

Appendix P

Teacher Implementation of Strategies Questionnaire: Item Analysis

The Teacher Implementation of Strategies Questionnaire (TIS-Q) includes a series of items related to literacy instruction and asks each teacher to indicate how prepared he or she feels to use the instructional strategies, methods, or materials **and** how frequently he or she uses those strategies, methods, or materials. (The TIS-Q is included as Appendix N-b of the Year 2 report.) Item analyses were conducted separately for responses on the preparedness scale and the frequency scale of the TIS-Q. The sample for the analyses is based on Year 1 baseline survey responses ($N = 174$ for preparedness, $N = 164$ for frequency after deleting missing data). This sample is appropriate because there are 24 items, and as Nunnally (1967) notes, there should be five to ten times as many respondents as items on the instrument to conduct a valid item analysis. Table P-1 presents descriptive statistics of responses on the preparedness scale of the 24 items, with mean scores ranging from 2.59 (PB) to 3.85 (PE) and standard deviation from .77 to 1.23.

Generally speaking, the higher the mean is, the lower the standard deviation (i.e., the less variability an item has). For example, item PB (“Identify ‘bridging books’”) has the lowest mean ($\mu = 2.59$) and highest variability ($\sigma = 1.23$). Item PE (“Discuss and analyze new vocabulary before reading”) has the highest mean ($\mu = 3.85$) and the fourth lowest standard deviation (.86). This is because scores grouped close to the highest anchor value (4), do not allow for much variability and have an extremely peaked and positively skewed distribution. Items PC, PO, and PV all have relatively high means and low variability; therefore, these items don’t discriminate the participants well. This is of no consequence because the main goal of the survey is not to improve the items’ ability to discriminate but to reveal the feelings or opinions of the respondents.

The raw Cronbach’s Alpha for responses on the preparedness scale is .962 with all 24 items included. Table P-3 shows how a particular item is correlated with the rest. The item with the lowest item-total correlation is PT ($r = .58$) and the item with the highest item-total correlation is PJ ($r = .77$). All items have item-total correlations of at least .35, which indicates that all responses on the preparedness scale are strongly interrelated and the preparedness portion of the survey is consistent: the preparedness scale does not need to be dropped from any items on the survey.

The raw alpha of item responses on the frequency scale was slightly lower but still very strong (.947). The item with the lowest item-total correlation is FD ($r = .54$) and the item with the highest item-total correlation is FO ($r = .73$). There are no frequency responses with extremely high correlations ($>.75$) that would potentially affect the reliability of the whole scale. Simply put, responses on both the preparedness and frequency scales are very homogeneous; therefore, the survey is reliable.

Reference

Nunnally, J. C. *Psychometric Theory*. New York: McGraw-Hill, 1967

Appendix P: TIS-Q Item Analyses

Table P-1: Descriptive Statistics of Preparedness Scale Responses (Year 1 TIS-Q, N = 174)

Scale/ Item	Mean	SD	Min	Max	Label
PA	3.736	0.943	1	5	Have students read aloud from core subject area texts and / or supplemental texts daily for at least five minutes per period
PB	2.586	1.226	1	5	Identify "bridging books" (part story and part information)
PC	3.799	0.840	1	5	Ask higher order questions and require students to justify their answers
PD	3.609	0.936	1	5	Pre-test students before the beginning of a new unit of instruction
PE	3.851	0.861	1	5	Discuss and analyze new vocabulary before reading
PF	3.690	1.073	1	5	Show relationships of words/ concepts using graphic organizers or thinking maps
PG	3.414	0.962	1	5	Create, elaborate, and sort subject-related vocabulary word list
PH	3.690	0.897	1	5	Establish the purpose for reading a text selection
PI	3.529	0.995	1	5	Have students read in pairs
PJ	3.661	0.934	1	5	Model for students, and provide guided practice with feedback on oral retelling strategies of selected subject area texts
PK	3.414	1.026	1	5	Model use of thinking maps to construct written summaries of selected text
PL	3.753	0.894	1	5	Link students' background knowledge and experiences to new vocabulary/concepts
PM	3.580	0.848	1	5	Model new learning strategies for students
PN	3.379	0.922	1	5	Differentiate instruction using multi-leveled materials
PO	3.644	0.839	1	5	Teach students to ask questions, before, during, and after reading text selections
PP	3.592	0.860	1	5	Provide guided practice for students trying out new learning skills with peer or teacher feedback
PQ	3.270	1.043	1	5	Provide instruction on the different forms of writing found in content area textbooks
PR	3.351	1.008	1	5	Offer small group instruction and practice several times per week according to students' achievement levels in reading.
PS	3.466	1.035	1	5	Use the writing process as part of content learning
PT	3.328	1.010	1	5	Adapt instruction for students having special needs
PU	3.759	0.886	1	5	use cooperative learning groups
PV	3.787	0.772	1	5	Use oral reading in subject area materials
PW	3.517	0.960	1	5	Use TCAP or other testing data to identify students' reading levels
PX	3.546	0.941	1	5	Use direct, explicit instruction when teaching new reading/study skills related to my core subject area.

