An evaluation of primary text materials in terms of the coverage of graded attainable terminal competencies

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Executive summary

Introduction

The world conference on Education for All, 1990, at Jomtien, Thailand, set a new goal for the developing countries around the world to educate people of these countries with basic education. As a signatory to the declaration of this conference, Bangladesh in to impart basic education to at least 80% of school-age children by the year 2000. To serve this purpose the Compulsory Primary Education Act was passed, and 53 terminal competencies attainable after five year primary education cycle have been identified and the text materials have also been revised accordingly. The Government of Bangladesh introduced competency-based education system in five year primary education cycle in 1992. The 'Education Watch' has undertaken a study this year 'Education Watch 2000' focusing on the learners' achievements at the end of primary level in terms of attainable terminal competencies. The particular study presented in this paper, as part of 'Education Watch 2000', focused on the evaluation of text materials (grade I to V) prepared by the NCTB in terms of the extent of coverage of graded learning continua and attainable terminal competencies specified for the achievements of learners at the end of five year primary education cycle.

Methodology

Two set of text materials those of textbook (TB) and teachers' guide (TG) which include all TB and TG of grade I through V in different subject area prepared by the NCTB, were considered as data sources. The study was an evaluation based on content analysis which was qualitative in nature. The purpose of the content analysis was to audit TB and TG against the graded learning continua as well as the terminal competencies in order to evaluate its extent of coverage. The TB and TG were reviewed, scanned and analyzed for the purpose and coverage was qualified in terms of excellent, fairly well, well, satisfactory and poor levels. The later three categories of coverage indicated a need for improvement.

The content analysis was done through a three day long workshop which was participated by a group of 18 experts who had expertise and long experience in primary education. They included curriculum experts, teacher educators, education supervisors and teachers. Apart from this, researchers did the same exercise in order to minimize gap among the data sources i.e. participants where 3 t0 4 experts in each group worked together. Two approaches were used in content analysis as well as the analysis of the study. In the first approach, a particular learning continua was picked up and examined the contents, expected learning outcomes of the contents in order to determine the extent of coverage of learning continua. Based on the coverage of learning continua the extent of coverage of related terminal competency was determined. In the second approach, a particular competency was picked up and examined the contents, expected outcomes of the contents in order to determine the extent of coverage of that particular competency. For the purpose list of competencies and learning continua, and checklist in specific format were supplied to the participants along with text materials.

Key findings and implications

It was revealed from the study that all the 53 terminal competencies attainable through five year primary education cycle adopted by the Government of Bangladesh were covered in the primary curriculum.

In general term, TB developed by the NCTB was found good and covered most of the terminal competencies fairly well. However, almost half of the competencies in Bangla (2 out of 4), English (2 out of 4), Mathematics (2 out of 5) and Other subjects (3 out of 8), and a few in Social Sciences (4 out of 28) were found either well or satisfactory covered in TB. This indicated an urgency to improve the coverage of these competencies in TB.

Coverage of learning continua and few competencies in four basic subjects of Bangla, English, Mathematics and Social Sciences indicated that far more than half of these competencies were either fairly well or excellently covered in TB. However, the remaining more than one thirds those of all the competencies in Bangla and Mathematics, one fourths in English and a very few in Social sciences found to be either well or

satisfactorily covered which indicated a need for improvement of coverage of these learning continua and related competencies in TB.

Most of the terminal competencies were excellently covered in TG although a few those from English, Social Sciences and Other subjects category were found either well or satisfactorily covered indicating a need for improvement of coverage in TG. On the other hand, the coverage of learning continua and few competencies in four basic subjects of Bangla, English, Mathematics and Social Sciences confirmed that almost all of the competencies were either fairly well or excellently covered in TG.

The extent of coverage of competencies and learning continua were found different in same subjects of different grade level which indicated a need for uniform coverage of competency and learning continua in source materials of different grade levels.

The coverage of cognitive competencies in both the TB and TG were found better compared to affective and psychomotor competencies which further indicated a need for more improvement of the coverage of the later two types of competencies in TB and TG.

