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Classroom Assessment Practices in Urban Secondary Science Classes in Bangladesh

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Abstract

Aiming to explore classroom assessment practices in Bangladesh, this study confined on some selected secondary science classrooms. A total of seven schools are selected purposively from seven divisional cities. The General Science class of Class Eight is selected purposively and observed in five consecutive days. The class teachers and students are also interviewed as respondents. This study shows that assessing student learning achievement and feedback are considered as the major objectives of classroom assessment, however, modifying teaching is totally ignored. Classroom feedback is 'right' or 'wrong' oriented followed by task-oriented and self-oriented in nature. Teachers mainly dominate the classroom assessment practices and basically relied on the traditional methods specifically on oral questioning for assessing students' classroom learning. The classroom questions are basically focused very specific or limited responses. Therefore, this study suggests to change the current practices by using several assessment strategies and focus on assessment for students' learning.

1. Introduction

Assessment is an integral and essential part of formal education. The basis of assessment is to measure whether the students achieve the objectives and learning outcomes of curriculum. Here, assessment system is used as indicator for students' competence for further education or for degree and work Assessment, not only, measures learning competency or learning outcomes of pupil and assists to take decision about student learning (Nitko, 2004) but also help in student learning. Therefore, assessment is also a teaching learning approach (Stiggins, 1991).

The most important role of assessment is in promoting learning and monitoring students' progress. According to Angelo (1993), assessment is 'an ongoing process aimed at understanding and improving student learning'. It involves: making expectations explicit and public; setting appropriate criteria and high expectations for learning quality; systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and standards; and using the resulting information to document, explain, and improve performance.

Among different types of assessment, classroom assessment is important one. Classroom assessment is an essential aspect of effective teaching and learning and it is an integral component of the teaching and learning process (Black and Wiliam, 1998). Assessment informs the teacher

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about what students think and about how they think. A teacher needs to know what the extent ability of individual student. And classroom assessment helps teachers to confirm what students already know and what they need to learn (Susuwele-Banda, 2005).

Stiggins (1991) states that teachers use assessments in their classrooms to serve at least three different categories of purposes: (a) as a means of informing decisions; (b) as teaching tools; and (c) as a classroom management or behavior control mechanism to keep students in line.

2. Rationale of the study

Current educational research supports that effective use of classroom assessment promotes student learning. Therefore, it is important to examine how teachers practice assessments inside the classroom. As a consequence, this inquiry investigates secondary science teachers' classroom assessment practice in Bangladesh.

The study results will be beneficial for secondary education sector in Bangladesh. As classroom assessment enhance students learning, the study will find out to what extent the current assessment practices are useful for student learning i.e. students are encouraged what type of learning; how much active they are. Secondary school teachers will be benefited from this study. As it will portray teachers' classroom assessment practices, they will comprehend what they do and actually what should do in classroom assessment. On the other hand, if there is lack of their perceptions i.e. they have misconceptions on classroom assessment patterns, they will overcome these thinking by gaining knowledge through this study. It is also hoped, this study will influence teachers to move authentic classroom assessment practices from traditional assessment system.

3. Statement of the Problem

Classroom assessment is the integral part of daily teaching-learning activities. The study focuses to investigate the classroom assessment which is being practiced currently in secondary science classrooms.

4. Research Questions

The major purpose of this research project is to explore the classroom assessment practices in urban secondary science classes. To achieve the purpose of this study, more specifically, intends to answer the following key questions:

i. What are the purposes of assessing students in classroom?
ii. What are the methods which are commonly using in urban secondary science classroom assessment?
iii. What types of test items are used in science classroom by the teacher?

5. Methodology

This study mainly confines on naturalistic inquiry to elicit data related to teachers' classroom assessment practices of secondary schools. It is carried out based on interpretive mode following mixed method approach.

A total of seven (07) science classrooms of urban secondary school have been chosen purposively from seven divisional cities. The main data sources of the study are the classroom, students and teacher. For ensuring quality data 35 classrooms, 35 general science teacher and 175 students of the selected classroom have been selected following purposive sampling technique.

An observation checklist following 5-point Likert scale for classroom assessment procedure is used in selected classrooms. Moreover, field note approach for detailed description of the assessment tasks as well as any other significant evidence is employed. Two separate semi-structured interview schedules are used for interviewing teacher and students of the selected class. The qualitative data is presented based on the emerged and significant themes. Few quantitative approaches are deployed to draw attention to some qualitative data. Finally the data was analysed following mixed method approach.

