

Construction and Standardization of Teaching Effectiveness Rating Scale (TERS) for Teacher Educators

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Abstract—The paper details the construction and standardization of the Teaching Effectiveness Rating Scale for Teacher Educators. This scale assesses teaching effectiveness across eight key dimensions: Subject Mastery, Presentation Style, Student-Teacher Interaction, Preparation & Organization, Classroom Management, Motivational Strategy, Academic Support, and Assessment & Feedback. Initially, the researcher formulated 82 statements, which were reviewed by a panel of eight experts for validation. Based on their feedback, a provisional draft with 58 items was prepared. Further item analysis led to the exclusion of four items, resulting in a finalized scale of 54 items. Reliability testing indicated high consistency, with Cronbach's Alpha at 0.970 and the Spearman-Brown Coefficient at 0.964. Face and content validity were established to ensure the scale's effectiveness. Additionally, norms were developed by computing raw scores and their corresponding z-score ranges, providing a standardized framework for interpretation.

Keywords: Teaching Effectiveness, Teacher Educators, Construction

I. INTRODUCTION

Recent research in India and globally has shown that teachers teaching effectiveness is “the most important school-based predictor of student learning and that several consecutive years of outstanding teaching can offset the learning deficits of disadvantaged students...” - cited on Ramachandran, V., & et.al. (2018). So, teaching effectiveness of a teacher is one of the most important factors in facilitating and enhancing students' learning and thereby bringing a positive alteration in society. According to Flander (1970), “Teaching effectiveness is concerned with relationship between characteristics of teacher, teaching acts and their effects on educational outcomes of classroom teaching. Thus, teaching effectiveness as the degree of success of a teacher in performing instructional and other duties specified in his contrast and demand by the nature of his position (Bhat, 2017).

II. PURPOSE OF CONSTRUCTION AND STANDARDIZATION OF THE TEACHING EFFECTIVENESS RATING SCALE (TERS)

The purpose of construction and standardization of the Teaching Effectiveness Rating Scale (TERS) is to measure the levels of teaching effectiveness of teacher educators in West Bengal.

III. CONSTRUCTION AND STANDARDIZATION OF TEACHING EFFECTIVENESS RATING SCALE (TERS)

The Steps Involved in the Construction and Standardization of Teaching Effectiveness Rating Scale are as follows:

III.I. PLANNING

For constructing the Teaching Effectiveness Rating Scale (TERS) for Teacher Educators, the researcher has undertaken several literature reviews in the area to understand the concept and identify the dimensions.

III.II. PREPARATION

It consists of the following stages:

I. IDENTIFICATION OF DIMENSIONS OF THE SCALE

Table-1: List of Constituents of Teaching Effectiveness with Dimensions of Teaching Effectiveness Rating Scale (TERS)

Constituents of Teaching Effectiveness	Dimensions	Investigation from Review Related Literature
Clear explanation	Subject Mastery	Kamamia et al. (2014),
Concise explanation		Song (2021), Minor et al. (2002),
Providing examples		Akram & Zepeda (2014),
Using analogies		Dar & Ponraj (2021),
Familiar language		Sathiya & Amuthasree (2021),
Control over content		Shahzad & Mehmood (2019),
Updating knowledge		Kulsum (2011), Khan (2015), Barman et al. (2015)
Eye Contact	Presentation Style	
Pause		
Movement		Barman et al. (2015),
Humour		Malikow (2006),
Fillers		Minor et al. (2002)
Clear tone		
Mumble		
Facial expression		
Accept feelings	Student-Teacher Interaction	Akram & Zepeda (2014)
Lecture		Gupta & Verma (2022)
Use or Accept ideas of Students		Sathiya & Amuthasree (2021), Barman et al. (2015), Shahzad & Mehmood (2019)
Asking Question		
Giving direction		Flander interaction analysis (1970)
Lesson plan	Preparation & Organization	Akram & Zepeda (2014)
Co-curricular Activities		Gupta & Verma (2022)
Routine		Dar & Ponraj (2021)
Preparing Assessment		Kulsum (2011)
Attention	Classroom Management	Gupta & Verma (2022), Dar & Ponraj (2021),
Positive reinforcement		Sathiya & Amuthasree (2021), Shahzad & Mehmood (2019)
Classroom control		
Keeping Order		Kulsum (2011), Chamyal (2019)
Time management		Barman et al. (2015),
High involvement		Khan (2015)