In overall term, it could be said from the study that the TB and TG prepared by the NCTB were well structured, detailed, lesson based and covered all the 53 competencies. However, there is a scope for improving these in terms of the extent of coverage of both the competencies and learning continua. The study being the first approach in the area in Bangladesh, suggests more indepth reviews of the source materials involving those who are real practitioners to revise the source materials in future.
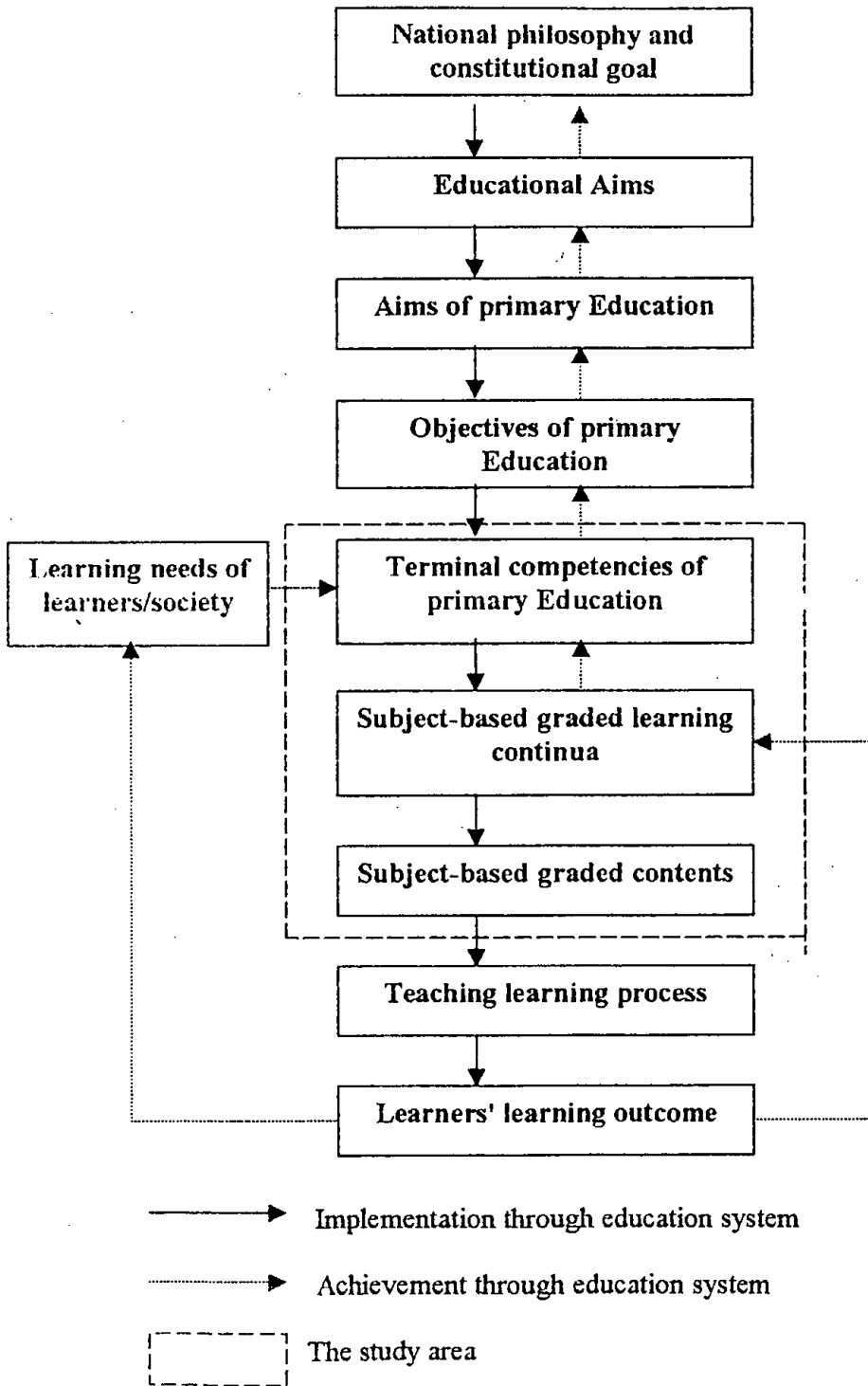
INTRODUCTION

The aims and objectives of primary education in Bangladesh have been changed with the changing demands of the nation over time. In order to fulfil the emerging demands, National Curriculum and Textbook Board (NCTB) selected the aims and objectives of primary education in 1988 (Zabbar, 1999 and Ali, 1999) . It was decided to give preliminary education to children so that they can acquire necessary knowledge, concept, skill, norms, values, etc. in order to become competent future citizen of the country after completing the five year primary education cycle. The World Conference on Education for All (WCEFA, 1990) at Jomtien, Thailand, set a new goal for the developing countries around the world to educate the people of these countries with basic education. As a signatory to the declaration of this conference, Bangladesh is to impart basic education to at least 80% of school-age children by the year 2000 (Primary and Mass Education Division, 1995). To serve this purpose the Compulsory Primary Education Act (Act 27, 1990) was passed. In viewing the above accounts 53 terminal competencies attainable after five year primary education cycle, have been identified and the textbooks have also been revised accordingly. The Government of Bangladesh introduced competency-based education system in five year primary education cycle in 1992.

The Campaign for Popular Education (CAMPE), a coalition of more than 400 NGOs involved in primary and non-formal education, has spearheaded the 'Education Watch' project. The broad purpose of the 'Education Watch' is to monitor the aspects of primary education in Bangladesh on a regular basis. The project was started in mid 1998 and the first report based on direct field survey was published in 1999 which focused mainly on 'internal efficiency' of primary education. This project has undertaken a study this year 'Education Watch 2000' focusing on the learners' achievements at the end of primary level in terms of attainable terminal competencies. The study presented in this paper focused on the evaluation of textbooks (grades I to V) prepared by NCTB in terms of graded attainable terminal competencies.

Conceptual Framework

The aims of any educational program are determined in accordance with the educational aims of the country. The educational aims of the country are determined in the light of national philosophy and constitutional goal. The aims of any educational program are specified, concretized and operationalised into its objectives. Competencies are determined in terms of educational objectives in one hand and learning needs of a particular level of education on the other (Ghosh,1999). There are various components of any educational program viz. Curriculum, contents, expected learning outcomes, teaching, evaluation, teacher training, supervision etc., each of which is related with the competencies. Thus, competencies play the most significant role in any educational program. The study considered the reflections of terminal competencies and respective learning continua in the content materials of the graded subject-based textbooks and teachers' guide in evaluating the source materials. This consideration and the competency-based primary education program undertaken by the Government of Bangladesh together formulate the conceptual framework outlined below (figure 1).

Figure 1:Conceptual Framework

National philosophy and
constitutional goal

Educational Aims

Aims of primary Education

Objectives of primary
Education

Learning needs of
learners/society

Terminal competencies of
primary Education

Subject-based graded learning
continua

Subject-based graded contents

Teaching learning process

Learners' learning outcome

⟶ Implementation through education system

┈┈┈┈▶ Achievement through education system

⌐ ¬ The study area
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Rationale of the study

In any education system, an endeavour is made to change human behaviour towards a desired goal, providing scope of interactions with specified curriculum. Curriculum, learner and teacher are the three input factors of education which interact with each other in an educational environment towards bringing changes in human behaviour specially learners' behaviour. In a competency-based education system competencies are the predetermined desired level of learners' behaviour to be achieved to reach the national goal. As far as the achievement outputs of learners in terms of competencies are concerned, it is thus important to know how far are the competencies reflected in the content inputs? In this context, this study examined the extent of the coverage of competencies in the primary curriculum viz. textbooks and teachers' guide prepared by NCTB. This will help in better understanding of the learners' achievement outputs in terms of terminal competencies. The Government is now considering a revision of the competencies, textbooks as well as teachers' guide. This study might help in locating strengths and weaknesses of the present textbooks and teachers' guide relating to terminal competencies which will help further in the reviewing process.

