Exploring the challenges in classroom assessment: A mixed-method study of secondary schools in Pakistan

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Article Info	ABSTRACT
	In the process of classroom assessment, data is collected regarding the skills, understanding and knowledge of students. It has very important role in enhancing academic achievement of students. Present study was designed at exploring the challenges of classroom assessment. The sample of study contained a sample of 360 participants and a concurrent mixed-method design was deployed to conduct the research. Data collection was carried out using researchers' self-developed questionnaire. The collected data was analyzed using statistical software of SPSS version 24.0 for descriptive and inferential stats. For collection and analyses of qualitative data, classroom observation and semi-structured interviews were also conducted. The study explored those major challenges included lack of interest of both, the parents and the students; insufficient guidance on the assessment by school administration; and less or no provision of professional training in assessment to the teachers. It was recommended that the school administration should take appropriate steps for the involvement of all stakeholders. Extensive professional training should be provided to all the teachers on regular basis by the concerned departments.

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1. INTRODUCTION

Assessment in education is a continuous procedure of collecting and analyzing data of the students about their abilities, knowledge and comprehension during specific duration of an academic session [1], [2]. It plays a very significant role in teaching-learning process [3]. It is a fact that assignments, learning behavior and academic achievement are interconnected. The classroom assessment plays a key role in the whole process of educating the students [4], [5]. This process is very important and useful for schools, teachers, and students. Teachers know well about its importance and they keep on working the tools and methods to measure the learning of students. However, they should follow new and modern techniques while assessing the students [6]. Moreover, the quality and method of assessment affect the learning and academic achievement of students [7]. The teachers who prefer to adopt modern techniques of classroom assessment produce better results and satisfaction among the students [8].

Basically, the process of classroom assessment involves measuring, judge and evaluating the overall learning of any student. It can be subdivided into formative and summative assessments. During formative assessment, teachers evaluate the performance and understanding throughout the academic session. It helps them to rectify teaching strategies and enhance interest among students. While in summative assessment, the evaluation of student is done after completing a semester, session, or year [9], [10]. Enhancing academic

achievement of students has a vital importance in the process of learning of students. Almost every teacher wishes and focuses to improve the level of academic achievement of student throughout the world [11]. Paper examinations were started in Massachusetts state during 19th-century to make a measurement of academic learning of students. Meanwhile, school administration should play its role to improve students' academic achievement and they were made responsible for enhancement of academic learning [12]. A variety of methods are used to judge the academic achievement by the teachers. Different report cards have been prepared by the teachers to convey the results of students to their parents [13].

There are different views and thoughts on conduct of procedure of classroom assessment. Many of them prefer to follow the multiple choice and essay type questions. They think that traditional techniques are better to make a measurement of academic achievement of students. Many others prefer to adopt modern methods including creative writing, peer assessment and self-explanatory notes. In their view, it is a good way to explore learning, comprehension and application of subject knowledge [14], [15]. Some essential classroom assessment formats include basic assessments, embedded assessment, paper/pencil tests, verbal intelligence, discussion, presentation tasks, checklists, investigative, projects, extended or unit projects and portfolios. Basic assessments are used to measure the basic knowledge of the learners. Embedded assessments use subjective and objective test items to judge student attainment. Paper/pencil tests are helpful in the evaluation of student learning experiences during session. Verbal intelligence is used to determine oral communication skills of students. The learning of students is evaluated using a discussion format. It is used during the semester. Presentation tasks are used to measure the response of students to specific issues. Checklists are used to monitor and record the subjective information of students. This format is applied throughout the semester. Investigative projects are used to determine the exploration skills of students. Extended or unit projects are used to evaluate the application of knowledge and skills of students. Portfolios allow students to present their ideas. These are used throughout the semester. Here basic assessments, embedded assessment, paper/pencil tests, verbal intelligence, discussion, presentation tasks, checklists, and portfolios are used during the semester whereas investigative projects, extended or unit projects are used at the end of semester [16].

