

Formative Assessment Practices for Students with Hearing Impairment

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ABSTRACT

Background: Formative assessment is a very important part of any learning process and needs due concentration. This study investigates the formative assessment practices of teachers 'of students with hearing impairment in special schools at Mysore. *Objective:* The main objective was to examine teacher's assessment practices across curricular areas (scholastic and Co-scholastic areas) for students with hearing impairment. *Sample:* Purposive sampling technique was used to select the sample. All teachers working in three special schools in and around Mysore were included as sample in the study. *Design:* Survey research design was used. *Tool:* Data was collected from special teachers using a Teacher Made Test – Rating Scale (TMT-RS) developed during the study. Assessment practices of teachers were examined across teaching levels; scholastic and co-scholastic areas; teaching years and assessment training. *Result:* The data was analyzed quantitatively using non-parametric tests including Mann-Whitney U test, Kruskal-Wallis one way ANOVA, Friedman's test and Wilcoxon's Signed Rank test. The findings of the study highlight that there is a need for teachers' special training on preparation of appropriate teacher made tests as a part of formative assessment to be used in their respective classrooms to carry out ongoing assessment of students with hearing impairment. *Conclusion:* This study investigates teacher's assessment practices within the framework of literature on classroom assessment and also assessment practices of teacher's of children with hearing impairment were examined across Teaching Levels, Curricular areas (Scholastic and Co-scholastic areas). The study underscored the need for teachers' special training on preparation of appropriate teacher made tests as a part of formative assessment to be used in their respective classrooms to carry out ongoing assessment of children with hearing impairment.

Keywords: Formative assessment, students with hearing impairment, special school, curricular areas, teaching levels

INTRODUCTION

To promote equity, education has to be accessible to all children in the country. This was envisaged by many government policies and the most recent act -Right to Education Act, (2009). However, the accommodation to be made in the process of delivering education effectively to all is still a distant affair although some practical solutions are being worked upon. Assessment is the most important component to measure effective educational delivery. In recent years, assessment done by teachers in the classrooms has received enormous attention as teachers are mostly responsible for testing student's learning and the progress made according to the objectives framed. The current scenario is that teachers in regular classrooms use a variety of

assessment techniques to test the learning and progress of typically developing children in their classrooms as recommended by 'National Curriculum Framework 2005' and 'Continuous and Comprehensive Evaluation'. Teachers have to use the previous knowledge of students to give new knowledge and formative assessment can help this process to add meaning to teaching (Bennett, 2011). Teachers using effective assessment practices on their students are able to make students think clearly, generate ideas for them and encourage them to know their present understanding levels (Windschitl, Thompson, Braaten & Stroupe, 2012). Investigations of teachers' assessment practices revealed that teachers were not well prepared to meet the demand of classroom assessment due to inadequate

training (O' Sullivan & Chalnack, 1991). Many teachers incorporated non-achievement factors such as effort, attitude, and motivation in the grades (Griswold, 1993). Despite the afore mentioned problems, many teachers believed that they had adequate knowledge of testing (Kennedy, 1993) and attributed that knowledge to experience and university coursework (Wise, Lukin, & Roos, 1991). Most of the educators have stated that assessment-related activities have an impact on students' achievement goals as they convey important information on what is valued by educators in the classroom (Harlen & Crick, 2003). Identifying assessment practices beneficial to the implementation of desirable achievement goals becomes essential in the classroom (Mertler, 2003). In a randomized experimental study, effects of a digital formative assessment tool on spelling achievement were studied, the results did not show that the use of digital formative assessment tool affected spelling achievements among third grade students (Fabera & Visscherb, 2018).

NEED FOR THE STUDY

Although the literature aforementioned highlighted various perspectives of assessment, none of these studies have revealed about assessment practices of teachers' working with children with hearing impairment. The Government of India enacted a law for person with disabilities stating that the appropriate government and the local authorities shall take the measures to make suitable modifications in the curriculum and examination system to meet the needs of students with disabilities such as extra time for completion of examination paper, facility of scribe or amanuensis, exemption from second and third language courses (chapter 3RPWD Act, 2016). Research on formative assessment practices of teachers is very less related to different subject areas as well (Coffey, Hammer, Levin & Grant, 2011). The systematic strategies for implementing feedback as a part of formative assessment practices to support learning of students and also simpler and less time consuming strategies of providing feedback should be explored to combat the challenge of increasing strength of students (Srivastava, Waghmare, & Vagha, 2015). And also research related to formative assessment practices of children with hearing

impairment, considering the importance of assessment and training of these children. Therefore, research which needs consideration is how teachers of students with hearing impairment are assessing children's learning and progress in their classrooms. The present study was taken up by the investigators seeking to examine formative assessment practices of teacher's of children with hearing impairment across teaching levels, curricular areas, teaching years and assessment training with the following objectives

