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ABSTRACT

The results of this study empirically demonstrate the importance of cross-validating an instrument intended for use in a future study. The instrument used was the Teachers' Practices Questionnaire (TPQ) which had been devised in 1963 to measure teachers' subjective role expectations. Three samples of undergraduate and graduate students who were, at the time of data collection, attending schools of education were employed in the study. Results from the first of these samples, analyzed to determine the extent of the invariance of the factorial structure of responses to the TPQ, revealed that two of the six roles proposed by the authors of the original 120-item instrument disappeared. In a revised TPQ, consisting of 28 items, four factors (Counselor, Motivator, Referrer, and Disciplinarian) emerged from the factor analysis, but the intercorrelations were judged to be too low to be psychometrically valid. Additional revisions and the addition of items clearly delineated the four role factors and, with one exception, each item was positively correlated with its appropriate factor and no other. A copy of the final 40-item version of the TPQ and a factor analysis are included. See TM 000 401 for a review of the instrument. (TA)

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THE TEACHERS' PRACTICES QUESTIONNAIRE: A FACTOR ANALYTIC CROSS-VALIDATION AND SUBSEQUENT REVISIONS

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The importance of cross-validating an instrument to be used as part of a future study cannot be over-estimated. We have heard this often enough for the statement to become a truism. All too often, however, a newly devised measure is presented in a journal accompanied by an analysis of the responses of but one set of subjects. Researchers planning to use this instrument as a measure of one of several variables in a study unfortunately do not often take the time and effort to determine whether similar results are obtainable by a subsample of the population in which they are interested. The results of this study empirically demonstrate the reason for undertaking this tedious task.

This writer was interested in studying the relations of several variables to teachers' subjective role expectations. Upon searching the literature, it was found that an instrument, the Teachers' Practices Questionnaire (TPQ), had been devised to measure these expectations by Sorenson, Husek, and Yu (1963). Before the research was carried out, a pilot study was made to determine the extent of the invariance of the factorial structure of Ss responses to the TPQ from that found by its authors. The results of this pilot study led to a series of revisions and analyses of the instrument.

Data Sources:

Responses of three samples of Ss to three versions of the TPQ constituted the sources of data for this study. These samples consisted of undergraduate and graduate students who were, at the time of data collection, attending Schools of Education in metropolitan areas.

Methodology:

Responses from each sample were factor analyzed using principal axes procedures followed by orthogonal varimax rotations.

Results:

1. The original 120-item TPQ of Sorenson, et al., was administered to 175 Ss in the New York metropolitan area. The factor analysis of their responses showed that the Counselor, Motivator, Referrer, and Disciplinarian role factors were clearly in evidence. The two other roles proposed by the authors, those of advice-giver and information-giver, which had collapsed onto one factor in the analysis reported by the authors, disappeared entirely as factors in this analysis. In addition, many of the items previously designated as "Referrer" items were highly correlated with the Disciplinarian role factor.

2. A revised TPQ, consisting of 28 items (seven items for each of the four roles), was administered to a sample of 245 Ss from the New York metropolitan area. Although the same four factors clearly emerged from the factor analysis of these responses, the intercorrelations between items comprising some of the factors were judged to be too low to be psychometrically valid.

3. To correct the above, and to increase the reliabilities of the four role factors, items were added and/or rewritten. This revision of the TPQ consisted of 40 items with Counselor, Motivator, Referrer, and Disciplinarian roles equally represented. (See Appendix A) The factor analysis of the responses of 689 Ss (589 from the New York metropolitan area and 100 from Illinois) showed the four role factors to be clearly delineated. (See Appendix B) With but one exception, each item was positively correlated ($>.30$) with its appropriate factor and no other. Internal consistency reliability estimates of the role factors ranged from .80 to .90.