Objective of the study

The objective of the study was to evaluate the national primary text materials viz. textbooks and teachers' guide, prepared by the NCTB, in terms of the extent of coverage of learning continua and terminal competencies specified for the achievement of students at the end of five-year primary education cycle.

METHODOLOGY

The Study design

The study was an evaluation based on content analysis which was qualitative in nature. Content analysis, according to Weber (1990), is a research method that uses a set of procedures to make valid inferences from text. One of the issues, these inferences are about, the message itself, was the focus of the study. According to Weber, content analysis can be used for many purposes. The purpose of the content analysis in this study

was to audit primary textbooks and related teachers' guide against the graded learning continua as well as the terminal competencies in order to evaluate its extent of coverage. The textbooks and teachers' guide were reviewed, scanned and analyzed for the purpose. The coverage was qualified in terms of excellent, fairly well, well, satisfactory and poor levels.

Data source

Two set of text materials used for content analysis in the study were- text materials, viz. Textbook (TB) and curriculum transaction materials, i.e. Teachers' Guide (TG). TB included all the textbooks prepared by NCTB for the students of grade I through V. All the guides for teachers developed by NCTB for teaching in grade I through V in different subject areas were TG.
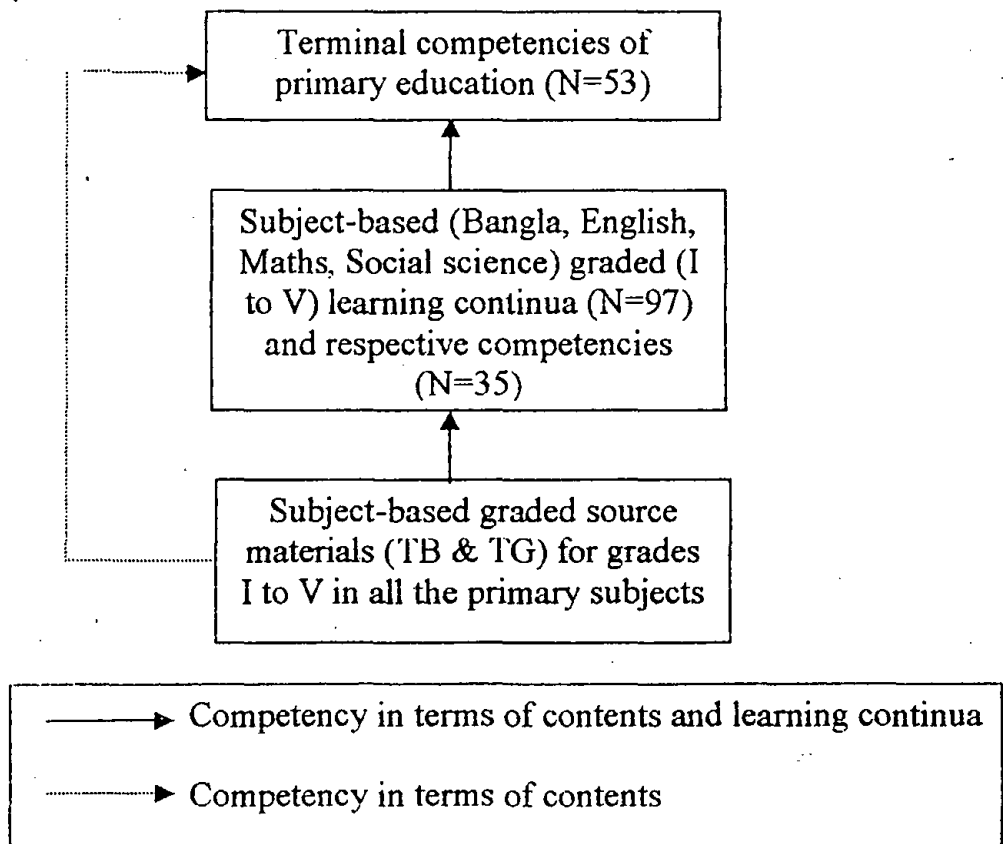
Data, data processing and analysis

Data collection or the exercise of content analysis was done through a three-day long workshop which was participated by a group of (18 persons) experts who had expertise and long experience in primary education. The participants included curriculum experts, teacher educators, education supervisors and teachers specialised in different subjects of primary education. Apart from this researchers did the same exercise in order to minimize gap among the data sources. The participants worked in groups of 3 to 4 members consisting of different expertise in doing the content analysis and processing data.

The participants evaluated both the source materials in respect to the coverage of terminal competencies through scanning contents, texts and adjudging expected outcomes. Key-Word-In-Context (KWIC) (Weber,1990) was used, among others as a technique of scanning. The content analysis as well as the analysis of the study were done following two approaches which are illustrated in the analytical framework outlined below (figure 2). The first approach was more elaborate and in-depth, where participants picked up subject wise graded learning continua related to particular competency and then located the source materials where the learning continua addressed in. The relevant content/s and

texts in the source materials, and expected outcomes were then studied to locate how those were reflected in order to finding out its extent of coverage. The extent of coverage of competency was then examined based on the coverage of related learning continua. In the second approach participants picked up a particular competency and then the source materials were scanned to locate where this particular competency addressed in. The content/s, texts in source materials and the related expected outcomes were then analysed in the same way followed in the first approach in order to find out the extent of coverage of the competency. In doing these checklists in specific format prepared by researchers were used for providing data on the extent of coverage of learning continua or competencies with specific references of reflections in the source materials. Apart from checklists, list of competencies and list of graded learning continua were supplied to the participants for the purpose.

