

ASSESSING BASIC COMPETENCIES: A PRACTICAL METHODOLOGY

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Abstract – Following the 1990 World Conference on Education for All in Jomtien, Thailand, many developing countries are making efforts to achieve basic education for all by the year 2000. However, when it comes to measuring educational progress, there are few methodologies that can overcome the many problems and controversies in this area. This paper describes a serviceable methodology for measuring basic education (competencies in reading, writing and arithmetic, as well as selected life skills), which has proven to be simple, inexpensive and rapid. This approach, termed the Assessment of Basic Competencies (ABC), has been tested in Bangladesh on 2,100 children between the ages of 11 and 12. The results are discussed here. This methodology may be of use to education programme managers in other developing countries.

Zusammenfassung – Nach der Weltkonferenz über Bildung für Alle 1990 in Jomtien, Thailand, bemühen sich viele Entwicklungsländer um eine Grundbildung für alle bis zum Jahr 2000. Wenn man jedoch die Methoden zur Bemessung der Leistungen der Schüler betrachtet, gibt es nur wenige Methodologien, die die zahlreichen Probleme und Kontroversen auf diesem Gebiet bewältigen können. Dieser Artikel beschreibt eine praktische Methodologie zur Bewertung der Grundbildung (Lese- und Schreibfähigkeiten, arithmetische Fähigkeiten sowie ausgewählte zum Leben notwendige Fähigkeiten), die sich als einfach, preiswert und schnell erwiesen hat. Dieser Ansatz wurde in Bangladesh an 2.100 Kindern zwischen 11 und 12 Jahren getestet. Das Ergebnis wird in diesem Artikel erörtert. Diese Methodologie könnte Bildungsprogrammleitern in anderen Entwicklungsländern von Nutzen sein.

Résumé – En réponse au Congrès Mondial sur l'Education pour Tous qui a eu lieu en 1990 à Jomtien, Thaïlande, de nombreux pays en voie de développement multiplient leurs efforts pour réaliser l'éducation de base de tous d'ici l'an 2000. Quand il s'agit pourtant d'évaluer le progrès pédagogique, rares sont les méthodologies pouvant faire face aux nombreux problèmes et controverses existant dans ce domaine. Cet article décrit une méthode efficace pour évaluer l'éducation de base (compétences en écriture, lecture et arithmétique de même que certaines aptitudes à la vie pratique), qui s'est révélée simple, économique et rapide. Ce procédé, appelé Evaluation des Compétences de Base (ABC – Assessment of Basic Competencies), a fait l'objet d'un essai au Bangladesh auprès de 2100 enfants entre 11 et 12 ans, dont les résultats sont discutés ici. Cette méthode pourrait être intéressante aux organisateurs de programmes d'éducation dans d'autres pays en développement.

The need for a system of measurement

The World Conference on Education for All (EFA), held in Jomtien, Thailand, in March 1990 was a landmark in reaffirming the participating nations' com-

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mitment to the cause of basic education. As a direct consequence of the conference, many initiatives to promote basic education have been launched in different parts of the world. In the Asia Pacific regions, for example, UNESCO, as the coordinating body, has drawn up a plan of action to implement the World Declaration on EFA (UNESCO 1992). Several member-countries have also drawn up their own elaborate plans of action.

However, there has been less activity in connection with the measurement of progress in implementing EFA. Information on educational attainment of children, whether in school or not, is scarce, owing to educational planners' lack of experience and vision, and to disagreements on what and how to measure. Critical to the success of educational programmes in developing countries is timely feedback on the status of basic educational achievement. The survey methodology discussed in this paper could make an important contribution to plans for implementing Education for All across the globe.

Assessment of basic education and literacy

The concept of basic education is relatively new. According to the Jomtien declaration, basic education refers to "education intended to meet basic learning needs", which in turn has been defined as "the knowledge, skills, attitudes and values necessary for people to survive, to improve the quality of their lives, and to continue learning" (WCEFA 1990). From these definitions it is clear that basic education refers to a much wider concept than what was hitherto understood by the word "literacy". Yet, most of the available information and statistics refer only to countries' literacy (or illiteracy) rates (UNESCO 1990).

