

Assessment Tools and Strategies used by Teachers of Public Sector Colleges of Lahore District: A Mixed Method Study

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Abstract

Assessment is the focal element for improving students' learning, therefore the efforts for handing teachers with assessment skills and competencies are also increasing. The study aimed at investigating assessment tools and strategies used by the teachers of public sector colleges of Lahore district using mixed method approach. Researcher opted mixed method approach for research because it allows researcher to collect data from multiple resources i.e., quantitative and qualitative. The sequence of the activities was QUAN→qual, where emphasis was given on quantitative phase. Quantitative sample was selected using two-stage random sampling technique in which 8 colleges (4 girls and 4 boys) were selected randomly and then 81 male and 55 female teachers from each college were selected randomly. Data was analyzed by applying t-test and ANOVA. Researcher opted multiple-case study design in this phase because teachers (cases) were embedded in context, and interviewed a sample of four teachers. Analysis of the data in the quantitative phase reveals that teachers' most practicing assessment tools and strategies are traditional ones i.e., tests, essays, questioning, oral quizzes. On the other hand, four not used and least reported tools and strategies by the teachers are peer evaluation, case studies, anecdotal records and conferences. Qualitative phase responses of the teachers highlighted a contradiction with quantitative phase. In quantitative results, contracts and student journals were reported as sometimes used, but in qualitative responses these are responded as never used by the teachers. It was recommended to the policymakers to improve the standardized examination system and incorporate assessment of higher order and 21st century skills and teachers to divert their focus from traditional assessment tools and strategies to the alternative ones.

Keywords: *Assessment tools and strategies, Teachers, Students, Classroom, Public Colleges*

Introduction

Assessment is the most focusing element in the educational setting that is getting high attention in all over the world for ensuring accountability of educational systems (Kubiszyn & Borich, 2016). Assessment use for the purpose of improving learning that term emerge as formative assessment is increasing in the recent era (Monteiro et al., 2021). Because of focus on the assessment for improving students' learning, the efforts for handing teachers with assessment skills and competencies are also increasing. Though, number of researchers reported that teachers' assessment skills of conducting effective assessment of students lies in the areas of improvement (Acar-Erdol & Yıldızlı, 2018; OECD, 2019; Sewagegn, 2019). This refers us to conduct evidence-based studies on finding out the ways that improve assessment practices of teachers. To determine what teacher need, first we should find out what teachers practice during assessing the learning of their students. It will allow us to understand where our teachers are standing in the level of their assessment skills expertise, and where they need improvement.

There is large number of national and international research conducted on exploring teachers' assessment practices. A mixed study conducted by Williams-McBean (2022) on assessment tools and strategies used by teachers in Jamaican secondary school she suggested conduct further study in different context to explore the teachers' practices in other contexts. Many international studies had been conducted on identifying assessment practices of teachers at school level, but there are few evidences at college level (Acar-Erdol & Yıldızlı, 2018; Bouchaib, 2016; Monteiro et al., 2021; Oduolowu et al., 2016; Sewagegn, 2019; Williams-McBean, 2022; Yan & Pastore, 2022). A number of national studies on exploring assessment practices of teachers had been conducted but at school and university level. A study conducted by Ali et al. (2022) on assessment practices of teachers in Pakistan identified a population gap to conduct this research at different grade level. Another research by Ahmad et al. (2021) on formative assessment practices at university level using quantitative methodology stresses on exploring the phenomenon using different methodology and population. The above studies are the evident of population gap as these are conducted at school and university level. Methodological gap also identified as most of the studies use quantitative and qualitative methods (Ahmad et al., 2021; Ali et al., 2022; Hussain et al., 2019; I. Khan, 2011; M. Khan et al., 2020; Rehmani, 2012). Thus, these studies identified two types of gaps which provides opportunity for conducting the study in Pakistani context. The present study was conducted on public sector colleges using mixed method research design for the purpose of covering methodological. Present study will also cover population gap related to assessment tools and strategies used by the teachers. Study was delimited to only public sector colleges of Lahore district. The study aimed at investigating assessment tools and strategies used by the teachers of public sector colleges of Lahore district using mixed method approach.

Assessment involve a theory of action which for assessing and a concrete instantiation that suggests ways in which these components work together for drawing desired outcomes (Bennett, 2011). Formative assessment primarily concerned with the ongoing procedures adopted by the teachers to assess student's learning and identify how much objectives of the instruction i.e., learning outcomes have been attained. For attaining desired outcomes, teachers are required design assessment procedures aligned with objectives, teaching strategies and content materials delivered

to the students (Yan & Pastore, 2022). The importance of assessment in the education system increases the importance of research on the teacher's assessment practices.

