The findings of the study indicate that parents play a crucial role in their children’s academic achievement, although many parents do not have adequate understanding about partnership of teachers and parents and its significance. Many parents emphasized the partnership’s role in managing disruptive behavior of students and disciplining students rather than in supporting children’s academic achievement.

The findings suggest that reciprocal trust and mutual respect between teachers and parents can strengthen teacher-parent partnership. Two-way communication between teachers and parents was found to be essential to build effective partnership. It was found that teacher-parent partnership was not at the same level in different schools. It depended on teachers’ and parents’ views regarding making such a partnership work and also on the socio-economic context of the school. The last section of this report provides recommendations about promoting parent-teacher partnership based on the findings of the study.

Faculty Advisor: Dr. Manzoor Ahmad
Committee members: Dr. Sharmistha Das, Fahmida Majumder

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**Teachers’ Problems in using Effective Methods to Improve Reading Skill at Primary Schools in Bangladesh**
Mosammat Afroza Khatun

This study explores the problems that are faced by teachers in using effective methods to improve reading skills of students in primary school in Bangladesh. The study is based on purposively selected qualitative approach that includes close observation and in-depth interviews. The objectives of the study are to know the teachers’ view about reading skills, their practices and problems in using effective methods in classroom. It also tries to explore the view of trainers and supervisors, and effectiveness of training. It is shown that teachers are facing many problems, such as, lack of sufficient teachers, lack of time, lack of teaching aids, burden of job, and lack of awareness of guardians about students. It is also shown that teachers’ perception about reading skills is superficial, and they cannot remember some of the things they learnt in teacher training which are crucial for teaching reading. They are practicing partial methods in classroom for teaching reading.

The study mentions three theories as a conceptual framework in which the teachers can teach reading to improve the skill. In the ‘result’ section the writer presents the research findings and in ‘discussion’ part discusses the problems of teaching reading and related issues. The concluding part presents recommendations to address the problems in improving teaching of reading.

Faculty Advisor: Dr. Carolyn Brown
Committee members: Dilruba Sultana, Shaheen Akhter
Effects of Primary School Completion Examination as Perceived By Students, Teachers and Policymakers

Mohiuddin Ahmed

Through this study I wanted to know the effects of primary school completion examination on students’ further learning as perceived by teachers, students and policymakers. External public examinations for students of early stages and categorizing and branding students by the results of the public examination as high achievers and low achievers are not practiced in many countries. Bangladesh, however, introduced in 2009 an external public examination at the end of grade V.

In my study I used interviews to collect data from teachers and policymakers, and informal conversation with students of class five and six. I also reviewed the examination questions. Based on the study, it can be said that this examination was generally appreciated by teachers. Students who were fast learners and high achievers in the Somaponi (end-of-primary) examination also spoke highly about it. However, low achievers and slow learners were frustrated and de-motivated by this examination. It was found that the Somaponi examination reduced the self-esteem of those students who did not perform well in the examination. Through this examination students were encouraged to memorize their textbook contents and reproduce these in the examination papers rather than develop skills and competencies.

Although primary education curriculum is competency-based, skills and competencies are not measured through this examination. Through this examination children are categorized and branded at an early stage as high achievers and low achievers and even failures. It is not justified educationally and may cause great harm to the students’ further learning. Grade repetition is increasing as a consequence of this examination. Increasing grade repetition is likely to increase dropout rate.

Faculty Advisor: Dr. Mainus Sultan
Committee members: Nafisa Anwar, Riffat Jahan Nahreen

The Supervisors’ Role in Building Leadership of Head Teachers in Primary Schools

Md. Abdullah Al Mamun

There is a great deal of contemporary interest all over the world in school leadership from the perspective of whole school improvement. Considering the importance of school leadership, this study focused on the Supervisors’ role in building head teachers’ leadership capabilities in primary schools. The purpose of the study is to explore the nature of leadership of supervisors and how their leadership is contributing to the improvement of schools.
Leadership at the school level is very important in the context of primary education development in Bangladesh, because a lot of government support to primary schools is not achieving desired outcomes. It is universally acknowledged that school leaders have a role of great importance in improving school performance and ensuring quality education for all. This study utilized a qualitative approach to research. Two Supervisors and three Head Teachers were interviewed for this study. This study highlights the key characteristics and features of the leadership approaches adopted by the supervisors from the perspective of transformational leadership, instructional leadership, and distributed leadership.

The study shows that the Supervisors have elements of the above mentioned leadership models to some extent. Empirical evidence from supervisors and head teachers indicates the significance of a transformational and instructional model of leadership that is chiefly concerned with building positive relationships, motivating the head teachers towards the goal, monitoring and providing suggestions through dialogue and discussion, providing trainings, and participating in events and activities of schools. The study concludes by suggesting that rethinking and redefining the Supervisors’ leadership role and responsibilities are required. This should encompass necessary initiatives such as assigning them tasks related to school development, providing them leadership training, offering them an attractive career path, and enhancing salary and financial incentives. These initiatives need to be taken to encourage and support the Supervisors to build effective leadership capabilities for the purpose of ensuring quality primary education for all in Bangladesh.

