UMT Education Review (UER)

Volume 4 Issue 2, Fall 2021
ISSN(P): 2616-9738 ISSN(E): 2616-9746
Journal DOI: https://doi.org/10.32350/uer
Issue DOI: https://doi.org/10.32350/uer.42
Homepage: https://journals.umt.edu.pk/index.php/uer

Article: **Modifications Accepted and Used by Teachers in Inclusive Classrooms of Punjab, Pakistan**

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Article DOI: https://doi.org/10.32350/uer.42.05

Article History:
Received: September 7, 2021
Revised: December 28, 2021
Accepted: December 28, 2021
Available: December 31, 2021

Citation: Chauhdry, N. (2021). Modifications accepted and used by teachers in inclusive classrooms of Punjab, Pakistan. *UMT Education Review*, *4*(2), 93–108.

Journal QR

Article QR

Nabila Chauhdry

Indexing

A publication of the
Department of Education, School of Social Sciences and Humanities,
University of Management and Technology, Lahore, Pakistan

Modifications Accepted and Used by Teachers in Inclusive Classrooms of Punjab, Pakistan

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Abstract

The current study was conducted to unfold the acceptability and application of different modifications made by teachers in Punjab, Pakistan which aim to accommodate children having various special needs in the classrooms in the province of Punjab. This was a quantitative study and survey method was used for collecting data from 124 primary school teachers performing their duties in 11 districts of Punjab, Pakistan. Descriptive statistics, independent sample t test, and ANOVA were used to analyze the data. The findings of the survey revealed that there was no significant difference in the acceptance and use of different modifications by teachers working in rural as compared to urban areas. Commonly used modifications were considered appropriate for all the students. Most commonly accepted and used modifications included adapting content presentation (simplifying text, highlighting important information in text, using graphic organizers), varying the pace of instruction, designing student engagement activities, and improving the learning environment (decreasing environmental distracters, using peer tutors, and cooperative learning). Adaptations to tests and evaluations were neither commonly accepted nor the most used modification by the teachers. The strict policy of schools regarding grading and testing and teachers' lack of training in adapting assessment can be the possible reasons behind it.

***Keywords*:** adaptations, inclusive classroom, inclusive education, modifications, special needs

Introduction

Inclusive Education is considered the best way of providing equitable and quality education to diverse learners (Fazal, 2012). In inclusive education, every student despite the differences in caste, religion, ethnicity or ability is

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placed in his/her nearby school with age mates and provided with equitable quality teaching, supportive environment and assistive aids to succeed in achieving expected learning outcomes (Bui et al., 2021).

Gradually a fair deal of consensus has developed in the society in favor of inclusion. But in order to ensure that all the students in an inclusive school have meaningful interaction with learning environment, a structured and systematic support mechanism has to be in place (Lamichhane, 2015; Scanlon & Baker, 2012; Siddik & Kawai, 2020).There are diverse opinions on nature of basic principles for putting inclusion in action (Stein, 2016).

Studies argue in favor of curriculum adaptation which can be beneficial in meeting diverse needs successfully and ensuring success of students (Kalbach & Forester, 2006). It has also been revealed through research that differentiated approaches not only increase students' participation but also yield better results in terms of learning (King et al., 2008). Key to differentiation lies with modification. Modifications in curriculum, instruction and assessment require lots of hard work and planning on the part of teacher (Allan & Brown, 2001; Sharma, et al., 2014). Therefore, training in and resources for curriculum modification becomes vital for the teachers to work effectively in inclusive classrooms (Davies, 2006; Sharma, et al., 2014).

Literature Review

Since teachers play a vital role in students' success, well-prepared and motivated teachers are among the most important features for equitable inclusive education (Alwis, 2015; Cretu & Morandau, 2020). In order to get a well-trained teaching force with a positive mind set up gradation of pre-service and in-service training is crucial (Frey, 2009; Morina et al., 2020). Another important factor is availability of resources for modifications, so teachers do not have to go through extensive exercise of selecting and preparing adaptations for each student (European Agency for Special Needs & Inclusive Edu, 2015).

Abbas et al. (2016) have reported in their study carried out in three districts of Punjab province of Pakistan, that less than twenty five percent regular school teachers had some information regarding classroom practices in an inclusive environment, especially in the presence of students with

special needs present in class. Mostly teachers considered themselves incapable with reference to handling students with special needs and owing to this feeling of inability; they were reluctant to accept special needs children as their students.