Constituents of Teaching Effectiveness	Dimensions	Investigation from Review Related Literature
Praise	Motivational Strategy	Dar & Ponraj (2021)
Encourage		Sathiya & Amuthasree (2021),
Support		Shahzad & Mehmood (2019)
Engage		Kulsum (2011),
Rapport		Malikow (2006), Barman et al. (2015)
Share information	Academic Support	
Teaching learning Materials		
Learning Strategies		
Guidance		Barman et al. (2015),
Open educational resource		Chen (2005)
Remedial class	Assessment & Feedback	
Corrective feedback		
Timely Feedback		Akram & Zepeda (2014),
Assessment observing		Barman et al. (2015),
Objective Nature		Khan (2015)

II. DEFINITION OF DIMENSIONS

1. **Subject Mastery:** It is the advanced and in-depth knowledge that an educator possesses in their specific subject area, enabling them to effectively teach, inspire, and engage (Malikow, 2006) students. This mastery goes beyond just understanding the core content (Song, 2021); it includes the ability to convey complex concepts in an accessible way, anticipate and address student queries (Dar & Ponraj, 2021), and connect the subject matter to real-world applications.

2. **Presentation Style:** It refers to the unique way in which a teacher delivers and communicates content to their students, combining verbal, visual, and nonverbal elements to enhance engagement and understanding (Minor et al. 2002). A teacher's presentation style includes tone of voice, body language, use of teaching aids, (Malikow, 2006), and the overall structure of their lessons. This style can significantly impact student engagement, comprehension, and enthusiasm for learning.

3. **Student-Teacher Interaction:** It refers to the ways in which teachers and students communicate, engage, and connect with one another in the learning environment. This interaction includes verbal and nonverbal exchanges (Flander interaction analysis, 1961), feedback, encouragement, and collaborative efforts that contribute to students' understanding and growth.

4. **Preparation & Organization:** In teaching it refers to the planning and structuring of lessons, materials, and classroom activities in a way that supports smooth, effective instruction (Dar & Ponraj, 2021) and maximizes student learning. This involves developing clear objectives, creating lesson plans (Kulsum, 2011), gathering resources, and setting up the classroom environment (Gupta & Verma, 2022) to facilitate student engagement and understanding.

5. **Classroom Management:** It is the process by which teachers create and maintain a positive, organized, and productive learning environment (Gupta & Verma, 2022). It involves establishing rules, routines (Chamyal, 2019), and expectations that support respectful behaviour (Sathiya & Amuthasree, 2021), effective learning, and a sense of community among students (Shahzad & Mehmood, 2019).

6. **Motivational Strategy:** It refers to a planned approach or technique used by educators to inspire and encourage (Dar & Ponraj, 2021) students to engage in learning and achieve their academic goals (Malikow, 2006; Barman et al. 2015).

7. Academic Support: Academic support provided by a teacher refers to the various forms of assistance and resources that educators offer to help students succeed academically (Barman et al. 2015; Chen, 2005).

8. Assessment & Feedback: Assessment refers to the systematic process of collecting, analysing (Akram & Zepeda, 2014), and interpreting information about student learning (Khan, 2015). Whereas Feedback is the information provided to students regarding their performance on assessments (Barman et al. 2015), highlighting strengths and areas for improvement.

III. WRITING OF ITEMS

For the writing of the items for the Teaching Effectiveness Rating Scale (TERS), the main objective was to identify the factors or elements influencing the Teaching Effectiveness of Teacher Educators. Hence, for the framing of items, positive or negative aspects have been carried out by the researcher working on Teaching Effectiveness.

Table-2: Scoring of the Items of the Teaching Effectiveness Rating Scale (TERS)

Responses	Marking of Positive Statements	Marking of Negative Statements
Always (A)	5	1
Very often (VO)	4	2
Sometimes (S)	3	3
Rarely (R)	2	4
Never (N)	1	5

IV. EXPERT OPINION

The Teaching Effectiveness Rating Scale (TERS) for Teacher Educators, consisting of 82 items, was given to Eight experts for their pertinent opinions and recommendations. Thus, a few items were modified and reduced to 58. Total 58 statements were developed.