OBJECTIVES

- To examine teacher's assessment practices across teaching levels for students with hearing impairment.
- To examine teacher's assessment practices across curricular areas (scholastic and Co-scholastic areas) for students with hearing impairment.
- To examine teacher's assessment practices across teaching years and
- To examine teacher's assessment practices based on the assessment training received by them.

METHOD

Sample:

Purposive sampling technique was used to select the sample. Based on this technique, three special schools for children with hearing impairment in and around Mysore were included in the study. All the thirty-three teachers working in these schools were included as sample.

Design:

Survey research design was used.

Tool:

Data was collected from special teachers using a Teacher Made Test – Rating Scale (TMT-RS) developed during the study. Assessment practices of teachers were examined across teaching levels; scholastic and co-scholastic areas; teaching years and assessment training

(i) **Investigator-Developed Tools for Assessing:**

- (a) Listening and speaking skills.
- (b) Ability to respond to oral queries at word, phrase and sentence levels.
- (c) The ability to spontaneously contribute to oral conversations.
- (d) Skill for reading comprehension.
- (e) Writing abilities at word, phrase and sentence levels.

Procedure:

Prior appointment was taken from the Principals of the respective schools to explain and conduct the study in their school with a permission letter. As per the date and time allotted, investigator went to the schools and explained about the importance of the research study. TMT-RS were distributed to the teachers under the supervision of the investigator. Later, instructions were given to all the teachers in a group to fill the details appropriately. Any doubts of the teachers during the filling in of TMR-RS were personally clarified by the investigator.

RESULTS

The type of data collected was normative data. The data was analyzed quantitatively using appropriate statistical techniques such as Non-parametric tests including Mann-Whitney U test, Kruskal-Wallis one way ANOVA, Friedman's test and Wilcoxon's Signed Rank test. Due to small size sample and absence of normal distribution of data, non-parametric tests were used. The specific tests used are as follows.

1. Mann-Whitney U test was used to compare responses between two groups namely *Teacher training program* and *Gained out of one's experience* with respect to assessment training.
2. Kruskal-Wallis one way ANOVA test was used to compare responses among four groups namely *less than or equal to five years; above five or equal to 10 years; above 10 or equal to 15 years and above 15 years* with respect to teaching years.
3. Friedman's test was used to compare six domains (within groups)
4. Wilcoxon's Signed Rank test was used to compare six domains in pairs.

Assessment practices across Teaching Levels

As can be seen in the above table 1, because of very small samples and unevenly distributed data over the variable under study, no inferential statistics tests have been done. However, descriptive statistics of the data revealed that there are differences in the data. Among the five independent groups of teaching levels, it is found that primary teacher's performed least (median = 68.09) compared to their other counter parts in assessment practices. Similarly, it is found that teacher's at primary and upper primary level performed better (median = 76.67) compared to their other counter parts in assessment practices.

Assessment practices across Scholastic & Co-scholastic areas

As can be seen in the table 2, descriptive statistics of the data revealed that there are differences in the data. Among the six independent groups of scholastic areas, it

Table 1**Descriptive statistics of assessment practices with respect to Teaching levels**

S.No.	Teaching levels	N	Mean	SD	Median
1	Primary	4	70.00	7.1	68.09
2	Upper primary	6	73.65	10.4	74.28
3	Secondary	10	74.09	7.3	75.24
4	Primary and Upper primary	10	76.95	5.1	76.67
5	Upper primary and secondary	3	71.75	10.4	75.24

Table 2

Descriptive statistics of assessment practices with respect to scholastic areas

S.No.	Scholastic areas	N	Mean	SD	Median
1	Only language	7	70.20	10.5	69.52
2	Mathematics	2	77.14	5.3	77.14
3	Social sciences	7	77.14	4.6	77.14
4	Others	10	76.47	3.2	76.19
5	Language and science	1	63.81	.0	63.81
6	Language and social sciences	6	72.22	9.97	71.43

Table 3

Descriptive statistics of assessment practices with respect to Co-scholastic areas

S.No.	Co- Scholastic areas	N	Mean	SD	Median
1	Art	4	76.43	4.8	77.61
2	Music	3	81.59	6.0	78.09
3	Dance	3	76.83	8.5	72.38
4	Physical Education	5	73.71	7.8	75.24
5	Others	18	72.11	7.5	73.81

is found that teachers who were teaching both language & science performed least (median = 63.81) compared to their other counter parts in assessment practices. Similarly, it is found that teachers who were teaching Mathematics and Social Sciences performed better (median = 77.14) compared to other their counter parts in assessment practices.

