

Development and Validation of Quality Teaching Scale

Naheed Akhter PhD Scholar, Institute of Education and Research, University of the Punjab, Lahore, Punjab, Pakistan.

Email: naheedakhtermughal@gmail.com (*Corresponding Author*)

Muhammad Shahid Farooq Professor, Institute of Education and Research, University of the Punjab, Lahore, Punjab, Pakistan.

Abstract: *This study was conducted to develop and validate the instrument 'Quality Teaching Scale' for elementary schools in the province of Punjab, Pakistan. In order to guide the study, two research questions were raised. The population of the study was 29125 8th class students in public elementary schools in the province of Punjab. A sample of 797 elementary students, 386 boys and 411 girls were selected through multi-stage random sampling techniques. The reliability of the instrument was established through Cronbach Alpha statistics which yielded a coefficient of .942. Smart PLS was used to measure the construct validity of the instrument. It was recommended that a quality teaching scale should be used by schools at all levels to know about the real situation of teachers' teaching process and suggest improvement in case of shortcomings.*

Key Words: Development, Validation of Instrument, Quality Teaching, Teachers' Instructional Effectiveness, Elementary Schools, Province of Punjab

Introduction

Teaching is a multidimensional and complex process. It requires vast knowledge and a deep understanding of many related areas. It includes different abilities such as synthesizing, integrating and then applying the acquired knowledge in different situations, in different conditions and with different groups of individuals. In quality teaching, this knowledge of the teacher is applied to provide those opportunities to the learners which will facilitate the learners to acquire and create new knowledge. In public schools, this concept of quality teaching is unequally found to serve the students.

Comprehensive and deep knowledge of the learning process is the foundation of quality teaching generally and knowledge about the theoretical basis of learning particularly. There are many facets of deep knowledge of the learning process such as having the ability to

identify the basic principles and tenets of different particular perspectives to identify differences in practice perspective, to use those perspectives while planning learning experiences in different social contexts and to solve different problems related to the instructional and learning process. It is very important to understand how specific social contexts for learning and particular pedagogical approaches are associated and how particular theoretical perspectives of learning are associated with these two factors. It is also very important to know that strength of learning practices lies in the fact that how ideas are integrated into different subject matters when there is coherence, continuity and consistency while applying different theoretical perspectives (Hollins, 2011).

An effective assessment is a source for obtaining the evidence that the learners have these abilities such as to (a) connect the

meaningful link between their daily experiences and the knowledge and practices which they obtain in different disciplines (b) connect those ideas which they obtain in different disciplines and then practically apply those ideas in novel and new situations (c) indulge their selves in those discipline-specific activities of truth-searching and ultimately become able to do some claims about determining its legitimacy (d) use all discursive practices of a discipline to represent and communicate the ideas (Duschl, 2008; Ford and Forman, 2006; Jordan, 2010). The basic purpose of this kind of assessment is to get ensured that either student has got deep knowledge of a specific discipline and has become able to apply that acquired knowledge and practices in a new and different situation. The purpose of this kind of assessment is also to measure that either teacher has all the important information on the basis of which some intervention would support eradicating misconceptions and correcting the misconceptions of others. Therefore it is essential that teachers should have the ability at the first point and to develop the appropriate assessment approaches at the second point to adopt those classroom activities which are trustworthy and have integrity, ultimately these activities will help the students to get consistent progress to achieve the expected learning outcomes (Graue and Johnson, 2011).

Today's global village concept of the whole world demands that school systems should adopt this intensity of change to compete and make their place in a global economy. In such a situation an effective performance appraisal system will help to meet these demands. This appraisal system will help to hold the employees accountable, address their underperformance and hence ultimately enhance their practices and performance (Zbar, Marshall, and Power, 2007). This concept of the appraisal system is the base of this quality teaching scale.

According to Aguinis's (2009) concept of performance, appraisal lies in an ongoing process which is used to identify, measure and develop an individual's performance according

to the goals of an organization. In a broader sense, this same concept of appraisal system of an individual's performance may be applied in a system. There may be two aspects of the appraisal system. The first aspect is formative in nature. It focuses on the development of performances such as professional learning, career development and feedback. The second aspect is summative in nature which may include evaluation of performance for career progression, promotion or demotion and termination purposes.