Teachers face different challenges while judging and evaluating the students. One of the major challenges is the short duration of the subject period. It hurdles the conduct of the effective assessment. An excessive number of students in a class causes difficulty in marking essay-type questions [17]. Teachers have to face political or external pressures during the conduct of classroom assessments. The complex structure of society also creates a hurdle. The phenomenon of globalization is affecting the process of classroom assessment, in one way or the other. Moreover, current practices in classroom assessment are not supporting the students in knowledge comprehension, practical application, and expression of skills. As the assessment process increases the load of work of teachers and students, so they do not feel at ease with it. Teachers are also of the view that it overburdens them and also causes them to slow down the process of teaching and learning. Students think that the process of classroom assessment is merely a method of recalling and reproducing knowledge [18]. Low-quality assessment material is a challenge for teachers as it badly affects the conduct and management of the whole assessment process. Students show less interest in attempting such tests. It is difficult for teachers to manage sufficient time for preparation, administration, and evaluation of assessment tasks due to which quality of assessment tasks is affected [19]. The federal government of Pakistan has established the Federal Government Educational Institutions (FGEIs). These institutions aim to provide education to the students residing in cantonments and garrisons throughout the country.

The major objective of this research was to assess challenges in classroom assessment in FGEIs. As classroom assessment plays a significant role to enhance student achievement, so the findings of this research are expected to help improve the academic achievement of students at the secondary school certificate (SSC) examination level. Research questions of this study included: i) Which tools and formats of classroom assessment, are being used in FGEIs?; ii) What are the challenges in classroom assessment in FGEIs? Moreover, several research hypotheses were also tested in this study: i) Do the teachers differ in their opinions on challenges in classroom assessment in FGEIs, based on gender?; ii) Do the teachers differ in their opinions on challenges in classroom assessment in FGEIs, based on age, experience, academic qualifications, professional qualifications and training?

2. RESEARCH METHOD
2.1. Research design
This research followed a concurrent nested mixed-method research design as it is helpful when data from one portion of the population is to be collected quantitatively and from the second portion of the population qualitatively. The data is collected simultaneously [20]. In this study, quantitative data was collected from students and teachers whereas qualitative data was collected from school principals.

2.2. Population and sampling
2.2.1. Quantitative data

Study population contained all teachers and students of secondary schools of FGEIs. For selection of sample, a concurrent mixed methods sampling method was deployed. It uses both probability and purposive sampling strategies to select the sample for a mixed-method study [20]. Quantitative data of the study was collected using probability sampling technique and for the collection of qualitative data purposive sampling technique was deployed. Table 1 presents population and sample of the study.

Table 1. Population and sample of the study

FGEIs location	Total secondary school teachers	Selected secondary school teachers	Total secondary school students	Selected secondary school students
Peshawar	45	20	885	25
Wah	35	16	743	15
Chaklala	45	18	832	25
Rawalpindi	47	18	841	25
Kharian	15	09	280	05
Lahore	15	11	335	05
Multan	21	19	365	15
Bahawalpur	10	09	135	15
Karachi	14	13	180	15
Quetta	12	10	115	05
Gujranwala	20	17	190	15
Fazaia	22	20	260	15
Total	295	180	5161	180

2.2.2. Qualitative data

Purposive sampling technique was used for collection of qualitative data. A total of 12 school principals and 24 secondary school teachers were purposefully selected for this research project. This collection helped researchers to conduct semi-structured interviews and classroom observations.

2.3. Instrumentation

Research instrument helped the researchers to collect data from the participants. This data is further analyzed to answer the research questions. In this way the selection and implementation of research instrument is very significant. Instrumentation of the study included a research questionnaire, semi-structured interview, and qualitative classroom observation.

2.3.1. Research questionnaire

The researchers developed a research questionnaire for quantitative data collection. A thorough review of past researches was carried out to prepare the research questionnaire. Moreover, expert opinion was sought to modify the research questionnaire. These steps helped researchers to ensure the consistency and validity of items in the questionnaire. It included 20 items. Different dimensions like tools, formats, and challenges of assessment were included. For the purpose of pilot testing, this questionnaire was administered to 12 teachers and 40 students. The overall value of Cronbach's alpha for this questionnaire was found to be 0.76. Table 2 shows the reliability values for the classroom assessment dimensions.