Discussion:

The judgment of a teacher as effective by others appears to rest on, among other things, the specific expectations others have for teachers' behavior. Differences in expectations for teachers' behavior probably exist between such influential subgroups of society as principals, school board members, parents, pupils, and teachers, as well as within each subgroup. It would therefore seem important to determine whether stable differences do in fact exist between these subgroups. The revised TPQ appears to be a psychometrically valid and reliable method of determining what expectations are held for teachers' behavior and thus provides a means for answering such a question. If differences between the subgroups exist, such differences would no doubt have important implications for the identification, isolation, and possible amelioration of conflicting role expectations.

REFERENCES

Sorenson, A. G., Husek, T. R., and Yu, C. "Divergent Concepts of Teacher Role: An Approach to the Measurement of Teacher Effectiveness," Journal of Educational Psychology, 1963, LIV, 287-294.

APPENDIX A

TEACHERS' PRACTICES QUESTIONNAIRE
AND SCALE DESIGNATION OF ITEMS

APPENDIX A
TEACHER PRACTICES QUESTIONNAIRE

Directions: Here are 10 problem situations typical of those which are often encountered in the classroom. Following each problem there are four alternative courses of action.

RATE EACH ALTERNATIVE COURSE OF ACTION INDEPENDENTLY OF THE OTHER THREE, ACCORDING TO ITS DEGREE OF APPROPRIATENESS.

Respond to each course of action as follows:

Extremely appropriate	+3	Extremely inappropriate	-3
Very appropriate	+2	Very inappropriate	-2
Fairly appropriate	+1	Fairly inappropriate	-1

When, in a fit of anger, Clara shouted at Shelley, "You are stupid. You are ugly," Shelley burst into uncontrollable sobs. Later that day, Shelley beats on the table with her fists when she is not permitted to get a drink of water during class time. She is also known to throw tantrums when crossed. Shelley is eight years old and in the third grade.

- M 1. Give special recognition to Shelley when she is able to hold back a remark when provoked or when she is able to maintain control when crossed.
- C 2. Explore with Shelley the feelings which lead to these outbursts.
- D 3. Tell Shelley that if she can't control herself, she should stay home.
- R 4. Refer Shelley to the school psychologist for counselling.

A new algebra formula has been introduced in the ninth grade math class. Problems were worked on the board using the new formula. You assign some exercises for the students to work in class. Joan completes a few steps of the first problem and asks you to check it; then she proceeds to work a few more steps and again asks you to check. She finishes the problem and again waits for approval. This she does for all the problems, all of which she solves correctly.

- R 1. Ask the guidance counselor to speak with Joan about her lack of self-confidence.
- C 2. Explore with Joan the possible insecurities in her interpersonal relations, with a view to helping her achieve more self-confidence.
- D 3. Be firm with her - tell her that if she keeps on interrupting this way you'll have to ask her parents to come to school.
- M 4. Watch for, and take advantage of, the first opportunity to praise Joan for doing any work by herself.

When Jim is not chatting with his neighbors in class, he is passing notes. He often interrupts the lecture or discussion to offer his point of view. Or he has to get a book, sharpen a pencil, etc. His work is unsatisfactory. Jim is fourteen years old and in the ninth grade.

- C 1. Explore with him how he sees his own behavior in school and the satisfactions he derives from it.
- D 2. Keep him after school when he misbehaves.
- M 3. Knowing that he likes to read, make him a library monitor, a position which only persons who do satisfactory work may retain. Let him know that he must improve his work to continue as monitor.
- R 4. Send him to the school guidance counselor.

Milly, the daughter of wealthy parents, rarely participates in any of the school functions. She is a sophomore in high school. When asked to attend the annual school picnic, she states, "Just about any and everybody goes. I don't think my father would care for me to associate with those people. Besides, those affairs are always so boring."

- R 1. Refer Milly to the school psychologist for help.
- C 2. Try to discover if insecurity is at the root of Milly's behavior.

- M 3. Plan with Frances, also of a wealthy family, how to get Milly to attend the picnic and to have a good time there.
- D 4. Tell her it's time she learned to be less snobbish.

Jane has marked her table with crayons several times. Each time she was reprimanded and asked to erase the marks. Today she has put pencil marks in a library book. Jane is eleven years old and in the fifth grade.

