AUTHENTIC ASSESSMENT: AN INSTRUCTIONAL TOOL TO ENHANCE STUDENTS LEARNING

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ABSTRACT

This paper underscores the process of using authentic assessment as a learning tool in a school the context of Pakistan. Data was collected through classroom observations, conducting interviews, analyzing relevant documents and maintaining person reflective diary. Findings indicate desirable changes in the perception as well as practices of teachers and students. Replacement of traditional paper-pencil test with authentic assessment resulted in active participation of teachers and students in teaching and learning process. Study finding also reveal considerable improvement in high order skills of the students. They were actively engaged in planning, collecting information and disseminating it to the community. Use of rubric for assessment was found to be very effective in determining a pathway for both the teachers and the students to look for and get to the desirable results.

Key words: Authentic Assessment, Innovative Form of Assessment, Assessment for learning

INTRODUCTION

Assessment is a conventional activity, which is practiced in schools on a day-to-day basis. It is also a process, which helps in developing students' learning. It provides the teacher with an opportunity to review their own teaching to enhance students' learning. Assessment has been viewed by different stakeholders in different ways. The review of the literature reveals that teachers, often view the process of teaching, learning, and assessment as separate tasks. They view that first curriculum is taught, learnt and then assessed. However, authentic assessment considers teaching, learning and assessment as an ongoing, intertwined and all happening at the same time (Puckett & Black, 2000), and that they strongly influence each other. Therefore, to improve the students" learning we need to develop classroom assessments that provide high-quality information about the students' learning Gulikers et al., 2004). And, for this to happen, we need to consider the assessment process as an integral part of our teaching and learning rather than view it as something to do after curriculum writing, teaching, and learning is over. This in turn, will result in a progressive change in curriculum, teaching and learning (Wiggins, 1998; Gulikers et al.). In short, the new goals of science education have raised the need to link science to the broader social context, but assessment practices have yet to catch up with this change. Given the relatively greater importance on assessment in the present era, the new curriculum emphasis may well be ignored unless new approaches to assessment are not designed and implemented soon (Orpwood, 2001).In Pakistan, in most cases, assessment is viewed just as a means for evaluation and the only tool to assess classroom instructions is through paper-and-pencil tests (Halai, 2002). In these assessments students' learning outcomes are measured in terms of what they have memorized at the expense of their conceptual understanding. Subsequently, this paper-and-pencil test does not give the real picture of the students' learning.

Moreover, it is argued that reconceptualization of science education will remain a dream until and unless the assessment is not re-conceptualized (Orpwood, citing Stake &Raizen, 1997). The reviewers of the literature suggest that, for this to happen, schools should move from traditional forms of assessment to new forms of assessment. And, most of them (Wiggins, 1998; Gulikers et al., 2004; Gipps, 1994; Emery, 2001) suggest the authentic assessment as a better replacement for the paper-and-pencil tests. This paper explores the opportunities of using authentic assessment as learning tool.

RESEARCH METHODOLOGY

The purpose of the research was to study the process of implementation of authentic assessment as tool to enhance students' learning in science classroom in a Pakistani school. In this study, within the qualitative paradigm, I used action research. There were two reasons behind his selection; first, to get in-depth understanding of the particular phenomenon which the study aimed to explore. Second, action research provides an opportunity to the teachers to understand their own and learners' behavior which empowers them to make informed decisions, link prior knowledge to new, learn from mistakes, and ask questions and find the answers systematically (as Fueyo&Koorland cited in Mills, 2003, p.10). Moreover, action research has potential to extend and enhance teacher's knowledge and pedagogical skills, which in turn results in professional growth of the teacher.

In this study the Kemmis, Mctaggart&Retallick (2004) model of action research was used. Kemmis et al. (2004) model of action research is a modified version of Lewin's model. This model includes a series of steps in a cycle; to develop a plan, act to implement it, observe the action in the setting and then to reflect on the effects in order to re-plan.