Quality teaching scale is students' appraisal. The use of students' appraisal is relatively a new concept in the Pakistani context and it is mostly criticized. Arubayi (2003) observed that most people are reluctant to use students in appraising their teachers' quality of teaching and its effectiveness. Some critics raise the point that students are not mature enough to judge the quality and effectiveness of their teachers' teaching. Arubayi (2003) and Fauzier (2009) are in the favor of the use of students' appraisal. They say that irrespective of school background and academic level, students are in a better position than any other to appraise the quality and effectiveness of their teachers' teaching. Seldin (1996) said that if we want to know the taste of dinner then we should consider the opinion of those persons who ate dinner. The implication of this opinion here is that students' are the best source to determine the effectiveness and quality of instruction they are getting. Students' appraisal of the quality of teaching in elementary schools is a vital and effective tool for improving the quality of teaching. According to Arubayi (2003), quality teaching appraisal may serve the following three purposes

- a. Helping administration to make decisions about tenure, promotion and pay increase on the basis of their performance appraisal.
- b. Improving the quality of their teaching by providing them with feedback.
- c. Guiding students to choose the better courses and instruction.

For improving the quality of teaching, it is

essential to know about those aspects which are strong and also about those aspects which could be further improved. Students' appraisal of their teachers' teaching is considered very important in getting the real picture of classroom instruction. Keeping in mind the importance of students' appraisal of their teachers' teaching performance, this research is aimed at developing and validating a quality teaching scale for elementary school teachers.

Statement of the Problem

Teachers are significant and the most important source in schools that play a vital role in raising educational standards. In order to improve the equity and efficiency of schools, teachers should be highly skilled, highly motivated to perform excellently and well aware of available sources. For this purpose, it is essential to have knowledge about the strength of teachers and also about those aspects of their professional life that can be improved and developed. From this perspective, the evaluation of teachers' performance is a basic step to improving the quality and effectiveness of teaching and learning. This step improves the educational standards.

Monitoring teams of the ministry of education visit schools from time to time to evaluate and monitor the work of each teacher to improve the learning of students. But it is very difficult for the monitor to evaluate all teachers of schools while teaching in all classes and hence observing the quality of their instruction in a real classroom situation is almost not possible for them. Most of the time, to ease their work they prefer to check their lesson plans, attendance registers, diaries and other available sources. While evaluating the performance and quality of teachers' work, monitoring team members usually referred to those available records. These records in reality cannot give the real picture of teachers' instruction with their students in their classes.

Along with school records, a large number of instruments have been developed to measure and evaluate the quality and effectiveness of

teachers' teaching. These instruments are mostly developed to be used by monitors and educational administrators or by teachers to rate the effectiveness of their teaching by themselves. When teachers are aware to be evaluated, they may create a false impression to impress the monitors or administrator. On the other hand, when teachers are asked to rate their performance, it is obvious that most of them rate themselves very highly. In such a situation, it becomes very difficult to get the true and real picture of the classroom instructional process.

Contrary to all those instruments, many researchers have developed instruments for students to appraise their teachers' performance to get a real and true picture of the classroom instructional process. This researcher also thinks that students are the right persons to evaluate the quality and effectiveness of their teachers' teaching because they are the persons who remain with them more than any other person.

Although there found many instruments for students to appraise their teachers' performances, some of them are outdated and some are scarce. Therefore researcher was motivated to develop and validate an instrument of quality teaching to get the real picture of classroom instruction pictures from the students' point of view. The researcher was instigating to conduct this research on the development and validation of quality teaching scales for elementary school teachers of the province of Punjab in Pakistan.

Purpose of the Study

The main purpose of the study was to develop and validate the Quality Teaching Scale for elementary schools' students to appraise their teachers' performance in the province of Punjab, Pakistan. This study was specifically carried out to:

1. Develop an instrument to measure the quality of teaching at elementary-level schools.
2. Measure the validity of the developed quality teaching scale.

3. Apply the Quality Teaching Scale to determine its reliability.

Research Questions

In order to guide the study, two research questions were raised. These questions are stated as

1. How reliable is the developed Quality Teaching Scale?
2. How valid is the developed scale with respect to constructing validity?

Research Methods

A research design is comprised of various components of research (research approach, research design, and research method) that provide guidelines to answer the research questions (Myers, 2019; Creswell & Clark, 2017). A step-by-step plan and procedure that leads a researcher to collect, analyze and interpret the data is known as a research approach (Creswell & Creswell, 2017; Johnson & Christensen, 2019). There are three types of research approaches i.e. quantitative research approach (positivism paradigm), qualitative research approach (interpretive paradigm), and mixed methods research approach (pragmatism paradigm) (Christensen, Johnson, & Turner, 2014; Creswell & Clark, 2017; Johnson, 2010; Johnson & Christensen, 2014, 2019).

