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Ball State University

On the Cover

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Four copies of the manuscript should be submitted typed double-spaced (including quotations and references) on $8^1/_2$ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

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Mary K. Bendixen-Noe, *MWER* Co-Editor
1179 University Dr., The Ohio State University at Newark, Newark, OH 43055

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MWER Publication Address

Mary K. Bendixen-Noe
The Ohio State University, Newark
1179 University Dr.
Newark, OH 43055
Phone: (740) 366-9469
Fax: (740) 366-5047
email: bendixen-noe.1@osu.edu

MWER Subscription & MWERA Membership Information

Jean W. Pierce
Dept. EPCSE
Northern Illinois University
DeKalb, IL 60115
Phone: (815) 753-8470
Fax: (815) 753-9250
email: P30JWP1@mvs.cso.niu.edu

The Influence of Textbooks on Teaching Strategies: An Empirical Study

Lianghuo Fan
National Institute of Education, Singapore
Gurcharn S. Kaeley
Illinois Institute of Art

Abstract

This study investigates the influence of textbooks on teaching strategies. Teaching strategies of 14 teachers using University of Chicago School Mathematics Project (UCSMP) secondary mathematics textbooks were compared to those of another 14 teachers using non-UCSMP textbooks in 13 schools. Data were collected from classroom observations, teacher interviews and a questionnaire survey. The results indicate that textbooks appear to affect teaching strategies by conveying pedagogical messages to teachers and providing an encouraging or discouraging curricular environment for employing different teaching strategies. Therefore their role in teachers' teaching practices should be recognized by textbook authors, curriculum reformers, and school teachers and administrators.

Introduction

For the last two decades, educational researchers have consistently pointed out the lack of research centering on textbooks and their role in teaching practice, and have called for more studies in this area. McCutcheon (1982) argued that little had been known about the nature and qualities of teachers' and students' use of textbooks. Graybeal and Stodolsky (1986) stated that "the analysis of curriculum materials seems to be a relatively unexplored field of study" (also see Graybeal, 1988, p.124). In a review of the research literature on this topic, Stodolsky (1989) again emphasized that "exactly what the presence of textbooks signals about their use has not been adequately studied or analyzed." Freeman and Porter (1989) argued that even though textbooks played a central role in most classrooms, surprisingly little research had focused on teachers' use of textbooks. Sosniak and Stodolsky (1993) claimed that "systematic attention to textbooks and their use by teachers and students is long overdue." A similar judgement was made by Love and Pimm in *International Handbook of Mathematics Education* (1996), where they gave a relatively comprehensive review of the literature and reported that "there is a dearth of research into the use of texts in class" (p. 397).

Focusing on the subject of mathematics at the secondary level, this study aims to investigate one issue in this area: how do textbooks influence teachers' teaching strategies in classrooms? More specifically, by comparing the teaching practices of teachers using math textbooks developed by the University of Chicago School Mathematics Project (UCSMP) and those using non-UCSMP textbooks, we intend to address the following questions:

1. Are there significant differences in the teaching strategies of teachers using UCSMP textbooks and those using non-UCSMP textbooks? By "teaching strategies" we mean the way a teacher performs his/her teaching task in the classroom. In contrast, if "teaching content" means *what* the teacher teaches in the classroom, then "teaching strategies" means *how* the teacher teaches. They are two different but related aspects of teaching practice.

2. If the answer to the above question is "yes", then how are the differences in teaching strategies related to the textbooks used? In other words, what do the distinctive features of UCSMP textbooks in comparison with the other textbooks contribute to the differences?

This paper is in four sections. Section 1 provides a brief review of relevant literature. Section 2 describes the methodology used in this study. Section 3 presents the main results obtained from the study. The last section gives the conclusions and implications based on these conclusions.

Related Research

First, we briefly examine relevant research since the 1980s on the role of textbooks in affecting teachers' teaching practices in the subject of mathematics as a background for this study.