Objectives of the Study

Present study was aimed to accomplish following objectives:

1. To explore different types of assessment tools and strategies use by teachers of public sector colleges in Lahore District.
2. To identify subject and college wise difference in teachers' practices in the use of different types of assessment tools and strategies.

Research Questions

Study sought answers of these research questions:

1. What assessment tools and strategies do teachers of public sector colleges in Lahore use most commonly?
2. What is the subject-wise difference in teachers' use of different assessment strategies and tools in Lahore district?
3. What is the college-wise difference of assessment tools and strategies use existing in between teachers' reported frequency of teachers?

The narrative literature review technique was adopted to explain the problem of interest by looking at the existing researches on the study topic not by a systematic way (Dodgson, 2021). This type of reviewing technique permits the researcher to go for more relating works about her/his present topic with more specific linking (Bettany-Saltikov, 2012). Assessment practices of the teacher highly influence student's learning by designing tools and strategies to assess the attainment of objectives set for the learners (Oduolowu et al., 2016). If the assessment objectives focuses on providing practical skills to the students, assessment procedures are designed as practical performance evaluators, whereas if objectives focuses on knowledge based cognitive development of the students, assessment procedures will be more facts and knowledge oriented (Acar-Erdol & Yıldızlı, 2018).

Assessment informs teachers about how well the teaching is going, and how much students are understanding, as well as how teaching could be improved (Yan & Pastore, 2022). In Pakistan, teachers assessment practices are not more linked with the objectives, and they are unable to fulfill the requirements of formative assessment that need to be designed by basing on objectives of the students' learning (Khattak, 2012). Teacher in Pakistan focus more on preparing students just to meet the requirements for the final annual examinations (Hussain et al., 2019). Teachers neglect the importance of formative assessment in classroom that is mandatory for ongoing improvement of students' learning and for achieving the learning outcomes. Hence, there is a need for exploring teachers' assessment practices more in-depth by using mixed method design that will allow researcher to go in more detail with qualitative and quantitative procedures of data collection and analysis. The current study aimed at exploring what assessment tools and strategies teacher employ for assessing their students' learning outcomes in public sector college classroom. The study also identified the factors that teachers consider for choosing a particular type of assessment tool and strategy.

Assessment Tools and Strategies used by Teachers

According to National Professional Standards for Teachers in Pakistan NPST (2009), teachers should be competent in practicing different types of assessment tools and strategies in their classroom i.e., quizzes, question-answering, assigning home works, and conducting objective-subjective tests. American Educational Research Association (AERA) define 'assessment' as "a process that integrates test information with information from other sources (e.g., information from other tests, inventories, and interviews; or the individual's social, educational, employment, health, or psychological history)". Formative assessment tools and strategies refer to whole set of technologies and instruments in the hands of a teacher by which teacher collect qualitative and quantitative information of students' learning for the purposive use in ongoing assessment process.

Assessment tools and strategies are discriminated by different ways, by their purpose of use i.e., formative, summative, and diagnostic, their format i.e., testing or performance, traditional or alternative, and results interpretation i.e., norm-referenced or criterion referenced (Acar-Erdol & Yıldızlı, 2018; Bennett, 2011; Kubiszyn & Borich, 2016).

Present research focused on the different formats of the assessment that teachers use in their classroom in Public Sector colleges of Lahore. When we talk about format, assessment tools and strategies are classified as alternative or traditional ways. Traditional assessment format are more rigid and standardized taken with specific directions, these include true/false, multiple-choice items, short answers, and essays (Dikli, 2003; Gronlund, 2006; Miller et al., 2013). On the other hand, alternative assessment methods involve performance based and authentic assessment in which students use their skills and knowledge to perform some tasks (Al-Mahrooqi & Denman, 2018; Dikli, 2003). These performances are observed directly and indirectly by the teacher. Alternative assessment strategies include c-maps, open-ended questions, exhibits, oral and practical presentations, interviews, self-assessment, experiments, observations, projects, and portfolios (Adeyemi, 2015; Al-Mahrooqi & Denman, 2018; Bland & Gareis, 2018; Dikli, 2003; Miller et al., 2013)

In education, research of over 30 years reported that the dominated methods of assessment used by the teachers are traditional assessment tools and strategies (OECD, 2019). However, the shift of attention towards the use of alternative assessment methods are increasing because these assessments provide opportunities to students for more active engagement and motivation, effectively measure higher-order learning with authenticity (Adeyemi, 2015; Al-Mahrooqi & Denman, 2018; Bland & Gareis, 2018; Bouchaib, 2016; Dikli, 2003). Some writers emphasize on adoption of both strategies i.e., traditional and alternative because it provides more comprehensive and valid assessment of students' achievement (Wren & Gareis, 2019).

