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ABSTRACT

Random samples of classroom teachers from Wyoming (n=555) and Louisiana (n=253) were drawn to determine teachers' purposes for using standardized tests, attitudes toward standardized testing, differences, if any, with grade level taught, and whether test use differed in two very different geographic locations. In addition, differences in standardized test use and attitudes were examined in relation to differences in training in tests and measurement. Elementary, middle, and high school teachers were included in the samples. A survey form was developed, containing 12 Likert scale items regarding attitudes toward standardized tests and 20 additional questions asking for demographic information and information on the types of standardized tests used and purposes for use. Additional questions covered the level of training in testing and measurement and the grade level taught. Overall attitude toward standardized tests was assessed by asking about the perceived usefulness of such tests to the teacher. A similar question covered the usefulness of classroom tests. Significant differences in reported test use were found by grade level and by amount of training. Attitude differences were also found for grade level taught. Implications for inservice and teacher education curricula are discussed. (TJH)

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STANDARDIZED TEST USE BY CLASSROOM TEACHERS: EFFECTS OF TRAINING AND GRADE LEVEL TAUGHT

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ABSTRACT

Two random samples of classroom teachers from a Western and a Southern state were drawn to determine teachers' purposes for using standardized tests, attitude toward standardized testing, and the differences, if any, with grade level taught. In addition, differences in standardized test use and attitudes with differences in training in tests and measurement were examined. Significant differences in reported test use were found by grade level and by amount of training. Attitude differences were also found for grade level taught. Implications for inservice and teacher education curricula are discussed.

Standardized Test Use by Classroom Teachers: The Effects of Training and Grade Level Taught

A majority of parents (77%) are in favor of achievement testing on a national basis to provide comparisons across communities (Gallup, 1986). But, while parents are in favor of standardized achievement testing and while standardized testing is performed in over 90% of schools and school districts (Yeh, Herman, & Rudner, 1981), teachers are reported to make little use of test results (Goslin, 1967). Stetz & Beck (1979) reported that 80% of classroom teachers do not use standardized test results. This paper describes how teachers do use standardized tests.

Standardized tests are given frequently in United States schools, although standardized testing is generally not a state policy. Yeh et al. (1981) found that the average child takes six standardized achievement tests prior to high school graduation. With increased attention to minimal competency as a prerequisite to high school graduation and to promotion at elementary grade levels, this number may rise. Singer, Ruddell, McNeil, and Wittrock (1983) reported the annual bill for testing to exceed $40 million. Standardized test use is extensive and costly and shows no signs of becoming less so. Given a substantial investment of money and time in standardized testing, what are the potential and actual uses of standardized test results? Potentially, standardized tests, in particular standardized achievement tests, <u>can</u> be used in selection and placement, instructional planning, diagnosis, in program

evaluation, student/school/district/state comparisons, and for feedback to students and parents regarding the student's standing in comparison with class, district, state or national norms (Brown, 1983; Sax, 1980). Surveys of teacher's actual use indicate little use of standardized test results in making instructional decisions (Ruddell, 1985; Stetz and Beck, 1979). When test results are used, reported actual uses are in placement (Barton & Tollefson, 1984), diagnosing individual strengths and weaknesses (Goslin, 1967), and assessing programs and district or state trends (Ruddell, 1985).

When used chiefly by the school administration, standardized tests are selected for district/state purposes and may be seen as being imposed on teachers (Boyd, McKenna, Stake, & Yachinsky, 1975). If imposed on teachers with little or no explanation, use of results may be minimal and attitudes negative. When used for instructional purposes, decisions may be made by administrators who compare overall performance year-to-year--a potentially questionable practice. One survey also suggests that teachers feel the emphasis on standardized testing has affected their own (60%) and other teachers' (90%) behavior (Darling-Hammond & Wise, 1985). Specifically, teachers reported spending class time teaching students how to take the required test and how to take tests in general.