Developing Plan

The action research plan went through the following steps.In the first stage "implementation of authentic assessment in a science classroom" was identified as a general idea for the study, followed by the second step, the reconnaissance stage. During this stage the school was visited for several times, where the study was going to be conducted. In these visits meetings were held with the principal, interviews conducted with the class teacher, some lessons were observed and relevant and available documents, like, lesson plans, test records and student notebooks were analyzed in order to find out about the existing assessment practices/experiences, so that a relevant plan for the implementation of authentic assessment could be developed. In the third stage a general plan was developed for implementation of authentic assessment in the classroom, in the light of findings of reconnaissance stage. The plan consisted of the following steps:

First, the issue identification by students from their own context,

Second, students' planning to solve the issue,

Third, exploration in a real contexts in order to find solution for issue and

Fourth, demonstration of their understanding and solution to the community.

The plan was developed keeping in view the five dimensions of authentic assessment (suggested in Gulikers et al., 2004) which are:

The Authentic Task

A real- world (see table 1) task was developed for authentic assessment which involved the students in the processes such as identifying an issue from their community, planning to solve the issue, exploration and demonstration of their understanding to the community. This task was also planned to allow the students to integrate their knowledge, skills and attitude to analyze and understand the issue and design possible solutions (Gulikers et al., 2004).

Physical Context

The authentic assessment task was divided into different steps which were planned to be carried out by the students in different places both in and outside the classroom. For example, issue identification and planning was done inside the classroom while the exploration (through interviewing people, visiting library, internet and the teacher demonstration) and demonstration of their learning through presentation was done outside the classroom in real context which is an essential element of authentic assessment (Gulikers et al., 2004).

Social Context

During the process of authentic assessment the students also got diverse opportunities to interact with other people (Gulikers et al., 2004). For example, they worked in groups where they were sharing information and collaborating with each other while performing different tasks during the process.

Moreover, they also interacted with different people in the real context while collecting information and giving presentation to the community.

Assessment Results

The students, during the process of authentic assessment explored the issue of noise pollution, got in-depth understanding of the issue and found out some ways of decreasing noise pollution. And, then they communicated their understanding through poster presentation to their community in the real context which was assessed against the criteria [See table 2].

Criteria and Standards

In order to assess students' performance, criteria for assessment and standards for expected competencies are developed in the form of authentic assessment rubric (Gulikers et al., 2004). The criteria was shared with the students before implementation of the authentic assessment, and then it is used to assess and grade students' learning (knowledge, other high-order cognitive skills and performance in the context) in each step of the authentic task (See table 2).

Implementation and Observation Stage

In this stage, the plan was implemented. The authentic task was given to the students in order to enhance students' learning, and also to assess students' learning through authentic assessment. During this stage, the observation of the implementation process also remained continuous to get necessary information on students' learning in order to get feed-back of the teaching and learning process. Questioning and on the spot feedback were used throughout the process to enhance students learning, students were also provided opportunities for discussions and questioning with each other and the teacher. Reflection was maintained throughout the implementation process to understand what was happening throughout the process. Data was collected during teaching in the class for understanding the process of implementation of authentic assessment and expanded it immediately after the class. The class teacher (as a critical friend) also helped me in collecting data on students' role/actions and teacher's role/actions, discussions and students' responses. The students' work samples and tape recorder were also used as data collection tools to understand how to assess and enhance students learning.

The Reflection Stage

Although reflection was an ongoing part of this study but at this stage it was far more crucial as it was the stage to reflect on the whole practices/processes carried out during the implementation stage. While reflecting, the focus was on questions such as:

a. Did I do what I planned to do?
b. What changes need to be made in my plan to implement in future?
c. What was my role during the implementation?
d. What was the role of students?
e. What supported or hindered in implementation?
f. What students' learning was I assessing?
g. How did my implementation enhance students' learning?
h. What strategies were used to enhance students' learning?

This reflection not only remained helpful in assessing the effectiveness of the action, but also in finding out the effects of the course of action.

During the study in different stages data was obtained through observations, interviews, field notes, document analysis (that is teacher lesson plans, syllabus, students' notebooks, test records, test papers, report cards, my lesson plans and assessment plans), students' work, informal talks and group interview (with the focused group students).I also used my own reflective diary, assessment tasks, plans and tools as data collection tools in the study.

