Development and Validation of Teachers Feedback Literacy (TFL) Scale

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Abstract

A focus on teachers feedback literacy is extremely decisive as student feedback literacy to a largely pivot on teacher feedback literacy (Carless & Winstone, 2020). If the teachers are feedback literate it is very difficult to for students to utilize feedback to utmost. If it is important than answering the question that how to measure TFL becomes of prime importance. The current study is an attempt to develop and validate a scale to spot light this budding concept to measure TFL in Pakistan paying attention to the call for research by Carless and Winstone (2020) on scale development to measure teacher feedback literacy. The TFL scale was developed by mapping of design, relational and pragmatic dimension and 19 competencies framework for TFL as stated by Carless and Winstone (2020) and Boud and Dawson (2021). The scale comprises of 42 items after incorporating suggested changes by experts and piloting the tool and reliability checks. The total TFL score is 168 as it is comprised of 42 items have 4 scores for each item. The number of items for all the three dimensions were as follows i.e. Design=16, Relational=13 and Pragmatic=13. The Cronbach's Alpha =0.867 and CVI=0.87 were calculated which are in the acceptable range of tool to be used by researcher. The development of TFL scale is value addition to measure the level of TFL and TFL can enhanced through CPD.

INTRODUCTION

The Journey of feedback literacy (FL) started by Sutton (2012) coining and defining as students' capability to read, understand and employ feedback. He emphasized comprehending feedback and managing it in an effective way both by the teacher and Students. He further explored an apparent gap between student capabilities and what the teachers expect from students, and to fill this gap teachers need to develop feedback literacy

which was termed as teachers' feedback literacy (TFL) to lead in the teaching-learning process. Building on it, Carless and Boud (2018) and Molloy, Boud, and Henderson (2020) dug out a structure for students' feedback literacy (SFL) and defined as the ability of students to comprehend the potentialities, and characteristics required to process the information and bring it into practice to enhance their learning. Malecka, Boud, and Carless (2020) developed the procedure to embed SFL in the curriculum. Winstone and Carless (2020) made SFL discipline-specific. Carless and Boud (2020) defined teachers' feedback literacy (TFL) as knowing the principles and practices of feedback; the pedagogical skills and capabilities to plan and execute feedback practices in a befitting manner; and the approach and determination to overcome challenges and make an effort to develop creative feedback for students. Boud and Dawson (2021) put forward a framework of competencies for TFL. The current study is an endeavour to develop as scale to measure TFL based on mapping of design, relational and pragmatic dimension and19 competencies framework of TFL as stated by Carless and Winstone (2020) and .Boud and Dawson (2021).

INTERPLAY OF FEEDBACK, STUDENTS FEEDBACK AND TEACHERS' FEEDBACK LITERACY

Educational assessment has many benefits and providing feedback on the tasks assigned to students is considered one of the ten major factors influencing students' achievement and had a large effect size. Teachers' Feedback steers students' learning (Epstein, 2007).

Feedback provides necessary information regarding set targets and achievements; assists in identifying gaps between targets and achievements and provides a way forward to bridge these gaps. Teachers and students are key stakeholders in the feedback practices and have shared responsibilities as one disseminates information and the other assimilates and vice versa. .(Winstone & Boud,2020)

Providing feedback on the assignment given to students plays a very important role in teaching and learning process and it is effective if the students are engaged with teachers' feedback (Brooks, Burton, van der Kleij, Ablaza, Carroll, Hattie and Neill, 2021). A spotlight on teachers and their feedback literacy is extremely fundamental as student feedback literacy (SFL) mainly pivot on teacher feedback literacy (TFL) (Carless & Winstone, 2020).

WHY TO DEVELOP SCALE FOR TFL?

Literature has revealed that there is a disparity between teachers feedback and students needs in terms of feedback. Researchers are of the view that in order to enhance students learning both teachers and students have a shared responsibility to play their role in dissemination and receiving feedback (Nash and Winstone, 2017). Teachers' feedback practices necessarily build on their feedback literacy. (De-Kleijn, 2021).

In the Pakistani context, the feedback provided by teachers is deficient in the necessary information owing to their unfamiliarity with teachers' feedback literacy (TFL) and its dimension i.e. pragmatic, design, and relational dimensions of feedback and the feedback is less likely to supplement the process of self-regulation of the students.