Floden, Porter, Schmidt, Freeman, and Schwille (1981) studied 66 fourth-grade math teachers to determine the relative power of six factors that might have influence on their decisions about the content taught in their classrooms. The six factors were district tests, textbooks, district instructional objectives, other teachers' opinions, the principal's opinions, and parents' opinions. Based on teachers' responses to four decision-making questions about "adding core topics", "adding peripheral topics", "omitting core topics", and "omitting peripheral topics", the researchers found that teachers perceived textbooks to be the least (or one of the least) powerful factor(s) that influenced their decisions on what to be taught in classrooms.

Schwille, et al., (1983) studied seven teachers of Grades 3 to 5 in six schools of three districts about how they made content decision. Using case study methodology, Schwille, et al., revealed that different teachers did not teach the same content even when they were using the same textbooks. Teachers had considerable discretion in the use of textbooks. Some of them followed the texts very closely, while others used them very selectively.

Krammer (1985) conducted a study that treated the textbook as a classroom context variable and compared the teaching practices of teachers using three different textbooks. By observing classrooms, administering tests, and using questionnaires to students and teachers from 50 eighth-grade math classes in seventeen college-bound schools in the Netherlands, the study found that there was a significant overall difference in teaching practices among the three textbook user groups. More specifically, four of the nine teaching practice variables, namely, the frequency of higher-order questions, the amount of seatwork, the amount of academic conversation, and the students' perception of remedial help, occurred to significantly different degrees. Teachers using a textbook that included plenty of seatwork did much more often use seatwork activity in their classrooms, and those using a textbook in which its authors avoided high-level questions did ask much less of those questions. In addition, less academic conversation was consistently found in the classes using less academically demanding textbooks. However, according to Krammer, it is not clear whether the consistency of the teaching practices and the textbooks' features arose because the teachers followed the textbooks or because the teachers chose textbooks that resembled their preferred teaching style.

Based on an intensive study of classroom activity, which included the observation of twenty-two fifth-grade classrooms in eleven school districts in the Chicago area for two consecutive weeks, Stodolsky (1988) described a general picture of how mathematics teachers used their textbooks. She explained that teachers did not use everything in the textbooks. They often omitted introductory examples or materials and assigned only some of the problems that did not include word problems and other application exercises contained in the books. They also made materials or used commercially available materials for the topics under study. However, teachers usually did not introduce topics not included in the textbooks or deviate from the sequence of chapters in the books (Stodolsky, 1988, p.111).

Barr (1988) studied nine fourth-grade math classrooms in five schools from three districts which were also located in the Chicago area with the focus being conditions influencing content taught. This study revealed that the nature of lessons and the problems in the textbooks determined what was taught. Teachers rarely deviated from, or supplemented, textbook content. The number of lessons on a topic included in the textbook directly influenced the number of class periods taught on that topic, and the number of problems included in the books directly influenced the number of problems assigned by teachers in their instruction. Moreover, most teachers did not sample work selectively, particularly in review areas, but proceeded, lesson by lesson, through the textbooks. Overall, there was a close relation between the emphasis a textbook gave to a topic and its development in class.

Freeman and Porter's (1989) study challenges the notion that elementary school teachers' content decisions are dictated by the textbooks. They investigated four fourth-grade math teachers' styles of textbook use and the match between content contained in the textbook and contents they presented in their classrooms. The research data were mainly collected from daily teacher logs and teacher interviews. Analysis of the data revealed that teachers did not always defer to the authority of their textbooks and differed considerably when deciding (a) what topics to teach, (b) how much time to spend on each topic, or (c) in which order topics were presented.

Sosniak and Stodolsky's (1993) year-long study of four fourth-grade teachers in two urban schools produced results consistent with Freeman and Porter. They collected data from classroom observations, teacher interviews, and content analysis of the materials used in the four classes in three subjects including math, arts/reading, and social studies. They found that the influence of textbooks on classroom instruction and teachers' thinking was not as significant as the literature would have people expect. Textbooks did not control the curriculum to the extent people often assumed and textbook content did not necessarily directly influence what students learned. From that, they deduced that textbooks could not be assigned major responsibility for the variety of problems associated with elementary education.