Table 2. Reliability values for the classroom assessment dimensions

Element of assessment	Number of items	Cronbach's alpha
Tools	05	0.75
Formats	05	0.73
Challenges	10	0.80
Overall	20	0.76

2.3.2. Semi-structured interview

Semi-structured interviews provide the researcher with an in-depth view of the research problem and help them to get maximum information in a short period [14]. In this mixed-method study, the researchers conducted semi-structured interviews with principals to obtain information regarding tools, formats, and challenges of classroom assessment. The data obtained through these interviews were transcribed, coded, and interpreted accordingly.

2.3.3. Qualitative classroom observation

A relationship between hypothetical statements and ground reality can be established using qualitative classroom observations. These support the researchers in complementing the findings and interpreting the results in a better way [21]. Hence, qualitative classroom observations were also made in this study to obtain a real picture of the research phenomenon.

2.4. Data collection and data analysis

As the study involved human, a formal approval of ethics committee was obtained from the Division of Education, University of Education, Lahore, Pakistan to conduct the research. Moreover, informed consent of the respondents was also obtained. Finally, the researchers visited the schools, to collect the quantitative and qualitative data. Research questionnaires were briefly explained to the respondents. The collected quantitative data was then saved, analyzed and interpreted using SPSS version 24.0. Frequencies, mean and standard deviation were calculated for descriptive analyses. Whereas, independent sample t-test and one way ANOVA were deployed, using inferential stats.

3. RESULTS AND DISCUSSION

3.1. Demographic information of teachers

There were 58 teachers of age group 21-28, 92 teachers of age group 29-39 years, 22 teachers of age group 40-49 and 8 teachers of age group 50-59. Moreover, there were 60 teachers with experience of 1-9 years, 112 teachers with an experience of 10-19 years, and 8 teachers with experience of more than 20 years. Furthermore, there were 141 teachers with M.A./M.Sc. academic qualifications, 33 teachers with an academic qualifications of M.Phil/MS and only 6 teachers with academic qualifications of doctorate degree. Similarly, teachers having professional qualifications of B.Ed. constituted the major part of the population of the study with a frequency of 135 and teachers having professional qualification of M.Ed. constituted the minor part of the population of the study with a frequency of 8. Teachers with B.Ed. (Hons) and M.A. (Education) as professional qualification were also part of the study with frequencies of 15 and 22. As far as, assessment training is concerned, a major portion of the population of the study with a frequency of 136 has received no training. Only, a minor part of the population of the study has received training in assessment for one month or more than one month with frequencies of 32 and 12 as presented in Table 3.

Table 3. Demographics of the respondents

Demographic	Variables	Frequency
Age (Years)	21-28	58
	29-39	92
	40-49	22
	50-59	8
Experience (Years)	1-9	60
	10-19	112
	20 and more	08
Academic qualification	M.A./M.Sc.	141
	M.Phil/MS	33
	PhD	06
Professional qualification	B.Ed.	135
	B.Ed. (Honors)	15
	M.Ed.	08
	M.A. (Education)	22
Training in assessment	No training	136
	One month	32
	More than one month	12

3.2. Which tools and formats of classroom assessment, are being used in FGEIs?

Table 4 presents the tools and formats in classroom assessment. It can be analyzed that items 1, 2, and 3 have high mean scores of 3.11, 3.14, and 3.18 for teachers, respectively. Moreover, items 4 and 5 have relatively low values of the mean of 1.49, and 1.54 for teachers, respectively. Similarly, it can also be analyzed that 1, 2, and 3 have high mean scores of 3.09, 3.06, and 3.11 for students, respectively. Moreover, items 4 and 5 have relatively low values of the mean of 1.52, and 1.57 for students, respectively. Finally, it can be deduced that the most common tools in classroom assessment include group work; class tests; and class exercise. Similarly, the least common tools include trial work during lessons; and homework.