Alternative assessment tools also have positive impact with improving learning outcomes of students. With the current requirements of the society, objectives had also shifted to the more practical and real-world experiences, and alternative assessment helps in achieving these objectives. Despite the fact, many researches had reported that assessment practices of teachers are more inclined towards traditional ways of assessment i.e., paper-pencil tests (Acar-Erdol & Yıldızlı, 2018; Kubiszyn & Borich, 2016; Williams-McBean, 2022).

In Pakistan, many of the researches that conducted at school level reported that, teachers are not trained about the use of assessment tools and strategies in their classroom. Majority of the

teachers use traditional ways of assessment such as question-answering, oral and written tests, and home works and ignore alternate assessment strategies-projects, self and peer assessment, and portfolios (Ali et al., 2022; Hussain et al., 2019; M. Khan et al., 2020; Khattak, 2012). Teachers do not realize the importance of alternative assessment and put more focus on assessment of factual knowledge using tests. Furthermore, even using traditional ways, teachers did not provide feedback to the students about their performance and just tell marks to students (M. Khan et al., 2020). At university level, researches also reported that teachers did not meet the criteria for assessment of students' learning and teachers are not aware of semester assessment rules (Ahmad et al., 2021).

METHODOLOGY

The philosophical world-view behind the study was pragmatism (pluralistic approach). According to Creswell (2009) pragmatism did not believe on absolute/unity reality, but allows the researchers to utilize both qualitative and quantitative approaches of data collection and analysis that allow for best understanding of problem to meet the needs of inquiry. Researcher opted mixed method approach for research because it allows researcher to collect data from multiple resources i.e., quantitative and qualitative for getting the picture more in detail and with decreased biasness using triangulation (Creswell, 2009).

Data was collected using an explanatory sequential mixed methods design, which began with a quantitative phase, followed by a qualitative phase. The reason behind choosing this design was, this design use quantitative study as foundation to design qualitative study and select participants that further explore the problem of interest (Creswell, 2009). Quantitative findings are further explained by the qualitative data. Furthermore, selection of explanatory not exploratory sequential was due to the limited time and resources as the exploratory sequential require much time to develop and validate the data collection instrument. The sequence of the activities was QUAN→qual, where emphasis was given on quantitative phase.

The Quantitative Phase

In this phase using survey design, the researcher surveyed teachers of public sector colleges about their practices of assessment tools and strategies, with what frequency, and the types of feedback they give to students.

Population and Sample

The quantitative sample consisted of 136 teachers from public sector colleges of Lahore District with population size of 4000. Sample was selected using two-stage random sampling technique in which 8 colleges (4 girls and 4 boys) were selected randomly and then 81 male and 55 female teachers from each college were selected randomly. The quantitative sample was consisted of male and female college teachers with different experience of teaching various subjects. Sample size were drawn from guided table by Conroy (2018), with a 90% confidence level and 7% margin error. As mentioned by research experts like Hair et al. (2009) and Dillman et al. (2009) in social sciences research, varying on the needs of the researcher, confidence interval could be taken up-to 90% (0.01 sig.) and margin error up-to 10% that is acceptable.

Out of the total 136 teachers, 81 or 59.6% teachers were male, 55 or 40.6% female, 75 or 55.1% young adult and 61 or 44.9% were middle age. Teachers' qualification degrees range from masters to PhD. The quantitative sample was taken from boys and girls colleges with varying

years of experience and teachers teaches different subjects, i.e., Education Urdu, Mathematics, Physics, Arabic/Islamiyat, Computer Science, Biology and Economics. Majority of the teachers was concerned to the Education subject.

Table 1. *Quantitative Sample Demographics*

| | Sample Characteristics | N | Percentage (%) |
|-------------------------------------|------------------------|----|----------------|
| Gender | Male | 81 | 59.6 |
| | Female | 55 | 40.4 |
| Age | Young Adult | 75 | 55.1 |
| | Middle Age | 61 | 44.9 |
| Experience as Teacher (in years) | 0-5 years | 37 | 27.2 |
| | 6-10 years | 56 | 41.2 |
| | 11-15vyears | 31 | 22.8 |
| | 16-20 years | 6 | 4.4 |
| | 20-onwards years | 6 | 4.4 |
| College Type | Boys | 81 | 59.6 |
| | Girls | 55 | 40.4 |
| Degree (Qualification) | Masters | 51 | 37.5 |
| | MPhil | 66 | 48.5 |
| | PhD | 19 | 14 |
| Subject (Teaches) | Education | 87 | 64 |
| | Mathematics | 13 | 9.6 |
| | Computer Science | 6 | 4.4 |
| | Arabic/Islamiyat | 6 | 4.4 |
| | Urdu | 6 | 4.4 |
| | Physics | 6 | 4.4 |
| | Biology | 6 | 4.4 |
| | Economics | 6 | 4.4 |