In providing information on literacy, countries have traditionally followed one of three approaches: census analysis, self-assessment, or the household survey (UNESCO 1990, Wagner 1990, Ziegahn 1992). Census analysts frequently consider everyone with less than a certain number of years of schooling (often four or five) as illiterate. The use of census information as time series data is constrained by changes in the definition of literacy from census to census. In Bangladesh, for example, the definition was changed in the 1940, 1951, 1964, 1974 and 1981 censuses.

Another common assessment approach is self-assessment, in which census interviewers ask census respondents if they can read or write. This highly subjective approach asks subjects to describe their own abilities in terms of an "all or none" response (literate or illiterate). The third approach to collecting literacy data is the household survey (UNESCO 1989). Measures can be objective (multiple choice tests) or subjective, in which an interviewer assesses the respondent's performance. While objective measures are less dependent upon the skill of the interviewer, they are also less useful in non-school settings where low literate children may be unfamiliar with test-taking skills. Asking children to perform certain educational tasks gives planners data on

the actual skills of respondents. The subjectivity involved in interviewers' assessment of this performance is outweighed by the fact such a test reflects actual tasks, and validity can be based upon this premise.

While "functionality" is perhaps a flawed concept within literacy education (Easton 1983, Kirsch and Guthrie 1977, Levine 1982, UNESCO 1976, Valentine 1986), it serves a purpose in its attempt to relate education to real tasks within the lives of individuals and their communities. An increasing number of studies have tried to address the functionality of literacy on a broad, nationwide scale (Bhola 1984, Kirsch and Jungeblut 1986, Richmond 1986, UN 1989, Wagner 1990, Ziegahn 1985 and 1992). In these studies, the concept of literacy has focused on the domains of reading, writing and arithmetic as they apply to life skills considered basic to survival. This approach has concentrated more frequently on adults than on children. There has been little attention given to the knowledge, skills and attitudes associated with life skills outside of their usual association with the decoding and calculation skills inherent in text and arithmetic. In addition, children's literacy is generally assessed only in the context of schooling. The approach used in the Bangladeshi Assessment of Basic Competencies breaks new ground in looking at children, regardless of their schooling, within their communities, and in exploring competencies in life skills as well as in traditional literacy.

Towards a new method of assessment

An important disadvantage of most educational monitoring and assessment tools is the amount of time it takes to generate information and "feed" it back to planners (UN 1989). Not many studies in the area of literacy or basic education assessment provide information in their reports on how much time it took to make the results available. Studies that have successfully addressed the question of achievement have also unfortunately taken a long time to complete. The literacy survey in Kenya, for example, took six months just to collect the data (Anonymous 1982). Such assessments frequently try to address a number of research and monitoring questions at the same time, making it all the more complicated and time-consuming. Methods that have been developed to transcend the limits of time and resources in conducting research in developing countries, such as rapid rural appraisal (McCracken 1989, Walker 1990), are useful for gathering socio-economic data on broad issues such as famine relief and agricultural production. While meeting the criteria of timeliness, such methods would be less useful in providing the specific benchmark data necessary for EPA planners in Bangladesh.

Recognising the need for a new approach to assessing basic education or basic competencies of children, an attempt was made to develop a methodology that would take overcome the problems of existing methodologies and at the same time be robust enough to be used by programmes as a regular

monitoring tool. The following gives a detailed explanation of the methodology as used in Bangladesh.

Preparing the methodology

At a meeting held at the office of the Bangladesh Rural Advancement Committee (BRAC), a Bangladeshi non-governmental organisation, in early November 1991, two inter-agency committees were formed: (1) an advisory group, drawing upon diverse expertise in curriculum development, testing, statistics, policy planning, survey methods and NGO programmes from several institutions based in Bangladesh; (2) a five-member task force to design test instruments and sampling methods. The task force met several times over the next two weeks in Dhaka, the capital city, to draft a test instrument. The instrument was field tested in a nearby rural area on three groups of 20 girls and 20 boys each – those who had attended formal schools, those who had been to non-formal schools (such as BRAC's Non-formal Primary Education (NFPE)) and those who had never enrolled in school. Problems encountered in locating and identifying children, assignment of age, and method of interviewing were all studied. Also tested was the instrument itself – various questions on reading, writing, numeracy and life skills in terms of both difficulty level and phrasing. The new instruments were again field tested both in rural and urban areas. In the second test, both male and female interviewers were used in order to examine whether the use of female investigators improved rapport and cooperation from the children, particularly girls.