Moreover, it can be analyzed that items 6, 7, and 8 have high mean scores of 3.12, 3.16, and 3.17 for teachers respectively. Moreover, items 9 and 10 have relatively low values of the mean of 1.44 and 1.41 for

teachers respectively. Similarly, it can also be analyzed that 1, 2, and 3 have high mean scores of 3.14, 3.18, and 3.15 for students, respectively. Moreover, items 4 and 5 have relatively low values of the mean of 1.46 and 1.48 for students, respectively. Finally, it can be deduced that the most common formats in classroom assessment include true/false questions; multiple type questions; and essay type questions. Similarly, the least common formats include completion items; and matching items.

Table 4. Tools and formats in classroom assessment

Dimension of classroom assessment	Description	Teachers		Students	
		SD	M	SD	M
Tools	1. Group work	3.11	0.46	3.09	0.47
	2. Class test	3.14	0.48	3.06	0.45
	3. Class exercise	3.18	0.39	3.11	0.34
	4. Trial work during lessons	1.49	0.35	1.52	0.37
	5. Homework	1.54	033	1.57	031
Formats	6. True/false questions	3.12	0.41	3.14	0.48
	7. Multiple choice questions	3.16	0.43	3.18	0.44
	8. Essay type questions	3.17	0.38	3.15	0.34
	9. Completion items	1.44	0.36	1.46	0.37
	10. Matching items	1.41	0.35	1.48	0.36

In the classroom of Teacher C, it was noted the teacher was using group work as a tool for classroom assessment. During classroom observation of Teacher J, it was noted that the teacher was telling the students about the importance of group work, class tests, and class exercise. In another class of Teacher M, it was observed that the students were engaged in-class exercise. Moreover, it was observed that the Teacher A was giving the test which was composed of multiple-choice and essay-type questions. During classroom observation of Teacher E, it was noted that the teacher was taking the oral test and true/false questions were being asked.

> *"Class exercises and tests are vastly used by the teachers in my school at the secondary level as tools in classroom assessment. This results in better preparation of students for the SSC Examination in FBISE."* (Principal B)
> *"I advise my teachers to use a variety of tools in classroom assessment including trial work during lessons, class exercise, trial work during lessons, class tests, and homework. At the secondary level, I advise the teachers to follow FBISE instructions regarding the assessment of students. A large majority follows multiple-choice and essay-type formats during the conduct of classroom assessments."* (Principal C)
> *"My institution is continuously producing the best results at SSC Level in FBISE. A major reason for it is the usage of all classroom assessment formats including reason-matching items, true/false questions, completion items, and essay-type and multiple-choice questions."* (Principal G)
> *"Teachers in my school use multiple-choice and essay-type questions as per the paper pattern of FBISE. It builds confidence among the students and ultimately my school succeeds to achieve a good position at SSC level examination."* (Principal J)

3.3. What are the challenges in classroom assessment in FGEIs?
Table 5 shows views of teachers and students on challenges in classroom assessment. It can be analyzed that items 15, 16, 17, 18, 19, and 20 have high mean scores of 3.41, 3.47, 3.32, 3.36, 3.49, and 3.48 for teachers, respectively. Moreover, items 11, 12, 13, and 14 have relatively low values of the mean of 1.93, 1.95, 1.98, and 1.84 for teachers. Similarly, it can also be analyzed those items 15, 16, 17, 18, 19, and 20 have high mean scores of 3.36, 3.42, 3.31, 3.37, 3.48, and 3.46 for students. Moreover, items 11, 12, 13, and 14 have relatively low values of the mean of 1.91, 1.93, 1.99, and 1.85 for students respectively. Finally, it can be deduced that the most common challenges classroom assessment include some of the students habitually remains absent on test day; some of the students show less interest in assessment tasks; the response of the parents on assessment tests and its results poor; the school do not have adequate materials for the conduct of assessment tasks; the school do not have adequate materials for the conduct of assessment tasks; the administration of my school does not provide sufficient guidance on assessment; I need extensive professional training in assessment; and teachers appreciate the students who show good performance in tests. Similarly, the least common challenges include classroom assessment causes to increase teacher's load of work; it takes much time of my class time; I lack proper skills to prepare, conduct, and evaluate assessment tasks; and sometimes, students do not submit their test for checking.