Figure 2: Analytical Framework

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              ┌─────────────────────────────┐
              │  Terminal competencies of   │
        ┌────▶│  primary education (N=53)   │
        ┊     └─────────────────────────────┘
        ┊                   ▲
        ┊     ┌─────────────────────────────┐
        ┊     │ Subject-based (Bangla, English, │
        ┊     │ Maths, Social science) graded (I │
        ┊     │ to V) learning continua (N=97)   │
        ┊     │ and respective competencies      │
        ┊     │           (N=35)                 │
        ┊     └─────────────────────────────┘
        ┊                   ▲
        ┊     ┌─────────────────────────────┐
        ┊     │ Subject-based graded source  │
        └┄┄┄┄│ materials (TB & TG) for grades│
              │ I to V in all the primary subjects│
              └─────────────────────────────┘
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┌────────────────────────────────────────────────────────┐
│  ──────▶ Competency in terms of contents and learning continua │
│                                                          │
│  ┄┄┄┄┄▶ Competency in terms of contents                  │
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The extent of coverage of competencies were denoted in the first step in quantitative term of percentages. The results from different groups of participants were compiled in terms of average for each competency. Finally these results of the extent of coverage were transformed into qualitative terms of Excellent, Fairly Well, Well, Satisfactory and Poor. The reflection or coverage precisenesses of 91-100%, 81-90%, 71-80%, 51-70% and 50% and below were designated as Excellent, Fairly Well, Well, Satisfactory and Poor respectively. The later three categories of coverage (i.e. well, satisfactory and poor) indicated a need to be improved.

Data quality

The expertise of the participating coders in competency-based curriculum of primary education itself was seen as an important source for content validity of the content analysis. Beyond this the construct validity (Weber, 1990) was ensured corresponding the measures of participating coders with the investigators' coding on the respective competencies and learning continua.

To achieve the reliability of data, the extent of coverage of competencies were qualified in two phases- achieving consensus among members within the group and calculating the average of the data received from the different groups. Thus, the stability and reproducibility (Weber, 1990) of data was qualified establishing shared consistency within the small group of expert coders as well as the large group participants.

FINDINGS

Source materials, graded learning continua and related competencies

The study is a part of the broad study initiated by the 'Education Watch' project focusing on the learners achievements at the end of primary level in terms of attainable terminal competencies. The broad study was confined in four basic subjects of Bangla, English, Mathematics and Social sciences at primary level. So this particular study presented in this paper did content analysis in two phases. The first phase was confined in four basic subjects mentioned earlier. The second phase of content analysis was confined in all the subjects at primary level. As the focus of the assessment of the achievement of learners was limited in four basic subjects, this study evaluated the source materials of these four subjects in a more indepth fashion. In this first phase of content analysis, the coverage of graded learning continua were examined in source materials to determine the extent of coverage of terminal competencies.

The extent of coverage of competencies was determined through examining the coverage of related learning continua in source materials of TB and TG of four subjects of Bangla, English, Mathematics and Social sciences. It was found that out of 28 competencies in social science, 6 (competency nos, 7, 8, 18, 36, 46 and 48) were not reflected in the learning continua, although there were some other issues reflected in learning continua those were not covered in the competencies. So the number of terminal competencies in social science in this section of analysis remained 22.Thus the number of terminal competencies in this section remained 35 only.

The coverage of competencies considering learning continua suggested for different grade level was also examined. In class I English is not taught and there is no TB suggested for class I for social science. One competency of Mathematics (competency no, 32) and three of social science (competency nos, 40, 41 and 49) have not been suggested for class I (Appendix 1). Data revealed that coverage of two competencies (no, 24 and 25) in both the TB and TG of Bangla needed to be improved. All the competencies in Mathematics were found excellently covered in TG but satisfactorily covered in TB

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which needed to be improved. One (no, 33) competency in social science was found in the well covered category that needed to be improved in TG.

In class II too, English as a subject and textbook of social science are not recommended. One competency (no, 49) of social science has not been suggested for class II. All the competencies in Bangla were found fairly well covered both in TB and TG source materials of class II (Appendix 2). The coverage of all the competencies of Mathematics in TB were either well or satisfactory which needed to be improved. Whereas the coverage of all the competencies of Mathematics were found either fairly well or excellent in TG. Almost all of the competencies of social science found to be either excellently or fairly well covered in TG of class II.

Distribution of competencies in four subject areas in respect to the extent of coverage and source materials considering learning continua of class III (Appendix 3) showed that all of the competencies in Bangla and English were covered either excellent or fairly well in both TB and TG. In the case of Mathematics, the coverage of all the competencies (no, 28, 29, 30, 31 and 32) in TB were either well or satisfactory which indicated a need for improvement. But this coverage was excellent in TG of Mathematics. Most of the competencies in social sciences were covered fairly well and 6 (no, 15, 33, 38, 39, 41 and 49) competencies were covered well in TB whereas almost all (91%) of these competencies were covered excellently in TG of social science in class III (Appendix 3).

In class IV, distribution of competencies in respect to the extent of coverage and source materials considering learning continua in four subject areas indicated that 15 out of 35 competencies needed to be improved in TB. This figure reduced to two in the case of TG (Appendix 4). All the competencies in Bangla were covered either satisfactorily or well in TB whereas only one of these competencies fell in this category in the case of TG. Most (75%) of the competencies in English were covered well in TB that needed to be improved, however, all the competencies in English were covered excellently in TG. In the case of Mathematics, all the competencies were covered excellently in TG but the coverage of all these competencies in TB indicated a need to be improved. For example

according to graded learning continua, learners completing grade four would be able to solve problems containing addition and subtraction with three steps and five digit numbers, however, in text materials of grade four contains this kind of problems with only two digit numbers. The coverage of most (86%) of the competencies in social science were either fairly well or excellent and almost all (95%) of these were fell in this category in the case of TG of social sciences (Appendix 4).