- R 1. Ask the guidance counselor to try to help Jane.
- D 2. Take away all library privileges and tell Jane to erase the marks in her book as well as other library books.
- M 3. Encourage Jane to draw the murals for the upcoming class project.
- C 4. Try to explore with her, her feelings about school.

Stephen is ten years old and in the fifth grade but his physical growth is that of a well-developed thirteen year old. He does not wait his turn in games and sets himself up as captain. At lunch time, he will take or demand cake or cookies from others. If anyone objects to his behavior or tells the teacher, he fights with him on the way home.

- C 1. Try to determine whether his behavior is the result of frustration, or rejection, or merely lack of awareness of how others see him.
- R 2. Have the guidance counselor speak with Stephen to try to determine what is causing Stephen's behavior.
- M 3. Ask Stephen to coach the less able children in the class.
- D 4. "Bench" him during play time.

A tenth grade boy plays truant once every other week. He lives alone with his father, a successful auto mechanic, who tells him, "School is for the birds. It's a waste of time. I'm making a good living even though I never finished high school and never got good grades."

- C 1. Find out what his interests and ideas for the future are and discuss with him some realistic plans to gain that end.
- R 2. Ask the school counselor to speak with him.
- D 3. Keep him after school the day after each truancy.
- M 4. Try to motivate him to come to school by praising him when he works well and by allowing him, whenever possible, to follow his interests in school work.

The sixth grade class is very excited about a proposed field trip. Jackie listens quietly to the hubbub and then says, "I hope it won't rain that day." At a surprise party given her by the class, she whispers to Nancy, "This is so nice. I'm afraid to enjoy it too much. Besides, it will all be over so soon." She appears sad.

- M 1. Arrange for her to participate more frequently in those activities which she especially enjoys.
- C 2. Get better acquainted with Jackie so as to be able to help her discover why she reacts the way she does.
- R 3. Ask the school counselor to take on Jackie's case.
- D 4. Tell Jackie to stop being such a "sad sack" -- That she is ruining the fun of others.

Almost every day Stephen asks his classmates, "Guess what I did today?" and proceeds to relate his latest escapade. He did not do his homework; he cut the branches from a tree in the school yard; he talked back to the English teacher, etc. Stephen is in his sophomore year of high school.

- C 1. Try to help him discover why he behaves this way.
- R 2. Ask the school guidance counselor to work with Stephen.
- D 3. Keep him after school when he behaves this way.
- M 4. Give Stephen a part in the next school play.

In fourth grade spelling class, Jill volunteers to spell "Mississippi" but is mistaken. You correct her, and she becomes sullen. Later she is called on to spell "acrobat." Again she is mistaken, and you correct her. She then gives the impression of feeling "picked on" and of wanting to be left alone.

- D 1. Warn her that you will request a conference with her parents if she does not improve her behavior.
- M 2. Make a special effort to praise Jill whenever appropriate.
- R 3. Ask the guidance counselor to try to find out what's troubling Jill.
- C 4. Try to find out what is behind her feelings and behavior.

APPENDIX B

**RESULTS OF THE FACTOR ANALYSIS
OF THE TEACHERS' PRACTICES QUESTIONNAIRE**

TABLE 1
UNROTATED FACTOR MATRIX, TPQ SCALE ITEMS, N = 689^a

Items	I	II	III	IV	V	VI	VII	VIII
1	259	-021	-169	300	-053	218	058	-208
2	548	074	357	-064	-004	-117	147	046
3	-550	160	224	115	227	272	149	-020
4	105	382	-129	039	029	-122	-258	211
5	044	546	-056	-014	233	020	-036	143
6	489	047	441	-042	155	-009	049	160
7	-531	137	219	236	292	278	026	022
8	468	008	-251	403	-183	121	-072	-107
9	627	052	358	-091	-076	-035	-034	-032
10	-483	120	253	305	-257	-228	-053	008
11	385	-009	-184	382	179	-027	116	059
12	022	636	-164	-044	093	-039	-141	032
13	044	540	-047	002	277	-005	-161	094
14	634	012	265	017	135	000	-125	-009
15	368	-122	030	272	041	-087	188	166
16	-434	120	258	211	-070	139	050	093
17	062	668	-084	-007	154	047	-006	-040
18	-448	154	222	211	-232	086	041	256
19	451	-022	-156	352	261	-144	069	-098
20	669	130	323	-056	048	-004	-001	-094