Process of inclusion brings in diversity and accepting behavior in school culture but it can be very challenging for the teacher if he/she does not plan instructions and materials well ahead of time (Gibb et al., 2007). Teachers who know special needs of their students, discuss lessons with special education experts, use online and other resources for guidance and plan modifications accordingly are usually more successful and comfortable in classrooms with diverse learners (Carrington & Elkins, 2002; Leifler, 2020).

Different terms have been used to explain variations made to curriculum. Curriculum modification means "changes made to contents, instruction, learning materials and expected learning outcomes to match the learning needs of a student"(Comfort , 1990). Modification process covers different significant parts of curriculum such as subject matter, teaching methodology, and learning environment, teaching materials and expected outcomes of learning process (King-Sears, 2001). According to Switlick (1997) curriculum modification is used to facilitate a learner in overcoming his/her special needs and to provide him/her with an enabling learning environment.

What happens in the class i.e., teaching – learning process is soul of entire efforts for inclusion. Therefore, the innovation, creativity and technical efforts made by teachers to cater to the diverse learning needs of their students, are most important (Bui, et al., 2020). Information gathered on class modification from practicing teachers in a given society can help in developing a practical guide for teachers (Cretu & Morandau, 2020).

In the Punjab province of Pakistan, different schools are accepting students with special needs in their regular schools but teachers lack required training and support skills. Not much research has been done in Pakistan to explore current classroom practices regarding curriculum modifications and adaptations. Exploring present modifications used and preferred by teachers in local context of Pakistan can add valuable

information to available research-based knowledge. This information can also be used to develop a teacher guide on adaptations and modifications.

This study was aimed at gathering empirical data from teachers working in the Punjab province about modifications they accept and use in their inclusive classroom.

Objectives of Study

This study was aimed to:

- Discover the acceptability and usage of various curriculum modifications by teachers who have students with special needs in their classrooms in the province of Punjab.
- find out differences and similarities between the most accepted versus most used modifications; and
- analyze the similarities and differences in accepting and using different curriculum modifications by teachers, working in urban and rural areas.

Methodology

This study is quantitative in nature. It was a survey type study The TAUS scale was used for data collection. This tool was developed by Boulton (2003). This instrument has been used in other studies as well (Williamson, 2011). For this study, special permission was obtained from the author for using the scale and translating it in Urdu. It was formatted as a bilingual tool where original statements in English were kept alongside Urdu translation of the statements. A separate sheet for recording demographics of respondents was also attached with the tool.

Scale had 28 items, and respondents were asked to rate each item based on two aspects i.e. “acceptability” of specific modification and “use” of specific modification. “Acceptance” was to be rated according to the extent that a teacher found a certain accommodation / modification in line with his / her teaching view point. Under “use” dimension they were asked to discuss how often they have used certain modifications in last couple of years.

A pilot study was conducted to observe understandability and convenience of use of the instrument for the respondents.10 teachers from

3 schools were included in the pilot study. After pilot study, a survey pack was prepared. It included a cover letter explaining purpose of study. It also included the bilingual survey form and separate sheet for reporting demographics.

Sampling

Inclusion criteria for selecting the cluster were: "regular schools having policy of admitting students with special needs"; "chain of schools under one schooling system or independent schools being facilitated in inclusive education by experts of a specific organization"; having "schools in different areas of Punjab"; and "having minimum five special needs students enrolled". Therefore, based on the inclusion criteria three clusters of schools were identified. These clusters represented inclusive schools functioning in the Punjab province yet had their own unique characteristics.

In the second stage convenient sampling technique was used to select schools from all clusters. Once a school was selected, all teachers of that school who had special children in the class were included in the sample. Sample represented 11 districts / cities of the Punjab (Lahore, Rawalpindi, Chakwal, Faisalabad, Mianwali, Bhakar, Muzafargarh, Sheikhupura, Sargodha, Jelum and Kasur). Out of all the Teachers included in sample (n=124), 73 teachers (58.9%) were working in urban areas and 41.1% (n=51) were working in schools situated in rural areas of the Punjab.

Data Collection

For Cluster 1 and cluster 3 help of their field teams was taken for data collection. After taking the training, the field teams took the survey pack to the target schools during their monitoring and guidance visits. Details of Schools included in cluster 2 were taken from the head office and each school was contacted via phone and afterwards survey pack was either delivered personally by the researchers or through post. Mostly schools returned the filled survey forms in three to four weeks on average.

Data Analysis

In order to analyze the data SPSS version 21.0 was used. Cronbach alpha coefficient was used for calculating reliability of TAUS scale. For dimension of acceptability Cronbach Alpha was .88 and for use dimension

it was estimated as .87. Reliability estimates for scale suggest reasonable consistency in scores.