Quantitative data collection and analysis methods

Researcher adapted Teacher Assessment Practices Questionnaire developed and validated by Williams-McBean (2022) to collect data in this phase. Minor changes in the tool were made to contextualize the tool. The questionnaire contained 33 questions that were divided into three sections. The first section presented six items to capture demographic details that researchers identified as influencing teachers' choice about the use of different assessment tools and strategies: gender, age, years of service and, subject(s) taught. The second section consists of 22 items assessment strategies and techniques on a 6-point Likert scale ranging from don't know to

frequently used. Last section comprised of five types of feedback: Grades alone, Oral feedback, Ticks and Xs, students' strengths and weaknesses written feedback, and Grades with written feedback. After taking permission from institutional heads, data was collected and entered in SPSS. Cronbachs' alpha internal consistency reliability value of the instrument was .902.

To answer the Research Question 1, descriptive statistics was used on two assessment strategies i.e., traditional and alternative. To answer questions no 2, one-way between-groups ANOVA was done on categories of all the subjects. Finally, independent samples t-test was used find out college-wise difference in teachers' reported frequency. Quantitative results were used to select sample of participants for qualitative phase.

The Qualitative Phase

Research design

Qualitative data in the second phase was also collected to explain the responses of the participants in more detail along with answering the research questions. I interviewed teachers for the purpose to determine considerations that teachers made while using assessment tools and strategies, which they responded on quantitative tool to improve findings' credibility. Researcher opted multiple-case study design in this phase because teachers (cases) were embedded in context of the public sector colleges, and they were selected to extract varying perspective about assessment practices of college teachers (Creswell, 2009). Hence, they act as "instrumental cases" (Creswell, 2009).

The participants

I selected the participants in the qualitative phase that provide enrich data about the assessment practices of teacher by using purposive sampling (Creswell, 2009). I selected two colleges (one boys, one girls) and, then interviewed four teachers at the point of saturation to explore further the methods of assessment teachers used and explain the quantitative findings.

Qualitative data collection and analysis methods

I collected data through semi-structured interviews. Researcher interviewed the participants using in-depth, semi-structured interviews guided by an interview protocol developed by the researcher. The interview questions were formed by using the finding of qualitative phase. In semi-structured interviews, open-ended questions for data collection in which participants were given with the opportunity to describe their practices clearly and study also move toward some directions that emerged from the data (Creswell, 2009). Respondents were asked about the types of assessment they use to assess students' learning, also the factors that influence teacher's choices to select any assessment tool or strategy most frequently in their college. The interviews lasted 20–30 minutes. Responses were recorded using audio-recorder with the permission of participants and field notes were also taken to be used in the analysis. After taking each interview, I transcribed and emailed the transcripts to each participant for their verification. I intertwined data collection and analysis to allow the analysis results to guide subsequent interviews.

The researcher used cross-case analysis method for analyzing qualitative data because it allows the researcher to compare and contrast the responses of different teachers about the assessment types they use (Ryan, 2012). According to Ryan (2012) this method involve steps *1-collect and organize data, 2-developing a coding scheme, 3-code the data, 4-create a codebook or*

code table (inductively or deductively), 5-identify patterns and themes, and 6-analyze the data. The researcher analyzes the interview transcripts one by one, then compare and contrast responses or participants to find out commonalities and differences in responses. The researcher used the descriptive coding method for identifying different types of assessments used by college teachers because it “*summarizes in a word or short phrase – most often a noun – the basic topic of a passage of qualitative data*” (Saldana, 2016, p. 102). In process coding, observable activity and conceptual actions can be coded using gerunds (“-ing” words) e.g., reading, understanding, communicating, listening, etc., through a Process Code (Saldana, 2016, p. 104). Process coding was also used which provides effective ways to code actions/activities about assessment activities done in classroom. Researcher also use pattern coding to draw patterns in the responses of teachers about their practices of assessment (Saldana, 2016, p. 105). N-Vivo software was used for coding data to identify patterns and trends in the data transcripts. In the end, findings were validated by cross-checking from the respondents and interpretations were made.