With Teachers' deficient of feedback literacy can hardly make their students get true fruit from the feedback. TFL being a novice concept and still in its phase of budding, researchers are exploring different areas and dimensions of TFL and its interplay with other in class and

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out of classroom variables. Measuring TFL to know its extent is one of the areas of discussion in literature and was suggested by Carless and Winstone (2020). Paying attention to their call, the current study was carried out to develop and validate a scale based on mapping 19 competencies framework of TFL put forwarded by Boud and Dawson (2021) and three dimension of TFL i.e. design, relational and pragmatic to measure teachers feedback literacy defined by Carless and Winstone (2020).

Teachers' Feedback Literacy

Teachers' feedback literacy(TFL)means knowing the principles and practices of feedback; the pedagogical skills and capabilities to plan and execute feedback practices in a befitting manner; and the approach and determination to overcome challenges and make an effort to develop creative feedback for students.
TFL has three dimensions
• Design Dimension means that teachers are to create opportunities for students to use feedback to improve their skills or understanding
• The relational dimension means that teachers use their relational sensitivities to 'show supportiveness, approachability, and sensitivity in how feedback is shared with students
• The pragmatic dimension means how a teacher manages the time expended on feedback activities for maximum utility.

FRAMEWORK FOR TEACHERS' FEEDBACK LITERACY COMPETENCIES

 Boud and Dawson (2021) in their exclusive work on TFL derived 19 competencies and formed a framework having three broad categories. i.e. 7 Macro-Level competencies which cover designing and developing feedback, 9 Meso-Level competencies preparing and implementing feedback and 3 Micro-Level competencies focusing on practical aspects of feedback and interaction between teachers and students.

Macro Level Competencies

(a) Strategically Planning feedback.
(b) Maximum Utilizing of Available Resources
(c) Creating Real Feedback Enriching Surroundings
(d) Developing Students' Feedback Literacy (SFL)
(e) Coordinating with Colleagues
(f) Managing pressure during feedback
(g) Improving the processes of Feedback Provision

Meso-Level Competencies

(a) Maximum utility of available time for feedback
(b) Organizing time, location, and sequence of feedback
(c) Designing feedback as dialogues
(d) Constructing and implementing Tasks with feedback
(e) Framing feedback as per communicated Standards and Targets
(f) Managing

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(g) Utilizing Appropriate Technology for Feedback
(h) Designing intentional prompts for execution
(i) Designing feedback involving peers and other stakeholder

Micro competencies
(a) Identifying and responding to students' needs
(b) Preparing appropriate input
(c) Differentiating between different needs of students

Table 1
Frame Work of Teachers' Feedback Literacy Scale Based on All Dimension

S No	Dimension	Sub Constructs	Indicators	Statements
1		Developing Students Engaging strategies	Time	i)Teacher provides timely feedback
			Encouragement	ii)Stating Teacher's Feedback starts with positive points first and then grey areas
			Focus on Area/Skill Improvement	iii)Teacher Focuses on specific area of Improvement
			Mutual Trust	iv)Teachers and students Enjoy mutual Trust
			Receptive	v)Teacher listens the students
	Design Dimension		Assistance	vi)Teacher is assisting the students to learn (Teacher act as facilitator)
			Review	vii)class test are reviewed together
2		Uses inclusive feedback practices for all students	Participation	Teacher ensures maximum Participation of student(Maximum participation = teachers provide feedback to more than 10 students on their work or performance in the class)
3		Apportions feedback resources to most effect	Verbal feedback	Feedback is conveyed verbally
			Written feedback	Feedback is conveyed on written assignment by Grades/Marks, smilie , emoji