Items	I	II	III	IV	V	VI	VII	VIII
21	630	015	375	-018	-048	050	-150	-038
22	149	688	-135	-066	-170	018	-051	017
23	409	-308	-108	303	116	-157	208	129
24	-491	176	241	226	-174	106	-170	044
25	616	025	095	035	-224	-016	089	052
26	094	602	-126	-034	-284	054	182	026
27	-488	192	328	237	-087	-229	-101	-150
28	599	-027	-191	201	-282	071	-088	093
29	437	-030	-040	266	041	041	-005	110
30	648	056	326	004	-111	046	069	-035
31	030	604	-094	-061	014	-080	110	-149
32	-500	068	297	184	130	-025	-030	-062
33	636	065	428	-025	018	117	-002	-023
34	166	645	-132	-047	-262	008	173	-050
35	-539	114	276	324	-200	-222	002	-080
36	389	-056	-130	286	312	-168	-099	-084
37	-605	166	257	164	133	001	056	-085
38	502	027	-233	370	-124	189	-178	-058
39	064	715	000	-065	093	-049	112	-114
40	612	096	367	-080	015	066	-080	-079

^aDecimals have been omitted.

TABLE 2
ROTATED FACTOR MATRIX, TPQ SCALE ITEMS, N = 689^a

Items	Factors			
	D	R	C	M
1	-074	017	013	<u>424</u>
2	<u>-141</u>	056	<u>636</u>	098
3	<u>538</u>	049	-188	-254
4	-027	<u>405</u>	001	103
5	052	<u>548</u>	035	000
6	-054	005	<u>656</u>	063
7	<u>589</u>	022	-192	-144
8	-174	073	080	<u>634</u>
9	-206	044	<u>689</u>	116
10	<u>616</u>	-003	-143	-074
11	-106	037	077	<u>557</u>
12	009	<u>657</u>	-049	-006
13	065	<u>538</u>	040	010
14	-207	016	<u>610</u>	239
15	-066	-110	226	397
16	<u>537</u>	008	-099	-128
17	058	<u>673</u>	037	016
18	<u>532</u>	047	-131	-125
19	-148	027	142	<u>556</u>
20	-212	128	<u>694</u>	172

Factors

Items	D	R	C	M
21	-164	-002	<u>694</u>	174
22	-051	<u>715</u>	062	026
23	-128	008	154	<u>482</u>
24	<u>581</u>	059	-146	-140
25	-277	061	<u>471</u>	297
26	-014	<u>622</u>	023	026
27	<u>636</u>	056	-077	-159
28	<u>-340</u>	054	226	<u>517</u>
29	-127	000	227	<u>443</u>
30	-180	049	<u>670</u>	213
31	026	<u>614</u>	007	-037
32	<u>569</u>	-055	-115	-192
33	-132	038	<u>742</u>	151
34	-057	<u>673</u>	070	050
35	<u>670</u>	-020	-164	-092
36	-144	-012	124	<u>466</u>
37	<u>617</u>	040	-202	-251
38	-199	094	120	<u>617</u>
39	079	<u>706</u>	110	-059
40	-176	082	<u>689</u>	112

^aDecimals have been omitted.