Table-3: Total number of items with their code and their distribution over 8 different dimensions in the scale

Sl. No.	Dimensions	Code of items in the Scale	Total No. of Items
1.	Subject Mastery (SM)	SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM8	8
2.	Presentation Style (PS)	PS1, PS2, PS3, PS4, PS5, PS6, PS7, PS8	8
3.	Student-Teacher Interaction (STI)	STI1, STI2, STI3, STI4, STI5, STI6, STI7, STI8, STI9	9
4.	Preparation & Organization (JS)	PO1, PO2, PO3, PO4, PO5, PO6, PO7	7
5.	Classroom Management (CM)	CM1, CM2, CM3, CM4, CM5, CM6, CM7, CM8	8

Sl. No.	Dimensions	Code of items in the Scale	Total No. of Items
6.	Motivational Strategy (MS)	MS1, MS2, MS3, MS4, MS5, MS6	6
7.	Academic Support (AS)	AS1, AS2, AS3, AS4, AS5, AS6, AS7	7
8.	Assessment & Feedback (AF)	AF1, AF2, AF3, AF4, AF5	5
Total			58

III.III. STANDARDIZATION OF TEACHING EFFECTIVENESS RATING SCALE (TERS)

I. FIRST TRY-OUT

The Teaching Effectiveness Rating Scale (TERS) containing 58 statements or items was then administered to 100 teacher educators from eight (8) B.Ed. Colleges or Colleges of Teacher Education (CTEs) of Malda, Murshidabad, and Purba Bardhaman district of West Bengal for the item analysis of the draft scale.

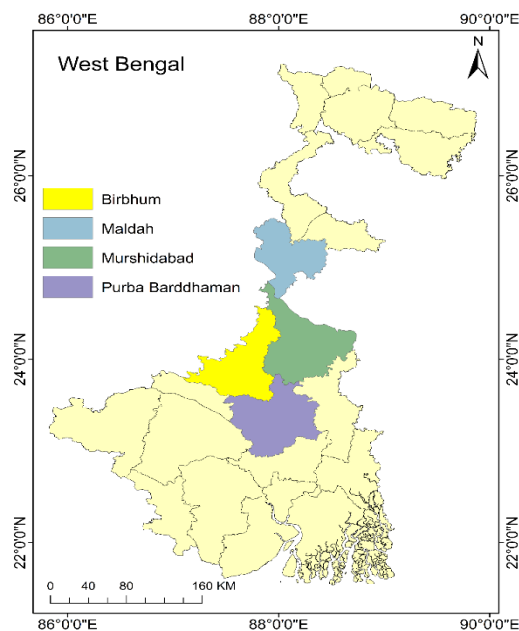


Figure-1: Location of the First Try-out Area of the draft of Teaching Effectiveness Rating Scale (TERS)

Main Research Area: Birbhum

First Try-Out Area: Maldah, Murshidabad and Purba Bardhaman

II. ITEM ANALYSIS

a. Phase I

Item analysis of the draft scale comprising 58 statements was carried out using Kelley's (1939) method, where the sum was calculated for each respondent in all the statements. After which, the list was arranged according to descending order. Thus, 27% of the total respondents who scored the highest on the test (upper group) and 27% of the total respondents who scored the lowest

on the test (lower group) were selected for computing the Mean (of upper and lower group), Standard deviation (of upper and lower group) & their Critical Ratios.

For the present study, the Level of Confidence taken is 99%. Hence, the value of the Critical Ratio (CR) of each item was compared with 2.68 at $df=52$. Thus, if the calculated CR value of an item is ≥ 2.68 then those items were selected.

Table-4: Mean, Standard Deviation, & Critical Ratios (CR) of 58 Items based on Upper and Lower Groups at .01 Level with $df=52$

Item No.	Code	Mean		Standard Deviation		CR at 0.01 Level
		Upper Group	Lower Group	Upper Group	Lower Group	
1.	SM1	4.74	3.30	0.447	0.609	9.943*
2.	SM2	4.07	2.48	0.730	0.802	7.629*
3.	SM3	4.33	3.22	0.784	0.698	5.498*
4.	SM4	4.07	2.93	0.874	0.616	5.582*
5.	SM5	4.41	3.41	0.797	0.694	4.917*
6.	SM6	4.67	3.48	0.480	0.893	6.073*
7.	SM7	4.04	2.56	0.854	1.013	5.811*
8.	SM8	2.41	3.63	0.747	0.688	3.980*
9.	PS1	4.70	3.19	0.542	0.786	8.264*
10.	PS2	4.59	3.89	0.636	0.934	3.237*
11.	PS3	4.11	2.74	0.577	0.813	7.141*
12.	PS4	4.63	3.04	0.492	0.759	9.152*
13.	PS5	4.89	3.37	0.424	0.839	8.396*
14.	PS6	5	4.37	0	0.926	3.533*
15.	PS7	4.30	3.52	0.669	0.849	3.739*
16.	PS8	4.52	3.44	0.580	0.698	6.151*
17.	STI1	4.56	3.37	0.506	0.565	8.118*
18.	STI2	4.26	2.96	0.712	0.706	6.717*
19.	STI3	4.59	3.59	0.501	0.844	5.295*
20.	STI4	4.26	3.63	0.712	0.884	2.883*
21.	STI5	4.22	2.11	0.801	0.892	9.154*
22.	STI6	4.37	2.56	0.688	0.974	7.909*
23.	STI7	4.41	2.89	0.501	0.751	8.741*
24.	STI8	4.37	2.56	0.688	0.823	8.072*
25.	STI9	4.89	3.67	0.424	0.832	6.802*
26.	PO1	4.15	3.48	0.770	0.753	3.217*