The quantitative research approach is used to test theories with the help of numerical data from a large sample size by examining the relationship among variables. Conversely, the qualitative research approach is used to build theories by gathering narrative data from a small sample size to explore and understand the behaviour of individuals naturalistically and holistically (Flick, 2018; Johnson & Christensen, 2014; Morgan, 2018). While, in a mixed-method research approach, the researcher integrates both types of quantitative (numerical) and qualitative (narrative) data by using distinct designs for theory-building as well as its testing in a specific context (Creswell & Clark, 2011, 2017). According to Creswell and Clark (2017), Johnson and Christensen (2014), and Myers (2019), the basic

assumption of the mixed-method approach is to understand a research problem completely by combining both quantitative and qualitative approaches, as compared to either approach alone. Two types of decisions are involved to select a research approach i.e. procedures of inquiry (i.e. research designs) and particular research methods (collection of data, analysis techniques, and its interpretation) (Creswell & Clark, 2017; Denzin & Lincoln, 2011).

This study is casual comparative in nature. Data was collected through a quantitative research approach and was analyzed.

The population of this study consisted of students in 8th grade in Punjab province (Pakistan). In the public sector, there are separate schools for boys and girls. According to School Census 2018, of Punjab School Education Department, there are 3549 middle schools for boys and 4740 middle schools for girls. In boys, middle schools 14882 boys and in girls' middle schools 14243 girls are enrolled in the middle class. The number of teachers in these middle schools is 35225 males and 55352 females respectively. By using multistage stratified random sampling techniques 797 total students were selected as a sample from six districts of Punjab.

In this study, a multistage random sampling technique was used to select the sample from the target population. This sampling process consisted of three stages. In the first stage, six districts from the 36 districts of the province of Punjab were selected through stratified random sampling. This sampling was based on UNDP (United Nation Development Program 2015), PCA (Principal Component Analysis), EI (Education Index) by Khan (2015) and the Retention Rate of different districts of Punjab given by NGO Alif Alan (2016). According to these reports, three groups of six districts were selected. In each group, one district was representing a high EI, PCA, UNDP and Retention Rate while the second district was selected from that category which was representing the lowest EI, UNDP, PCA and Retention Rate. These six districts are Gujrat, Norowal, Hafizabad, Kasur, Jhang and Muzaffargarh. In these six districts, there are

521 Boys middle schools and 625 Girls middle schools according to Punjab School Development Census 2018.

In the second stage of sampling, two strata of 521 Boys Middle Schools and 625 Girls Middle Schools were selected through stratified random sampling. In these 512 Boys Middle Schools, 14882 boys were enrolled in the 8th class and in 625 Girls Middle Schools, 14243 girls were enrolled in the 8th class. A total of 29125 students were enrolled in the 8th class in these middle schools.

In the third stage, with the help of simple random sampling total of 797 middle-class students were selected according to John Curry's (1998) formula(rule of thumb) use of sample sizes 10 to 100 (100 %), 101 to 1000(10%), 1001 to 5000(5%), 5001 to 10000(3%),100000 or above then1%. These 797 students are 3% of their target population. Of these 797 students, 368 are boys and 411 are girls. The researcher constructed the instrument titled; "Quality Teaching Scale (QTS)".

Quality teaching instrument was developed according to those quality teaching indicators which are given by Terry Lovate (2005). These quality teaching indicators are

1. Explicit teaching
2. Effective feedback
3. Use of data to inform practices
4. Classroom management
5. Wellbeing
6. collaboration and
7. High expectation.

This instrument was consisting of two parts. The first part consisted of demographic variables of the study (i.e.) student's name (optional), school name, gender, school roll number, subject, and the number of students in that class. The second section was consisting of those items that were related to teachers' teaching practices, which were directly or indirectly related to his or her quality of teaching. Students were asked to respond on five points Likert-type scale (Strongly Disagree=1, Disagree= 2, Neutral=3,

Agree=4, Strongly Agree=5). The judgement and quantification stage of the instrument began with face validation and the establishment of the reliability of the instrument. Research Question 1 was answered by using Cronbach Alpha Statistics while Research Question 2 was answered by using PLS-SEM.

The instrument was validated by one international, three assessment and evaluation experts of Pakistani Universities and five PhD scholars to confirm the overall design of the instruments, appropriateness of language, and its usability in the Pakistani context. In light of valuable comments, the researcher added demographical information and statements to each instrument. The instrument was again translated into the Urdu language with comparatively simple and easy-to-understand words because Urdu was the native language of the respondents.

The questionnaire was piloted on 200, 8th-grade students of the permissible school by the researcher. The researcher administered this pilot with the help of their teachers during their class time. All the protocol of questionnaire piloting was followed.

Result

Research Question 1

How reliable is the developed instrument?

This research question was raised to determine how consistent the instrument (Quality Teaching Scale) is in producing consistent results when used for teachers' appraisal by their students. Cronbach Alpha Statistics was used in determining the reliability of the instrument. Cronbach Alpha was considered appropriate since the researcher was interested in determining the internal consistency reliability of the instrument. The summary is presented in Table 1.