Note. Individuals with missing values are not included in the analysis.

Appendix P: TIS-Q Item Analyses

Table P-2: Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.962
Standardized	0.963

Table P-3: Item-Total Correlation and Cronbach Alpha with the Variable Deleted

Deleted Variable	Raw Variables		Standardized Variables	
	Correlation with Total	Alpha	Correlation with Total	Alpha
PA	0.616	0.961	0.619	0.962
PB	0.632	0.961	0.632	0.962
PC	0.712	0.960	0.713	0.961
PD	0.624	0.961	0.627	0.962
PE	0.765	0.960	0.766	0.961
PF	0.721	0.960	0.719	0.961
PG	0.703	0.960	0.699	0.962
PH	0.762	0.960	0.764	0.961
PI	0.730	0.960	0.732	0.961
PJ	0.772	0.960	0.773	0.961
PK	0.744	0.960	0.742	0.961
PL	0.725	0.960	0.727	0.961
PM	0.745	0.960	0.748	0.961
PN	0.700	0.960	0.700	0.962
PO	0.734	0.960	0.736	0.961
PP	0.689	0.960	0.690	0.962
PQ	0.734	0.960	0.731	0.961
PR	0.767	0.960	0.766	0.961
PS	0.651	0.961	0.648	0.962
PT	0.583	0.962	0.583	0.963
PU	0.695	0.960	0.698	0.962
PV	0.722	0.960	0.723	0.961
PW	0.687	0.960	0.686	0.962
PX	0.755	0.960	0.756	0.961

Appendix P: TIS-Q Item Analyses

Table P-4: Descriptive Statistics of Frequency Scales Responses (Year 1 TIS-Q, N = 164)

Scale/ Item	Mean	SD	Min	Max	Label
FA	3.817	0.980	1	5	Have students read aloud from core subject area texts and / or supplemental texts daily for at least five minutes per period
FB	2.640	1.213	1	5	Identify "bridging books" (part story and part information)
FC	4.152	0.818	1	5	Ask higher order questions and require students to justify their answers
FD	3.665	1.070	1	5	Pre-test students before the beginning of a new unit of instruction
FE	4.177	0.952	1	5	Discuss and analyze new vocabulary before reading
FF	3.762	1.090	1	5	Show relationships of words/ concepts using graphic organizers or thinking maps
FG	3.482	1.054	1	5	Create, elaborate, and sort subject-related vocabulary word list
FH	3.945	1.041	1	5	Establish the purpose for reading a text selection
FI	3.201	1.168	1	5	Have students read in pairs
FJ	3.805	1.079	1	5	Model for students, and provide guided practice with feedback on oral retelling strategies of selected subject area texts
FK	3.415	1.140	1	5	Model use of thinking maps to construct written summaries of selected text
FL	3.951	0.912	1	5	Link students' background knowledge and experiences to new vocabulary/concepts
FM	3.951	0.878	1	5	Model new learning strategies for students
FN	3.695	0.999	1	5	Differentiate instruction using multi-leveled materials
FO	3.951	0.925	1	5	Teach students to ask questions, before, during, and after reading text selections
FP	3.829	0.869	1	5	Provide guided practice for students trying out new learning skills with peer or teacher feedback
FQ	3.274	1.076	1	5	Provide instruction on the different forms of writing found in content area textbooks
FR	3.262	1.123	1	5	Offer small group instruction and practice several times per week according to students' achievement levels in reading.
FS	3.463	1.174	1	5	Use the writing process as part of content learning
FT	3.677	1.068	1	5	Adapt instruction for students having special needs
FU	3.878	0.938	1	5	Use cooperative learning groups
FV	3.927	0.904	1	5	Use oral reading in subject area materials
FW	3.640	1.124	1	5	Use TCAP or other testing data to identify students' reading levels
FX	3.768	1.019	1	5	Use direct, explicit instruction when teaching new reading/study skills related to my core subject area.

Note. Individuals with missing values are not included in the analysis.