In the case of class V, more than half of the competencies found to be covered in TB either satisfactorily or well which need to be improved and this proportion was 3 (8%) for TG (Appendix 5). The extent of coverage of all the competencies in Bangla, English and Mathematics in TB indicated a need for improvement whereas in TG of these subjects almost all of these competencies were covered either excellently or fairly well. In social science, most of the competencies were covered either excellently or fairly well both in TB and TG, however, one competency (no, 39) was found poorly covered in TB of class V (Appendix 5).

The study found that none of the 35 terminal competencies was covered excellently in TB whereas 29 (83%) were found to be covered excellently in TG (Table 1). 13 (37%) and one (3%) competencies respectively in TB and TG were found weakly reflected which need to be improved. The coverage of all the four competencies in Bangla, two (no, 51 and 52) in English, all five in Mathematics and three (no, 33, 40 and 49) in social sciences, in TB were found in those categories of coverage that needed to be improved. The only one terminal competency (no, 33) whose coverage in TG needed to be improved was from social science. For details of this section please see appendix 6.

Table 1: Distribution of terminal competencies in four subject areas in respect to the extent of coverage in source materials considering learning continua

Extent of coverage	Competencies reflected in different subjects								Total	
	Bangla		English		Mathematics		Social science			
	TB	TG	TB	TG	TB	TG	TB	TG	TB	TG
Excellent	--	--	--	04 (100)	--	05 (100)	--	20. (90.9)	--	29 (82.8)
Fairly well	--	04 (100)	02 (50.0)	--	--	--	19 (86.4)	01 (4.5)	21 (60.0)	05 (14.3)
Well	04 (100)	--	02 (50.0)	--	02 (40.0)	--	03 (13.6)	01 (4.5)	11 (31.4)	01 (2.9)
Satisfacto -ry	--	--	--	--	03 (60.0)	--	--	--	03 (8.6)	--
Total	04 (100)	04 (100)	04 (100)	04 (100)	05 (100)	05 (100)	22 (100)	22 (100)	35 (100)	35 (100)

Note: Figures in the parentheses indicate the percentages

Source materials and 53 terminal competencies

· After the completion of first phase of content analysis, an attempt was made to evaluate all the subjects at primary level in terms of the extent of coverage of terminal competencies. The first phase of content analysis helped the coders in becoming fully aware of the most of the source materials. The coders could use this awareness on most of the source materials in phase two of content analysis where they analysed source materials of all the subjects at primary level in terms of the extent of coverage of terminal competencies. Textbooks (TB) and teachers' guide (TG) content materials of class I through V were analyzed directly in terms of coverage of overall 53 terminal competencies.

Table 2 presents distribution of competencies in the TB of different subjects in respect to the extent of coverage. The coverage of competencies was found best in the TB of religious studies. Competencies in Mathematics were found to be either excellent or fairly well covered in TB. Most of the competencies in Bangla and English were found well covered in TB. In social science half of the competencies were found fairly well covered and a few were found either well or satisfactorily covered. About one thirds of other category competencies were found satisfactorily covered.

Table 2: Distribution of terminal competencies in the textbooks in respect to the extent of coverage

Extent of coverage	Competencies reflected in the textbooks of different subjects						Total
	Bangla	English	Mathem -atics	Social science	Religious studies	Others	
Excellent	01 (25.0)	01 (25.0)	02 (40.0)	10 (35.7)	04 (100)	01 (12.5)	19 (35.9)
Fairly well	01 (25.0)	01 (25.0)	01 (40.0)	14 (50.0)	--	04 (50.0)	21 (39.6)
Well	02 (50.0)	02 (50.0)	02 (40.0)	02 (7.1)	--	--	08 (15.1)
Satisfactory	--		--	02 (7.1)	--	03 (37.5)	05 (9.4)
Total	04 (100)	04 (100)	05 (100)	28 (100)	04 (100)	08 (100)	53 (100)

Note: Figures in the parentheses indicate the percentages

Table 3 represents the distribution of competencies in the TG of different subjects in respect to the extent of coverage. It was revealed that all of the competencies of Mathematics and religious studies found to be in excellent coverage in TG. Most of the competencies in Bangla, social science and other category were excellently reflected in TG, but a few competencies were also found to be either well or satisfactorily covered. In English most of the competencies were covered fairly well in TG.

Table 3: Distribution of terminal competencies in the teacher's guides in respect to the extent of coverage

Extent of coverage	Competencies reflected in the teacher's guides of different subjects						Total
	Bangla	English	Mathem -atics	Social science	Religious studies	Others	
Excellent	03 (75.0)	01 (25.0)	05 (100)	20 (71.4)	04 (100)	03 (37.5)	36 (67.9)
Fairly well	01 (25.0)	02 (50.0)	--	05 (17.9)	--	02 (25.0)	10 (18.9)
Well	--	01 (25.0)	--	01 (3.6)	--	02 (25.0)	04 (7.5)
Satisfactory	--	--	--	02 (7.1)	--	01 (12.5)	03 (5.7)
Total	04 (100)	04 (100)	05 (100)	28 (100)	04 (100)	08 (100)	53 (100)

Note: Figures in the parentheses indicate the percentages

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Considering learning domains of Cognitive, Affective and Psychomotor, it is found that some of the competencies have three parts of these learning domains, some have two parts of these and some have only any one of these learning domains as part. Thus the number of competencies stands roughly total 76 parts out of which 29, 16 and 31 parts belong to cognitive, affective and psychomotor domains respectively (Table 4). Data in table 4 indicate that 11 (38%) out of 29 parts of cognitive competencies were excellently covered in TB. The number of cognitive competencies that excellently covered in TG was found to be 24 (83%). Three and two competencies respectively in TB and TG were found that these needed to be improved.