TABLE 3
FACTOR ARRAYS OF ORTHOGONAL FACTOR ANALYSIS, TPQ SCALE
ITEMS, N = 689^a

Factor I: Disciplinarian

- .670 35. Keep him after school when he behaves this way. (IX)
- .636 27. Keep him after school the day after each truancy. (VII)
- .617 37. Warn her that you will request a conference with her parents if she does not improve her behavior. (X)
- .616 10. Keep him after school when he misbehaves. (III)
- .589 7. Be firm with her - tell her that if she keeps on interrupting this way you'll have to ask her parents to come to school. (II)
- .581 24. "Bench" him during play time. (VI)
- .569 32. Tell Jackie to stop being such a "sad sack" -- That she is ruining the fun of others. (VIII)
- .538 3. Tell Shelley that if she can't control herself, she should stay home. (I)
- .537 16. Tell her it's time she learned to be less snobbish. (IV)
- .530 18. Take away all library privileges and tell Jane to erase the marks in her book as well as other library books. (V)

Factor II: Referrer

- .715 22. Have the guidance counselor speak with Stephen to try to determine what is causing Stephen's behavior. (VI)

- .706 39. Ask the guidance counselor to try to find out what's troubling Jill. (X)
- .673 17. Ask the guidance counselor to try to help Jane. (V)
- .673 34. Ask the guidance counselor to work with Stephen. (IX)
- .657 12. Send him to the guidance counselor. (III)
- .622 26. Ask the school counselor to speak with him. (VII)
- .614 31. Ask the school counselor to take on Jackie's case. (VIII)
- .548 5. Ask the guidance counselor to speak with Joan about her lack of self-confidence. (II)
- .538 13. Refer Millie to the school psychologist for help. (IV)
- .405 4. Refer Shelley to the school psychologist for counselling. (I)

Factor III: Counselor

- .742 33. Try to help him discover why he behaves this way. (IX)
- .694 21. Try to determine whether his behavior is the result of frustration, or rejection, or merely lack of awareness of how others see him. (VI)
- .694 20. Try to explore with her, her feelings about school. (V)
- .689 9. Explore with him how he sees his own behavior in school and the satisfactions he derives from it. (III)
- .689 40. Try to find out what is behind her feelings and behavior. (X)
- .670 30. Get better acquainted with Jackie so as to be able to help her discover why she reacts the way she does. (VIII)

- .656 6. Explore with Joan the possible insecurities in her interpersonal relations, with a view to helping her achieve more self-confidence. (II)
- .636 2. Explore with Shelley the feelings which lead to these outbursts. (I)
- .610 14. Try to discover if insecurity is at the root of Milly's behavior. (IV)
- .471 25. Find out what his interests and ideas for the future are and discuss with him some realistic plans to gain that end. (VII)

Factor IV: Motivator

- .634 8. Watch for, and take advantage of, the first opportunity to praise Joan for doing any work by herself. (II)
- .617 38. Make a special effort to praise Jill whenever appropriate. (X)
- .557 11. Knowing that he likes to read, make him a library monitor, a position which only persons who do satisfactory work may retain. Let him know that he must improve his work to continue as monitor. (III)
- .556 19. Encourage Jane to draw the murals for the upcoming class project. (V)
- .517 28. Try to motivate him to come to school by praising him when he works well and by allowing him, whenever possible, to follow his interests in school work. (VIII)
- .482 23. Ask Stephen to coach the less able children in the class. (VI)
- .466 36. Give Stephen a part in the next school play. (IX)
- .443 29. Arrange for her to participate in those activities which she especially enjoys. (VIII)

- .424 1. Give special recognition to Shelley when she is able to hold back a remark when provoked or when she is able to maintain control when crossed. (I)
- .397 15. Plan with Frances, also of a wealthy family, how to get Milly to attend the picnic and to have a good time there. (IV)

^aFactor loadings precede each item.

^bRoman numerals following each item represent situation number in the TPQ.

TABLE 4
 MEANS, STANDARD DEVIATIONS, RELIABILITIES, AND
 INTERCORRELATIONS OF COUNSELOR, MOTIVATOR, REFERER,
 AND DISCIPLINARIAN MEASURES, TPQ, N = 689

	<u>\bar{X}</u>	S.D.	<u>r_{tt}</u>	Intercorrelations		
				M	R	D
Counselor	5.535	1.082	.903	.441	.102	-.441
Motivator	5.669	.825	.803		.042	-.450
Referrer	4.550	1.061	.854			.034
Disciplin.	2.291	.952	.861			