Reasons offered for why standardized tests are given but results not used by teachers are a resistance to a perceived narrowing of the curriculum, resistance to management control, accountability

avoidance (Darling-Hammond & Wise, 1985; Ruddell, 1977), failure of test publishers to report scores in a form useful to teachers (Lortie, 1975), the low quality of some standardized tests (Boyd et al., 1975), the vague purpose of some standardized tests (Whitehead & Santee, 1987), the delay between testing and receiving results (Stiggins, 1985), a limited understanding of score interpretation (Cramer & Slakter, 1968; Yeh et al., 1981) and inadequate preservice preparation, especially in statistics and standardized testing (Gullickson & Hopkins, 1987). Marso and Pigge (1988) found teachers to perceive a lower need for standardized testing skills than for classroom testing skills. They also found that teachers reported lower proficiencies in standardized test score use and interpretation than in classroom test score use and interpretation. If limited understanding of tests and measurement is a factor in the lack of use of test results, increased training should result in increased use of test results. This relationship has, in fact, been found by two researchers (Tollefson, Tracy, Kaiser, Chen, & Kleinsasser, 1985; Yeh et al., 1981). Further, Yeh et al. (1981) reported younger teachers as less likely to use standardized test results, possibly because younger teachers tend to have less training in tests and measurement.

Only one study (Hall, Villeme, & Phillippy, 1985) was identified that addressed the differences in standardized test use by grade level taught. Results indicated that elementary level teachers gave more weight to the results of state-wide tests than did middle-level and high school teachers. However, attitudes of elementary teachers

toward achievement tests have been found to be less positive than those of secondary teachers (Tollefson et al., 1985).

Differential use of standardized tests may indicate a need for differential emphases in preservice training of students preparing to teach at different levels. It has been suggested by several authors that college instruction in tests and measurement needs to be reoriented (Ebel, 1967; Fennessey, 1982; Gullickson, 1984, 1986; Newman & Stallings, 1982). Fennessey (1982) argued that college tests and measurement training should be focused on the curricular area of the student to be of most use. This requires a tailoring of coursework to curricular area--English, physical education, mathematics. Concurrent with this, tests and measurement courses could be (and sometimes are) structured for elementary, junior high, and senior high levels. Several authors agree that courses need to be teacher-oriented and classroom-oriented--that training needs to be more highly relevant to what goes on in the classroom and in the teacher's life (Gullickson, 1986; Mayo, 1967; Newman & Stallings, 1982). Restructuring training to make it more compatible with the needs of teachers may serve to improve testing practices (and attitudes). But, prior to restructuring training, one needs to describe practice differences across grade levels and subject areas.

The purpose of this study was to assess classroom teachers' use of standardized tests, attitude toward standardized testing, and the differences, if any, with grade level taught. A further purpose was to examine differences in standardized test use and attitudes with training in tests and measurement.

METHODS

Subjects

Two samples were selected for use in this study. The reason for using two diverse samples was to examine whether test use differed in two very different geographic locations. If so, results would have less generality and if not, results would seem more likely to hold for other locations. Marso and Pigge (1988) found no significant differences in teachers' reported testing needs and proficiencies in rural, urban, and suburban settings in Ohio. In fact, studies of testing practices conducted in different states have yielded generally consistent results. Therefore, no major differences across location were expected by the authors in the present study.

The first group was a random sample of teachers in the State of Wyoming. The sample was chosen from a list provided by the Wyoming State Department of Education of all licensed educators in Wyoming. During the spring of 1984 these teachers were sent a letter explaining the nature of the study, a survey form, and a stamped return envelope. After two follow-ups, a total of 555 replies were received, or 81% of the deliverable envelopes (12 letters were undeliverable, 4 teachers refused to reply, and 133 did not reply). There were no significant differences between nonrespondents and respondents in sex or grade level taught. The sample included 288 elementary, 103 middle level, and 129 senior high teachers. Of the sample, 36.5% were male and 63.5% female. Twenty-three percent held a master's degree. There is no tests and measurement requirement for

certification in this state, although a course in tests and measurement is required for graduation from the sole teacher education program in the state at elementary, middle, or secondary level.

The second sample was drawn from a large metropolitan school district in Louisiana. During the fall of 1986 a random sample, stratified by grade level, of 16% of the teachers were sent a letter explaining the nature of the study and a survey form with special anonymous return procedures. A total of 253 replies were received (54% of those sampled). This group served as a validation sample in this study. The sample included 97 elementary, 82 middle level, and 65 senior high teachers. Nine persons did not respond to this question. Of the sample, 22% were male and 78% were female; 57% held a master's degree. Training in tests and measurement is not required for certification in Louisiana but a course in tests and measurement is now required for graduation from most teacher education programs.