Table 5. Challenges in classroom assessment

Challenges	Teachers		Students	
	SD	M	SD	M
11. Classroom assessment causes to increase teacher's load of work.	1.93	0.35	1.91	0.31
12. It takes much time of my class time.	1.95	0.33	1.93	0.34
13. I lack the proper skills to prepare, conduct, and evaluate assessment tasks.	1.98	0.36	1.99	0.32
14. Sometimes, students do not submit their tests for checking.	1.84	0.43	1.85	0.45
15. Some of the students habitually remain absent on test days.	3.41	0.51	3.36	0.53
16. Some of the students show less interest in assessment tasks.	3.47	0.60	3.42	0.62
17. Response of the parents on assessment tests and their results is poor.	3.32	0.57	3.31	0.57
18. The school does not have adequate materials for the conduct of assessment tasks.	3.36	0.52	3.37	0.51
19. The administration of my school does not provide sufficient guidance on assessment.	3.49	0.53	3.48	0.55
20. I need extensive professional training in assessment.	3.48	0.56	3.46	0.58

During classroom observation of Teacher A, it was noted that the attendance of students was poor. The teachers stated that some of the students habitually remain absent on test day. In another classroom of Teacher N, some of the students were not taking interest in the assessment task. The teacher explained that these students have less attention to their and their parents do not respond positively to assessment test and their results. In the classroom of Teacher P, it was observed that the teacher was in professional training in assessment. The teacher stated that school administration neither provided adequate materials nor sufficient guidance on assessment.

> "*My teachers are facing several challenges in classroom assessment. Some of these include the habitual absence of some students on test day and less interest in assessment tasks, poor response and less cooperation of parents.*" (Principal D)
> "*Some of the teachers lack professional assessment training and they have less interest in conducting assessment tests, too. This results in poor academic achievements of their students.*" (Principal I)
> "*My teachers are already overburdened with routine teaching and classroom maintenance duties. So, they are unable to manage time for preparation, conduct, and evaluation of assessment tasks. Moreover, the school administration is not providing adequate materials and sufficient guidance on assessment. So, it becomes very difficult for teachers to complete the process of assessment tasks efficiently.*" (Principal O)

3.4. Inferential stats
To verify hypothesis 1, an independent sample t-test was deployed using SPSS (21.0). The result obtained has been shown in Table 6. This can be analyzed that male and female teachers have different opinions on challenges in classroom assessment in FGEIs as there exists a mean difference of 5.57 with t equals to 2.71 at sig. value of .001.

Table 6. Differences in challenges in classroom assessment, based on gender

Gender	N	M	SD	Df	MD	T	Sig
Male	75	21.41	4.93				
				149	5.57	2.71	.001
Female	75	26.98	4.98				

To verify hypothesis 2, an ANOVA test was deployed using SPSS (24.0). The result obtained has been shown in Table 7. This can be analyzed that teachers of different ages do not differ in their opinions on challenges in classroom assessment in FGEIs as ANOVA ($F_{(2,177)}=.472$, p=.219). Moreover, teachers with different levels of experience, academic qualifications, professional qualifications and training have a significant difference in their opinions on challenges in classroom assessment, as showed by ANOVA ($F_{(4,175)}=5.542$, p=.000), ANOVA ($F_{(2,177)}=25.928$, p=.000), ANOVA ($F_{(3,176)}=25.122$, p=.000), ANOVA ($F_{(2,177)}=52.066$, p=.000), respectively.

The study assessed tools, formats, and challenges in classroom assessment in FGEIs. The most common tools in classroom assessment included group work; class tests; and class exercises and the most common formats in classroom assessment included true/false questions; multiple type questions; and essay type questions. These findings are in line with previous reports [19], [22]–[26]. Similarly, most common challenges in classroom assessment included: Some of the students habitually remaining absent on test day; Some of the students showing less interest in assessment tasks; Response of the parents on assessment tests

and its results is poor; The school do not have adequate materials for the conduct of assessment tasks; The school does not have adequate materials for the conduct of assessment tasks; The administration of my school does not provide sufficient guidance on assessment; I need extensive professional training in assessment. These results are similar to the findings of previous research in a similar area [27]–[30].