6. Results

The results of this study are presented based on the major focuses of the identified research questions.

6.1 Purposes of Classroom Assessment

Teachers assess students' learning outcomes based on the discussed topics in all sessions. Making a connection between students' prior knowledge and new topics and providing feedback to students are greatly considered in 21 sessions. Teachers usually assess prior knowledge at the beginning of the lessons. Monitoring students' learning is observed only in 14 sessions which are mainly through individual works. For example, one teacher asked students to 'draw and label different parts of a typical flower' individually and then monitor one by one.

Teachers argue that at the beginning of lesson they assess students aiming to identify students' prior knowledge, understand students' perception regarding new lesson, and make connection with previous and new lessons, monitor students' learning and provide corrective measures. However, students argue that teachers assess their learning on previous lessons, measure their learning on present lessons and give them suggestions for corrections. They, moreover, notice that teachers rarely observe their activities in classroom except some individual or group works as s/he provides in classroom.

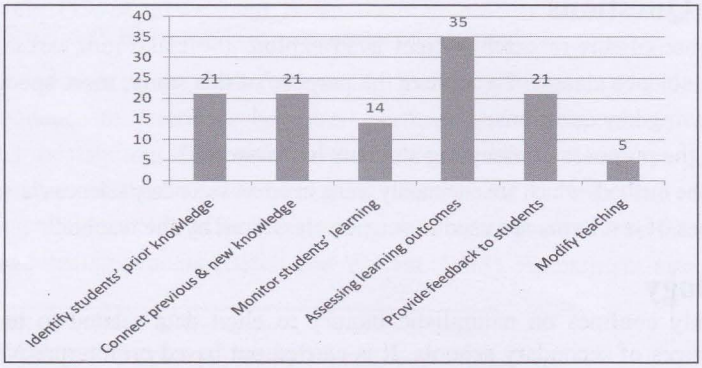

Figure 1: Purposes of Classroom Assessment

The main purpose for assessing at the end is to assess learning outcomes based on the discussed topics. In every class they use assess to identify learning outcomes based on the discussed topics. Although, teachers notice that they monitor student learning, it is hardly observed in only 14 sessions.

According to teachers, another important purpose for assessment is to provide feedback about their learning and support them to correct their mistakes. Usually, they provide feedback to students throughout the class whenever assessment occurs. However, it is observed that teachers use assessment for feedback in 21 sessions. Students also support the observed findings as they inform that teachers give corrections to them in some classes. Actually, teachers do not have much time to provide corrections to students as they assess them at the end of class periods. Unlikely, teachers do not have any intention to modify teaching based on classroom assessment. The students also support that teachers assess them and provide corrections but they teach in the same way as they teach in the earlier part of classroom activities.

In most cases teachers provide feedback through oral instructions and sometimes in written. Students also inform that feedback mainly given through oral instructions followed by written. They argue that they way of feedback depends on the nature of problem arise and supports needed to make the answers correct. However, teachers provide written instruction when procedural feedback is required based on the tasks.

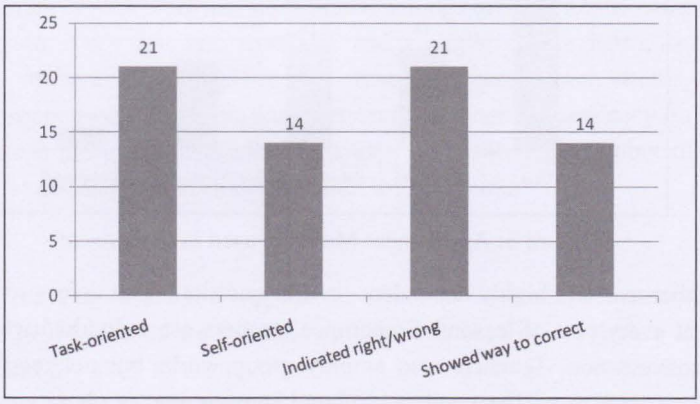

Figure 2: Type of Classroom Feedback

Feedback basically depends on the nature of tasks and individual student's need. It is also observed in classrooms that the nature of feedback, provided by the teachers during classroom teaching-learning activities, is basically right-wrong based followed by task and self oriented. It is highly observed in all classes that teachers give feedback which is allied with classroom tasks. While in 14 sessions, teachers provide self-oriented feedback and show the way to solve problem correctly. However, according to the students, teachers provide feedback, generally, to all students based on the mistakes and basically by indicating right or wrong.