Table 4: Distribution of the parts of terminal competencies in three learning domains in respect to the extent of coverage and source materials

Extent of coverage	Cognitive		Affective		Psychomotor		Total	
	Text -book	Teacher guide	Text -book	Teacher guide	Text -book	Teacher guide	Text -book	Teacher guide
Excellent	11 (37.9)	24 (82.8)	05 (31.2)	10 (62.5)	10 (32.3)	18 (58.1)	26 (34.2)	52 (68.4)
Fairly well	15 (51.7)	03 (10.3)	07 (43.8)	03 (18.8)	15 (48.4)	08 (25.8)	37 (48.7)	14 (18.4)
Well	03 (10.4)	02 (6.9)	03 (18.8)	03 (18.8)	02 (6.4)	01 (3.2)	08 (10.5)	06 (7.9)
Satisfactory	--	--	01 (6.2)	--	04 (12.9)	04 (12.9)	05 (6.6)	04 (5.3)
Total	29 (100)	29 (100)	16 (100)	16 (100)	31 (100)	31 (100)	76 (100)	76 (100)

Note: Figures in the parentheses indicate the percentages

In the case of the parts of affective competencies, five (31%) out of 16 were found excellently covered in TB. This proportion was 10 (63%) in the case of TG. The number of affective competencies those needed to be improved were four (no, 36, 37, 42 and 51) and three (no, 37, 42 and 51) respectively in TB and TG. Among 31 psychomotor competencies, 10 (32%) were found to be covered excellently in TB. The number of psychomotor competencies covered excellently in TG was 18 (58%). The psychomotor competencies whose coverage need to be improved were six (no, 13, 22, 34, 42, 44 and 51) and five (no, 13, 22, 34, 42 and 51) respectively in TB and TG. The cognitive competencies whose coverage need to be improved were three (no, 33, 51 and 52) and

two (no, 33 and 51) respectively in TB and TG. The study found better coverage of cognitive competencies both in TB and TG compared to affective and psychomotor competencies (Table 4).

It was found that in both the source materials of TB and TG most of the competencies were excellent or fairly well covered (Table 5). Out of 53, 19 and 21 competencies were found excellent and fairly well covered respectively in TB. These figures were 36 and 10 respectively in the case of TG. It was found that in TB about 75% competencies were excellently and fairly well covered and the rest 25% was well and satisfactorily covered. But in respect to the TG about 87% competencies were excellently and fairly well covered, and the rest 13% was well and satisfactorily covered. These indicated a better reflection of competencies in TG rather than in TB. No competency was found in poor coverage either in TB or in TG. For details please see appendix 7 and 8.

Table 5: Distribution of terminal competencies in respect to the extent of coverage and source materials

Extent of coverage	Competencies reflected in the source materials	
	Textbook	Teachers' guide
Excellent	19 (35.9)	36 (67.9)
Fairly well'	21 (39.6)	10 (18.9)
Well	08 (15.1)	04 (7.5)
Satisfactory	05 (9.4)	03 (5.7)
Total	53 (100)	53 (100)

Note: Figures in the parentheses indicate the percentages

DISCUSSION AND CONCLUSION

The Government of Bangladesh introduced competency-based education system in five year primary education cycle and the source materials of TB and TG were reviewed accordingly by the NCTB. This study attempted to evaluate the TB and TG in terms of the extent of coverage of the terminal competencies through content analysis.

It was revealed from the study that all the 53 terminal competencies attainable through five year primary education cycle adopted by the Government of Bangladesh were covered in the primary curriculum.

The coverage of competency and learning continua in source materials indicated that some competencies of social science (e.g. competency no, 7, 8, 18, 36, 46 and 48) were not covered in learning continua and there were some other learning continua which were reflected in source materials but were not covered in competencies of social science, for example, to identify prejudices existing in the immediate environment and to help to remove these.

Producing any skill in students i.e. achieving competencies by students necessitates the perfect reflection of competencies in source materials. In general term, TB developed by NCTB was found good and covered most of the terminal competencies fairly well. However, the coverage of few of the terminal competencies needed to be improved in TB. Almost half of the competencies in Bangla, English, Mathematics and other subjects, and a few in Social Sciences were found either well or satisfactorily covered in TB. This indicated an urgency to improve the coverage of these competencies in TB.

Coverage of learning continua and few competencies in four basic subjects of Bangla, English, Mathematics and Social Sciences indicated that far more than half of the competencies were either fairly well or excellently covered in TB. However, the remaining more than one thirds of the learning continua and competencies were found

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either well or satisfactorily covered in TB. These later competencies were scattered in all the four subjects. These included all the competencies in Bangla and Mathematics, one fourths of competencies in English, and a very few competencies in Social Sciences. The coverage of learning continua and these competencies needed to be improved in TB. Specially in TB of Mathematics, provision of more illustration and examples was found much needed in order to develop clear concepts and conceptual rules to learners instead of just exercise it.

Curriculum transaction is important in making students to achieve competencies. In this context the perfect reflection of competencies in transaction materials i.e. in TG is essential. Most of the terminal competencies were excellently covered in TG although a few were found in need to be improved in their coverage in TG. All of the competencies in Bangla, Mathematics and Religious Studies, and almost all of the competencies in English, Social Sciences and other subjects were found either excellent or fairly well covered in TG. A very few competencies those from English, Social Sciences and other subjects were found either well or satisfactorily covered indicating a need for improvement of coverage in TG.

The coverage of learning continua and few competencies in four basic subjects of Bangla, English, Mathematics and Social Sciences confirmed that almost all of the competencies were either fairly well or excellently covered in TG.

The extent of the coverages of competency and learning continua were found different in same subjects of different grade levels. As the competencies was supposed to build in students continuously step by step over five grade levels of primary education, so there had been a need for uniform coverage of competency and learning continua in source materials of different grade levels.

It was found that cognitive competencies were better covered both in TB and TG compared to affective and psychomotor competencies which further indicated a need for more improvement of the coverage of the later two types of competencies in TB and TG.