FINDINGS

Types and Frequencies of Assessment Tools and Strategies used by the Teachers

Analysis of the data in the quantitative phase reveals that teachers’ most practicing assessment tools and strategies are traditional ones i.e., tests, essays, questioning, oral quizzes. Analysis reported that all the teachers use tests (57.4% frequently use), questioning (40.4% always used), teacher observations (36% always used), oral quizzes (50% frequently used) and essays (46.3 frequently used). Questioning is the highly used assessment strategy ($M=5.18$, $SD=.885$) as 40.4% teachers always use it than tests ($M=4.85$, $SD=.749$) as 57.4% frequently use it. Furthermore, self-evaluations 31.6%, roleplays 36% and rubrics 31.6% are used by the teachers of public sector colleges but not frequently. Practical tests 36.8%, checklists 35.3%, speech/debate/drama 37.5%, research reports 36%, portfolios 40.4%, student journals 45.6%, interviews 46.3% and contracts 36.8% are sometimes used by the teachers but they do not practice these tools and strategies on daily bases. On the other hand, four not used and least reported tools and strategies by the teachers are peer evaluation 30.6% not used, case studies 23.5% not used, anecdotal records 36.8% not used and conferences 45.6% are not used assessment tools and strategies by the teachers of public sector colleges. Conferences are the highly not in practice of use strategies ($M=3.00$, $SD=1.241$).

Table 2. Frequencies of assessment tools and strategies used by the Teachers

| Tools/Strategies | N | M | SD | DK | NU | SU | U | FU | AU | % |
|---------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| Tests | 136 | 4.85 | .749 | 0 | 0 | 5.1 | 21.3 | 57.4 | 16.2 | 100 |
| Questioning | 136 | 5.18 | .885 | 0 | 0 | 4.4 | 18.4 | 32.4 | 40.4 | 100 |
| Teacher Observation | 136 | 4.69 | 1.177 | 0 | 0 | 22.1 | 22.8 | 19.1 | 36 | 100 |
| Practical Tests | 136 | 3.74 | 1.013 | 0 | 8.8 | 36.8 | 30.9 | 19.1 | 4.4 | 91.2 |
| Oral Quizzes | 136 | 4.40 | .838 | 0 | 0 | 18.4 | 27.2 | 50 | 4.4 | 100 |
| Self-Evaluations | 136 | 4.09 | 1.183 | 3.7 | 0.7 | 27.9 | 31.6 | 22.8 | 13.2 | 95.6 |

| | | | | | | | | | | |
|--------------------------|-----|------|-------|-----|------|------|------|------|------|------|
| Essays | 136 | 4.54 | .942 | 0 | 0 | 18.4 | 22.1 | 46.3 | 13.2 | 100 |
| Peer-Evaluation | 136 | 3.40 | 1.302 | 0 | 31.6 | 27.9 | 17.6 | 14 | 8.8 | 68.4 |
| Role Plays | 136 | 3.51 | 1.068 | 0 | 0 | 19.1 | 36 | 19.9 | 25 | 100 |
| Rubrics | 136 | 4.57 | 1.159 | 0 | 0 | 22.1 | 31.6 | 14 | 32.4 | 100 |
| Checklist | 136 | 3.82 | 1.270 | 0 | 14 | 35.3 | 18.4 | 19.1 | 13.2 | 86 |
| Speech, Debate, Drama | 136 | 3.59 | 1.189 | 0 | 17.6 | 37.5 | 22.1 | 14 | 8.8 | 82.4 |
| Research Reports | 136 | 3.07 | 1.090 | 0 | 36.8 | 36 | 14 | 10.3 | 2.9 | 63.2 |
| Portfolios | 136 | 3.34 | 1.063 | 0 | 22.1 | 40.4 | 23.5 | 9.6 | 4.4 | 77.9 |
| Concept Maps | 136 | 3.93 | 1.203 | 4.4 | 4.4 | 31.6 | 17.6 | 37.5 | 4.4 | 91.2 |
| Flow Charts | 136 | 3.95 | 1.182 | 0 | 13.2 | 23.5 | 27.2 | 27.2 | 8.8 | 86.8 |
| Student Journals | 136 | 3.01 | .915 | 0 | 31.6 | 45.6 | 13.2 | 9.6 | 0 | 68.4 |
| Interviews | 136 | 3.68 | 1.060 | 0 | 8.8 | 46.3 | 17.6 | 22.8 | 4.4 | 91.2 |
| Case Studies | 136 | 3.26 | 1.384 | 8.8 | 23.5 | 26.5 | 23.5 | 8.8 | 8.8 | 67.7 |
| Anecdotal Records | 136 | 2.99 | 1.202 | 4.4 | 36.8 | 31.6 | 14 | 8.8 | 4.4 | 58.8 |
| Conferences | 136 | 3.00 | 1.241 | 4.4 | 45.6 | 13.2 | 19.1 | 17.6 | 0 | 50 |
| Contracts | 136 | 3.66 | 1.357 | 4.4 | 14 | 36.8 | 9.6 | 26.5 | 8.8 | 81.6 |