In January 1992 a pilot test was undertaken in two urban areas and four rural areas, one from each of the country's four geographic divisions. Two methods of data collection were tested: the first, in which two male interviewers acted as a team (one doing the actual interview while the other managed the crowd of onlookers) and interviewed seven girls and seven boys; the second in which one male interviewer did the same number of interviews with support from an elderly village woman to help manage the crowd. The test helped to identify problems in logistics (such as finding a place for the interviewers to stay overnight), and the feasibility of tabulating data and checking data quality on the same day.

During the period between November 1991 and January 1992, experts on sampling methods were consulted to devise a sampling design. Also senior managers from the Directorate of Primary Education of the Government were briefed on the study.

Definition of "basic education"

Based on the definitions of "basic education" and "basic learning needs" recommended by the World Conference on Education for All (1990) the following working definition of basic education was used in the survey:

Basic education will refer to education intended to develop basic learning skills (i.e. the '3 R's') as well as some basic life skills necessary for the children to survive, to improve the quality of their lives and to continue learning.

Instruments for assessment

Given the above definition, the following competencies were considered in developing an assessment instrument:

- a child's ability to read and write a short, simple statement on everyday life;
- a child's ability to work out everyday arithmetic;
- a child's knowledge/attitude regarding selected life skills necessary for him/her to improve the quality of his/her life.

Based on the above principles, the survey instrument included four sections: life skills/knowledge, reading, writing and numeracy. Performance in each of these domains contributed to a composite test score for each child representing a level of basic education. The following describes different questions under each section – The actual questions are contained in the final reports (BRAC 1992d, UNICEF 1992). Detailed instructions for interviewers were covered through a separate manual (BRAC 1992d).

Assessment of life skills knowledge

There were ten questions under this section. Although the earlier drafts included as many as 40 life skill questions, this number was later reduced to the ten considered most important in terms of development priorities in an effort to abbreviate interview time. The ten questions related to the following topics:

- Treatment of diarrhoea.
- Food for preventing night blindness.
- How to clean water for drinking.
- The water used for drinking.
- Use of sanitary latrines.
- The benefits of vaccination.
- Ideal family size.
- Gender issue (whether girls also should go to school).
- Prevention of diseases in poultry and cattle (vaccination).
- First aid for high fever.

The questions concentrated on development issues, particularly in health and nutrition. It should be remembered, however, that the subjects of the study were children, and it would not be appropriate to ask questions which one would expect only an adult to know. For questions on physical health,

the rationale is obvious. The rationale for other questions is less obvious but equally valid in view of the definition of basic education. The ideal family size relates to the population problem; asking children about the place of girls in society is an attempt to get at basic attitudes about gender. Questions asked in functional literacy assessment instruments aimed at adult populations (such as whether the child understands important signs (such as a road sign) or can fill out a government form) were consciously excluded because they were considered unimportant for the situation in Bangladesh.

The number and type of questions included was somewhat arbitrary. The 1992 survey provided some lessons which were utilised in modifying the 1993 repeat survey instruments, for example, parents' views on what they considered to be basic life skills for their children. It was interesting to note that the findings from this follow-up study did not alter the areas of emphasis on life skills questions substantially.

Assessment was made according to whether the answer was correct or incorrect. No response and "don't know" were treated as incorrect. However, "don't know" answers could be analysed separately from incorrect answers if necessary.

Assessment of reading skill

There were three questions in this part, progressing from easier to more difficult ones.