Majority of respondents (91.8%) were female teachers (n=114). Male teachers (n=10) constituted the 8.1% of that sample. The mean age of the teachers was 30.44 years (SD=8.22). Range of age of teachers included in the sample was 18 to 58 years. Years of education ranged from 12 to 18 years. Half of the (50.8%) teachers (n=63) had done bachelors. Teaching experience ranged from less than 1 year to 30 years of working as a teacher. Mean teaching experience as reported by the teacher was 5.83 years (SD=4.79).

A small group, 23 teachers (18.7%) had attended no training, while 54% (n=67) had attended 1-2 training workshops on inclusive education.

Frequencies for response on each item for acceptability and use of modification/adaptation were calculated. Table 1 shows modifications accepted for most of studentsin rank order. Table 2 represents the rank order of most used modifications as reported by the teachers.

Table 1

Modification Accepted for Most of Students (in Rank Order)

#	Sum	Mean	Rank order	Description of modification
1	543	4.38	1	Reduce the pace or speed of the instruction
2	539	4.35	2	Reduce distractions in the environment
3	538	4.34	3	Divide learning tasks in to small pieces and learn in sequence
4	537	4.33	4	Combine oral instruction with the written
5	529	4.27	5	Highlight the text to make key information known
6	525	4.23	6	Simplification of text by reducing the length and complexity.
7	522	4.21	7	Using graphic formats and pictures to make learning easier
8	520	4.19	8	Using simpler and shorter questions according to the requirements

Table 2

Modifications used for Most of Students (in Rank Order)

#	Sum	Mean	Rank order	Mostly used modifications and adaptations
1	479	3.86	1	Vary the time of instruction for students
2	477	3.85	2	Lessen environmental distractions (e.g., keep noise levels down, reduce the amount of visual stimuli in the classroom)
3	469	3.78	3	Break tasks or concepts into smaller units of learning
4	468	3.77	4	Provide both oral and written directions
5	458	3.69	5	Highlight key information or concepts in text
6	454	3.66	6	Simplify text material (e.g., reduce the complexity and length of units, provide graphic aids that summarize material, provide self-correcting materials)
7	451	3.64	7	Use graphic organizers in lessons
8	448	3.61	8	Use different levels of questions for students based on ability (e.g., lower level questions)

Inferential Analysis of Data

Mean scores of teachers from urban and rural areas were analyzed to identify if the difference in their responses was substantial. Table 3 shows results of independent sample t-test on acceptability of different modifications.

Table 3

Independent Samples t-test on Acceptability of Modification by Teachers from Rural and Urban Areas

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower Upper
Accept	Equal variances assumed	20.040	.000	.227	122	.821	.53398	2.34962	-4.11733 5.18529

	Equal variances not assumed	.248	119.321	.805	.53398	2.15699	-3.73697	4.80492

Independent samples t-test showed that difference was not significant in the mean values of both group on acceptance of modifications (t = .248, df = 119.321, sig. = .805, mean urban=111.671, mean rural = 111.137). Independent samples t-test on use dimension indicated the same.

Table 4

Independent Samples t-test on use of Modification by Teachers from Rural and Urban Areas

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower Upper
Use	Equal variances assumed	4.945	.028	-.393	122	.695	-.91190	2.32213	-5.50878 3.68498
	Equal variances not assumed			-.416	121.943	.678	-.91190	2.19004	-5.24732 3.42353

Levene's test for equality of variance indicated that variance of both groups was significantly different (f = 4.945, sig. = .028). Therefore, lower row of the table was considered.

Independent samples t-test revealed that mean values of both groups were not significantly different on acceptance of modifications (t =-.416, df = 121.943, sig. = .678, mean urban=97.0685, mean rural = 97.9804). Therefore, results indicated that modifications used by teachers working in rural and urban areas of the Punjab were quite similar.

Analysis of Variance (ANOVA)

Mean scores of teachers from all three clusters of sample were compared to calculate if the mean of scores of teachers from different clusters were

significantly different on acceptability and use dimensions of the scale. Table 5 shows the results of ANOVA for acceptability dimension.

Table 5

Result of ANOVA on Acceptability of Modifications

		Sum of Squares	Df	Mean Square	F	Sig.
Acceptance	Between Groups	144.198	2	72.099	.434	.649
	Within Groups	20086.512	121	166.004		
	Total	20230.710	123			

ANOVA table shows that the means of scores of teachers from different clusters on acceptability of modifications are not significantly different (df = 2, f = .434, sig. = .649).

Similarly analysis of variance (ANOVA) was used for comparison of the mean scores of teachers from various clusters of sample on use of different curriculum modifications and adaptations.