Table 1.Authentic Task

Authentic Task
Select an issue from your context/ community and find out an appropriate solution for that. And, communicate the solution that to your community. You can use the following guidelines to complete your task: Identify an important issue (which must be related to any science topic from your textbook) from your context, Develop a plan; how to go about and solve the issue, Explore and collect information from different sources to get in-depth understanding of the issue, ways to solve it, and the science concept, Design a solution (s) and Communicate it to your community

Table 2.Assessment Rubric

Criteria	Excellent (E)	Satisfactory (S)	Not satisfactory (NS)
Analysis of situation and Issue identification	Identified relevant issue and gave at least four reasons/ causes	Identified relevant issue and gave two to three reasons/ causes	Identified irrelevant issue with less then three reasons/ causes
Planning and developing tools	Feasible plan, Organized step by step and steps are properly explained Appropriately time framed. Appropriate and focused tools	Feasible plan, Organized step by step but not explained appropriately Time framed is inadequate. Tools are general or not focused.	Plan is not feasible
Data collection	Data collected from different sources e.g. teaching, interviewing people, internet, books Analyzed properly	Data collected from any two of the following sources e.g. teaching, interviewing people, internet, books Poor analysis of the data	Data collected from less than two sources e.g. teaching, interviewing people, internet, books
Quality End product & content knowledge	The end product communicated through innovative ways like, poster presentation, brochures or writing letters to Newspapers, Content knowledge is relevant and enough Massage or idea communicated clearly Questions were responded to well	The end product communicated through innovative ways like, poster presentation or writing letters to Newspapers, Content knowledge is relevant but not enough. Massage or idea wasn't coming out clearly Questions were not responded to well.	The end product presentation ambiguous and not interesting Content knowledge is not relevant Massage or idea Wasn't coming out clearly Questions were not responded to well
Quality of the Group work	Shares information Shows willingness to listen Questions appropriately Shows respect for others Accepts differing opinions	Any three of the SSQSA given in the Excellent column.	Less than three of any SSQSA given in the Excellent column

Data analysis was an ongoing processwhich started before the data collection and remained continue during and after it (Creswell, 1994). The data collected through the above mentioned sources were regularly analyzed to inform the action steps and to identify and categorize the frequently emerging themes. The results emerging from the final analysis of the data are discussed below.

RESULTS AND DISCUSSION

Authentic Assessment as a Tool for Learning

The analysis of the data indicates that participation of students in authentic assessment task developed their understanding of the scientific concepts 'sound and noise'. The teacher said, "As far as scientific knowledge concerns, they [students]investigated about the concepts sound and noise through different sources developed their understanding, especially about the effects of noise and the ways to control [it]"(interview, April 4, 2006). However, the knowledge which was presented by the students about the noise pollution was not mere reproduction of the scientific knowledge assembled from different sources, but they also collected and analyzed data from the community, monitored sound at different times and gathered people ideas on sound and its effects. As it is claimed that the production of new knowledge requires assembling and interpreting information, formulating ideas and making critiques and then to integrate them in new ways rather simply retrieving and reproducing it in separate atomized forms (Newman and Archbald, 1992). It needs high order skills, like, organizing, synthesizing and integration.

Besides, analysis of the data from interviews, observations, and students work also shows that authentic assessment also developed some high order skills. For example, a student said that they analyzed their environment and identified the issue of noise pollution in order to work on it. Another student said, "To understand the issue, we interviewed different people and searched information from the internet"(Interview, April 4, 2006). As Newman and Archbald (1992) point out, "disciplined inquiry tries to develop in-depth understanding of the problem, rather than only passing familiarity with or exposure to pieces of knowledge" (p.73).In short, the achievements of students during the implementation of authentic assessment were not of that level what one could expect from a disciplined or scientific inquiry. However, noticeable improvement was seen in students regarding some other high-order skills, such as, developing questions, interviewing, collecting data, information (like, a researcher in the real context), analyzing the information, preparing poster presentations and communicating their understanding to their owncommunity.In addition, an amazing change was noticed that they reproduced the knowledge about the scientific concept „noise pollution" but not through rote learning (memorizing). They, first, monitored sound levels, understood it and then communicated their understanding to other people and they themselves were aware of this change. As one student pointed out:

One more thing which I wanted to share is that in paper-pencil test we were memorizing and then reproducing it in the given test. But in authentic assessment we did not memorize anything. We ourselves searched out the answer from different sources working collectively.(Interview, April 4, 2006)

Role of Teacher and Students in Authentic Assessment

During the study in classroom observations and interviews with teachers and focus group of students it was found out that in authentic assessment the role of stakeholders, especially the role of teacher and learners has changed. There were more opportunities found for active participation of learners in the process of authentic assessment as compared to that of traditional testing. During the process of authentic assessment, the students themselves were exploring the issue of noise pollution in order to get in-depth understanding which shows the students self-learning and taking responsibility of their own learning. They also made decisions about the issues to be explored, processes and products of assessment, hence, played the role of decisionmaker.The teacher viewed the role of the teacher during the authentic assessment as a facilitator, helper, encourager and pusher. The teacher saw that the teacher was encouraging the students to ask questions and motivating them through questioning. Furthermore, she noted down in her observation note that:

The teacher is facilitating students through questioning, and pushing students to think, for example, the teacher asked the following questions in group:

a. What was your first step?

b. What do you need to deepen your understanding?

c. What kind of information do you need?

d. From where do you get this information?

e. What will you do with this information? (Field notes, March 8, 2006)

Moreover, while talking about their role one student said, "In test we had more writing role [writing the answers to the questions] but in authentic we have variety in our roles, we do different activities in different places and learn more" (Students' interview, April 4, 2006). It indicates that variation in students' work and work place makes their role more active which, in turn, helps in enhancing students' learning. Hargreaves, Earl and Schmidt (2002) citing Wiggins and McTighe (1998) also support that during authentic assessment students are involved in a variety of activities which make them "active, engaged, and challenged contributors to their own learning" (p. 77). Another student commented on teacher's role in this way, "In the authentic assessment, we found the role of the teacher as a helper and got the chance to improve ourselves during the activity through getting timely feedback" (Students interview, April 4, 2006). It shows that in authentic assessment, the role of a teacher was no longer as an invigilator as in traditional testing. In Authentic assessment, the teacher not only assessed the students' learning but also helped them in accomplishing their task through feedback and feed forward. During authentic assessment, students are involved in real world tasks under the supervision of the teacher which helps them to accomplish their task through timely feedback (Hargreaves, Earl and Schmidt, 2002;citing Torrance, 1998). As I wrote in my reflection:

"when I reflect on my own role during authentic assessment, I found it two folded; as a teacher and as an assessor. I was playing both these roles simultaneously, in order to help the students to accomplish the assigned real world task. Although, it was very challenging but two things; the presence of the critical friend who helped me in observation and group work strategy facilitated the process of authentic assessment". (Personal reflection, March 22, 2006)

CONCLUSION

In conclusion, it could be stated that though authentic assessment is a complex and demanding process but the evidences presented in this study highlight that it is vital for educational reforms in assessments. Authentic assessment is a new notion which provides an alternative to traditional assessment practices. According to this new notion, assessment is a process which facilitates students' learning rather than something to be used just to evaluate the teaching and learning processes. From the study it is also evident that implementation of authentic assessment in any classroom setting changes the role of stakeholders, especially the role of teachers and the students. During the process of authentic assessment the learners were active and were taken over the responsibility of their own learning and on the other hand, the teacher's role was just facilitation of the process of learning. A major aspect of the authentic assessment is that many assessments are completed to gauge students processing of learned information. Although, the students' reflections and self-evaluations were not graded through authentic assessment checklists and rubrics but these were found beneficial indicators of students' progress.

In concluding the implementation of the authentic assessment with the targeted eight class of a community-based school in Pakistan, it can be said that the use of authentic assessment methods were strongly appreciated by students. The payback(s) of authentic assessment methods are extremely beneficial for students. More students are able to excel with the use of the authentic assessment and learning. Authentic assessment strongly emphasizes meta-cognition and processing of information which is the key to learning. Despite this, the use of authentic assessment methods may become more widespread if accepted and adopted at a national level

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