1. *Reading words.* Eight words were presented. These were chosen with the rationale that they represented words with different number of letters and different difficulty level (include at least some joint letters); words that were close to life (such as mother, pond); words that transmitted values (such as saving); and abstract words (independence, cooperation). Although not explicitly considered in selection, these words are frequently found in primary curricula.
2. *Reading sentences.* There were two sentences. The first one had five simple words in the sentence and the second one had three words. The children were expected to read each sentence in one trial. If a child read all words in one trial it was treated as "correct". If he/she could read three to four words in the first and two in the second those were treated as "partially correct". All other responses were treated as incorrect.
3. *Comprehension passage.* The children were given a short passage to read, loudly or to himself/herself, and afterwards were asked four questions. The passage was simple, described Bangladeshi life, and transmitted important development message (saving, small family, and schooling). The questions were both direct and indirect. There was no partial scoring.

Assessment of writing skill

There were four questions and, similar to reading skills, these moved from easier to more difficult ones.

1. *Writing one's own name.* Since many people knew how to sign their names without knowing the alphabet, the first question required each child to write down his/her own name and also the name of his/her village. If interviewees could decipher what was written by a child, the answer was treated as correct.
2. *Writing words.* Three words, starting from simple ones, were dictated and the children were asked to write them in the exercise book. If the spelling was not correct, but the word could be deciphered, the answer was treated as "partially correct".
3. *Writing a sentence.* There were four words in the sentence and these were dictated to the children. If he/she could write all words correctly, it was treated as "correct".
4. *Writing a letter.* This was the last and probably most difficult writing question. The Bangladesh national census defines literacy as the ability to write a letter. There were three parts to the letter: salutation, transmission of a given message, and a closure. Since the message was the most important part of the letter, this was given the most weight in scoring. Since the pilot tests found this to be the most difficult, letter writing was administered last (after the numeracy section).

Assessment of numeracy skill

Inclusion of numeracy as a component in literacy measurement is still somewhat new (Carr-Hill 1991; Ziegahn 1992). This section included six questions:

1. *Counting.* the children were asked to count out loud all numbers between 40 and 50, which was a compromise between too easy (0 to 10) and difficult (90 to 100) numbers. If the child missed five numbers or less, the answer was treated as partially correct.
2. *Reading numbers.* Three numbers with different and varying number of digits were shown for reading out loud.
3. *Writing numbers.* Three numbers were dictated to the children to write.
4. *Addition.* A simple addition problem was given.
5. *Subtraction.* A simple subtraction problem was given.
6. *Mental arithmetic.* Children were given four different mental arithmetic problems needing skills in addition, subtraction, multiplication and division. The problems were related to situations that might occur in daily life.

Background information

Several background characteristics of the children and their parents/guardians were collected from the parents/guardians of the children. Background characteristics of children included age, gender and schooling. Characteristics of parents included age, schooling, occupation, source of income and asset possession. In the repeat survey, however, the number of these characteristics was drastically reduced.

Age group of children

The assessment population consisted of children beyond the official primary school age, 6–10 years. Instead of a single year (viz. 11), we took 11 and 12 as the ages of children in the target population. Since the date of birth was not available for most people, selection of a broader age group (11 and 12 instead of 11 only) simplified and shortened the process of identifying the required number of children. This is the age at which most children will either have completed their education (either formal or non-formal), or the age beyond which they will not attend school at all.

Defining a minimum level and scoring

Children satisfying the following criteria, based upon goals of the EFA and Bangladesh's official definition of literacy, were considered to have "basic education":

- Answering correctly at least seven of the ten life skill questions.
- Answering correctly at least three of the four questions from the comprehension passage.
- Correctly communicating the message through the letter.
- Answering correctly at least three of the four mental arithmetics.

This was an arbitrary definition of the basic minimum level. The instrument, however, is sufficiently flexible to generate results according to other criteria that may be decided upon for further data analysis.

The instrument also had scores for individual questions, with each section having a fixed score of 20, or 80 overall. This would allow for other analyses, such as that based on a transformed score called the "T" (Gupta and Kapoor 1984).