Item No.	Code	Mean		Standard Deviation		CR at 0.01 Level
		Upper Group	Lower Group	Upper Group	Lower Group	
27.	PO2	4.22	3.48	0.506	0.700	4.455*
28.	PO3	4.59	3.70	0.636	0.669	5.004*
29.	PO4	4.33	3.48	0.555	0.700	4.956*
30.	PO5	4.30	2.19	0.609	1.001	9.361*
31.	PO6	4.52	3.04	0.509	0.759	8.426*
32.	PO7	4.30	3.70	0.724	0.609	3.256*
33.	CM1	4.70	3.81	0.542	0.483	6.362*
34.	CM2	4.59	3.26	0.501	0.813	7.256*
35.	CM3	4.30	1.85	0.775	0.907	10.642*
36.	CM4	3.70	2.07	0.869	0.917	6.704*
37.	CM5	4.74	3.63	0.447	.565	8.018*
38.	CM6	4.37	3.22	0.565	0.577	7.386*
39.	CM7	4.07	3.22	0.829	0.577	4.383*
40.	CM8	3.96	2.70	0.898	0.724	5.673*
41.	MS1	4.74	3.15	0.447	0.456	12.965*
42.	MS2	4.56	3.33	0.506	0.679	7.495*
43.	MS3	4.85	3.67	0.534	0.620	7.526*
44.	MS4	4.81	3.30	0.396	0.953	7.644*
45.	MS5	4.30	3.15	0.775	0.362	6.972*
46.	MS6	4.89	3.78	0.424	0.506	8.745*
47.	AS1	4.37	3.30	0.629	0.609	6.375*
48.	AS2	4.56	3.56	0.506	0.801	5.485*
49.	AS3	4.85	3.33	0.456	0.679	9.643*
50.	AS4	3.93	2.04	0.781	0.706	9.323*
51.	AS5	3.78	2.19	0.934	1.039	5.924*
52.	AS6	4.70	2.70	0.456	0.869	10.544*
53.	AS7	4.67	2.78	0.480	0.892	9.691*
54.	AF1	4.78	3.59	0.506	0.636	7.575*
55.	AF2	4.52	2.52	0.643	0.935	9.158*
56.	AF3	4.78	3.48	0.506	0.935	6.334*
57.	AF4	4.81	3.52	0.483	0.580	8.923*
58.	AF5	4.33	3.07	0.480	0.675	7.897*

*Significant at 0.01 level

After the drawing out their critical ratios at .01 level of significance at $df=52$, out of a total of 58 items, no items were rejected.

b. Phase II

Due to the non-rejection of any items or statements in phase I, item analysis of the draft scale comprising 58 statements was carried out a second time, but now using the corrected item-total correlation method in phase II. Items were analysed by determining the relationship between a scored item and the total test score.

Table-5: List of items with Corrected Item-total Correlation

Item No.	Code	Corrected Item-total correlation (R)	Item No.	Code	Corrected Item-total correlation (R)
1.	SM1	0.689	30.	PO5	0.746
2.	SM2	0.610	31.	PO6	0.440
3.	SM3	0.547	32.	PO7	0.474
4.	SM4	0.600	33.	CM1	0.574
5.	SM5	0.541	34.	CM2	0.610
6.	SM6	0.551	35.	CM3	0.769
7.	SM7	0.567	36.	CM4	0.585
8.	SM8	0.484	37.	CM5	0.595
9.	PS1	0.674	38.	CM6	0.452
10.	PS2	0.241*	39.	CM7	0.499
11.	PS3	0.684	40.	CM8	0.624
12.	PS4	0.749	41.	MS1	0.745
13.	PS5	0.746	42.	MS2	0.692
14.	PS6	0.364*	43.	MS3	0.674
15.	PS7	0.354*	44.	MS4	0.598
16.	PS8	0.612	45.	MS5	0.616
17.	STI1	0.558	46.	MS6	0.662
18.	STI2	0.567	47.	AS1	0.411
19.	STI3	0.472	48.	AS2	0.452
20.	STI4	0.449	49.	AS3	0.759
21.	STI5	0.512	50.	AS4	0.686
22.	STI6	0.715	51.	AS5	0.529
23.	STI7	0.668	52.	AS6	0.716
24.	STI8	0.735	53.	AS7	0.781
25.	STI9	0.612	54.	AF1	0.631