Reliability

After piloting the study, reliability analysis was conducted to check the internal consistency of the instrument statements.

Table 1. The Cronbach Alpha of Instruments

Scale	Items	Cronbach Alpha
Quality Teaching Scale	64	.942

Exploratory Factor Analysis

Before conducting Exploratory Factor Analysis (EFA), the researchers first performed the Kaiser–Meyer–Olkin (KMO) test to measure the

adequacy of sampling, and performed the Bartlett Sphericity test to study the factor ability of the data.

Table 2. Kmo and Bartlet’s Test of Scale Quality Teaching

KMO	Measure of Sampling Adequacy	.758
	Aprox chi-square	7708.517
Barlett’s test of Sphericity	Df	2016
	Sig	.000

Table 2 presents KMO measure .758 indicating that data were sufficient for Exploratory Factor Analysis (EFA). Bartlett’s test of Sphericity χ^2

(2016) = 7708.517, p = .000 showed that there was a sufficient pattern relationship between the items.

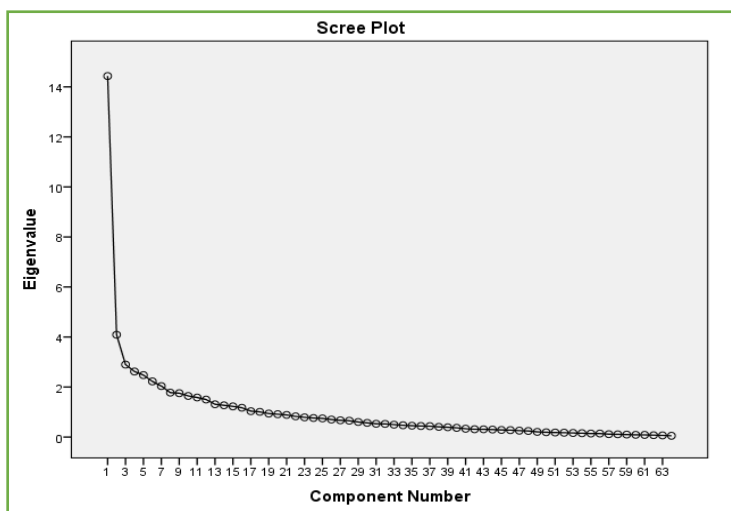


Figure 1: Scree Plot of Seven Factors of Quality Teaching Scale

Table 3. Pattern Matrix of Quality Teaching Scale

	Component						
	1	2	3	4	5	6	7
UDIP1	.762						
C4	.753						
CM4	.724						
UDIP8	.723						
UDIP3	.654						
WB3	.549						
C6	.523						
HE3	.500						

	Component						
	1	2	3	4	5	6	7
C3	.480						
EF11	.457						
WB7		.782					
HE5		.661					
WB6		.652					
CM5		.592					
HE8		.572					
CM2		.545					
C5		.537					
HE2		.516					
HE1		.444					
HE7		.412					
ET4			.894				
ET6			.819				
CM13			.677				
ET7			.623				
WB1			.540				
EF3			.486				
CM7			.414				
UDIP4				.750			
EF1				.677			
UDIP6				.561			
UDIP5				.538			
ET8				.500			
CM10				.499			
ET5					.773		
ET3					.739		
ET2					.614		
ET1					.608		
UDIP2					.417		
CM6					.416		
EF2						.690	
EF6						.519	
C1						.464	
EF10						.422	
WB8						.416	
HE6						.413	
EF4							.719
EF8							.666
HE9							.533
HE4							.518
C2							.438
Eigenvalues	14.43	4.09	2.89	2.62	2.47	2.22	2.03
% of Variance	22.55	6.39	4.52	4.09	3.86	3.47	3.18

The Eigenvalue table has been divided into three sub-sections, i.e., Initial Eigen Values, Extracted Sums of Squared Loadings and Rotation of Sums of Squared Loadings. For analysis and interpretation purposes the

researcher was only concerned with Extracted Sums of Squared Loadings. Using an eigenvalue cut-off of 1.0, there were seven factors the first factor accounted for 22.55% of the variance, the second 6.39%, the third

4.52%, and the fourth, fifth, sixth and seventh 4.09,3.86,3.47 and 3.18 per cent of the variance respectively. The table shows the factor loading after rotation using a significant factor criterion of .40. The table shows that a total of 50 items are extracted, and the first and second each factor consisted of 10 items. The third factor consisted of 7 items and the fourth, fifth and sixth factors contained 6 items. The seventh factor consisted of 5 items.