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			etc or any other _____(please write)
4	mobilizes students for multiple feedback roles	Readiness	Teacher mobilizes the students to assimilate feedback
5			Teacher mobilizes the students to give feedback
6	Assists students to utilize information from the environment in which they operate	Real Life experience	Real life examples are related while providing feedback
7	Explains feedback to students and their role in it	Explains Roles	I ensures the utilization of feedback for improvement
8	Promotes feedback as something useful	Promote	FB promotes to improve teachers' feedback practices .
10	Maximizes effects of limited opportunities for feedback	Effective	Feedback has some visible Effect
1	Designs exemplar exercises that involve students providing feedback	Example	Students are engaged using multiple relevant engaging examples
2	**Relational Dimension** Facilitates and equips students to engage in peer feedback processes	Facilitate	Teachers facilitates to get peer feedback on their work
		Prepare	Teacher enables the students to get peer feedback to get peer FB
3	Connects students with other feedback providers	Relate FB with other sources	Teacher Relates the FB provided by parents, digital media and peers
4(11R)	Fine tunes their comments to individual student needs	Differential FB	Teacher modifies his feedback /comments as per students' needs
5	Ensures students	Practicable	Teacher provides clear

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	receive usable information	input	feedback instructions/comments/grades so students can use it for focused area of improvement.
6	Relates feedback inputs to students' self-assessments of their work	Relating FB with Self assessed work	I relate my feedback to students' self-assessment
7	Provides comments that identify needed improvements	Required Comments	Teacher always provides focused comments for needed improvement area.
8	Poses questions that open students to new ways of thinking about their work and other ways of doing it	Thought provoking Questioning	Teacher always uses questioning to enable students to review their work critically
9		Thinking multiple ways	Teacher always instigate students greatly to think alternate ways of doing the same task
10	Strategically avoids wasting time on low-level corrections	Focus on Major Areas of Improvement	Teacher provides feedback on major needed corrections
12	Identifies students at risk of not being able to use feedback processes well	Identify	I identify at risk (weak) student(s) unable to utilize feedback
13	Seeks to engage difficult to involve/ marginal/excluded students	Engagement	Low achievers are engaged by asking questions, seeking comments, opinions, during class discussions

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1		Sequences feedback events to maximize their influence on student learning	Sequence	I disseminate feedback at the end of formative exam I disseminate feedback on any submitted assignment. I disseminate feedback at the end of any classroom task.
2		Prompts students to identify particular kinds offeedback information they need	Get useful FB	Teacher assists the students to identify type of feedback required by students
3	**Pragmatic Dimension**	Sources and deploys a wide range of exemplars to demonstrate features of good work	Prepares Show case	Teacher is prepared to provide FB(at least 4 best examples) Teacher presents example work to be used as standard at least 4 best examples)
4(9D)		Explicitly connects feedback information to standards to be achieved	Connect FB to Standards	Feedback is provided on already stated standards for assigned task
5		Uses technology to enable more efficient/scalable feedback processes	Use of Technology	I provide feedback on students work, attendance , or any query raised by parents /students using WhatsApp group of class I provide feedback on students work, attendance , or any query raised by parents /students using cell phone I accept submission of assignments through email, Google Documents, LMS, Google Classroom, Google Meet etc or any other technology _____(please mention if any)

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6	Provides persuasive rationales for the importance of student actions in feedback processes	Engage students	I provide reasons to involve students in feedback processes.
7	Designs activities so students can incorporate feedback responses into subsequent assignments	Design FB activities for later tasks	I plan assignments and task to be re submitted after necessary correction as per provided feedback
8	Invites students to show how they have utilized feedback information in their work	Utility of Feedback	Students narrate /show case corrected work after provision of feedback

DEVELOPING TEACHERS FEEDBACK LITERACY SCALE
In order to measure the teachers' feedback literacy (TFL), the TFL scale was developed initially comprising 53 items which was later reduced to 42 items after incorporating suggested changes by experts and piloting the tool and reliability checks.
Table below shows the framework of all sub-constructs and indicators and statements made for three sub-scales.
The tool comprised **following** three sub-scales**:-**
(a)   Teachers' Feedback Literacy Classroom-Observation Sheet (TFL-OS)(**Annexure-B**)
(b)   Teachers' Feedback Literacy Questionnaire (TFL-Ques)(**Annexure-C**)
(c)   Prompt Based Performance Observation Sheet for TFL (Prompt Based Performance – OS for TFL) (**Annexure-D**)