Item No.	Code	Corrected Item-total correlation (R)	Item No.	Code	Corrected Item-total correlation (R)
26.	PO1	0.395*	55.	AF2	0.825
27.	PO2	0.415	56.	AF3	0.572
28.	PO3	0.601	57.	AF4	0.640
29.	PO4	0.460	58.	AF5	0.548

*Rejected items

Those items which correlate equal to or more than 0.40 ($R \geq 0.40$) were selected. Therefore, after evaluation, the scale consisting of 58 items was retained to 54 items as the test result showed that four item (code: PS2, PS6, PS7 and PO1) was rejected (i.e., $R < 0.40$).

Hence, 54 items are retained for the Teaching Effectiveness Rating Scale (TERS) for the draft of the Scale.

III. ESTABLISHING RELIABILITY

Reliability refers to the measurement of consistency. In the present study, the researcher has estimated the reliability using the following methods:

I. INTER-ITEM CORRELATION WITH DIMENSION TOTAL

To test the correlation of the items within the dimension of the scale, the correlation coefficient of items with their dimension total was calculated.

Table-6: Inter-item Correlation of Subject Mastery (SM)

Item Code	Pearson Correlation(r)	Subject Mastery Total (SMT)
SM1	r	.764**
SM2	r	.626**
SM3	r	.678**
SM4	r	.645**
SM5	r	.600**
SM6	r	.608**
SM7	r	.663**
SM8	r	.602**
SMT	r	1

**Significant at 0.01 Level with $df = 98$ ($r \geq 0.254$)

The above Table-6 indicates that the correlation coefficient between the items (SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM8) with the dimension total, i.e. Subject Mastery Total (SMT) at $df = 98$, has Pearson Correlation (r) values ranging from 0.600 to 0.764 which are significant at .01 level. Hence, none of the items are rejected and all 8 items are retained for the final form/draft of the scale.

Table-7: Inter-item Correlation of Presentation Style (PS)

Item Code	Pearson Correlation(r)	Presentation style Total (PST)
PS1	r	.738**

PS3	r	.856**
PS4	r	.815**
PS5	r	.837**
PS8	r	.791**
PST	r	1

**Significant at 0.01 level with $df = 98$ ($r \geq 0.254$)

The above Table-7 indicates that the correlation coefficient between the items (PS1, PS3, PS4, PS5, PS8) with the dimension total, i.e. Presentation style Total (PST) at $df = 98$, has Pearson Correlation (r) values ranging from 0.738 to 0.856 which are significant at .01 level. Hence, none of the items are rejected and all 5 items are retained for the final form/draft of the scale.

Table-8: Inter-item Correlation of Student-Teacher Interaction (STI)

Item Code	Pearson Correlation(r)	Student-Teacher Interaction Total (STIT)
STI1	r	.610**
STI2	r	.616**
STI3	r	.499**
STI4	r	.497**
STI5	r	.658**
STI6	r	.793**
STI7	r	.740**
STI8	r	.788**
STI9	r	.623**
STIT	r	1

**Significant at 0.01 Level with $df = 98$ ($r \geq 0.254$)

Table-8 indicates that the correlation coefficient between the items (STI1, STI2, STI3, STI4, STI5, STI6, STI7, STI8, STI9) with the dimension total, i.e. Student-Teacher Interaction Total (STIT) at $df = 98$ has Pearson Correlation (r) values ranging from 0.497 to 0.788 which are significant at .01 level. Hence, none of the items are rejected and all 9 items are retained for the final form/draft of the scale.