As can be seen in the table 3, descriptive statistics of the data revealed that there are differences in the data. Among the five independent groups of scholastic areas, it is found that teachers who were teaching music performed better (median = 78.09) as compared to their counterparts in assessment practices. Similarly, it is found that teachers who were teaching dance performed least (median = 72.38) as compared to their counterparts in assessment practices. However, these differences are not statistically significant.

Assessment practices across Teaching years

Results gave a chi-square of 0.36 with an associated

significance level of 0.948. Thus, it was concluded that there is no significant difference in the assessment practices of teachers with respect to their teaching experience. Even though there was no significant difference found, among the four independent groups of teaching years (experience), it is found that teachers who had less than or equal to five years of experience performed better (median = 76.19) compared to their counter parts in assessment practices.

Assessment practices across Assessment Training

The Mann-Whitney U was found to be $|Z|$ value as 0.275 with an associated significant level of 0.783. Therefore, it can be concluded that there is no significant influence of assessment training of teachers on assessment practices. This finding is supported by Roos (1991), who stated that knowledge of assessment is attributed to university course work and experience. None of the teachers mentioned that they had attended a separate certificate program on how to do assessment

Table 4

Descriptive statistics and result of Kruskal-Wallis one way ANOVA of assessment practices with respect to teaching years

Teaching years	N	Mean	SD	Median	Chi-Square	df	Sig
Less than or equal to 5 years	7	73.33	7.4	76.19	0.36	3	0.948
Above five or equal to ten years	9	75.66	6.5	74.29			
Above ten or equal to fifteen years	7	74.01	10.3	71.42			
Above 15 years	9	72.80	7.1	74.29			

Table 5

Descriptive statistics and result of Mann-Whitney test of assessment practices with respect to assessment training

Assessment training	N	Mean	SD	Median	Z	Sig
Teacher training program	21	73.61	8.37	74.29	0.275	0.783
Gained out of one's experience	10	74.09	5.72	74.29		

training. It is important that teachers have some certificate program on how to carry out assessment for children with hearing impairment as assessment being a most important activity of a teacher. This is supported by O'Sullivan & Chalnick, (1991), who studied teachers' assessment practices revealed that teachers were not well prepared to meet the demand of classroom assessment due to inadequate training.

Comparison of six domains of Assessment practices

As mentioned earlier, Friedman's test was used to compare the six domains of assessment practices of all 33 teachers in the study. The results are as follows:

As shown in Table 6, among the six domains of assessment practices, it is found domain 4 Using performance tests by teachers of children with hearing impairment during assessment was less (1.45) as compared to other domains. Domain 1 Giving

instructions were scored highest (4.74) as compared to other domains. Results gave a chi-square of 56.52 with an associated significant level of 0.000. Thus, it was concluded that there is significant difference in the assessment practices of teachers with respect to different domains. As significant difference was found among domains further analyses has been done as follows:

Comparison of six domains of Assessment practices in pairs

Wilcoxon Signed Rank test was used to find out those domains in pairs which had to the significant difference.

As can be seen in the table 7, results of Wilcoxon's Signed Rank test for pair-wise comparison at 0.05 level of significant reveals domain 1 giving instructions is the highest which is found to have significant difference

Table 6
Friedman Test comparing the six domains of assessment practices

Domains	N	Mean	SD	Median	Chi-Square	Sig
1. Giving instructions	33	86.67	15.3	93.33	56.52	0.00
2. Using different types of test items	33	76.36	15.0	80.00		
3. Using different levels of test items	33	74.07	17.7	77.78		
4. Using performance tests	33	46.72	13.8	41.67		
5. Non -achievement based grading factors	33	67.6768	32.2	66.67		
6. Communication test results, ethics and grading	33	77.2727	9.9	77.08		