Scoring Method
The total TFL score is 168 as it is comprised of 42 items have 4 scores for each item. The number of items for all the three dimensions were as follows i.e. Design=16, Relational=13 and Pragmatic=13.
The scoring for TFL Classroom Observation and Prompt Based Performance for TFL Observation, were to be recorded on observation sheet during classroom teaching-learning process and observer to tally mark in the light of Wraggs (2014) who suggested the method to record the frequency of occurrence as Always = 4 or above, Often = 3, Sometimes = 2, Rarely = 1 and Never = 0 and then it was to be quantified on five-point Likert type scale to show the level of proficiency in TFL i.e. Beginner/Novice=0, Advance Beginner=1, Competent=2,

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Proficient=3 and Expert =4 keeping in view the pre-determined rubrics (**Annexure-A**)
 The TFL self-report questionnaire was used to get responses from the subject teachers   on a five-point Likert scale Always = 4, Often = 3, Sometimes = 2, Rarely = 1 and Never = 0.
These scores were then tabulated to give a consolidated score of TFL which was interpreted as per the following pre-determined criteria.

Levels of proficiency in TFL
 The following table shows the range of score for interpretation of Levels of proficiency in TFL which has been developed by dividing the total scores to number of responses for tally marking and observation**.**

Table
 Showing Levels of TFL for Interpretation

TFL Scores	Interpretation
0-33.6	Beginner
33.7-67.2	Advance Beginner
67.2-100.8	Competent
100.9-134.4	Proficient
134.5.168	Expert

 The TFL Classroom Observation Sheet
It consisted of 20 items based on indicators of three dimensions, the scoring was initially recorded during observation of the classroom teaching-learning process and tally marking in the light of Wraggs (2014) who suggested the method to record the frequency of occurrence as Always = 4 or above, Often = 3, Sometimes = 2, Rarely = 1 and Never = 0 and then it is quantified on five-point Likert type scale to show the level of proficiency in TFL i.e. Beginner/Novice=0, Advance Beginner=1, Competent=2, Proficient=3 and Expert =4 keeping in view the pre-determined rubrics attached as Annexure-A.

The Prompt-Based Performance Observation Sheet for TFL
It consisted of 06 items based on indicators of three TFL dimensions. The observer gave three prompts to teachers
(a)   a sample homework assignment and the teacher's feedback on the assignment was observed;
(b)   a sample WhatsApp message from students or parents was prompted to get teachers' response for observation and
(c)   a piece of formative assessment of different subject (normally real time) was prompted for getting teachers feedback response.
The response is to be recorded for subject teachers. The scoring method is the same by tally marking in the light of Wraggs (2014) to record the frequency of occurrence as Always = 4 or above, often = 3, Sometimes = 2, Rarely = 1 and Never = 0 and then it is quantified on five-point Likert type scale to show the level of proficiency in TFL i.e. Beginner/Novice=0, Advance

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Beginner=1, Competent=2, Proficient=3 and Expert =4 keeping in view the pre-determined rubrics attached as **Annexure-A**.

The TFL Questionnaire
It consisted of 16 items based on a five-point Likert scale ranging from 0-4 Always = 4 or above, Often = 3, Sometimes = 2, Rarely = 1 and Never = 0, the scoring is initially recorded during observation of the classroom teaching-learning process and tally marking in the light of Wraggs (2014) who suggested the method to record the frequency of occurrence as and then it is quantified on five-point Likert type scale to show the level of proficiency in TFL i.e. Beginner/Novice=0, Advance Beginner=1, Competent=2, Proficient=3 and Expert =4 keeping in view the pre-determined rubrics attached as Annexure-A.

VALIDITY AND RELIABILITY
Validity
All the instruments of the study were submitted for validation to 09 different experts in the Faculty of Education, Allama Iqbal Open University, Islamabad, Federal College of Education, Islamabad and field experts. 09 experts (List Attached in Appendix E) validated and provided their expert opinions. The experts opined on consistency, clarity and comprehension. All the valuable input was incorporated under the guidance of the supervisor and the instruments were finalized to be launched for pilot testing. The content Validity Index (CVI) of each instrument was calculated. The Items of the instruments on which there was agreement of 6-7 experts were maintained while an agreement on items by 4-5 experts was amended/ rephrased accordingly. The amended and rephrased instruments were used to collect data during the pilot study.

The comments, recommendations and suggestions of the experts were considered during the survey. The valuable comments of the experts reinforced the content validity. Threats to validity were also controlled.