6.2 Methods of Assessment

The teachers articulate during interview that the most common technique used by teacher in classroom assessment is questioning (orally). Sometimes, they assess through written works, individual problem solving, quizzes, and group works. Teachers also employ performance-based assessment strategies as a part of classroom assessment Personal conversation and observation are rarely used for assessing in classroom.

Classroom observations also signify the same picture of classroom assessment practices. Data shows teachers' emphasize on oral questioning in classroom assessment. It is observed that teacher use oral questions everyday to assess students. They also assign written tests and individual works some sessions as part of assessment. Teachers rarely emphasize on group works and usually ignore the other methods like, performance-based assessment, observation, interview, quizzes etc.

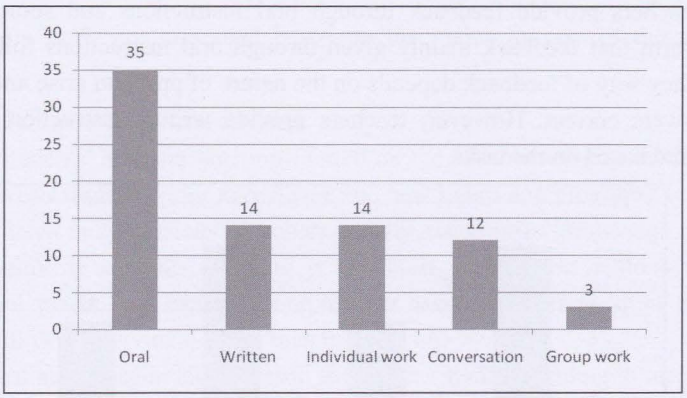

Figure 3: Assessment Methods used in Classroom

Data indicates that teachers highly dependent on oral questioning to assess students' learning and understanding at every part of lessons. Sometimes teachers use individual works, written works, and personal conversation. Teachers also employ group works but not regularly. According to teachers, the main reason of the most use of oral questioning as classroom assessment is the shortage of class duration as well as the large class size. Other assessment devices require more times of a class period. Comparatively more students can be assessed throughout oral questioning than others like written work, group work, quizzes etc.

6.3 Items used in Classroom

Teachers usually use the traditional assessment items for assessing students in every part of classroom teaching-learning activities. They mainly depend on the short-answer type questions to assess students' learning in classroom. According to them, they basically ask the short-answer type items requiring more specific responses at the beginning. Sometimes they use self prepared multiple choice questions or follow the multiple choice questions given in exercises of the

respective lessons. They also consider true/false, completion, and matching type items to assess students but not frequently.

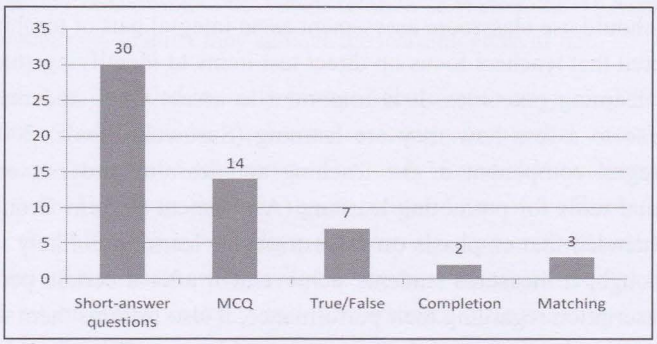

Figure 4: Test Items used in Classroom

Table 4 shows teachers' dependency on short-answer type items to know students' concepts, understanding, and learning outcomes in classroom assessment practices. It is observed that teachers emphasize on short-answer type items in classrooms. They always ask 'what', 'when', or 'which' type questions which require very specific answers. For example, they ask 'What is the scientific name of Man?', 'Which phylum does prawn belongs to?', 'Write the names of five known arthropods' and so on. They also use true/false and multiple choice items to assess students' performance only in some classes. However, teachers ignore essay items, matching and completion in classroom assessment. The basic reason for teachers' dependency on specific answer demanded questions is the insufficient class time as well as the large number of students. They prefer those items for assessing most students within the time limit.

7. Discussion

Classroom assessment is an essential component in effective classroom instructions. According to Black & William (1998), one of the outstanding characteristics of researches on assessment in recent years has been the shift in the focus of mind, towards larger concern in the connections between assessment and classroom learning. This shift has been attached with expectations that improvement in classroom assessment will make a strong contribution to the improvement of learning (Ahmed, 2012). This study focused on the classroom assessment practices to explore the three major aspects of it.