Instruments

A survey form was developed containing 12 Likert scale items regarding attitudes toward standardized tests and 20 additional questions asking for demographic information and what standardized test were used and for what purposes (supply format rather than selection). Additional questions asked how much training in tests and measurement the respondent had, and what grade level he/she taught. Overall attitude toward standardized tests was also assessed by asking how useful (on a 1-7 scale) standardized tests were to the

teacher. A similar question was asked regarding usefulness of classroom tests.

RESULTS

Western Teachers. A significant difference in reported use of standardized tests was found for grade level taught for this sample (χ_2^2=87.9,p<.01); 71.4% of the elementary teachers reported using standardized tests, 55.6% of middle level, and 19.8% of high school teachers. Multivariate attitude differences were significant (Wilk's lambda = .82, p<.001). Significant differences were then found using oneway analyses of variance for eight of the twelve attitude items (Table 1). Elementary level teachers (M_E=3.1) had more positive attitudes about statewide testing and grading programs than middle level (M_M=2.9) or high school teachers (M_H=2.6) and were more likely to feel they understood standardized test results (M_E=3.9 vs. M_M=3.6 and M_H=3.4). Elementary teachers were less favorable (M_E=1.9) than the other groups (M_M=2.2, M_H=2.3) about the use of standardized tests or competency tests to judge a teacher's performance. Middle level teachers were the most favorable (M_M=3.9) about requiring competency tests for students, though all three groups were in favor of this (M_E=3.7, M_H=3.5). Elementary (M_E=4.0) teachers were more favorable to a districtwide grading system than middle level (M_M=3.6) or high school (M_H=3.3) teachers. Elementary teachers (M_E=3.1) were the least favorable to

competency testing for teachers ($M_M=M_H=3.4$). Overall attitudes toward standardized testing did not differ across the groups.

Purposes for testing were also assessed. Teachers could list more than one purpose. At the elementary level, the top five purposes for testing were (in order of most to least mention): district requirement for school comparisons (49.1%), individual diagnosis (31.8%), curriculum evaluation (22.9%), assessing student growth (21.7%), and placement (19.1%). At the middle school level, the top five purposes were district requirement for school comparisons (42.1%), individual diagnosis (30.3%), placement (27.6%), assessing student growth (22.4%), and curriculum evaluation (21.1%). At the senior high level, the top two purposes were to assess growth (28.6%) and for curriculum evaluation (28.6%). No other reasons for testing were mentioned by more than 20% of the senior high subsample.

Teachers were also grouped by how much training in tests and measurement they'd had (0, 1, 2, or 3+ courses). Tests and measurement training did not differ significantly across grade level taught. There was a significant difference in use of standardized tests based on amount of training ($\chi_3^2=8.3$, $p<.05$). Those with more extensive training were more likely to give a standardized test than those with less training (69.5% of those with three or more courses vs. 54.2% of those with no courses). The multivariate test of attitude toward standardized testing showed no significant differences across the groups. Teachers with the most measurement training were significantly <u>more</u> likely to agree with the statement

that 'teachers do not understand standardized test results' (M=3.3). Teachers with little or no measurement training were more likely to disagree with the statement (M=3.8). No significant differences were found for other attitude items.

Purposes for testing were tabulated by amount of tests and measurement training. The top five purposes listed by those teachers with the most tests and measurement training were requirement/district requirement for school comparisons (40.5%), curriculum evaluation (37.8%), individual diagnosis (29.7%), placement (29.7%), and assessing growth (27.0%). The top five purposes listed by those with no training were required/district requirement for school comparisons (50.7%), individual diagnosis (27.5%), assessing growth (18.8%), curriculum evaluation (17.4%), and placement (15.9%).

While grade level taught did not relate to training in tests and measurement, training level did affect reported purpose for testing. Those with the most training reported a greater use of test results for curriculum evaluation and for other purposes than did teachers with no tests and measurement training. Teachers with no tests and measurement training were less likely to give standarized tests and if they did because of school/district requirements, were less likely to use the results in their classrooms.

Attitudes toward standardized testing were significantly less favorable (M=4.1) than attitudes towards classroom testing (M=5.6).