Pilot Study
For reliability of the research instrument the piloting of the TFL scale was conducted in Islamabad Model School for Boys (VI-X), G-9/1. 06 teachers and two sections comprising 52 students participated in the pilot.

Reliability
Cronbach's alpha (α) was used to calculate the internal consistency of the items. The overall reliability of TFL scale was calculated to be 0.867 which was acceptable.

Showing overall Reliability Statistics for TFL scale

Cronbach's Alpha	N of Items
.867	42

The sub-scale summary of reliability statistics are tabulated below.

Table
Showing Reliability Statistics for sub scales of TFL

Sub Scale	Cronbach's Alpha	No of Items
Observation Sheet for TFL	.911	20
TFL Questionnaire	.948	16
Observation Sheet for TFL Performance Based Prompts	.800	6

Inter-Rater Reliability of Research Instruments
The research instrument was pilot-tested in 02 classes with 06 iterations to establish reliability. The inter-rater reliability has been used to get the Inter-rater reliability which was 0.91 of the OS for TFL, OS for TFL Performance Based Prompts and SE- OS.

Conclusion
TFL is has come to lime light and has a large effect size on students learning. SFL and TFL are inter-woven constructs and play a very vital role in reinforcing teaching and learning process. Teachers need to develop FL as part of their professional competence to support students develops their FL which will definitely enhance their academic achievement and positively control other important classroom dynamic. Developing and validating TFL scale is a humble contribution in the area of FL and way forward to measure TFL to improve quality of education in Pakistani and international perspectives.

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<div align="right">**Annexure- A**</div>

<div align="center">**Classroom Observation Sheet for TFL**</div>

School_____

Class_____   Date_____

Lesson_____   Teacher's   Name_____

Subject_____Observer_____

Start Time_____End Time_____

Instructions for observer:

Please mark (/) for the number of instances when each of the following occurs during that specified period time. You may write remarks if any that may assist you to quantify data. Observer shall record an observation at 1-minute interval for a period of 40 minutes. Use following scoring guidelines.

Design Dimension		Instances					
S No	Statements	N	R	S	O	A	
D1OT1 D1QT2 D1OT3 D1OT4 D1OT5 D1OT6 D1QT7	(i)Teacher provides timely feedback	0	1	2	3	4	5
	(iii)Teacher Focuses on specific area of Improvement	0	1	2	3	4	5
	(iv)Teachers and students Enjoy mutual Trust	0	1	2	3	4	5
	(v)Teacher listens student's response carefully	0	1	2	3	4	5
	(vi)Teacher assists students learning	0	1	2	3	4	5
D2OT8	Teacher ensures maximum Participation of student (Maximum participation = teachers provide feedback to more than 10 students on their work or performance in the class)	0	1	2	3	4	5
D3OT9 D3OT10	Feedback is conveyed verbally	0	1	2	3	4	5
	Feedback is conveyed on written assignment by drawing Grades, Some smilie , emoji etc((please Confirm from students)	0	1	2	3	4	5
D6OT13	Real life examples are related while providing feedback	0	1	2	3	4	5
D10OT16	Feedback has some visible effect	0	1	2	3	4	5

Never (N) =0, Rarely (R)= 1, Sometimes (S)= 2, Often (O)= 3, Always = 4 or more After recording instance of occurrence the scoring on then it is quantified on five point Likert type

scale to show the level of proficiency in TFL i.e. Beginner/Novice=0, Advance Beginner=1, Competent=2, Proficient=3 and Expert =4 keeping in view the pre-determined rubrics attached.

Relational Dimension							
R1OT17	Students are engaged using multiple relevant engaging examples	0	1	2	3	4	5
R2OT18 R2OT19	Teachers facilitates to get peer feedback on their work	0	1	2	3	4	5
	Teacher enables the students to get peer feedback to get peer FB	0	1	2	3	4	5
R3OT20	Teacher Relates the FB provided by parents, digital media and peers	0	1	2	3	4	5
R8OT24	Teacher uses questioning best to enable students to review their work critically	0	1	2	3	4	5
R9OT25	Questioning technique of Teacher instigate students greatly to think alternate ways of doing the same task	0	1	2	3	4	5
R13OT29	Low achievers are engaged by asking questions, seeking comments, opinions, during class discussions	0	1	2	3	4	5
Pragmatic Dimension							
P3OT34 P3OT35	Teacher is prepared to provide FB	0	1	2	3	4	5
	Teacher presents examples to be used as standard	0	1	2	3	4	5
P4(D9)OT36	Feedback is provided on already stated standards for assigned task (please Confirm from students)	0	1	2	3	4	5

