

Report on organizing the ROSE survey in Bangladesh

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1. ROSE team

- name of contact person
- name of coworkers
- occupation
- name of institution

There was no Bangladesh team. The operation was handled by the international consultant, Jack Holbrook, who was working on a Government education project in Bangladesh. Help was sought from others as needed.

2. School system and science teaching

- (short!)
- number of years with compulsory school
- schools with grouping of pupils according to ability, gender, language, region, religion, special needs, etc.
- how science teaching is arranged at various grades (e.g. one common science subject or different subjects like physics, chemistry, biology, etc.)

The Bangladesh school system has only five years of compulsory education. Children start at school at the age of 6, and about 50% drop out by the end of grade 5 (11 year of age). Grade 5 represents the end of primary education. Secondary education is divided in to 3 parts – junior secondary for grades 6-8, secondary grades 9-10 and higher secondary grades 11-12. Progress through secondary school depends on school results (at grade 8) and external public examinations (at grades 11 and 12)

Primary education is essentially free (there are free paying private schools, many offering education in the medium of English, but overall their numbers of less that 1%). There is a stipend system for girls by which they are encouraged to come to school at both primary and secondary levels. The result is that there are more girls than boys studying in schools.

At secondary level, education is largely in single gender schools in the towns and in the "better" schools. There are only 7% Government schools (basically free); the rest are mainly "fee paying private" schools, where the Government pays 90% of teacher salaries and the students pay a varying range of fees – most very low (less than US\$10 per year). In many if not most private schools, teachers only get the Government portion i.e. the 90% of Government teacher salaries so that school fees are able to be low.

There are very few secondary schools covering grades 11-12. Learning in grades 11-12 is undertaken by colleges, most also including Bachelor degree (general and honours) students. The teachers are permitted to call themselves "professors" and thus see themselves on a different level to teachers at the 6-10 grade level. Whereas many 6-10 grade teachers are trained in teacher training colleges and qualified with a B.Ed (this is really equivalent to a teacher certificate), this is very rare for "professors". Success for all teachers and schools/colleges is measured in percentage pass in the external examinations (where most students that fails do so in either English or mathematics – pass rates in 2004, at grade 10 – 48%; at grade 12 – 52%).

Little science exists at primary level – it being mainly linked to health and environmental studies. Science is a timetable subject at grades 6-8 and from grade 9, students are divided into “electives” and one elective group will study chemistry, physics and biology. Students in the other electives study general science as one subject. The learner is heavily guided by the standard textbook, which, for classes 1-10, is currently published by the National Curriculum and Textbook Board. The books cannot be described as inspiring and are heavily laden with facts.

The external examinations “drive” the learning for students in grade 9-12. These examinations are very stereotyped, comprising one paper of factual MCQ items and another of short answer “essay” type questions, all taken from the textbook. There is a practical examination for students of biology, chemistry and physics (grade 10 and grade 12), but this is recognized as “useless” by most teachers and is really copying experiments into a notebook (few students handle, or even see, any science equipment)

Bangladesh has one of the highest population densities in the world and is approximately 1000 persons per square kilometre. There are approximately 18,000 secondary schools. In the more prestigious secondary schools (these are largely the Government schools) class sizes are large and can exceed 100 students per class. The Government recommendation is 60 students per class, but external pressure on the headmaster, within the town, usually means this figure is hard to maintain in Government schools. The highest achieving schools are army cadet colleges which are few in number, have smaller classes (approx 30-35 students), and are generally feeding the army with high class academic recruits. Some private schools are prestigious, especially in Dhaka, the capital, and here class size can also be large.

3. Translation

- description of the process
- at what time the translation was done
- any particular difficulties?

The ROSE instrument was administered in Bangla, the national language and the medium of instruction. The administering of the questionnaire was handled by the assessment and examination component of SESIP (secondary education sector improvement project – a Government of Bangladesh project, funded by a loan from the Asian Development Bank), under the guidance of technical assistance from international and national consultants.