The study revealed that teacher use assessment in classroom activities in every parts of a lesson even for a few moments. However, according to Rahman & Ahmed (2009), the use of classroom assessment as a tool for learning is limited in the Bangladeshi classrooms. Ahmed (2012) furthermore explored that teacher rarely uses assessment for facilitating classroom learning. Classroom assessment needs to be part of a day-to-day teaching and learning. Most of the times teacher specified the time interval s/he assesses students, an indication that classroom assessment

came separate from teaching. It should not be seen as an add-on activity as was perceived by some school teachers (Kadyoma, 2004; in Susuwele-Banda, 2005). As a useful learning tool for student learning, teachers should use classroom assessment as an integral part of teaching learning process. The study discovered that teachers focus on direct test items to identifying students' prior learning and assessing the learning outcomes. It is important to assess what students have achieved but more important also to assess how they are learning (Susuwele-Banda, 2005). Assessment for learning is an integral component of the teaching and learning process, and it is one of the powerful educational tools for promoting learning (Assessment Reform Group, 1999). Brooks & Brooks (1999) contended that emphasis on assessment for learning is likely to improve students' achievement. Although, it measures students' achievement after a certain period of learning and gives numerical description regarding their performance, it also informs them up to what level they accomplished, how much they need to improve, and so on. Therefore it is concluded that assessment for learning takes care of assessment of learning (Susuwele-Banda, 2005).

It also revealed that teachers try to make a connection between students' prior and new knowledge. However, teachers do not use diagnostic assessment to ascertain the current level of understanding (or misunderstanding) that students possess about a concept prior to instruct. Diagnostic assessments reveal "where the students are now" so that teachers can plan appropriate pathways that will lead the students to deeper levels of understanding (Butler & McMunn, 2006). Such assessments are also useful in uncovering student misconceptions about science topics. Therefore, diagnostic assessments are powerful assessment tools that help teachers design instruction that meets students' needs.

Using assessment to monitor students' understanding of scientific concepts is very critical and teachers must organize their classrooms to promote active participation and to give students the freedom to explore ideas (Brooks & Brooks, 1999). This study revealed that teachers have limited ways and methods of assessing students. Teachers mainly use oral questioning to assess their students in classroom. Sometimes teachers give individual home work towards the end of lesson, the tasks are given to the students to study and consolidate what the teachers have just taught although these encourage memorization. Teachers need to use different strategies to monitor students' progress. The nature and format of assessment should be selected to suit the goals that are being assessed. Strategies such as written tasks, home works, quizzes, group work, peer work, assignment, probing questions, observation, clinical interview, and thinking aloud may help teachers to understand the learning processes that students engage in the process of developing learning. When teacher place meaningful assessment at the center of instruction, they give students' insights into their own thinking and growth, and students gain new perspectives on their potential to learn (Susuwele-Banda, 2005).

Teachers rarely use assessment information to modify their teaching although this is an important purpose. The study also examined that no lesson progress really on the basis of students' performance.

Since the purpose of assessment is to help development of ideas, skills and attitudes and to use this information to transfer pupil's learning to next steps (Harlen & Winter, 2004). Therefore, progression of student learning depends on whether they achieve the learning goals or not.

Classroom feedback can be provided in many forms. According to Stiggins (1991) teachers mostly use some forms of feedback, such as, oral communication, nonverbal communication, written comments, performance ratings and test score. The study found that teachers provide feedback mainly through oral form. However, teachers ignore written form of feedback for the classes. The study also explored that although now-a-days right-wrong answer feedback followed by task-oriented and self-oriented feedback are provided in many classes, generally classroom feedback takes place in the form of letting students to know whether their answers are 'right' or 'wrong'. Right-wrong answer feedback focuses on product of students learning not learning process. Like grades and marks, right-wrong answer feedback switches learner's concentration 'how good I am' (Harlen & Winter, 2004) and then pupils look for the ways to obtain the remark 'you are right' rather than at the needs of their learning. But effective feedback inspires students 'how to do it better' (Harlen & Winter, 2004) and it focuses on learners' strengths and weaknesses therefore learning process. It is most effective when it points out strengths in the work as well as areas need improvement (Stiggins et al., 2004). Feedback should be timely, goal-oriented, task-oriented and explicit. It explores the existing learning in details as well as informs learners the ways to achieve goals by fostering learning stage. It should be about the particular qualities of his/her work, with advice on what he/she can do to improve, and should avoid comparisons with others (Black & Wiliam, 1998).