Validity of the test instrument

On analysing the children's background, it was discovered that a total of 1,089 children (out of 2,100) attended government primary schools. Since the total years of schooling was known, it was possible to analyse the educational attainment of these children according to years of schooling and thereby carry out a validity exercise on the instrument. Table 1 shows the proportion of children correctly answering the different questions in each section of the test according to their years of schooling. It also shows clearly that the proportion of children who correctly answered different questions increased progressively along with an increase in years of schooling.

In June–July 1992, the instrument was further tested on four groups of school children. An earlier study published by the Directorate of Primary Education of the government and sponsored by UNICEF (Ullah 1991) had identified eight schools in Bangladesh which, according to a set of criteria, were the "best" in the country. From these, two schools were selected – one rural and one urban. In the sub-districts where these two schools were situated, the local education officers identified a "poor" school. The head teachers of these four schools were then asked to identify ten "good" students and ten "poor" students each in class III and V. The instrument was then administered on all of the groups. Table 2 shows the results of this testing.

The proportion satisfying the basic education criteria were greater in class V than in class III and greater in "good" schools than in "poor" schools; greater among "good" students than "poor" students. The instrument demonstrated sufficient sensitivity to detect such differentials. Although in class V there are fewer differences between good and poor schools, good and poor students, these findings are consistent with earlier increases in all test areas by school level (Table 1).

Sampling

In this methodology basic education is considered a dichotomous variable. For a precision level of 7 per cent with a 95 per cent confidence interval and a cluster methodology, 14 children were selected from each of 30 random clusters for a sample size of 420 children (Cochran 1963). This is similar in principle to the 30-cluster methodology recommended by the World Health Organization (WHO), which is considered to give valid estimates of immunization coverage of children and which has been successfully used all over the world (Henderson and Sundaresan 1982). The difference between our methodology and that used by WHO is that the latter uses a 10 per cent precision level with a consequent smaller sample size of 210. Since educational changes do not occur as rapidly as changes in immunization practices, a precision level of 7 per cent was taken as a compromise. A 5 per cent level would make the sample too large.

Table 1. Percentage of children who correctly answered different individual questions by years of schooling.