Table-9: Inter-item Correlation of Presentation & Organization (PO)

Item Code	Pearson Correlation(r)	Presentation & Organization Total (POT)
PO2	r	.619**
PO3	r	.594**
PO4	r	.485**
PO5	r	.746**
PO6	r	.670**
PO7	r	.549**
POT	r	1

**Significant at 0.01 Level with $df = 98$ ($r \geq 0.254$)

Table-9 indicates that the correlation coefficient between the items (PO2, PO3, PO4, PO5, PO6, PO7) with the dimension total, i.e. Presentation & Organization Total (POT) at $df = 98$ has Pearson Correlation (r) values ranging from 0.485 to 0.746 which are significant at .01 level. Hence, none of the items are rejected and all 6 items are retained for the final form/draft of the scale.

Table-10: Inter-item Correlation of Classroom Management (CM)

Item Code	Pearson Correlation(r)	Classroom Management Total (CMT)
CM1	r	.640**
CM2	r	.638**
CM3	r	.830**
CM4	r	.733**
CM5	r	.685**
CM6	r	.583**
CM7	r	.518**
CM8	r	.655**
CMT	r	1

**Significant at 0.01 level with $df = 98$ ($r \geq 0.254$)

The above Table-10 indicates that the correlation coefficient between the items (CM1, CM 2, CM 3, CM6, CM7, CM8) with the dimension total, i.e. Classroom Management Total (CMT) at $df = 98$, has Pearson Correlation (r) values ranging from 0.518 to 0.830 which are significant at .01 level. Hence, none of the items are rejected and all 8 items are retained for the final form/draft of the scale.

Table-11: Inter-item Correlation of Motivational Strategy (MS)

Item Code	Pearson Correlation(r)	Motivational Strategy Total (MST)
MS1	r	.740**
MS2	r	.813**
MS3	r	.753**
MS4	r	.793**
MS5	r	.724**
MS6	r	.778**
MST	r	1

**Significant at 0.01 level with $df = 98$ ($r \geq 0.254$)

The above Table-11 indicates that the correlation coefficient between the items (MS1, MS2, MS3, MS4, MS5, MS6) with the dimension total, i.e. Motivational Strategy Total (MST) at $df = 98$, has Pearson Correlation (r) values ranging from 0.724 to 0.813 which are significant at .01 level. Hence, none of the items are rejected and all 6 items are retained for the final form/draft of the scale.

Table-12: Inter-item Correlation of Academic Support (AS)

Item Code	Pearson Correlation(r)	Academic Support Total (AST)
AS1	r	.593**
AS2	r	.589**

AS3	r	.662**
AS4	r	.752**
AS5	r	.743**
AS6	r	.843**
AS7	r	.776**
AST	r	1

**Significant at 0.01 level with $df = 98$ ($r \geq 0.254$)

The above Table-12 indicates that the correlation coefficient between the items (AS1, AS2, AS3, AS4, AS5, AS6, AS7) with the dimension total, i.e. Academic Support Total (AST) at $df = 98$, has Pearson Correlation (r) values ranging from 0.589 to 0.843 which are significant at .01 level. Hence, none of the items are rejected and all 7 items are retained for the final form/draft of the scale.

Table-13: Inter-item Correlation of Assessment & Feedback (AF)

Item Code	Pearson Correlation(r)	Assessment & Feedback Total (AFT)
AF1	r	.802**
AF2	r	.809**
AF3	r	.796**
AF4	r	.790**
AF5	r	.572**
AFT	r	1

**Significant at 0.01 level with $df = 98$ ($r \geq 0.254$)

The above Table-13 indicates that the correlation coefficient between the items (AF1, AF2, AF3, AF4, AF5) with the dimension total, i.e. Assessment & Feedback Total (AFT) at $df = 98$, has Pearson Correlation (r) values ranging from 0.572 to 0.809 which are significant at .01 level. Hence, none of the items are rejected and all 5 items are retained for the final form/draft of the scale.

II. INTER-DIMENSION CORRELATION WITH SCALE TOTAL

The inter-dimension and dimension total correlation was calculated as follows:

Table-14: Inter-dimension Correlation with Scale Total

Item Code	Pearson Correlation(r)	Teaching Effectiveness Rating Scale Total (TERST)
SMT	r	.919**
PST	r	.877**
STIT	r	.935**
POT	r	.890**
CMT	r	.917**
MST	r	.879**
AST	r	.904**
AFT	r	.872**
TERST	r	1

**Significant at 0.01 level with $df = 98$ ($r \geq 0.254$)

Note: **SMT**= Subject Mastery Total, **PST**= Presentation Style Total, **STIT**= Student-Teacher Interaction Total, **POT**= Presentation & Organization Total, **CMT**= Classroom Management Total, **MST**= Motivational Strategy Total, **AST**= Academic Support Total, **AFT**= Assessment Total, **TERST**=Teaching Effectiveness Rating Scale Total

Table 14, shows that the Pearson correlation coefficient of inter-dimension of eight dimensions total (SMT, PST, STIT, POT, CMT, MST, AST, AFT) with the Scale total (TERST) ranges between 0.872 and 0.935. It indicates that there exists good reliability between the dimensions and the scale.