Note. DK = Don't Know, NU = Never Used, SU = Sometimes Used, U = Used, FU = Frequently Used and AU = Always Used

Results of the descriptive statistics reveals that traditional ways of assessment are still dominant in the public sector colleges of Lahore. Teachers' most frequently used tools and strategies are tests, questioning and essays whereas not used tools and strategies are peer evaluation, case studies, anecdotal records and conferences. Some of the teachers also reported that they don't know the concept maps, case studies and anecdotal records.

Subject-wise differences in Use of Assessment Tools and Strategies

Second research question was focus on exploring subject-wise difference in teachers' use of different assessment strategies and tools. It was answered by using a one-way between-groups ANOVA using a post-hoc test as eight categories of the subjects were identified: Education, Mathematics, Computer Sciences, Arabic/Islamiyat, Physics, Biology, Economics and Urdu as dependent variables analyzed separately.

The assumptions related to the normality and homogeneity of variance for the ANOVA was violated for the frequency of use of assessment tools and strategies by the teachers of different subjects. Both the Welsh and Brown-Forsythe tests shows a significant difference between reported frequency about use of assessment tools and strategies by the teachers of public sector colleges based on subject ($p < 0.001$ for both tests). If distribution is not normally distributed, as Field (2013) and Pallant (2013) both recommended Kruskal-Wallis non-parametric test instead of a one-way between-group ANOVA. Results of the Kruskal-Wallis test also showed a significant

difference. Hence, it was concluded that significant difference occurs in teachers' reported frequencies about the use of assessment tools and strategies based on subject.

Table 3. Kruskal-Wallis test for subject wise differences in assessment tools and strategies used

| | Null Hypothesis | Test | Sig. | Decision |
|---|--|---|------|----------------------------|
| 1 | The distribution of assessment tools and strategies is the same across the categories of subject teaches | Independent samples Kruskal-Wallis test | .000 | Reject the null hypothesis |

Note. Asymptotic significances are displayed. The significance level is .05.

College-Wise Differences in the Use of Assessment Tools and Strategies

The third research question assessed the college-wise differences exist between the teachers of boys and girls colleges in the use of assessment tools and strategies to assess their students. Teachers' reported frequencies were analyzed by running independent samples t-test to see whether the difference is significant or not. Results of the t-test reported below:

Table 4. College-wise differences in the use of assessment tools and strategies

| Variable | College Type | M | SD | Df | T |
|---------------------------------|--------------|-------|-------|-----|--------|
| Assessment Tools and Strategies | Boys | 88.28 | 15.15 | 134 | 4.115* |
| | Girls | 78.32 | 11.64 | | |

Note. * $p < .05$

Table 4 shows results of independent samples t-test to compare the mean of boys and girls college teachers' use of assessment tools and strategies. Results of the table presents that boys college teachers' mean score ($M = 88.28$, $SD = 15.15$) is significantly different than that of girls college teachers' ($M = 78.32$, $SD = 11.64$), $t(134) = 4.115$, $p = .000$. Boys and girls college teacher groups differ significantly on their responses about their use of assessment tools and strategies in classroom. Results are evident that boys college teachers use more tools and strategies than girls college teachers in assessment.

Table 5. Type of grading used by the teachers to assess students' performance

| Type of Grading | N | M | SD | Yes (%) | No (%) |
|--|-----|------|------|---------|--------|
| Grades | 136 | 1.00 | .000 | 100 | 0 |
| Ticks & crosses (✓ / X) | 136 | 1.14 | .348 | 86 | 14 |
| Oral feedback | 136 | 1.04 | .206 | 95.6 | 4.4 |
| Written feedback | 136 | 1.04 | .206 | 95.6 | 4.4 |
| Grades accompanied by written feedback | 136 | 1.09 | .285 | 92.2 | 7.8 |

The above table shows that all of teachers use grades to assess and report their students' performance in their learning tasks. Grades are highly used grading procedures ($M = 1.00$,

SD=.000) as 100% of the teachers use them. Secondly, oral feedback and written feedbacks are also used by majority of the teachers as 95.6% for both. About 92.2% of the teachers reported that they use grades along with providing written feedback to their students on their performance. The lowest reported type of grading was ticks and crosses (\checkmark / X) as 86% teachers use it and 14% of the teachers reported that they do not use it.