Southern Teachers. Significant differences in reported use of standardized tests were found for grade level taught for this sample (χ_2^2=72.7, p<.01); 85.1% of the elementary teachers reported using standardized tests, 62.3% of middle level, and 15.9% of high school teachers. The multivariate test of attitude differences was significant at p<.05 (Wilk's lambda = .85). Significant differences were found using oneway anova for two of eleven attitude items. (Item 6 was found objectionable for use with this sample--see Table 1.) All teachers had a favorable attitude toward statewide testing and grading programs. Elementary teachers (M_E=4.1) were more likely to feel they understood standardized test results better than middle level or high school teachers (M_M=M_H=3.6). Middle level teachers (M_M=4.2) were the most favorable about using competency tests for students, although all three groups were in favor of this (M_E=M_H=3.7).

Purposes for testing listed most frequently by Southern elementary teachers were: individual diagnosis (97.9%), curriculum evaluation (21.6%), and placement (21.6%). At the middle school level, the three most frequently listed purposes were placement (47.2%), individual diagnosis (30.5%), and school/district requirement (25.0%). At the senior high level, only eight persons completed this question.

When teachers were grouped by training in tests and measurement, level of training did not differ significantly across grade level taught. Teachers with the most training were significantly less

likely to agree with the statement that requiring teachers to pass competency tests would raise educational standards (M=3.8) than teachers with little or no measurement training (M=3.6). No significant differences were found for other attitude items.

The three most frequently listed purposes for testing for teachers with no training were placement (37.7%), individual diagnosis (28.8%), and curriculum evaluation (26.6%). Purposes listed most frequently by those with measurement training were individual diagnosis (76.5%), placement (41.1%), school/district requirement (29.4%), curriculum evaluation (23.5%), and assessing growth (23.5%).

Training did affect reported purpose for testing in this sample as well. Those with training reported a greater use of test results than teachers with no tests and measurement training. Teachers with training (3 or more courses: 72.0%) were significantly more likely to give standardized tests than teachers with no training (no courses: 52.2%, $\chi_3^2=5.58$, $p<.05$). Again, teachers with no training were less likely to give standardized tests and if they did were less likely to use the results in their classrooms. The multivariate test of attitudes toward standardized testing found no significant differences across groups.

Similar to Western teachers, attitudes toward standardized tsting were significantly less favorable (M=4.3) than attitudes toward classroom testing (M=5.9).

Comparison of Western and Southern Teachers. Reported use of standardized tests was found to be fairly consistent across the two samples. Differences in test use across grade level taught and differences due to tests and measurement training were found in both samples and were found to lead to similar conclusions.

Differences were found between states when examining teachers purposes for using test results. In general, the purposes for testing were similar for elementary and middle school teachers within states. The most frequent purpose for Western teachers was administrative purposes while Southern teachers emphasis was on diagnosis and placement. High school teachers are less frequently required to give standardized tests in their classrooms and so their reasons for testing differed. While grade level taught did not relate to training in tests and measurement, training level did seem to affect reported purpose for testing. Those with the most training reported a greater use of standardized tests. Teachers with no tests and measurement training were less likely to give standardized tests. This result is consistent with that of Tollefson et al. (1985) and Yeh et al. (1981). Differences in test use across states may be due to the difference in percentage of teachers with tests and measurement training (82% for Western teachers, 10% for Southern teachers).

Attitude toward standardized tests tended to be neutral to negative for most items, although teachers did perceive standardized tests as serving some useful purpose. A strong majority believe that

standardized tests are not the best way to evaluate a teacher's effectiveness and should not be the basis for salary increases. Elementary level teachers use standardized tests more but nave as negative or more negative attitudes toward the tests than secondary teachers. These differences were more often significant for the Western teachers than for the Southern teachers. This effect of grade level taught on attitudes is consistent with that found by Tollefson et al. (1985). Baker and Herman (1983) note that elementary teachers have been more accountable for student's performance than secondary teachers and that curricular changes are more closely tied to test scores at the elementary level. Besides being in many cases a school or district imposed test rather than a teacher-selected test, formal testing may carry greater weight at elementary levels and thus produce more anxiety. Elementary level teachers may use standardized tests more because the elementary curriculum is more homogeneous than the curriculum at other levels and elementary level teachers are more actively concerned with placement and diagnosis. For example, mathematics instruction at the basic skills level lends itself well to standardized assessment.