III. INTERNAL CONSISTENCY

The scale's internal consistency was established using Cronbach Alpha and Split-half methods. Cronbach Alpha was calculated to determine the internal consistency of the items in the whole test. Meanwhile, the Spearman-Brown Coefficient was used to compute the Split-half method by dividing the items on the scale into two halves based on the Odd-Even form.

Table-15: Internal Consistency of the Final Draft of the Teaching Effectiveness Rating Scale (TERS)

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	0.970
	Total Number of Items	54
Correlation Between Forms		0.931
Spearman-Brown Coefficient	Equal Length	0.964
	Unequal Length	0.964

Thus, in Table 15, **Cronbach's Alpha value of 0.970** and **Spearman-Brown Coefficient value of 0.964** indicate that the Teaching Effectiveness Rating Scale (TERS) has good internal consistency.

V. ESTABLISHING VALIDITY

In the present study, validity was established using face validity and content validity methods.

Face Validity: It refers to the extent to which a test is subjectively viewed as covering the concept it purports to measure. Face Validity for the Teaching Effectiveness Rating Scale (TERS) was measured by the Supervisor and the Eight experts to whom the scale was given for their critical evaluation. Thus, the researcher established face validity.

Content Validity: Content Validity evaluates how well a test covers all relevant parts of the construct it aims to measure. Thus, the Scale was given to eight experts for their pertinent opinions, recommendations, and feedback. The feedback and suggestions were then incorporated, and items found to be similar and repetitive in nature were modified and further increased to 78 statements.

III.IV. FINAL BLUEPRINT

Table-16: Distribution of Total Items Retained for the Final Draft of the Teaching Effectiveness Rating Scale (TERS)

Sl. No.	Dimensions	Code of items in the Scale	Total No. of Items
1.	Subject Mastery (SM)	SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM8	8
2.	Presentation Style (PS)	PS1, PS3, PS4, PS5, PS8	5
3.	Student-Teacher Interaction (STI)	STI1, STI2, STI3, STI4, STI5, STI6, STI7, STI8, STI9	9

4.	Preparation & Organization (JS)	PO2, PO3, PO4, PO5, PO6, PO7	6
5.	Classroom Management (CM)	CM1, CM2, CM3, CM4, CM5, CM6, CM7, CM8	8
6.	Motivational Strategy (MS)	MS1, MS2, MS3, MS4, MS5, MS6	6
7.	Academic Support (AS)	AS1, AS2, AS3, AS4, AS5, AS6, AS7	7
8.	Assessment & Feedback (AF)	AF1, AF2, AF3, AF4, AF5	5
Total			54

III.V. ESTABLISHMENT OF NORMALITY OF TEACHING EFFECTIVENESS RATING SCALE (TERS)

III.V.I. SECOND TRY-OUT

To establish the normality, the researcher distributed 213 final drafts of the Teaching Effectiveness Rating Scale to the teacher educators of 14 B.Ed. Colleges or Colleges of Teacher Education (CTEs) are under 6 districts of West Bengal, namely Bankura, Pashchim Bardhaman, Purulia, Nadia, Uttar Dinajpur, and Dakshin Dinajpur. The researcher returned 202 responses, of which 2 were incomplete. Thus, 200 teacher educators who had voluntarily participated in the research were considered to establish normality.

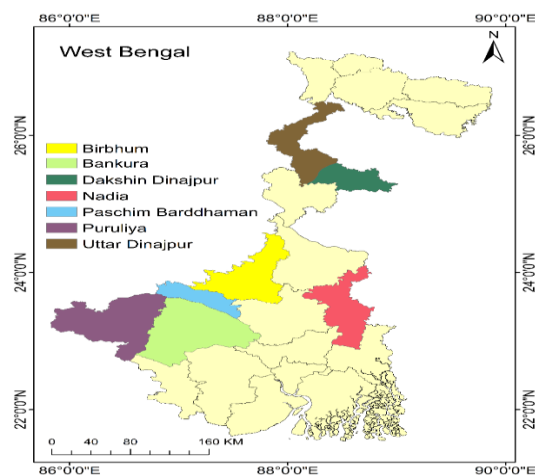


Figure-2: Location of the Second Try-out Area for the Final draft of Teaching Effectiveness Rating Scale