Question item	Years of schooling						
	0	1	2	3	4	5	6+
A. LIFE SKILLS							
Treatment for diarrhoea	55.6	63.5	60.5	67.2	70.1	79.1	90.1
Prevention of night blindness	9.8	16.8	16.9	21.6	32.0	45.2	61.1
How to clean water	28.4	36.8	41.9	41.0	55.4	67.3	77.2
Water for drinking	89.3	93.0	95.9	97.4	98.6	74.7	95.2
Place of defaecation	66.6	69.7	72.7	80.6	86.0	91.2	92.6
Benefits of vaccination	12.6	18.4	22.7	28.0	38.8	48.2	71.0
Ideal family size	46.1	44.3	47.1	53.7	58.3	66.8	74.2
Gender issue	84.0	88.1	89.0	92.2	93.2	93.6	94.7
How to prevent disease in poultry	35.4	38.9	54.1	54.1	58.6	64.6	68.9
First aid for high fever	24.4	28.6	30.2	34.3	39.9	48.9	58.3
B. READING SKILLS							
Mother	3.9	29.2	66.9	84.3	95.3	98.3	99.8
Marriage	1.1	8.1	38.4	56.7	77.0	91.6	97.7
Pond	1.4	11.9	38.4	58.2	79.9	94.1	98.8
Barsha (Seasons name)	0.8	5.9	26.7	45.1	65.8	86.0	95.4
Enjoyment	0.6	5.9	30.8	45.1	70.1	86.7	96.3
Savings	0.6	1.1	8.7	14.6	37.8	61.4	82.9
Freedom	0.3	3.2	15.7	22.0	50.7	71.7	88.5
Cooperation	0.8	4.3	17.4	33.6	56.8	81.8	94.2
Sentence: A	1.1	6.5	21.5	42.9	67.6	86.2	97.7
B	0.3	4.9	14.0	24.3	50.7	74.2	90.1
Passage Q#A	0.8	5.4	28.5	50.0	72.3	91.4	98.6
Q#B	0.8	5.9	24.4	49.9	68.3	89.4	98.2
Q#C	0.6	5.4	15.1	33.6	57.6	77.1	86.4
Q#D	0.3	3.2	8.7	18.7	36.0	46.2	67.5
C. WRITING SKILLS							
Own name	5.9	29.3	64.5	84.7	93.2	98.0	100.0
Town/Village name	0.6	7.7	27.3	41.8	62.6	82.3	93.5
Words Water	0.8	8.1	36.6	51.1	73.4	90.7	97.4
Education	-	2.2	7.6	16.8	40.3	64.9	83.9
Bangladesh	0.3	8.1	23.3	42.9	67.6	88.2	96.8
Sentence	0.3	2.7	13.4	13.8	36.3	60.7	78.3
Letter Salutation	0.8	3.8	12.2	23.9	45.3	69.5	80.9
Message communication	0.3	3.2	11.0	23.9	43.2	70.5	82.7
Sincerely	0.3	1.6	6.4	11.2	28.0	46.9	63.6
D. NUMERACY SKILLS							
Count 40 to 50	39.9	62.7	76.2	90.7	98.2	98.3	99.8
Can read 3	22.5	61.1	83.7	95.9	97.8	99.3	100.0
49	2.2	12.4	30.8	48.9	70.9	82.1	87.3
500	3.4	14.7	37.8	61.2	74.8	89.7	94.7
Can write 5	9.0	38.4	76.2	90.7	96.0	99.3	100.0
67	0.8	7.6	26.2	37.7	58.3	71.3	88.7
208	1.7	6.0	16.7	31.0	53.2	68.8	87.8
Addition	1.1	6.0	25.0	52.2	75.2	86.0	94.2
Subtraction	-	2.7	9.3	17.5	38.1	55.5	70.5
Mental Arithmetic Q#A	64.0	70.8	84.9	89.6	93.9	95.3	100.0
Q#B	69.4	75.7	82.6	85.8	92.4	96.8	98.6
Q#C	51.7	59.5	70.0	81.3	87.4	92.4	97.5
Q#D	5.3	15.7	23.8	26.9	38.5	52.1	71.2

Table 2. Percentage of children satisfying the criteria of basic education and different skills by class, school and student categories.

	BE		LS		RS		WS		NS	
	III	V	III	V	III	V	III	V	III	V
Good schools	47.2	87.2	69.4	97.4	80.6	100.0	58.3	89.7	86.1	100.0
Poor schools	31.6	82.6	50.0	95.7	60.5	100.0	39.5	82.6	78.9	100.0
Good students	57.9	93.3	73.7	100.0	89.5	100.0	65.8	100.0	94.7	100.0
Poor students	19.4	78.1	55.6	93.8	55.6	100.0	30.6	81.3	77.8	100.0

Note: BE – Basic education (composite score); LS – Life skill; RS – Reading skill; WS – Writing skill; NS – Numeracy skill.

In Bangladesh, because of known geographical variations, five different surveys were carried out, one in each of the following regions/strata (each representing roughly a fifth of the country): rural Rajshahi Division; rural Dhaka Division; rural Khulna Division; rural Chittagong Division; and urban Bangladesh. For each region/stratum similar sampling strategy was used. A total of 420 children, aged 11–12 years,¹ were selected in three stages. In the first stage, 30 thanas (sub-district) (municipalities for urban areas) were selected at random. In the second stage, one union² (ward for urban areas) was selected at random from each selected thana. In the third stage, one village (para/mahalla for urban areas) was selected at random from each selected union/ward. This means that for each region/stratum, 30 villages/ward were selected for a total of 150 for the country. In each village/para 14 children were selected for a total of 2,100.

The 14 children in each village/para were selected following the procedure recommended in the WHO 30-cluster survey (WHO 1983). As soon as the interviewer entered the selected village, he identified the north-west corner of the village and started looking for children of the designated age group by visiting households.³ He started moving counter-clockwise for a household. As soon as he found a household with a child in the designated age group, he interviewed him or her. In order to reduce intra-cluster correlation in educational knowledge and achievement of children the interviewer skipped the next five households and started looking for a target child from the sixth household, and so on.