This might be due to less scope or importance was given on performance (related to psychomotor) and attitude or belief (related to affective) in the source materials.

In overall term, it could be said from the study that the TB and TG prepared by the NCTB were well structured, detailed, lesson based and covered all the 53 competencies, however, there is scope for improving these in terms of the extent of coverage of both the competency and learning continua. The achievement of learners in competencies is dependent not only on the reflection of competencies in source materials but also on how are these addressed in the classroom situations. In spite of this, the text materials are the most significant source of knowledge to our young learners. So much care is needed to develop or to revise those. In fine, the study being the first approach in the area in Bangladesh, suggests a more indepth reviews of the source materials involving those who are the real practitioners to revise the source materials in future.

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APPENDIX

Appendix 1: Distribution of competencies in four subject areas in respect to the extent of coverage and source materials considering learning continua of class I

Extent of coverage	Competencies reflected in different subjects						Total	
	Bangla		Mathematics		Social science			
	TB	TG	TB	TG	TB*	TG	TB	TG
Excellent	--	--	--	04 (100)	--	08 (42.1)	--	12 (44.4)
Fairly well	02 (50.0)	02 (50.0)	--	--	--	10 (52.6)	02 (25.0)	12 (44.4)
Well	01 (25.0)	02 (50.0)	--	--	--	01 (5.3)	01 (12.5)	03 (11.1)
Satisfacto-ry	01 (25.0)	--	04 (100)	--	--	--	05 (62.5)	--
Total	04 (100)	04 (100)	04 (100)	04 (100)	--	19 (100)	08 (100)	27 (100)

* No textbook is recommended for the class
Note: Figures in the parentheses indicate the percentages

Appendix 2: Distribution of competencies in four subject areas in respect to the extent of coverage and source materials considering learning continua of class II

Extent of coverage	Competencies reflected in different subjects						Total	
	Bangla		Mathematics		Social science			
	TB	TG	TB	TG	TB*	TG	TB	TG
Excellent	--	--	--	04 (80.0)	--	16 (76.2)	--	20 (66.7)
Fairly well	04 (100)	04 (100)	--	01 (20.0)	--	04 (19.0)	04 (44.4)	09 (30.0)
Well	--	--	02 (40.0)	--	--	01 (4.8)	02 (22.2)	01 (3.3)
Satisfact-ory	--	--	03 (60.0)	--	--	--	03 (33.3)	--
Total	04 (100)	04 (100)	05 (100)	05 (100)	--	21 (100)	09 (100)	30 (100)

* No textbook is recommended for the class
Note: Figures in the parentheses indicate the percentages

Appendix 3: Distribution of competencies in four subject areas of class III in respect to the extent of coverage and source of materials considering learning continua

Extent of coverage	No. of competencies by subjects								Total	
	Bangla		English		Mathematics		Social science			
	TB	TG	TB	TG*	TB	TG	TB	TG	TB	TG
Excellent	01 (25.0)	01 (25.0)	02 (50.0)	--	--	05 (100)	02 (9.1)	20 (90.9)	05 (14.3)	26 (83.9)
Fairly well	03 (75.0)	03 (75.0)	02 (50.0)	--	--	--	14 (63.6)	01 (4.5)	19 (54.3)	04 (12.9)
Well	--	--	--	--	03 (60.0)	--	06 (27.3)	01 (4.5)	09 (25.7)	01 (3.2)
Satisfacto-ry	--	--	--	--	02 (40.0)	--	--	--	02 (5.7)	--
Total	04 (100)	04 (100)	04 (100)	--	05 (100)	05 (100)	22 (100)	22 (100)	35 (100)	31 (100)

* No teacher's guide is available for the class
Note: Figures in the parentheses indicate the percentages

Appendix 4: Distribution of competencies in four subject areas in respect to the extent of coverage and source materials considering learning continua of class IV

Extent of coverage	Competencies reflected in different subjects								Total	
	Bangla		English		Mathematics		Social science			
	TB	TG	TB	TG	TB	TG	TB	TG	TB	TG
Excellent	--	01 (25.0)	--	04 (100)	--	05 (100)	02 (9.1)	19 (86.4)	02 (5.7)	29 (82.9)
Fairly well	--	02 (50.0)	01 (25.0)	--	--	--	17 (77.3)	02 (9.1)	18 (51.4)	04 (11.4)
Well	01 (25.0)	01 (25.0)	03 (75.0)	--	03 (60.0)	--	03 (13.6)	01 (4.5)	10 (28.6)	02 (5.7)
Satisfacto-ry	03 (75.0)	--	--	--	02 (40.0)	--	--	--	05 (14.3)	--
Total	04 (100)	04 (100)	04 (100)	04 (100)	05 (100)	05 (100)	22 (100)	22 (100)	35 (100)	35 (100)

Note: Figures in the parentheses indicate the percentages

Appendix 5: Distribution of competencies in four subject areas in respect to the extent of coverage and source materials considering learning continua of class V

Extent of coverage	Competencies reflected in different subjects								Total	
	Bangla		English		Mathematics		Social science			
	TB	TG	TB	TG	TB	TG	TB	TG	TB	TG
Excellent	--	--	--	04 (100)	--	04 (80.0)	03 (13.6)	17 (77.3)	03 (8.6)	25 (71.4)
Fairly well	--	03 (75.0)	—	--	—	01 (20.0)	14 (63.6)	03 (13.6)	14 (40.0)	07 (20.0)
Well	--	01 (25.0)	04 (100)	—	01 (20.0)	—	04 (18.2)	01 (4.5)	09 (25.7)	02 (5.7)
Satisfacto -ry	04 (100)	--	--	—	04 (80.0)	—	--	01 (4.5)	08 (22.9)	01 (2.9)
Poor	--	--	—	--	--	--	01 (4.5)	—	01 (2.9)	
Total	04 (100)	04 (100)	04 (100)	04 (100)	05 (100)	05 (100)	22 (100)	22 (100)	35 (100)	35 (100)