Classroom questioning is fully dominated by teacher. Teachers ask questions as their own choice while posing questions and selecting learners. The study found that open questions are more focused by teachers to evaluate student learning whereas close questions are hardly thrown in classroom. Effective questioning is also an important aspect of the impromptu interventions teacher conduct once the students are engaged in an activity (Black et al, 2004). When the purpose of questioning is to find out learners' ideas and how they are linking new experience to their existing mental frameworks based on prior knowledge, the questions should invite more than a one-word answer; they should encourage learners to say what they really think, not to guess what answer the teacher is looking for (Harlen & Winter, 2004).

Teachers strongly rely on oral questioning followed by written tasks, individual works and conversations. However, group work and other methods are ignored in classroom assessment practices. Assessment techniques are used largely to support one-on-one interactions with students rather than small group activity. Hunter, Mayenga, & Gambell (2006) notified that one of the major factor for less using of group activity is it consumes more class-time and which is threatening for the teacher to complete the course in time. Therefore, teachers can reschedule weekly common time for secondary students. During the time, the teachers can use common

assessment concerns as well as design and share the writing of less traditional items.
Study revealed that teachers do not use performance-based assessments even on an infrequent basis. Similarly, Cooney, Bell, Fisher-Cauble & Sanchez (1996) found that teachers remain hesitant to use performance-based assessments because they lack the confidence to implement this methodology as a fair assessment of student performance. Parsad, Lewis and Farris (in Ohlsen, 2007) found that only 37% felt very well prepared to use student performance-based assessments. The teacher reluctance to use performance-based assessments can often be traced back to previous experiences when execution of such assessments was unsuccessful or the results were inconclusive (Stiggins, 1991). These less than successful attempts appear to discourage teachers to use it in classrooms. Performance-based assessment also takes more time to complete. Therefore, it can affect content coverage which can be a serious concern for high school teachers in today's testing environment (Cooney et al., 1996).

While assessing students in classroom teachers prioritized the short-answer questions in all parts of classroom assessment. Except the short-answer questions teachers also relied on multiple-choice questions, true/false, and matching. Similarly, researchers explored that the mostly frequent used classroom test items are teacher-made essay questions, multiple-choice, true-false, matching, completion, and short-answer items (Hunter, Mayenga & Gambell, 2006; Ohlsen, 2007; Ahmed, 2012). They also explored that these traditional assessment items are often lower in realism and complexity of the tasks assessed, but require limited time to administer and can be scored quickly and objectively. However, Linn & Gronlund (2005) argued that traditional assessment presents a single, highly structured task that does not simulate performance in the real world.

8. Recommendations

Based on the findings of this study some recommendations have been made for improving classroom assessment practices. The recommendations are:

- Assessment for learning should be focused greatly in classroom rather assessment of learning. Teachers should use assessment for the modification of his/her teaching so that it would fulfil the students' needs.
- Through written tasks, alongside oral questioning, brainstorming, peer work, group work, learning by doing students should be encouraged to develop and show understanding of the key features of what they have learned.
- Teachers should employ different types of test items in the assessment process so that students can get the opportunity to show their learning in different ways. Teachers might employ alternative assessment techniques like peer-assessment and self-assessment to make classroom assessment productive.
- Feedback should be formulated so that it guides improvement in learning. Teacher should provide feedback in such way that identify what has been done well and what still needs improvement and give guidance on how to make that improvement.

9. Conclusion

The classroom assessment picture reflected in this study indicates strong continued reliance on traditional methods of assessing student learning: majorly tests and oral questioning. Despite the strong emphasis on shifting the focus of classroom assessment, teachers only occasionally use the alternative assessment techniques. However, teachers included multiple assessment methods throughout the class period thereby blending the traditional assessment strategies with some few alternative assessment practices. The assessment practices focuses only on the learning outcomes of students based on the classroom discussion. Although feedback emphasized in classroom, the ways and nature of feedback are not able to meet students' requirements regarding their learning gaps. Even sometimes these types of feedback become ineffective.

These findings can inform the classroom teachers as well as the school administrators who are involved in maintaining the quality of classroom practices so that they can make some changes in the present classroom assessment practices.

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