Appendix P: TIS-Q Item Analyses

Table P-6: Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.947
Standardized	0.948

Table P-7: Item-Total Correlations and Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables		Standardized Variables	
	Correlation with Total	Alpha	Correlation with Total	Alpha
FA	0.553	0.946	0.556	0.947
FB	0.559	0.947	0.554	0.947
FC	0.549	0.946	0.552	0.947
FD	0.535	0.947	0.534	0.947
FE	0.617	0.946	0.618	0.946
FF	0.721	0.944	0.716	0.945
FG	0.640	0.945	0.635	0.946
FH	0.670	0.945	0.672	0.945
FI	0.634	0.945	0.636	0.946
FJ	0.677	0.945	0.678	0.945
FK	0.676	0.945	0.671	0.945
FL	0.626	0.946	0.629	0.946
FM	0.605	0.946	0.610	0.946
FN	0.680	0.945	0.680	0.945
FO	0.729	0.944	0.734	0.945
FP	0.621	0.946	0.623	0.946
FQ	0.717	0.944	0.711	0.945
FR	0.725	0.944	0.724	0.945
FS	0.673	0.945	0.668	0.946
FT	0.565	0.946	0.566	0.947
FU	0.518	0.947	0.518	0.947
FV	0.647	0.945	0.650	0.946
FW	0.689	0.945	0.689	0.945
FX	0.716	0.944	0.718	0.945

Appendix P: TIS-Q Item Analyses

Table P-8: Pearson Correlation Coefficients of Preparedness Items (Year 1 Baseline), N = 174.

	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PU	PV	PW	PX
PA	1.000																							
PB	0.450	1.000																						
PC	0.641	0.469	1.000																					
PD	0.452	0.372	0.598	1.000																				
PE	0.649	0.511	0.614	0.501	1.000																			
PF	0.461	0.526	0.553	0.414	0.644	1.000																		
PG	0.452	0.499	0.504	0.502	0.620	0.595	1.000																	
PH	0.620	0.503	0.638	0.468	0.696	0.578	0.612	1.000																
PI	0.624	0.450	0.557	0.484	0.646	0.539	0.549	0.632	1.000															
PJ	0.501	0.538	0.583	0.502	0.713	0.598	0.581	0.639	0.573	1.000														
PK	0.382	0.458	0.513	0.446	0.561	0.658	0.598	0.561	0.577	0.605	1.000													
PL	0.498	0.475	0.595	0.526	0.628	0.522	0.596	0.646	0.570	0.612	0.553	1.000												
PM	0.432	0.455	0.547	0.521	0.555	0.517	0.441	0.519	0.532	0.622	0.599	0.579	1.000											
PN	0.329	0.472	0.510	0.421	0.465	0.482	0.441	0.472	0.442	0.553	0.573	0.542	0.693	1.000										
PO	0.457	0.507	0.513	0.403	0.582	0.460	0.470	0.581	0.497	0.626	0.541	0.544	0.633	0.624	1.000									
PP	0.372	0.414	0.454	0.411	0.464	0.426	0.450	0.524	0.456	0.532	0.507	0.484	0.612	0.597	0.630	1.000								
PQ	0.437	0.522	0.478	0.334	0.592	0.522	0.642	0.572	0.563	0.474	0.635	0.530	0.527	0.572	0.573	0.568	1.000							
PR	0.372	0.460	0.487	0.539	0.494	0.582	0.511	0.524	0.552	0.594	0.653	0.507	0.633	0.634	0.565	0.666	0.630	1.000						
PS	0.399	0.444	0.454	0.326	0.513	0.547	0.496	0.536	0.512	0.427	0.580	0.468	0.408	0.456	0.498	0.468	0.702	0.530	1.000					
PT	0.286	0.386	0.365	0.473	0.376	0.398	0.371	0.349	0.373	0.511	0.404	0.353	0.540	0.537	0.418	0.528	0.371	0.637	0.346	1.000				
PU	0.394	0.349	0.478	0.499	0.513	0.498	0.457	0.487	0.591	0.536	0.511	0.464	0.603	0.537	0.521	0.583	0.434	0.633	0.413	0.586	1.000			
PV	0.557	0.480	0.522	0.476	0.639	0.534	0.430	0.647	0.651	0.565	0.513	0.568	0.508	0.415	0.560	0.478	0.531	0.535	0.544	0.379	0.600	1.000		
PW	0.388	0.477	0.453	0.510	0.486	0.533	0.468	0.483	0.432	0.558	0.532	0.459	0.531	0.509	0.589	0.488	0.558	0.576	0.437	0.474	0.528	0.524	1.000	
PX	0.379	0.518	0.535	0.480	0.523	0.495	0.553	0.606	0.567	0.593	0.573	0.573	0.615	0.566	0.636	0.584	0.579	0.608	0.503	0.480	0.603	0.559	0.633	1.000