He continued moving from household to household until he completed interviewing 14 children. If the requisite number of children were not found in the village, he moved to the next closest village to complete the remaining interviews.

Table 3. Percentage of children for whom the results of original and post-enumeration interviews matched, by selected indicators.

Indicators	% matched
a) Age of child	98.2
b) Knowledge on prevention of night blindness	79.5
c) Attitude towards girls' education	91.1
d) Reading of word "Monsoon"	92.0
e) Question from comprehension passage	96.4
f) Writing own name	100.0
g) Writing the word "Bangladesh"	96.4
h) Read "49"	86.7
i) A mental arithmetic	92.0
n	112

Results

Some salient results from the basic education survey in Bangladesh are presented below.

Level of basic education

Table 4 shows that 28.8 per cent of the children aged 11–12 years satisfied the criteria of attaining basic education. In general, boys performed better than girls, although girls performed somewhat better than boys in three of the rural divisions. Urban children did much better than their rural counterparts; and the difference between urban boys and girls was much more pronounced than between rural boys and girls. Division-wise, the sample in Khulna did best (29.5 per cent), while Chittagong was worst (16.7 per cent).

Table 4. Percentage of children satisfying all basic education criteria by gender and by residence.

Residence	Boys	Girls	All
Rural Dhaka Division	19.5 (210)	21.9 (210)	20.7 (420)
Rural Chittagong Division	15.7 (210)	17.6 (210)	16.7 (420)
Rural Khulna Division	28.6 (210)	30.5 (210)	29.5 (420)
Rural Rajshahi Division	26.2 (210)	16.7 (210)	21.4 (420)
Rural Bangladesh	22.5 (840)	21.7 (840)	22.1 (1680)
Urban Bangladesh	64.8 (210)	46.2 (210)	55.5 (420)
All Bangladesh	31.0 (1050)	26.6 (1050)	28.8 (2100)

Note: * Figures within parentheses indicate number of children interviewed.

* Results are unweighted.

Table 5 shows the data on literacy, defined as the 3R's, which is basic education as in Table 4 minus the life skills. The literacy rate as found in this study for Bangladesh is similar to what others have found for the same age group. Other findings revealed that parents' education is correlated to the performance of their children. Specifically, the mother's education past the SSC (Secondary School Certificate) had more of an influence on their sons' education than on their daughters' education. The same conclusions could be made about the influence of the fathers' post-SSC education, although to a lesser extent. Further analysis of these preliminary findings will be conducted.

Table 5. Proportion of children satisfying literacy criteria, i.e. the 3R's, by sex and residence.

Residence	Proportion of children		
	Boy	Girl	Total
Dhaka	30.0	27.6	28.8
Chittagong	28.1	26.7	27.4
Khulna	36.7	36.7	36.7
Rajshahi	32.4	20.1	26.7
Rural	31.8	28.0	29.9
Urban	70.5	51.9	61.2
Bangladesh	39.5	32.8	36.1

Results of T tests

Educational planners will be able to compare progress in Bangladeshi children's basic education competencies over time through the differences in T test scores. It is expected that the ABC will be repeated roughly every two years, and that the percentage of children at each percentile point will either increase or decrease, thus giving planners an indication of the relative progress made toward implementing Education for All in Bangladesh. Table 6 displays results of transformed T scores across the different components of the ABC survey.

Discussion

This paper describes an innovative methodology to assess basic education and competencies of children. Most developing countries are committed to attaining the goal of basic education by the year 2000. Although many efforts are now underway to attain the goal, little preparation had been made to monitor progress. This is partly due to problems and controversies on what and how to measure this progress. The methodology used in testing basic education in Bangladesh represents a blend of methods used in educational testing

Table 6. Percentage of children by different percentile points on the T-score by different skills.