The summary of the result in Table 2 indicated that Cronbach Alpha Statistics yielded an internal consistency reliability coefficient of 0.942 for the Quality Teaching Scale (QTS). According to Nachmias and Nachmias (2009), with a reliability coefficient

of 0.7 and above, an instrument is considered reliable and the higher the coefficient, the more reliable the instrument. Therefore, the instrument was considered reliable for use by students in evaluating the teaching quality of teachers.

Research Question 2

How valid is the developed instrument with respect to constructing validity?

Confirmatory Factor Analysis (CFA) was performed to establish the structural validity of scale by using the software Smart PLS.

The EFA extracted seven factors from Quality Teaching Scale (QTS).

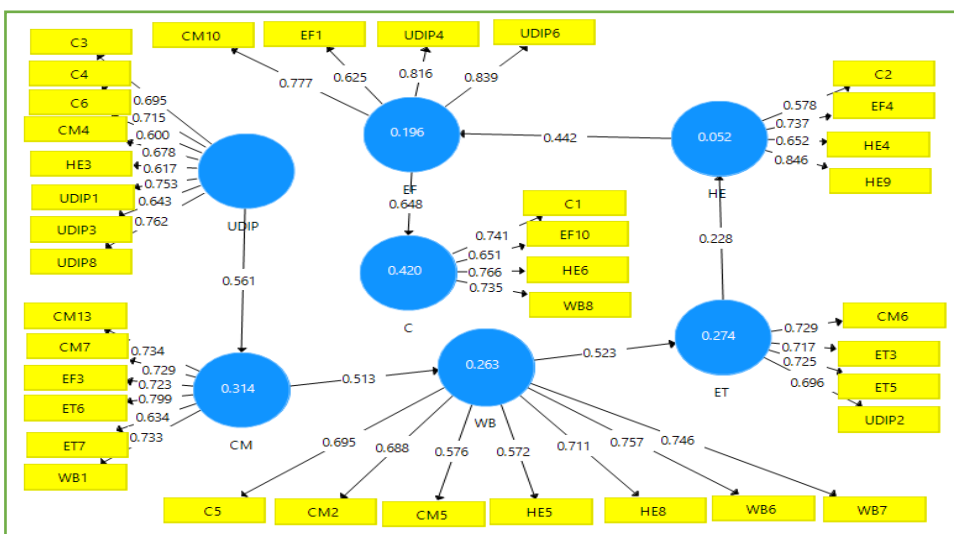


Figure 2: PLS-SEM CFA and Structural Model of Scale Quality Teaching

Figure 2 shows that after performing CFA, a few items were excluded to improve the reliability of the scale. A total of 13 items were excluded out of 50 items. So, there are a total of 37 items are in the scale of Quality Teaching.

PLS-SEM results show a good fit of the model (SRMR=0.07, NFI= 0.93), which is acceptable. Latent variables correlation was examined, and the result showed that a significant correlation exists between factors ($p < 0.01$).

Table 4. Construct Validity and Reliability of Quality Teaching Scale

Factors	Cronbach's Alpha	CR	AVE
Collaboration	0.71	0.81	0.52
Classroom Management	0.82	0.87	0.52
Effective Feedback	0.77	0.85	0.59
Explicit Teaching	0.76	0.80	0.51
High Expectations	0.77	0.80	0.50

Factors	Cronbach's Alpha	CR	AVE
Use of Data to Inform Practice	0.83	0.87	0.51
Well Being	0.80	0.85	0.53

Note. CR= Composite Reliability, AVE= Average Variance Extracted

Table 4 depicts that the AVE value of all constructs is greater than 0.5, indicating the convergent reliability of constructs. Cronbach

Alpha and Composite reliability of constructs is above 0.7 indicating internal consistency of constructs.

Table 5. Discriminant validity of Quality Teaching Scale Factors

Constructs	C	CM	EF	ET	HE	UDIP	WB
C	0.72						
CM	0.49	0.72					
EF	0.64	0.45	0.76				
ET	0.42	0.45	0.33	0.71			
HE	0.45	0.19	0.44	0.22	0.71		
UDIP	0.47	0.56	0.47	0.31	0.42	0.71	
WB	0.50	0.51	0.42	0.52	0.20	0.45	0.72

Note. C=Collaboration, CM= Classroom Management, EF=Effective Feedback, ET=Explicit Teaching, HE=High Expectations, UDIP= Use of Data to Inform Practice, WB=Well Being

The discriminant validity was assessed by Fornell Larcker Criterion by comparing the square root of AVE of all constructs. The model of measurement supports the discriminant validity between constructs.