Note: Figures in the parentheses indicate the percentage

Appendix 6: Coverage of competencies in source materials of four subject areas from class I to V considering coverage of learning continua

Competency No	Subject	Class I		Class II		Class III		Class IV		Class V		Total/Terminal	
		TB	TG	TB	TG	TB	TG	TB	TG	TB	TG	TB	TG
24	Bangla	S	W	W	FW	FW	FW	S	FW	S	FW	W	TG
25	Bangla	W	W	FW	FW	E	E	S	W	S	W	W	FW
26	Bangla	FW	FW	FW	FW	FW	FW	S	FW	S	W	W	FW
27	Bangla	FW	FW	FW	FW	FW	FW	W	E	S	FW	W	FW
50	English	-	-	-	-	FW	-	FW	E	W	E	FW	E
51	English	-	-	-	-	E	-	W	E	W	E	W	E
52	English	-	-	-	-	FW	-	W	E	W	E	W	E
53	English	-	-	-	-	FW	-	W	E	W	E	FW	E
28	Mathematics	S	E	W	E	S	E	W	E	S	E	W	E
29	Mathematics	S	E	S	FW	S	E	S	E	S	E	S	E
30	Mathematics	S	E	W	E	W	E	W	E	S	E	W	E
31	Mathematics	S	E	S	E	W	E	S	E	W	E	S	E
32	Mathematics	-	-	S	FW	W	E	S	E	S	FW	S	FW
5	Social science	-	FW	-	FW	E	E	FW	E	FW	E	FW	E
6	Social science	-	FW	-	FW	E	E	FW	E	FW	E	FW	E
9	Social science	-	E	-	E	FW	E	FW	E	E	E	E	E
10	Social science	-	E	-	E	FW	E	FW	E	FW	E	FW	E
11	Social science	-	FW	-	E	FW	E	FW	E	FW	E	FW	E
12	Social science	-	FW	-	E	FW	E	FW	E	W	FW	W	E
13	Social science	-	FW	-	E	FW	E	FW	E	W	FW	FW	E

14	Social science	-	FW	-	E	FW	E	FW	E	W	FW	E
15	Social science	-	E	-	FW	W	E	E	E	FW	E	FW
16	Social science	-	E	-	E	FW	E	FW	E	FW	FW	FW
17	Social science	-	E	-	E	FW	E	FW	E	FW	FW	FW
19	Social science	-	FW	-	E	FW	E	FW	E	E	FW	E
20	Social science	-	FW	-	E	FW	E	FW	E	FW	FW	FW
21	Social science	-	FW	-	E	FW	E	FW	E	FW	FW	FW
22	Social science	-	FW	-	E	FW	E	FW	E	FW	FW	FW
23	Social science	-	FW	-	E	FW	E	FW	E	FW	FW	E
33	Social science	-	W	-	W	W	W	W	W	W	W	W
38	Social science	-	E	-	E	W	E	FW	E	E	FW	E
39	Social science	-	E	-	E	W	FW	FW	E	FW	FW	E
40	Social science	-	-	FW	FW	E	W	FW	P	S	W	FW
41	Social science	-	-	E	W	E	E	E	FW	FW	FW	FW
49	Social science	-	-	-	W	E	S	FW	FW	E	W	E

Note: E= Excellent, FW= Fairly Well, W= Well, S= Satisfactory, P= Poor

Appendix 7: Coverage of competencies in source materials

Competency number	Subject	Coverage	
		TB	TG
1	Religious Studies	E	E
2	Religious Studies	E	E
3	Religious Studies	E	E
4	Religious Studies	E	E
5	Social Science	E	E
6	Social Science	E	E
7	Social Science	FW	E
8	Social Science	S	S
9	Social Science	FW	E
10	Social Science	FW	E
11	Social Science	FW	E
12	Social Science	FW	FW
13	Social Science	FW	FW
14	Social Science	FW	FW
15	Social Science	E	E
16	Social Science	E	E
17	Social Science	E	E
18	Social Science	FW	E
19	Social Science	E	E
20	Social Science	E	E
21	Social Science	FW	E
22	Social Science	FW	FW
23	Social Science	E	E
24	Bangla	E	E
25	Bangla	W	E
26	Bangla	W	FW
27	Bangla	FW	E
28	Mathematics	E	E
29	Mathematics	E	E
30	Mathematics	FW	E
31	Mathematics	W	E
32	Mathematics	W	E
33	Social Science	W	W
34	Others	S	S
35	Others	FW	FW
36	Social Science	W	FW
37	Others	S	W
38	Social Science	E	E
39	Social Science	E	E

40	Social Science	FW	E
41	Social Science	FW	E
42	Others	S	W
43	Others	FW	E
44	Others	FW	FW
45	Others	E	E
46	Social Science	FW	E
47	Others	FW	E
48	Social Science	S	S
49	Social Science	FW	E
50	English	E	E
51	English	W	W
52	English	W	FW
53	English	FW	FW

Note: E= Excellent, FW= Fairly Well, W= Well, S= Satisfactory

Appendix 8: Ranking of 53 competencies according to their extent of coverage in source materials

Extent of coverage	Competency no	
	TB	TG
Excellent	1, 2, 3, 4, 5, 6, 15, 16, 17, 19, 20, 23, 24, 28, 29, 38, 39, 45, 50	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 27, 28, 29, 30, 31, 32, 38, 39, 40, 41, 43, 45, 46, 47, 49
Fairly Well	7, 9, 10, 11, 12, 13, 14, 18, 21, 22, 27, 30, 35, 40, 41, 43, 44, 46, 47, 49, 53	12, 13, 14, 22, 26, 35, 36, 44, 52, 53
Well	25, 26, 31, 32, 33, 36, 51, 52	33, 37, 42, 51
Satisfactory	8, 34, 37, 42, 48	8, 34, 48

29

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