

Reliability and validity of the Cooperating Teacher Survey

Conclusions

1. The scales are moderately internally consistent.
2. Perhaps all of the items correlate too highly, with little separate variability “left over” for the other scales.
3. A factor analysis revealed the existence of four non-orthogonal structures, pedagogy (teaching skills + content knowledge), assessment (using and reporting assessment), responsibility (ethics and professional development, and diversity (understanding and programming for diverse students.
4. Since 2011 we have reported data on the four factor-derived scales as well as those hypothesized by INTASC. Three of the four scales support the validity of the INTASC structure.

Context/ Background

When studies have been disseminated in the unit, we generally assess the internal consistency of scales that we have constructed. A primary example is seen in Table 1, where we have laid out the Cronbach alphas (α) reflecting the internal consistency reliabilities of the scales designed around the 10 INTASC Principles.

We ran factor analyses of the items on the Cooperating Teacher Instrument in 2012 and in 2013. The data shown in Table 2 demonstrates that the instrument factors into four relatively independent structures, shown below in Table 2. Since the time of the factor analytic studies, we have reported data on these scales along with the INTASC scales. The factor structure is provided in Table 2, while 2012 scores on these latent constructs are shown in Table 3. The full report with narrative is available upon request.

Table 1. Cooperating teacher reliability (internal consistence, coefficient α) as of 2012.

<u>Principle & Reliability</u>	<u>Explanation of Principle(s)</u>
INTASC 1 Subject Matter, Items 13-17, reliability = .89	The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for students.
INTASC 2 Student Learning, Items 18-21, reliability = .88	The teacher understands how children learn and develop, and can provide learning opportunities that support their intellectual, social and personal development.
INTASC 3 Diverse Students Items 22-25, Reliability = .89	The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.
INTASC 4 Instructional Strategies, Items 26-28, Reliability = .79	The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.
INTASC 5 Learning Environment, Items 29-33, Reliability = .92	The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

Principle & Reliability	Explanation of Principle(s)
INTASC 6, Communication, Items 34-38, Reliability = .86	The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.
INTASC 7 Instructional Planning, Items 39-43, Reliability = .93	The teacher plans instruction based upon knowledge of subject matter, students, the community, and curriculum goals.
INTASC 8 Assessment, Items 44-48, Reliability = .95	The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social and physical development of the learner.
INTASC 9 Reflective Practice, Items 52-54, Reliability = .92	The teacher is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others (students, parents, and other professionals in the learning community) and who actively seeks out opportunities to grow professionally.
INTASC 10 Collaboration, Items 60, 61 Reliability = .72	The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.
TOTAL Reliability = .98	Across scales

Table 6. Rotated Factor structure (Varimax rotation, four factors selected).

	<i>Factors</i>			
	<i>1 Pedagogy</i>	<i>2 Assessment</i>	<i>3 Responsibility</i>	<i>4 Diversity</i>
Characteristic root (λ ; eigenvalue)	11.95	7.19	5.92	5.76
Percent of variance explained	24.9	15.0	12.3	12.0
Reliability (Cronbach's α)	.97	.94	.92	.92
Factor 1: Knowledge of Subject matter and ability to impart knowledge and skills (e.g., pedagogy)				
15. Use different methods of inquiry	.679			
31. Manage time to provide for engagement of students	.677			
32. Manage activities to provide active eng of students	.670			
18. Design interdisciplinary learning experiences	.669			
14. Uses students prior understanding to link new concept	.666			
17. Use curricula that encourage students to understand ideas	.666			
16. Develop curricula that encourage students to undrst ideas	.665			
19. Provide. opportunity for students to shape learning	.658			
41. Implement learning experiences based on effective pract	.651			
33. Maximize the class time spent in learning	.644			
40. Implement learning experiences relevant to learners	.644			
39. Implement. learning experiences appro for Curric. goals	.635			
20. Use student thinking as a basis for class discussions	.629			
29. Design Lrn Cmnts where students responsible for selves	.626			
21. Use student experience as a basis for class discussion	.615			

Exhibit 2.4.c.3: Reliability and Validity Study of Cooperating Teacher Survey

	<i>Factors</i>			
	<i>1 Pedagogy</i>	<i>2 Assessment</i>	<i>3 Responsibility</i>	<i>4 Diversity</i>
43. Create long-term plans linked to student needs	.612			
30. Design. learn comnts for students to work collaborative	.610			
42. Create short-term plans linked to student needs	.600			
27. Monitor. and adjust strategies in resp. to learner feedback	.589			
36. Probe for leaner understanding	.546			
53. Underst the value of self-directed learning as habit of mind	.514			
52. Understand the value of critical thinking as habit of mind	.501			
26. Implement MN Graduation Standards	.492			
28. Use educational technology to broaden student knowledge	.470			
Factor 2: Assessment skill and the ability to understand and communicate assessment findings				
47. Use various assess to evaluate student progress		.783		
45. Use a variety of formal assess techniques		.765		
46. Use a variety of informal assess techniques		.746		
48. Use various assessment techniques to modify teaching		.707		
44. Value ongoing assessment		.687		
50. Maintain records of student work		.673		
51. Communicate student progress to parents		.633		
49. Monitor teaching strategies related to student success	.488	.587		
Factor 3: Collaboration and professional responsibility				
58. Understand the responsibility for obtaining licensure			.803	
59. Understand the responsibility for maintaining licensure			.803	
57. Understand code of ethics for MN teach			.715	
60. Understand the role of teacher as a public employee			.704	
61. Understand the purpose and contributions of Ed. organiza			.681	
56. Collaborate with professional colleagues			.560	
55. Use prfsl literature to support development as teacher			.480	
54. Understand the role of reflection as an ongoing process			.425	
Factor 4: Equity and diversity				
24. Respect student as individual including family background				.791
23. Value human diversity				.771
25. Develop a learning community that respects indiv differen				.734
35. Appreciate the cultural dimensions of communication				.662
37. Communicate in ways dmstrt snstvtly to cultural differ				.638
22. Understand that children can learn at high level				.559

	<i>Factors</i>			
	<i>1 Pedagogy</i>	<i>2 Assessment</i>	<i>3 Responsibility</i>	<i>4 Diversity</i>
34. Be a thoughtful listener				.527
Item not loading				
38. Use a variety of media communication tools				

Table 3. Candidate performance on scales developed through structural analysis (descending order by '09-'10 means).

Scale	2007-2008 N ~302			2008-2009 N ~ 289			2009-2010 N ~ 279		
	<i>Mean</i>	<i>SD</i>	<i>% Prep A & B¹</i>	<i>Mean</i>	<i>SD</i>	<i>% Prep A & B¹</i>	<i>Mean</i>	<i>SD</i>	<i>% Prep A & B¹</i>
Factor 4: Equity and diversity/ Items related to equitable treatment of diverse students	3.32	.51	93.7	3.39	.55	94.1	3.38	.52	94.3
			88.8			87.6			90.7
Factor 3: Collaboration and professional responsibility	3.23	.59	90.8	3.29	.61	90.7	3.28	.57	91.4
			85.5			83.8			86.7
Factor 1: Knowledge of Subject matter and ability to impart knowledge and skills (e.g., pedagogy)	3.01	.57	84.2	3.09	.60	84.1	3.07	.58	85.3
			73.6			76.6			73.8
Factor 2: Assessment skill and the ability to understand and communicate assessment findings	2.80	.62	70.2	2.99	.68	79.9	2.96	.63	78.5
			58.9			70.8			67.7

¹The top figure is the percentage of respondents averaging 2.500 and above across items. The bottom figure is the percent scoring at 2.75 or above.