Four points can be summarized from the literature review. First, among the limited number of related studies reviewed, the majority have focused on how textbooks affected the content of teaching, and only a very few studies have addressed the issue of how textbooks influenced the strategies of teaching. Second, most of the studies were conducted at the elementary school level, and only a very few were at the secondary level. Third, there is much inconsistency in their results. For such inconsistencies (e.g., see Barr's and Freeman and Porter's studies), one possible explanation might be that the textbooks used by teachers in those studies were different. In other words, there might be different patterns for teachers to use different textbooks. Finally, these were small-scale studies, implying that large-scale study in this area is hard to implement. It is not surprising, as Love and Pimm (1996) have pointed out, that obtaining research data in this field of study is rather difficult.

Method

This study focuses on how textbooks affect teachers' teaching strategies in their classrooms. Data were obtained from four pilot studies of textbooks developed by UCSMP. The textbooks in the four studies were the second editions

of, respectively, *Transition Mathematics*, *Algebra*, *Geometry*, and *Advanced Algebra*. The first two pilot studies were conducted in 1992 and 1993 and the last two in 1993 and 1994. They took the form of a matched pair design, with *Transition Mathematics* classes matched to classes using traditional Pre-Algebra textbooks, *Algebra* to traditional Algebra I classes, *Geometry* to traditional Geometry classes, and *Advanced Algebra* to traditional Algebra II classes in the same schools.

Since its inception in 1983, UCSMP has been one of the largest, as well as one of the most progressive, projects on curriculum reform and development in the United States. It has developed a whole series of secondary mathematics textbooks with special features and substantial differences, as compared to most traditional teaching materials, including integrated use of technology, extensive opportunities for cooperative learning, and many required readings. This was the most important reason we chose UCSMP textbooks as the main object of comparison for this study. However, we should point out that our focus in this study is on how textbooks affect teachers' teaching strategies. The study is not intended to judge what type of textbooks are better, nor is it intended to suggest what kind of teaching strategies are more effective.

Like many other studies conducted in the field of social sciences and education (e.g., see Stevenson and Stigler, 1992), it was not possible for us to randomly select the subjects to be included in the research sample. We therefore first solicited schools to apply for participation in the pilot studies. From the schools that applied, we then chose those that would be most representative of the majority of schools in the U. S. according to our own analysis. That means, to maximize the generalizability of results, the inclusion of schools in the pilot studies was based on location, size, and socioeconomic status of the community surrounding the schools.

In total, the research sample consisted of thirteen schools and twenty-eight teachers. The schools were in eleven states across the U. S.: California, Colorado, Georgia, Oregon, Indiana, Illinois, Mississippi, Wisconsin, Pennsylvania, South Carolina, and Texas. They were located in semi-rural, rural, town, suburban, and inner city areas, with at least two schools in each type of area. Among them, one was a middle school, another was a junior high school, and the rest were high schools. School size ranged from about 500 students to over 3000 students. Each school participated in one of the four pilot studies, except for one school in Pennsylvania, which took part in two pilot studies for two different UCSMP textbooks in two different years.

After the schools were chosen, a pair of teachers were nominated by each participating school for each pilot study. One of them was assigned to teach one UCSMP textbook in two classes, and the other to teach a matched traditional textbook in other two classes. The pilot study for each textbook started in late August and took one school year to complete. For each pilot study, site visits were conducted in the second semester of the school year. During the site visits, all the fourteen teachers' (four males, ten females) classrooms using UCSMP textbooks, and all the fourteen teachers' (eight males, six females) classrooms using non-UCSMP texts were observed, and all the teachers were interviewed. The data on participating teachers' professional background were collected through a questionnaire survey a few weeks after the site visits. However, one teacher from each group was not available when the questionnaire was administered. Hence we only present the background of thirteen teachers from each group.