Table 6 shows results of analysis of variance (ANOVA) which reveals that the means of scores of teachers from different clusters of sample on use of curriculum modifications are not different significantly (df = 2, f = .785, sig. = .458). Since ANOVA is insignificant, no post-hoc analysis is desired.

Table 6

Results of ANOVA on use of Modifications

Dependent Variable		Sum of Squares	Df	Mean Square	F	Sig.
USE	Between Groups	253.468	2	126.734	.785	.458
	Within Groups	19523.137	121	161.348		
	Total	19776.605	123			

Discussion and Conclusion

In acceptance dimension most important finding was that teachers accepted many modifications as useful for all the students in the class. This finding is strongly supported by the literature as many studies have shown that use of different methods of instructions and ways of presenting the content benefits the whole class and increases the overall students' performance (Ainscow & Tweddle, 2003; Bouillet, 2013; Rose & Meyer, 2002; Engelbrecht et al.,2015).

Another important finding was that teachers across work settings (i.e. urban and rural) and across clusters (having different target population, rules and resources) accepted modifications and were providing accommodations to make students having various special needs a part of teaching – learning environment.

It was discovered that most of the accepted adaptations were mostly in presenting the content of learning, i.e., the way materials to be learned was presented to the students e.g., supporting oral directions with written instructions, using highlighting strategies to help students grasp the key points in a given task and pacing the instruction rate according to the needs of the students. Other adaptations which were accepted for most or all of the students were related to process of learning or the way students interacted with content to make sense of it. Most of the process related adaptations included the use of practical activities and manipulative, adjusting the classroom environment to reduce distractions and to use different work arrangements e.g. peer tutoring and working in cooperative group.

Adapting content and process of learning according to requirements (i.e. interests, learning styles and readiness) is strongly incongruent with the basic principles of differentiated learning (Anderson, 2007) and with the two basic underlying rules of universal design of learning i.e. various ways of representation and various means for involvement (Hall et al., 2012).

This study discovered that out of most frequently used adaptations four were also most accepted by the teachers. These modifications which were most accepted and most frequently used were: controlling environmental distractions from classroom; changing the rate or pace of instruction;

highlighting the important information in a given text; and providing instruction both in oral as well as in writing. It demonstrates that teachers working in different private schools of the Punjab tend to accept adaptations in the way they present their information. It can be derived that they are more convenient in accommodating their instructional pace and style to facilitate all learners in the class.

Findings also indicate that teachers frequently used questions of varying difficulty level, divided lessons into small understandable parts and used graphic organizers for facilitating learning.

Findings of other studies (Boulton, 2003; Williamson, 2011) have indicated that when teachers think that certain adaptations are effective, they do not hesitate to invest extra time in it. In contrary, present study indicated that teachers were of the view that small group arrangements, use of peer tutors and cooperative learning groups could be affective for most or all students. However, different group arrangements were not reported among the most frequently used adaptations. Change in work arrangements requires more time and flexible classroom settings (Hall et al., 2012). Therefore, it may be due to these constraints despite accepting different group arrangements effective teachers were not frequently practicing it. Another reason can be lack of training in using such strategies.

This study has also revealed that teachers included in this study neither accepted nor used adaptations in the way students demonstrated their learning. A reason supported by the literature can be that strict grading system didn't allow teachers to differentiate the formative and summative assessments (Bui et al., 2010; Williamson, 2011). Another barrier can be that teachers were not well trained in adapting assessment and evaluation process (Hall et al., 2012).

Recommendations

On the basis of the findings of the current study, the following recommendations are made to improve classroom practices and the quality of teaching in inclusive classrooms of Punjab, Pakistan.

- In service teacher trainings should be designed to equip teachers so they can handle diversity (including special needs) in their

classrooms. The Directorate of Staff Development and affiliated departments should develop modules on inclusive education for newly inducted trainees, school heads, and promotion related trainings and trainings specially for teachers from pre-primary and primary schools.

- Regular schools have a very strict grading criterion and usually the performance of teachers is measured based on the results of their students. For this reason, teachers hesitate in taking students with special needs in their class. Schools should revise their students' performance evaluation system and should adopt a more diversified and flexible system of evaluation.
- Government and non-government organizations should collaborate and share resources to develop more motivated and trained teachers.
- Use of accessible ICT is very important in facilitating the education of diverse learners in the classroom. New technologies should be introduced in schools and teachers should be trained in using these technologies to support the teaching-learning process.
- Teacher guides on adaptations and modifications should be developed and made available to the teachers working in inclusive classrooms.

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