Main Research Area: Birbhum district

Second Try-Out Area: Bankura, Paschim Bardhaman, Puruliya, Nadia, Uttar Dinajpur and Dakshin Dinajpur

III.V.II. DATA STATISTICS

Table-17: Data Statistics of the Teaching Effectiveness Rating Scale (TERS)

TERS	Total Samples	Mean	Median	Mode	Standard Error of Mean	Standard Deviation	Skewness	Kurtosis
	200	207	207.5	235	1.869	26.43	-0.190	-0.527

Table-17 indicates the Skewness value as **-0.190** and the Kurtosis value as **-0.527** of the Teaching Effectiveness Rating Scale (TERS). According to SPSS: Descriptive Statistics, the Skewness and Kurtosis value should be less than ± 1 to be considered normal. Hence, the data fall under **normal distribution**.

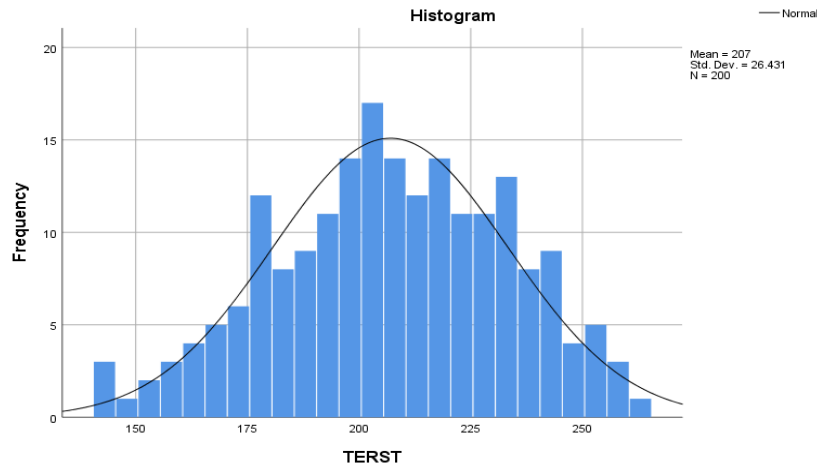


Figure-3: Histogram distribution of the Teaching Effectiveness Rating Scale (TERS)

III.V.III. TEST FOR NORMALITY

Table-18: Shapiro-Wilk Test of the Teaching Effectiveness Rating Scale (TERS)

	Shapiro-Wilk		
	Statistic	df	Sig
TERS	0.898	200	0.109

For testing the normality of the distribution, the Shapiro-Wilk Test was conducted, the result was found as the p -value (0.109) is greater than the alpha-value (0.05) i.e., $p > 0.05$. Thus, it can be stated that the data collected from 200 teacher educators for the standardization of Teaching Effectiveness Rating Scale has a good fitness to the normal distribution.

III.V.IV. LEVELS OF TEACHING EFFECTIVENESS RATING SCALE (TERS)

The researcher converted the raw scores into z-scores to frame the norms to interpret the levels of the Teaching Effectiveness Rating Scale (TERS). The raw scores of 200 samples (Mean: 207 and SD: 26.43) range from 143 to 261 and their z-score range from -2.42149 to 2.043133.

Table-19: Norms for Interpretation: z-Score for Levels of the Final draft of the Teaching Effectiveness Rating Scale (TERS)

Range of Raw Score	Range of Z Score	Levels of the Teaching Effectiveness Rating Scale (TERS)	Frequency	Percentage (%)
260 and above	+2.00 σ and above	Extremely Effective	2	1
234 to 259	+1.02 σ to +1.97 σ	Highly Effective	35	17.5
181 to 233	-0.98 σ to +0.98 σ	Moderately Effective	127	63.5

180 to 155	-1.02 σ to -1.97 σ	Slightly Effective	31	15.5
154 and below	-2.00 σ and below	Less Effective	5	2.5
Total			200	100

From the above distribution (Table-19), the Raw scores and z- Scores range are divided into five Category or Levels. These are Less Effective (-2.00 σ and below), Slightly Effective (-1.02 σ to -1.97 σ), Moderately Effective (-0.98 σ to +0.98 σ), Highly Effective (+1.02 σ to +1.97 σ) and Extremely Effective (+2.00 σ and above).

IV. CONCLUSION

After construction and standardization of Teaching Effectiveness Rating Scale (TERS) for teacher educators, it is ready for final data collection.

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