The translation of the ROSE instrument was undertaken by the national consultant for assessment and examinations, a person very familiar with the education system through many years of involvement and who had received teacher training and Master degrees in Science (Physics) education from the UK. The translation was checked by a few teachers during a project workshop. The translation was not exposed to a large number of persons on purpose, as there are so many different “forms” of Bangla (in English perhaps it is best described as ranges of formal and informal forms) and it is extremely difficult to get agreement. Preference was therefore given to one standard form and this was then checked for accuracy, albeit in a very limited manner.

4. National questions

- additional questions for background of the home (parents education or occupation, etc.)
- additional survey questions

No national items were added and the instrument was administered as is.

5. Piloting

- pilot testing of the questionnaire, if any
- experiences, feedback and results

The instrument was not piloted, but administered as the opportunity arose. No comments were given by the teachers or students (unfortunately they are very used to errors in examination papers etc and tend to handle the situation as best they can).

6. Official permission

- permission needed from authorities
- restrictions and difficulties, if any

No official permission was sought and the teachers who administered ROSE were volunteers who had attended a SESIP workshop. They attended the workshop because their school had been selected to be involved in a SESIP pilot project on school based assessment at grades 9 and 10. (The selection of schools was carried out on high achieving schools at the external exam level by the 7 different examination boards. This formed a pool of schools and the actual schools involved were selected, based on interview of a teacher interested to be sent overseas for training).

7. Population

- demarcation of the target population (the population to be represented)
- accessible population

The ROSE target population in Bangladesh was students in the SESIP pilot schools in grade 9 in the "science elective stream" from the pilot schools involved in a Biology/Science training workshop. These students were mainly 15 years of age. This involved 28 schools (of which 20 were Government schools) and largely single sex schools (10 girls, 14 boys).

8. Sample and participation

- how the sample was drawn, random sampling?
- response rate, percentage of positive responses
- how good does the sample represent the target population?
- possible weaknesses connected to the sample

No sample was drawn in Bangladesh. The opportunity was taken to administer the instruments to grade 9 students in schools where the teachers were involved in a training programme for school based assessment (SBA).

The students cannot be described as a representative sample of students in Bangladesh. On the contrary the students were, overwhelmingly, from Government schools and can be considered as high achievers. It would have proved far too costly to attempt to seek a representative sample, given that Bangladesh has 18,000 secondary schools and school attendance in many schools is variable.

9. Data collection in schools

- how the contact with schools was established
- how the questionnaire was duplicated
- how the questionnaire was distributed
- persons involved in conducting the survey at schools
- what instructions the persons got

- practical problems, if any
- at what time the data was collected

The instrument was developed as an A5 (half A4 size booklet) and the SESIP project duplicated this for all schools. Sufficient booklets were given to each teacher during the SESIP workshop. After administering the instrument, the schools posted the completed instruments to the assessment and examination consultants. Administering of the instruments to students was undertaken by the teachers in the school during "science" lessons. The arrangements for this were planned by the teachers within the school and undertaken when convenient. Most schools did this within one week of receiving the booklets.

10. Feedback and experiences

- reactions from the pupils, if any
- reactions from the persons who collected the data
- ROSE team's general feeling of how well the survey was conducted

Little attempt was made at feedback. Teachers generally reported that they had no problems in administering the questionnaire and reported that students were able to handle all of the questions.

11. Coding (also of the open-ended I question)

- how the coding was done
- who coded the questionnaire
- problems with the coding, if any
- how flippant or incomplete responses were handled
- proofreading and checking of the coding, if any
- at what time the coded file was finalized

The handling of the completed instrument was entrusted to a local consultancy firm with experience in working with encoding and analysis using SPSS. The firm entered all data into the computer using a team of experienced computer operators and checked this for accuracy by two major techniques – a leaving blank column from time to time to guide the operators where they has missed or duplicate a response and then checking that entries in each cell did not exceed the expected response. No questionnaires were rejected and in most cases all items were answered. The coding was completed by October 2003.

The identification of 2 schools was not determined and hence missing data for this aspect was recorded.

The open-ended questions were coded, but not analysed.