Discussion of Findings

Cronbach Alpha was used to determine the reliability of the instrument, which yielded a coefficient of 0.942. According to Nachmias and Nachmias (2009), a positive coefficient of over 0.7 is considered to be reliable, and the higher the coefficient the more reliable the instruments. Therefore, with a coefficient of 0.942, the instrument was considered reliable for use in appraising teachers' quality of teaching by their students. This result is similar to that of Akram and Zepeda (2015), who conducted a study to develop and validate a Self-assessment Instrument for Teacher Evaluation (SITE II) based on five National Professional Standards for Teachers developed by the Ministry of Education, Pakistan: subject matter knowledge, instructional planning and strategies, assessment, learning environment, and effective communication. The overall reliability of the questionnaire was found high

($\alpha=.94$), and the instrument was considered reliable for use.

Confirmatory Factor Analysis (CFA) was performed to establish the structural validity of scale by using the software Smart PLS. The EFA extracted seven factors from Quality Teaching Scale (QTS). PLS-SEM results show a good fit of the model (SRMR=0.07, NFI= 0.93), which is acceptable. Latent variables correlation was examined, and the result showed that a significant correlation exists between factors ($p<0.01$). This is an indication of evidence of construct validity in the instrument. According to Kpolovie (2010), unlike the correlations found in or required for criterion-related validity, the correlation evidence for construct validity should be moderately high, but not too high. The AVE value of all constructs is greater than 0.5, indicating the convergent reliability of constructs. Cronbach Alpha and Composite reliability of constructs is above 0.7 indicating internal consistency of constructs. The discriminant validity was assessed by Fornell Larcker Criterion by comparing the square root of AVE of all constructs. The model of measurement supports the discriminant validity between constructs. All these results

indicate that the construct validity of the instrument is evident.

Conclusion

Based on the findings of the study, it is concluded that the instrument, "Quality Teaching Scale" is a reliable and validated instrument for use in appraising teachers' quality of teaching in elementary schools in the province of Punjab, Pakistan.

Recommendations

Based on the findings of the study, the

following recommendations were made;

1. School administration should use the "Quality Teaching Scale" for appraising the performance of their teachers. In this way, they can get a clear and genuine picture of the classroom activities of a particular teacher.
2. To appraise their teachers, school administration should use QTS from time to time to get first-hand knowledge about the areas in which a teacher should be more developed.

References

- Aguinis, H. (2009). *An expanded view of performance management*, 26-31. In: J. W. Smither and M. London (Eds.), *Performance management: Putting research into action*. Jossey-Bass, San Francisco.
- Akram, M., & Zepeda, S. J. (2015). Development and validation of a teacher self-assessment instrument. *Journal of Research and Reflections in Education*, 9(2), 134-148. <http://www.ue.edu.pk/jrre>
- Arubayi, D. O. (2003). An Evaluation of the Current Research Efforts in Science Curriculum in Nigeria. *Journal of Education and Society*. 6(1), 99-103.
- Christensen, L. B., Johnson, R. B., & Turner, L. A. (2014). *Research Methods*. Pearson Education Limited.
- Creswell, J. W., & Clark, V. L. P. (2011). Choosing a mixed methods design. *Designing and Conducting Mixed Methods Research*, 2(1), 53-106.
- Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage publications.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approach*. Sage publications.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334. <https://doi.org/10.1007/BF02310555>
- Denzin, N. K., & Lincoln, Y. S. (2011). *The Sage handbook of qualitative research*. Sage. (Eds.).
- Duschl, R. (2008). Science education in three-part harmony: Balancing conceptual, epistemic, and social learning goals. *Review of Research in Education*, 32, 268-291. (edition). United Kingdom: Routledge.
- Farrer, F. (2000). *A quiet revolution: Encouraging positive values in our children*. London: Random House.
- Fauzier, F. A. (2009). Students' perception of the teachers teaching of literature communicating and understanding through the eyes of the audience. *European Journal of Social Sciences*, 7(3), 17-26.
- Flick, U. (2018). *An introduction to qualitative research*. Sage Publications Limited.
- Fontaine, D., & Keeling, A. W. (2017). "Compassionate care through the centuries: highlights in nursing history", *Nursing History Review*, 25(1), 13-25. <https://doi.org/10.1891/1062-8061.25.13>.
- Ford, M. J., & Forman, E. A. (2006). Redefining disciplinary learning in classroom contexts. *Review of Research in Education*, 30, 1-32. <https://www.jstor.org/stable/4129768>
- Graue, E., & Johnson, E. (2011). Reclaiming assessment through accountability that is "just right." *Teachers College Record*, 113(8), 140-149. <https://doi.org/10.1177/016146811111300804>
- Hollins, E. R. (2011). Teachers' preparation for quality teaching. *Journal of Teachers Education*, 62(4), 395-407. <https://doi.org/10.1177/0022487111409415>
- Johnson, B., & Christensen, L. (2014). *Educational research fourth edition: Quantitative, qualitative and mixed approaches*. SAGE Publications, Incorporated.
- Johnson, R. B., & Christensen, L. (2019). *Educational research: Quantitative, qualitative, and mixed approaches*. SAGE Publications, Incorporated.
- Jordan, W. J. (2010). Defining equity: Multiple perspectives to analysing the performance of diverse learners. *Review of Research in Education*, 34(1), 142-178. <https://doi.org/10.3102/0091732X09352898>
- Kpolovie, P. J. (2010). *Advanced Research Methods*. New Owerri, Nigeria, Springfield Publishers Ltd.
- Lovat, T. J. (2005). *Values education and teachers' work: A quality teaching perspective*. National Values Education Forum, Australian Government