Qualitative Explanations of the Types of Assessment Tools and Strategies used by Teachers

To explore in-depth findings of the quantitative phase, qualitative phase was designed. Quantitative findings were also supported by the qualitative phase and explanations of the reported different assessment tools and strategies selection were collected. In this phase, four teachers were interviewed and their responses were recorded and analyzed qualitatively. Responses were coded and themes were generated. A cross-case analysis was also done to view the difference exist in the responses of the participants.

In qualitative responses of the participants, highly reported tool and strategies were also tests and questioning. Teachers responded that they use tests more frequently to assess their student's understanding of what was taught in the classroom to check how much they grasp it. They also pointed out that our final board examinations are also focused on the written tests that make them to prepare their students for that situation. One of the participants responded that;

"I assign tests to my students to see whether they have grasped what I taught them, and it is also required to prepare them for finals." (Asif Ali)

Furthermore, teachers use question and answering strategies to take an immediate look on the students' understanding during the lessons. Teachers responded that questioning is an easy and quick way to assess what the students' have learned from the lesson and where students are standing right now. Stated by a participant;

"For me, questioning is most easy and quick way to check my students' understanding on the spot. I design question-answering sessions in the lesson in which students' learning is assessed and also, I clear them what they do not understand in lesson." (Imran Ahmed)

Teachers also responded that they practice oral quizzes, teacher observations and essays as tools and strategies more frequently to assess their students' learning. They observe what the students are doing in the class during the lessons, they direct students' focus on the task and make them more engaged in their learning. They assign topics to the students and ask questions about the topics next day. Teachers also assign paper and pencil essays to the students and consider it as a useful tool for assessing their students. Essays also help them to cover the content of the subject in an easy way. One of the participants reported that;

"I use to observe my students during my lessons to keep them focused in their learning. I also assign them homework of the day and ask questions about the previous work. I conduct essay tests from students about the contents of the book" (Faiza Khan)

It was also emerged from the responses of the teachers that they also use self-evaluations, roleplays and rubrics as assessment tools and strategies but not frequently as tests or questioning. Teachers think that students of public sector colleges did not understand the concept of self-evaluation and are not capable to assess themselves. Teachers responded that their subject nature determine that they could use roleplays or not. As responded by a participant;

“Students here are not as mature to understand self-evaluation concepts and can’t apply it. As nature of my subject education is not much concerned with roleplays as of Pakistan studies subject, that’s why I practice it rarely.” (Moin Ali)

Interview responses of the teachers identified that they very occasionally use assessment tools and strategies like practical tests, checklists, speech/debate/drama, portfolios and interviews. Teachers reported that these tools require much time to design and manage, but here we have short time lectures where these can’t be applicable most frequently. Stated by one of the respondents;

“Yes, I use to make portfolio of the students test performances but not always. As we have just 45 minutes lectures, so speech or dramas or interviews are not possible to always manage in this short time.” (Asif Ali)

Furthermore, the assessment tools and strategies which were not used by the teachers was also identified from their interview responses. These assessment tools and strategies were contracts, student journals, peer evaluation, case studies, anecdotal records and conferences that were not used by the teachers of public sector colleges. A slight contradiction occurs here between qualitative and quantitative responses as contracts and student journals were reported as sometimes used in quantitative responses but not used in qualitative responses. As responded by Faiza Khan;

“My students try to focus on preparing examination requirements and did not take interest in writing anecdotal records. That’s why I do not use it. Case studies are time taking and require expertise, so I avoid them.”

Another respondent reported that;

“Students are not mature as much as to evaluate their peers. They become biased and evaluate as good to their friends and bad to those who are not their friends. So, I avoid to use peer evaluations.” (Imran Ahmed)

DISCUSSION AND CONCLUSION

The aim of present study was to explore assessment tools and strategies used by the teachers of public sector colleges of Lahore. Effectively selection of the appropriate assessment tools and strategies appropriate to the content, objectives, students’ psychology and needs ensure the actual assessment of students’ learning. Assessment tools and strategies when properly selected and applied in the colleges, improve the whole quality teaching-learning process in public colleges. Effectiveness of the teaching and learning highly depends upon selection of appropriate assessment tools and strategies as it improve the teaching and learning (Acar-Erdol & Yıldızlı, 2018). Proper assessment improves the quality of entire education in public colleges. When assessment tools and strategies will not match to the objectives, content or students’ need, quality of education will not be up to the expectations. For meeting the objectives, teacher should bring harmony among assessment tools and strategies and content, students’ needs and psychology. Both traditional and advanced tools and strategies need to be used to ensure effective assessment of student’s learning.