Table 7. Differences in challenges in classroom assessment

Dimension		Sum of squares	Df	Mean square	F	Sig
Age	Between groups	49.531	2	12.368	.472	.219
	Within groups	7934.462	177	39.351		
	Total	7983.993	179			
Experience	Between groups	936.214	4	234.054	5.542	.000
	Within groups	7390.764	175	42.233		
	Total	8326.978	179			
Academic qualifications	Between groups	1886.772	2	943.386	25.928	.000
	Within groups	6440.206	177	36.385		
	Total	8326.978	179			
Professional qualifications	Between groups	2705.578	3	901.859	25.122	.000
	Within groups	6318.222	176	35.899		
	Total	9023.800	179			
Training	Between groups	3084.343	2	1542.171	52.066	.000
	Within groups	5242.635	177	29.619		
	Total	8326.978	179			

4. CONCLUSION

The study explored tools, formats and challenges in classroom assessment in FGEIs. It was concluded that major challenges included lack of interest of both, the parents and the students; insufficient guidance on the assessment by school administration; less or no provision of professional training in assessment to the teachers. Teachers of different ages do not differ in their opinions on challenges in classroom assessment teachers but they differ with different levels of experience, academic qualifications, professional qualifications and training. It was recommended that the school administration should take appropriate steps for the involvement of all stakeholders. Extensive professional training should be provided to all the teachers on a regular basis.

REFERENCES

[1] P. Marriott and A. Lau, "The use of on-line summative assessment in an undergraduate financial accounting course," *Journal of Accounting Education*, vol. 26, no. 2, pp. 73–90, Jan. 2008, doi: 10.1016/j.jaccedu.2008.02.001.
[2] C. R. Reynolds, R. B. Livingston, and V. Willson, *Measurement and assessment in education*, 2nd ed. Allyn & Bacon/Pearson Education, 2006.
[3] H. S. Dhindsa, K. Omar, and B. Waldrip, "Upper Secondary Bruneian Science Students' Perceptions of Assessment," *International Journal of Science Education*, vol. 29, no. 10, pp. 1261–1280, Aug. 2007, doi: 10.1080/09500690600991149.
[4] P. Black and D. Wiliam, "Assessment and Classroom Learning," *Assessment in Education: Principles, Policy & Practice*, vol. 5, no. 1, pp. 7–74, Mar. 1998, doi: 10.1080/0969595980050102.
[5] D. Bryant and M. J. Driscoll, *Exploring Classroom Assessment in Mathematics: A Guide for Professional Development*. Virginia: National Council of Teachers of Mathematics, 1998.
[6] A. J. Nitko, *Educational assessment of students*, 3rd ed. New Jersey: Merrill Prentice Hall, 2001.
[7] H. Dixon and M. Haigh, "Changing mathematics teachers' conceptions of assessment and feedback," *Teacher Development*, vol. 13, no. 2, pp. 173–186, May 2009, doi: 10.1080/13664530903044002.
[8] M. Elkatmß, "An analysis of perceptions of classroom teachers regarding their use of alternative assessment and evaluation techniques in the Turkish course," *International Journal of Educational Research and Reviews*, vol. 3, no. 3, pp. 149–154, 2015.
[9] R. Stiggins, "From Formative Assessment to Assessment for Learning: A Path to Success in Standards-Based Schools," *Phi Delta Kappan*, vol. 87, no. 4, pp. 324–328, Dec. 2005, doi: 10.1177/003172170508700414.
[10] R. J. Marzano, *Classroom Assessment and Grading That Work*, 1st ed. Virginia: ASCD, 2006.
[11] M. D. Miller, R. L. Linn, and N. Gronlund, *Measurement and Assessment in Teaching*, 11th ed. Merrill Pearson Education, 2013.
[12] T. M. Haladyna, S. M. Downing, and M. C. Rodriguez, "A Review of Multiple-Choice Item-Writing Guidelines for Classroom Assessment," *Applied Measurement in Education*, vol. 15, no. 3, pp. 309–333, Jul. 2002, doi: 10.1207/S15324818AME1503_5.
[13] J. H. McMillan, "Secondary Teachers' Classroom Assessment and Grading Practices," *Educational Measurement: Issues and Practice*, vol. 20, no. 1, pp. 20–32, Oct. 2005, doi: 10.1111/j.1745-3992.2001.tb00055.x.
[14] E. B. Fiske, *Education for All: Status and Trends. Assessing Learning Achievement*. Paris: UNESCO 2000.
[15] S. S. A. Rahim, G. Venville, and A. Chapman, "Classroom Assessment: Juxtaposing Teachers' Beliefs with Classroom Practices," in *Australian Association for Research in Education: International Education Research Conference*, AARE, 2009.
[16] T. A. Angelo and K. P. Cross, *Classroom Assessment Techniques: A Handbook for College Teachers*, 2nd ed. John Wiley & Sons, Inc., 1995. doi: 10.2307/2943957.
[17] Z. Zhang and J. A. Burry-Stock, "Classroom Assessment Practices and Teachers' Self-Perceived Assessment Skills," *Applied Measurement in Education*, vol. 16, no. 4, pp. 323–342, Oct. 2003, doi: 10.1207/S15324818AME1604_4.
[18] A. Tashakkori and C. Teddlie, *SAGE Handbook of Mixed Methods in Social and Behavioral Research*. California: SAGE Publications, Inc., 2010. doi: 10.4135/9781506335193.