- Department of Education Science and Training.
- Morgan, D. L. (2018). Living within blurry boundaries: The value of distinguishing between qualitative and quantitative research. *Journal of Mixed Methods Research*, 12(3), 268-279. <https://doi.org/10.1177/1558689816686433>
- Myers, M. D. (2019). *Qualitative research in business and management*. Sage Publications Limited.
- Nachmias, F. C., & Nachmias, D. (2009). *Research methods in the social sciences*. St. Martin's Press, Inc, London.
- Seldin, P. (1996). *Improving college teaching: What works, what doesn't? Paper presented at the 16th Annual Lilly Conference on College Teaching, Oxford, OH.*
- Zbar, V., Marshall, G., & Power, P. (2007). *Better schools, better teachers, better results: A handbook for improved performance management in your school*. Australian Council for Educational Research, Melbourne.

Appendices

Quality Teaching Scale

This questionnaire is being filled to collect data for research purposes at PhD level. The thesis is entitled "Effect of Values Education on Educational Eco System through Quality Teaching". Its sole purpose is to collect data for research. It is ensured that for all those students who are cooperating for this purpose, their

identity and all other information obtained from them will be kept secret and will not be used for any other purpose.

Student Name: _____

Student Gender: 1: Boy 2: Girl

Class: _____

School Name: _____

Subject 1: Eng, 2: Urdu, 3: Islamiyat

Strongly Disagree(SD)=1, Disagree(DA)=2, Neutral(N)=3, Agree(A)=4, Strongly Agree(SA)=5

S. No	Statements	SD 1	DA 2	N 3	A 4	SA 5
Use of Data to Inform Practices طلبہ سے حاصل معلومات کو استعمال میں لانا						
1	My teacher provides appropriate resources. میرے استاد محترم ہمیں موزوں تعلیمی وسائل مہیا کرتے ہیں۔					
2	My teacher often teaches us through games. میرے استاد محترم اکثر ہمیں کھیلوں کے ذریعے سکھاتے ہیں۔					
3	My teacher uses humor occasionally. میرے استاد محترم بروقت مزاح کو بھی استعمال کرتے ہیں					
4	My teacher gives more time to those students who are needed. میرے استاد محترم ضرورت مند طالب علموں کو زیادہ وقت دیتے ہیں۔					
5	My teacher collects data about students during instruction. میرے استاد محترم پڑھانے کے دوران طلبہ کے بارے میں معلومات بھی حاصل کرتے ہیں۔					
6	My teacher often practices the activities of information exchange in the classroom (Barrier game, Rainbow). میرے استاد محترم کمرہ جماعت میں معلومات کے تبادلے سے متعلق سرگرمیاں منعقد کرواتے ہیں					
7	My teacher asks open ended questions. میرے استاد محترم غیر ختمی سوالات پوچھتے ہیں۔					
8	My teacher practices the activity of drama and role play in the classroom for the learning of language. استاد محترم طلبہ کو زبان و ادب سکھانے کے لیے ڈرامہ اور مختلف کردار ادا کرنے کی سرگرمیاں منعقد کرتے ہیں۔					
Well Being افراد کی بہلائی						
1	My teacher is always ready to help the needy students. میرے استاد محترم ضرورت مند طلبہ کی مدد کرنے کے لیے ہمیشہ تیار رہتے ہیں۔					
2	My teacher gives detailed feedback on our work. میرے استاد محترم ہمارے کام پر تفصیل سے اپنی رائے کا اظہار کرتے ہیں۔					
3	My teacher is very sympathetic. میرے استاد محترم بہت ہمدرد انسان ہیں					
4	My teacher walks through the classroom during lecture/class. میرے استاد محترم کلاس میں پڑھانے کے دوران چکر بھی لگاتے ہیں۔					
5	My teacher appreciates every student's effort for learning. میرے استاد محترم ہر طالب علم کی سیکھنے کی کوشش کو سراہتے ہیں۔					
6	My teacher praises students for their good work. میرے استاد محترم طالب علموں کے اچھے کام کی بدولت ان کی تعریف کرتے ہیں۔					
7	My teacher is friendly. میرے استاد محترم کا رویہ بہت دوستانہ ہے۔					
Classroom Management کمرہ جماعت میں مشغولیت						
1	My teacher verbalizes the thinking process. میرے استاد محترم سوچنے کے عمل کو الفاظ میں بیان کرتے ہیں۔					
2	My teacher provides opportunities for students to practice what they have learnt to make the class interesting.					