According to Khattak (2012), teachers in our education system focus on testing the memory skills by using paper-pencil tests, essays and question-answering techniques. It was also identified from the findings that majority of the teachers reported that they use tests, essays, questioning and teacher observations as assessment tools and strategies to assess the learning of their students.

Teachers use these tools and strategies because our final board examinations system is highly standardized and focus on factual knowledge testing in most of the subjects and very little room for practical testing in few subjects. Findings may be similar due to the contextual similarity of both studies, as both studies are conducted in Pakistani context where education and examination system is same. External examination system also influence teachers' choice of using a particular assessment tool and strategy (Ali et al., 2022). The results also showed that the oral quizzes are easy to practice for teachers to assess their students' learning and build confidence in students to speak what they know.

Furthermore, it was concluded from the responses of the teachers of public sector colleges that self-evaluations, roleplays and rubrics are the assessment tools and strategies that are also used by most of the teachers but not very frequently. Teachers feel that students of public sector colleges did not understand concept of self-evaluation completely. Role plays are used by the teachers based on the nature of subject field, as Arabic/Islamic studies teachers try to practice it more. According to Hussain et al. (2019), very nature of the subject matter and students' abilities influence the selection of assessment tools and strategies, and teachers not commonly use to adopt roleplays and evaluations. Findings are same because both the studies were conducted on the teachers of public sectors. It was also concluded from the findings of quantitative phase that the assessment tools and strategies like, practical tests, checklists, speech/debate/drama, research reports, portfolios, student journals, interviews and contracts are sometimes used by the teachers but they do not practice these tools and strategies on daily bases. These alternative assessment tools and strategies ensure more accurate assessment of students' learning but teachers in our education system avoid to use them. Qualitative phase responses concluded that teachers occasionally use portfolios, student journals and research reports because they require plenty of time to design and implement. Similar findings were also drawn by Ahmad, Pervaiz, and Hayat (2021) that teachers avoid using portfolios, research reports because they consider these assessment techniques as time taking. According to Williams-McBean (2022), majority of the teachers use alternative assessment tools and strategies like portfolios, student journals and research reports. Findings were contradictory to present study due to contextual and population changes as that study was conducted in Jamaican context on school teachers.

In the current era of technological advancement, 21st century skills requirements are more practical and higher order learning. These skills require students to be more evaluative, responsive, creative and divergent thinkers. However, it was concluded from the findings that four not used and least reported assessment tools and strategies by the teachers of public sector colleges are peer evaluation, case studies, anecdotal records and conferences. Conferences are the highly not in practice of used strategies. Teachers consider that students did not take interest in writing anecdotal records, and that case studies are time taking and require expertise. According to Khan, Zaman, and Saeed (2020), teachers do not assess students' higher order thinking skills and do not use anecdotal records, case studies and peer-evaluations. Findings may be similar due to contextual similarity as both studies were conducted in Pakistani context.

To view subject-wise differences in teachers' use of assessment tools and strategies, one-way between groups ANOVA was run and both the Welsh and Brown-Forsythe tests shows a significant difference between reported frequency about use of assessment tools and strategies by the teachers of public sector colleges based on subject. It was concluded from the results of the Kruskal-Wallis test that a significant difference occurs in teachers' reported frequencies about the use of assessment tools and strategies based on subject. Williams-McBean (2022) also reported

subject-wise significant difference in responses of the teachers about use of assessment tools and strategies. Furthermore, it was also concluded from the results of t-test that college-wise significant differences exist between the teachers of boys and girls colleges in the use of assessment tools and strategies to assess their students. Teachers of boys college use more tools and strategies than girls college teachers in assessment.

Qualitative phase responses of the teachers highlighted a contradiction with quantitative phase. In quantitative results, contracts and student journals were reported as sometimes used assessment tools and strategies, but in qualitative responses these tools and strategies are responded as never used by the teachers. Assessment tools and strategies are highly focused in the education system because they ensure the quality of students' learning and even of whole education system. Therefore, alternative assessment tools and strategies are recommended to be used by the teachers due to the requirements of 21st century higher order skills.

Recommendations

1. Study allows teachers to understand where our teachers are standing in the level of their assessment skills expertise, and recommend them where they need improvement.
2. Study provides recommendations to curriculum planners and policy makers to improve implementation of assessment tools and strategies in public sector colleges.
3. It was recommended to the policymakers to improve the standardized examination system and incorporate assessment of higher order and 21st century skills.

Finally, it was recommended to the teachers to divert their focus from traditional assessment tools and strategies to the alternative ones.

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