Table 7
Wilcoxon's Signed Rank test to compare six domains in pairs

Domains	1. Giving instructions	2. Using different types of test items	3. Using different levels of test items	4. Using performance tests	5. Non-achievement based grading factors	6. Communication test results, ethics and grading
1. Giving instructions		S	S	S	S	S
2. Using different types of test items			NS	S	NS	NS
3. Using different levels of test items				S	NS	NS
4. Using performance tests					S	S
5. Non-achievement based grading factors						NS
6. Communication test results, ethics and grading						

(S= Significant, NS= Not significant)

with all other domains. Similarly, Domain 4 Using performance tests is the lowest which is found to have significant difference with all other domains. However, other domains 2 Using different types of test items;

domain 3 Using different levels of test items; domain 5 Non-achievement based grading factors and domain 6 communication test results, ethics and grading were found to have no significant difference.

DISCUSSION

Instrument:

Based on the theoretical framework delineated by the literature on classroom assessment (Zhang & Burrystock, 1994; Stiggins 1994) an assessment tool namely, *Teacher Made Test Rating scale (TMT-RS)* was prepared. It was given to 11 experts in the field of Education and Special Education to check for content and face validity. Their suggestions were incorporated and final tool was prepared. Later, TMT-RS was translated to Kannada language and was given to three experts in Kannada language to check for the language compatibility. After including their suggestions, final Teacher made Test-Rating Scale (TMT-RS) was developed. It has altogether 35 items divided into six domains covering broad range of assessment activities given in the literature: Domain 1: Giving instructions(5 items) It included all the related items with respect to giving directions to students during the test (e.g., *I mention the subject in my test paper*); Domain 2: Using different types of test item (5 items) It includes all the statements related to using different types (e.g., *I include multiple-choice questions in my test paper*); Domain 3: Using different levels of test items (3 items) It includes the statements related to different levels (e.g., *I include application based questions*); Domain 4: Using performance tests (4 items) It includes all statements related to activity (e.g., *I give hands on activities while testing students*); Domain 5: Non-achievement based factors (2 items) It includes statements not related to subject knowledge (e.g., *I include student's attendance while giving marks*) and Domain 6: Communication test results, ethics and grading(16 items) It includes statement related to communication, ethics and grading related to the test results (e.g., *I give oral feedback to students after the test*).

Procedure for scoring:

All the statements in the TMT-RS were based on literature on assessment practices to be used frequently by teachers during assessment in their classrooms. Consequently, High score in the statements pertaining to one domain represents teachers using mostly and low score in the statements pertaining to one domain

represents teachers not using very often. Accordingly, teachers were requested to mark their responses appropriately on all the 35 items. The rating scale was designed to measure teachers' assessment with following scale ranging from 0 (not at all), 1 (sometimes), 2 (very often) to 3 (always). Based on the responses of the teachers, marks were given as 0 marks for 0, 1 mark for 1 and 2 marks for 2 and 3 marks if the teachers have marked 3. Total score and an overall score for each domain was calculated for every teacher.

CONCLUSION

This study investigates teacher's assessment practices within the framework of literature on classroom assessment and also assessment practices of teacher's of children with hearing impairment were examined across Teaching Levels, Curricular areas (Scholastic and Co-scholastic areas). The results underscored the need for teachers' special training on preparation of appropriate teacher made tests as a part of formative assessment to be used in their respective classrooms to carry out ongoing assessment of children with hearing impairment. This is in accordance with the findings of Stiggins (1997), who highlighted that there is a need for teachers to develop assessment skills in classroom. In addition to this, teachers' need to use performance tests as a part of their formative assessment practices especially for children with hearing impairment. A study by Gotwals, Philhower, Cisterna, & Bennett (2015) who examined and analysed the formative practices of 13 mathematics and science teachers through videos found that teachers with more expertise in formative assessment let students' guide their teaching.

RECOMMENDATIONS

The strengths and weak areas in terms of assessment practices brought out by the Teacher Made Test - Rating scale may be introspected for improving the assessment skills of teachers of students with hearing impairment. The study also reveals that there is a need to improve the existing educational assessment practices of teachers of children with hearing impairment in schools. In a nutshell to recommend, considering the present day assessment practices of teachers of students with hearing impairment and the challenges ahead, there is a

need for teachers to make use of multiple observations and several different assessment methods over time which can partially compensate for flaws in any one method. Especially multisource 360 degree assessments can be used where there is place for peer assessments, self assessment, portfolios and caregivers assessment reports as well.

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