Percentile points	Life skills	Reading	Writing	Numeracy	Total
<i>Rural</i>					
100%	4.2	14.2	13.5	16.2	1.3
75% and above	25.9	17.5	20.7	32.0	15.7
50% and above	72.4	41.3	40.4	63.1	62.7
25% and above	98.6	60.9	57.9	87.6	96.2
0	0.3	30.7	31.4	4.3	0.2
<i>Urban</i>					
100%	20.7	46.4	46.4	40.0	12.9
75% and above	41.9	50.0	54.5	56.7	32.0
50% and above	80.9	65.2	63.1	75.2	73.6
25% and above	97.9	78.1	77.6	92.4	96.2
0	0.7	17.1	15.2	3.6	0.5
<i>All Bangladesh</i>					
100%	7.5	20.7	20.0	21.0	5.7
75% and above	32.5	24.0	27.4	33.5	18.2
50% and above	75.5	49.5	48.0	66.2	65.1
25% and above	98.6	72.0	71.8	88.8	94.8
0	0.4	28.0	28.1	4.2	0.2

and social science research. The Assessment of Basic Competencies adapted the 30-cluster methodology developed to measure progress in the health sector to measure progress in the education sector. The advantages of this methodology were its simplicity in contrast to traditional educational achievement tests, and the fact that it was comparatively inexpensive, repeatable at regular intervals, and rapid.

Using primarily in-country professional resources, survey designers attempted to operationalise the definition of basic education which included basic life skills as well as the standard literacy components of reading, writing, and arithmetic. The survey was carried out on a sample of 2,100 children. Five independent sites were covered, each covering 30 villages and 420 children. Apart from providing national estimates, the survey also provided sub-national, urban-rural and gender-based estimates.

Data from the survey and post tests confirmed the face validity (Borg and Gall 1983) of the instruments used. Validity was ensured by several measures: repeated pilot testing, comparison of ABC results with (1) good and poor schools and students, and (2) levels of respondents' schooling. The instrument was sufficiently sensitive to detect differences in basic education outcomes for different groups of students belonging to different backgrounds. It should be clearly kept in mind that the instrument presented here was *not* intended for assessing *individual* achievement. It was an aggregate measure of the competencies of a group of children.

The instruments took approximately two months to develop; the survey itself took approximately four weeks for data collection and report writing. The survey was relatively inexpensive. Less than US\$ 12,000 was spent in administering the five surveys. This amount will vary across countries, depending on cost of living, employment opportunities and availability of local expertise.

The survey was repeated in February 1993 using a modified design and instruments. Because of the ultimate goal of repeating the survey at regular intervals, it will be important not to repeat exactly the same instrument. This is particularly important given the inevitable coverage of the survey by the media (both questions and issues) and by the schools. A depository of questions against each item of interest may be created with question(s) randomly selected from this list for successive surveys. In the reading section, for example, there were eight different words selected on the basis of level of difficulty and other criteria (see text). In the depository there may be five different words for each criterion of word selection; similarly, an item bank of comparable life skills could be created.

Results based on a transformed "T" score were also worked out. This method of analysis is important in comparing results between two or more similar surveys – the ultimate aim in assessing progress in basic education in the future. Apart from doing a dichotomous analysis (either a "yes" or "no" to basic education), education planners could base categories of literacy or basic education on a range from non-literate, to low-literate, to moderately literate, to highly literate (UNESCO 1989; Wagner 1990). A child satisfying all 4 basic minimum level criteria would be considered to have "basic education". A child in the same way satisfying 1 to 3 criteria may be considered to have "partial education". A child who satisfies not a single one of these criteria obviously does not have basic education.

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Notes

1. In the 1992 survey, 210 boys and 210 girls were separately selected. In 1993, however, a total of 420 *children* were selected.
2. The "union" is a lower administrative unit with an average population of 20,000. A village has an average population of 1,200.
3. Since the date of birth is not remembered and births are not recorded in Bangladesh, age had to be estimated by using events calendars and visual examinations.
4. The helper woman was given a token honorarium for her time. Out of 120 rural survey spots, females were available in 98. In the remaining spots local males were taken as helper.

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