DISCUSSION

Deans, AFT-NEA officials, and legislators agreed that teachers should accept standardized tests as useful measures and learn more about tests and how to interpret them (Lambert, 1981). One study of

administrators suggested that group perceived teachers to be less competent than desirable in using and interpreting results from purchased tests. But, consistent with Boyd et al. (1975) and Ruddell (1985), the primary reason Western teachers, particularly at the elementary-middle school level, use standardized tests is because they're required to by the school administration. The public accountability demands placed on administrators lead them to perhaps emphasize standardized testing over classroom testing. If standardized tests are primarily district or school mandated to serve as markers of school position, then teachers are realistic in their perception of purposes for testing and may, in fact, be unable to use the test results themselves. If administrators, however, wish teachers to make greater use of tests it may be necessary to explain exactly how this may be done. Puleo and Lieberman (1986) and Whitehead and Santee (1987) describe examples of maximizing the use of standardized test results by providing training on the specific tests used and by enlisting the principal in the process. If the standardized test matches the curriculum well, teachers may use results for program evaluation. If the standardized test does not match the curriculum well, results may still have value for placement and diagnosis. At the lower levels, teachers report using tests for diagnosis, especially the Southern teachers, so this practice might be enhanced by additional information on use of results. To be useful, test results should be provided to teachers at the beginning of the year to aid in planning instructional programs.

Alternatively, the test results may provide no useful information to teachers. If this is the case, choice of test might be examined. Teachers may be able to suggest particular tests of greater local value. Perhaps teachers could be more closely tied into the school/district decision-making process or at least be familiar enough with the district's reasons for standardized testing to maintain a supportive attitude toward the testing program.

One finding of interest was that Western teachers with <u>less</u> tests and measurement training perceived themselves as <u>more</u> knowledgeable about test interpretation than did teachers with more training. Although a basic tests and measurement course is required in many teacher preparation programs, many teachers had no coursework. Teachers with no tests and measurement training may be unaware of the potential pitfalls in test score interpretation.

Since standardized test use clearly differs across grade levels, preservice instruction in tests and measurement may appropriately place more emphasis on standardized testing for prospective elementary and middle level teachers than for prospective secondary level teachers. Elementary and middle level teachers may profit by examples of how standardized test results can be used to diagnose students' strengths and weaknesses as well as to provide information about the curriculum in general. Specific examples of use with specific tests might provide links teachers are not making. Inservice presentations in score profile interpretation and reporting to students/parents might be targeted to elementary and middle level teachers.

Professors of educational tests and measurement may need to work more closely with inservice teachers to identify uses of standardized tests and to garner examples of innovative test use. Concrete examples with locally used tests may be most appropriate in instruction. Professors might enlist the assistance of inservice teachers who are in graduate degree programs, in practica and internships, or who are members of professional organizations such as Phi Delta Kappa as well as by making direct contact with the schools. Closer contact with the classroom may provide information to realign inservice teachers' use of tests and to change preservice college instruction.

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Table 1
Attitudes to standardized testing by sample

	Wyoming		Louisiana	
	Mean	SD	Mean	SD
Response scale: 1-6 where 1=strongly disagree and 6=strongly agree.				
Standardized tests are the best way to evaluate a teacher's effectiveness.[a]	2.1	1.2	2.3	1.2
Teachers whose students score higher on standardized tests should receive higher salaries.	1.7	1.0	2.1	1.2
All districts in the state should be required to use the same standardized testing program.[a]	2.9	1.5	4.0	1.4
Requiring students to pass competency tests would raise educational standards.[a,c]	3.7	1.3	3.9	1.2
Requiring teachers to pass competency tests would raise educational standards.[a,d]	3.3	1.3	3.5	1.4
School districts should have a uniform grading system, for example, percentage cut-offs.[a]	3.7	1.4	-	-
Response scale: 1-6 where 1=strongly agree and 6=strongly disagree.				
Teachers do not understand standardized test results.[a,b,c]	3.7	1.2	3.8	1.3
Standardized tests serve no useful purpose.	4.1	1.0	4.0	1.0
Standardized tests assess only unimportant educational outcomes.	3 9	.9	4.0	.9
Standardized tests force teachers to "teach to the test."	3.1	1.2	3.5	1.1
Low scores on standardized tests damage a student's self-concept.[a]	3.2	1.0	3.4	1.1
Standardized tests generate harmful anxiety in students.	3.4	1.0	3.5	1.2

Note. Significance was assessed at $p<.05$.
a= significant differences across grade levels, Western sample
b= significant differences across training groups, Western sample
c= significant differences across grade levels, Southern sample
d= significant differences across training groups, Southern sample