[19] E. K. Kipkorir, "Classroom assessment practices by mathematics teachers in secondary schools of Kenya," Master Thesis, University of Nairobi, 2015.

[20] C. Teddlie and F. Yu, "Mixed Methods Sampling: A Typology with Examples," *Journal of Mixed Methods Research*, vol. 1, no. 1, pp. 77–100, Jan. 2007, doi: 10.1177/1558689806292430.

[21] W. D. Schafer and R. W. Lissitz, "Measurement Training for School Personnel Recommendations and Reality," *Journal of Teacher Education*, vol. 38, no. 3, pp. 57–63, May 1987, doi: 10.1177/002248718703800312.

[22] C. Campbell and J. A. Evans, "Investigation of Preservice Teachers' Classroom Assessment Practices During Student Teaching," *The Journal of Educational Research*, vol. 93, no. 6, pp. 350–355, Jul. 2000, doi: 10.1080/00220670009598729.

[23] S. L. Senk, C. E. Beckmann, and D. R. Thompson, "Assessment and Grading in High School Mathematics Classrooms," *Journal for Research in Mathematics Education*, vol. 28, no. 2, pp. 187–215, Mar. 1997, doi: 10.5951/jresematheduc.28.2.0187.

[24] M. Thomas, "Teachers' Beliefs about Classroom Assessment and their selection of Classroom Assessment Strategies," *Journal of Research and Reflections in Education*, vol. 6, no. 2, pp. 103–112, 2012.

[25] A. Pauline *et al.*, "Current assessment practices in schools in Malta and Gozo – a research report," *Journal of Maltese Education Research*, vol. 1, no. 2, pp. 57–94, 2003.

[26] G. S. Kotzé, "Issues related to adapting assessment practices," *South African Journal of Education*, vol. 22, no. 1, pp. 76–80, 2002.

[27] J. Mouton and H. C. Marais, *Basic concepts in the methodology of the social sciences*. HRSC Press, 1990.

[28] S. Shazadiy and A. Rafa, "A Study of Classroom Assessment Practices: Challenges and Issues in the Context of Public Secondary Schools of Karachi Pakistan," *American Journal of Educational Research and Reviews*, vol. 3, no. 1, 2018.

[29] S. Hussain, N. Shaheen, N. Ahmad, and S. U. Islam, "Teachers' Classroom Assessment Practices: Challenges and Opportunities to Classroom Teachers in Pakistan," *The Dialogue*, vol. XIV, no. 1, pp. 87–97, 2019.

[30] İ. Buabeng, A. B. Atingane, and İ. Amoako, "Practices, Challenges and Perceived Influence of Classroom Assessment on Mathematics Instruction," *International Journal of Assessment Tools in Education*, vol. 6, no. 3, pp. 476–486, Oct. 2019, doi: 10.21449/ijate.616617.

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