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Annexure- B

Teachers' Feedback Literacy Questionnaire (TFL-Que)
(Part: I)
(Demographic Information)

Institution _____–

Class_____   **Teacher's Name**_____

Subject_____

Age Group:
i. 25 - 35 years ii. 36 - 45 Years iii. 46 - 55 Years   iv. Above 55 Years
Gender :   i. Male   ii. Female
Academic Qualification: i.. Graduate   ii. Master   iii. Mphil/Phd
Professional Qualification   i. PTC   ii. CT   iii. B.Ed.   iv. M.Ed.
Years of Service:i.0- 5years ii. 6-10 years   iii.10-15 years iv. More than 15 years

Teacher's Informed Consent to take Part in the Study

I give my formal consent to take part in the study titled "Effect of Teachers' Feedback Literacy on Students Engagement at secondary Level" as a subject and allow that my lesson be observed for data collection, analysis and publication for academic purposes etc.
Name of the Teacher_____

Signature_____

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Part-II

Tick (√) the best statement which depicts best of you.

S No	Statement	Always	Often	Some times	Rarely	Never
Design Dimension						
D1QT2 D1QT7	(ii)I start my feedback with positive points followed by areas of improvement					
	(vii)I review students' formative assessment together with whole class					
D7QT14 D8QT15	I use feedback to improve my teaching and feedback practices					
	I use feedback to promote students' learning.					
Relational Dimension						
R6QT22	I relate my feedback to students' self-assessment					
R11(4R)QT27	I provide feedback as per individual difference of the students					
R12QT28	I identify at risk (weak) student(s) unable to utilize feedback					
Pragmatic Dimension						
P1QT30 P1QT31 P1QT32	I disseminate feedback at the end of formative exam					
	I disseminate feedback on any submitted assignment.					
	I disseminate feedback at the end of any classroom task.					
P5QT37 P5QT38 P5QT39	I provide feedback on students work, attendance , or any query raised by parents /students using					

Development and Validation of Teachers Feedback Literacy (TFL) Scale

	WhatsApp group of class					
	I provide feedback on students work, attendance , or any query raised by parents /students using cell phone					
	I accept submission of assignment through email, Google documents, LMS, Google classroom, Google meet etc or any other technology _____(please mention if any)					
P6QT40	I provide reasons to involve students in feedback processes.					
P7QT41	I plan assignments and task to be re submitted after necessary correction as per provided feedback					
P8QT42	My Students narrate /show case corrected work after provision of feedback					

Annexure: C

Observation Sheet for Measuring Teachers' Feedback Literacy Performance Based Prompt
PART 'A' (Demographic Information)

Institution _____

Class_____   Topic_____

Teacher's Name_____   Subject_____

Start Time_____   End Time_____

Observer_____

(Part :B)

Observers/Raters are to record their response against the indicators to quantify as per rubrics from 0-4.(Oral Debrief on sample formative assessment by each teacher, Response on WhatsApp message, and Sample Home Work will be given to teacher to record their response)

S No	Prompt for Recording Response	Statements	Instances					
			N	R	S	O	A	
Design Dimension								
D4PT11 D5PT12	oral debrief by teacher on a sample formative assessment	Teacher mobilizes the students to get feedback	0	1	2	3	4	5
		Teacher mobilizes the students to give feedback	0	1	2	3	4	5
Relational Dimension								
R5PT21	Sample formative assessment /Response on WhatsApp groups of class students and Parents	Teacher provides clear feedback instructions/comments/grades so students can use it for focused area of improvement	0	1	2	3	4	5
R7PT23	Sample Home work	Teacher provides focused comments for needed improvement area.	0	1	2	3	4	5
R10PT26	Sample Home work	Teacher provides feedback on major needed	0	1	2	3	4	5
Pragmatic Dimension								
P2PT33	Oral debriefs by teacher on formative assessment	Teacher assists the students to identify type of feedback required by students	0	1	2	3	4	5