Faculty Advisor: Dr. Virginia Roach
Committee members: Md. Mahboob Morshed, Shegufta Anam

Students’ and Parents’ Perspectives on Mainstreaming Children with Special Needs: Barriers Faced and Ways Out

Utpal Mallick

This paper deals with the issue of mainstreaming children with special needs (CSN) into regular classrooms and discusses this problem from the point of view of children’s and their parents’ experiences. It also provides some suggestions regarding the problems faced by parents and children in the mainstreaming process.

This was a qualitative study that followed a case study design. The reason for choosing a case study was to investigate specific barriers in mainstream education for CSN. The focus was on two regular primary schools in Dhaka, Bangladesh. The research population was selected purposively from these schools. The main method was interviews. It was considered to be appropriate for the investigation, because it would allow an in-depth investigation into the issues. The instruments for collecting data were semi-structured guides combined with some open-ended questions used in the interviews.
The results of the study showed that there is a lack of awareness among regular teachers, general students and their parents about CSN which leads to negative attitudes towards CSN. The respondents said that most teachers lacked skills and experience about teaching CSN together with regular students in the same class. They also noted limited teachers’ training with limited resources in schools. Inaccessible infrastructures and facilities in schools had been mentioned as another important barrier to education of CSN in regular schools. However, children and parents who participated in this study were willing to attend in regular classroom and seemed to support the idea of mainstreaming.

They emphasized the importance of addressing issues related to hostile attitudes towards CSN and their education. Incorporating special needs issues in school curriculum was seen as a remedy to reduce such attitudes. The parents asked for better training for teachers. The teacher training curriculum, in the parents’ view, should focus on special needs issues and education of CSN. They also desired environmental modifications to make school accessible for all children.

The findings of the study cannot be generalized because of the small number of cases included in the study. However, the findings can be useful in suggesting improvement in the mainstreaming process and identifying issues related to for future policy and practices.

Faculty Advisor: Dr. Cristine Smith
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**Practices and Problems of Formative Assessment in a Bangladeshi Non-Formal Primary School: How BRAC Schools are addressing them**

Md. Mohasin Ali

The purpose of my study is to explore the practices and problems in formative assessment in a Bangladeshi non-formal primary school. In addition, my study explores the professional and supervisory supports and materials which help teachers to practice formative assessment in the classroom. For conducting this study, I have applied the qualitative research approach. I have used a classroom observation guide and a semi-structured interview guide for collecting raw data from the field. I have used social constructivism learning theory as a conceptual framework in my study. I have categorized the data at first and then I have divided these into themes and sub-themes according to the research questions. After analyzing my data, I have found that most of the times teachers use written and oral tests to assess the students and provide instructional feedback to the struggling learners. Students have been found generally to be interested in being involved with the assessment activity. Teachers also have been found to give a lot of extra attention to slow learners.

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School Feeding in Primary Level: Perception Of Parents, Students, Teachers And School Managing Committee (s.m.c) About Its Effectiveness

Abu Fateh Muhammad Zaheed Iqbal

The World Food Programme (WFP) and the Government of Bangladesh (GOB) initiated a pilot School Feeding Programme (SFP), targeted at schools in chronically food insecure rural areas and in urban slums in the capital, Dhaka in July 2002. The programme was intended to reduce short-term hunger of students, and thereby improve school achievement. Fortified biscuits were distributed to elementary school children in selected locations to increase school enrollment and attendance; reduce school repetition and drop out rates, and improve attention and learning capacity of students. The programme also aimed to improve nutritional status and health of students by reducing micronutrient deficiencies and providing a protein/calorie supplement.

The present study was undertaken to determine the value and efficacy of large-scale school feeding by examining the perception about the school feeding program of teachers, parents and SMC members who have been involved in the pilot school feeding program.

For this study, two primary schools (one each of government and non government primary schools) under Karimganj upozila of Kishorganj district were selected, where the pilot program was in implementation. A total of 34 people involved in the feeding program were respondents in the study. Two head teachers from the selected two schools and two members from SMC were interviewed and ten parents and ten students from each school were participants in FGD.

All the teachers, SMC members and parents had a generally positive outlook about the school feeding program. The teachers and SMC members were of the view that the school feeding program helped increase student’s enrollment rate and a higher attendance rate even in adverse weather condition. According to the SMC members higher attendance was due to the attraction of the fortified biscuits distributed in the school. Teachers and SMC members agreed that regular attendance is critical to better performance of the students in the school.

On the other hand, some parents (8 out of 20, 40%) felt that there was no need to provide a special inducement to children to attend school, which was more a matter of effective teaching-learning in school. A majority of parents (12 out of 20, 60%) expressed the view that sincerity of the teachers and environment of the school were the keys to the child’s performance in the school.

While there was some divergence of views about the learning benefits, the teachers and SMC members pointed out that the school’s attractiveness to students increased as a result of the feeding program. They noted that students no longer wanted to go home during school hours since the start of the school feeding program in their school. There was also agreement
among teachers and SMC members. about the effect of school feeding program on the health of the students However, a few parents (5 out of 20, 25%) had no comments about the health and nutrition benefits.

Regarding logistics and operations of the programme, the biscuits were generally found to be acceptable, but the respondents also were in favour of variation in the food items distributed. SMC members felt that the distribution of the same food items throughout the year may not help achieve the main objectives of the program. On balance, the respondents were positive about the benefits of the school feeding program. Based on this positive view, it can be recommended that the school feeding program should be launched throughout the country, in phases and undertaking further trial regarding logistics and management, as a key element of the strategy to achieve universal primary education in Bangladesh.

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