S. No	Statements	SD 1	DA 2	N 3	A 4	SA 5
3	میرے استاد محترم کمرہ جماعت کے ماحول کو دلچسپ بنانے کے لیے طلبہ کو سیکھے ہوئے اسباق کا عملی مظاہرہ کرنے کے مواقع فراہم کرتے ہیں۔ My teacher gives opportunities to the students to practice what they have been taught.					
4	میرے استاد محترم طلبہ کو سیکھے ہوئے اسباق کا عملی مظاہرہ کرنے کے مواقع فراہم کرتے ہیں۔ My teacher is open to the point of view of the students.					
5	میرے استاد محترم طلبہ کی رائے کو فراہمی سے سنتے ہیں۔ My teacher gives use feedback that is educative in nature.					
6	میرے استاد محترم ہمیں اپنی ایسی رائے دیتے ہیں جو کہ اپنی ساخت میں تعلیم و تربیت سے متعلق ہوتی ہے۔ My teacher has discipline in his class.					
	Effective Feedback پُر اثر رائے کا اظہار					
1	میرے استاد محترم پڑھانے کے دوران طلبہ کے سیکھنے کے عمل کا بھی مشاہدہ کرتے ہیں۔ My teacher monitors learning and progress of students during teaching.					
2	میرے استاد محترم طلب علموں کو بامعنی رائے دیتے ہیں۔ My teacher gives a meaningful feedback for students.					
3	میرے استاد محترم طلبہ کی ضروریات کے مطابق اپنے طریقے میں تبدیلی کرتے ہیں۔ My teacher changes his instruction style according to the need of the students.					
4	میرے استاد محترم ہر طالب علم کے ساتھ انفرادی طور پر پیش آتے ہیں۔ My teacher has one-to-one interaction with students.					
	Explicit Teaching (Clear Explaining) واضح تدریس					
1	میرے استاد محترم سادہ اور آسانی سے سمجھ آنے والے الفاظ میں گفتگو کرتے ہیں۔ My teacher communicates in simple and easy to understand words.					
2	میرے استاد محترم اسباق کو واضح طور پر پیش کرتے ہیں۔ My teacher makes clear presentation.					
3	میرے استاد محترم ہمیں ایسی مشقیں حل کرنے کے لیے دیتے ہیں جو ہمارے نصاب کے مقاصد سے مطابقت رکھتی ہیں۔ My teacher gives us assignments that match the learning outcomes of the course.					
4	میرے استاد محترم کمرہ جماعت کو سجانے کے لیے کئی سرگرمیوں کا انعقاد کرتے ہیں (چارٹ بنانا، پینٹنگ بنانا اور نمائش وغیرہ)۔ My teacher arranges activities to decorate the classroom (charts, paintings, and exhibitions).					
	Collaboration ہم آہنگی					
1	میرے استاد محترم کمرہ جماعت میں امداد باہمی کاموحوں پیدا کرتے ہیں۔ My teacher creates the environment of helping each other in classroom.					
2	میرے استاد محترم حقیقی تعریف کرتے ہیں (طلبہ کی)۔ My teacher gives genuine praise.					
3	میرے استاد محترم طلبہ کی ذہنی صلاحیتوں کو جلا بخشنے کی کوشش کرتے ہیں۔ My teacher stimulates the students' intellectual development.					
4	میرے استاد محترم اپنی ذاتی مثالوں سے ہمارے لیے نمونہ فراہم کرتے ہیں۔ My teacher sets examples for us by himself.					
	High Expectations بلند امیدیں وابستہ کرنا					
1	میرے استاد محترم ہمیں بروقت اپنی رائے دیتے ہیں۔ My teacher gives us timely feedback.					
2	میرے استاد محترم ہر طالب علم کے متعلق مثبت رویہ رکھتے ہیں۔ My teacher has positive attitude towards every students.					
3	میرے استاد محترم ہر طالب علم کے متعلق مثبت رویہ رکھتے ہیں۔ My teacher inquires about the poor quality work of students when they are not performing well.					

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4	<p>میرے استاد محترم طلبہ کی غیر تسلی بخش کارکردگی کی وجوہات، جاننے کی کوشش کرتے ہیں۔</p> <p>My teacher makes groups of students for discussion.</p> <p>میرے استاد محترم طلبہ کے بحث و مباحثہ کے لیے گروہ بناتے ہیں۔</p>					