In terms of the highest degrees possessed, seven teachers in the UCSMP group had Master's degrees, six Bachelor's degrees; in contrast, nine teachers in the non-UCSMP group had Master's degrees, four Bachelor's. Applying the chi-square test to these data revealed that the two groups were statistically equivalent, $\chi^2(1, N = 26) = 0.65$, $p < .42$. In addition, all the participants were certified to teach mathematics. As to teaching experience, the average length of teaching any subject within the UCSMP group was 19.1 years with standard deviation (*SD*) of 6.33, and that of teaching mathematics was 17.4 years with $SD = 9.60$. Correspondingly, within the non-UCSMP group, the average was 19.3 years for teaching any subject with $SD = 5.87$, and 17.7 years for teaching mathematics with $SD = 9.08$. As expected, no significant difference was found by statistical testing. In fact, the probability value of the *t* test for the difference of the averages and that of *F* test for the difference of the *SD*s are .94 ($t(24) = 0.07$) and .16 ($F(12,12) = 1.79$) for teaching any subjects, and .92 ($t(24) = 0.10$) and .145 ($F(12,12) = 1.88$) for teaching mathematics, respectively.

It is noteworthy that the two groups were equivalent with respect to both educational and teaching experiences based on the statistical indicators described above. From this fact we can significantly eliminate the influences of professional background on the difference of teaching strategies between the two groups and therefore enhance the validity of attributing the difference of teaching strategies to textbooks, which is our main concern in this study. Nevertheless, there might be other factors contributing to the differences, which were not under control. Thus the results of this study should be interpreted with some caution.

Table 1 lists the textbooks used in the study. From Table 1, we can see that the compared textbooks have been in use for some time, and many of them have been highly recommended and widely used. However, they were relatively traditional. For brevity, we shall not compare in detail the features of UCSMP textbooks with those of the non-UCSMP textbooks used in this study. Nonetheless, it should be pointed out that there are several elements of UCSMP textbooks that distinguish the textbooks from most traditional ones. These features include wider scope of content, more reading and problem-solving, more applications, integrated use of technology, a multidimensional approach to understanding, a new instructional format, and student projects (for more details,

Table 1
Textbooks Used in the Two Groups

UCSMP (*n* = 14)	Non-UCSMP (*n* = 14)
UCSMP	Addison Wesley: *Pre-Algebra* (1)
Transition Mathematics (3)	Heath: *Pre-Algebra* (1)
	Laidlaw: *Algebra I* (1)
UCSMP	Houghton Mifflin: *Algebra: Structure and Method* (1)
Algebra (3)	Prentice Hall: *Algebra* (1)
	Saxon: *Algebra* (1)
UCSMP	Key Curriculum Press: *Discovering Geometry* (1)
Geometry (4)	Houghton Mifflin: *Geometry* (2)
	Merrill: *Geometry* (1)
UCSMP	Addison-Wesley: *Algebra* (1);
Advanced Algebra (4)	Merrill: *Algebra II* (1);
	Houghton Mifflin: *Algebra and Trigonometry* (2)

Note: The figures in parentheses are the numbers of teachers using the textbooks.

see the textbooks and/or Usiskin and Senk, 1998). Although all the features may to varying degrees affect teachers' teaching practice including the choice of content and teaching methods, and some (e.g., wider scope of content, and more applications) may have more influence on the content taught, we expect that the following will have more direct influence on teachers' teaching strategies.

1. Use of Technology. The rapid development of technology is one of the most important forces in the reform of school curriculum. It is claimed that taking advantage of today's widely available technology is one of the underlying beliefs of UCSMP. In fact, students are expected to use scientific calculators in all courses, and to use graphics calculators or computers beginning in UCSMP *Algebra* and on a daily basis in *Advanced Algebra*. Geometry drawing software programs such as "GeoExplorer", which is designed specially for UCSMP textbooks, are also strongly recommended for use with *Geometry*. Meanwhile, every UCSMP textbook has a corresponding "technology sourcebook" for teachers' use in classrooms.

2. Cooperative Learning. Cooperative learning is integrated in UCSMP textbooks and its use is encouraged. Table 2 shows statistics regarding the opportunities for cooperative learning (small group work) provided in UCSMP textbooks. The data are obtained from the suggestions contained in the officially published second edition of the textbooks (McConnell, et al., 1996; Senk, et al., 1996; Usiskin, et al., 1995; Usiskin, et al., 1997). Furthermore, there are "In-Class Activities" in most chapters and "Activities" in many lessons, most of which require small group work.

3. Reading. UCSMP stresses the importance of reading the text for students to understand mathematics. Reading mathematics is explicitly required in the textbooks. In fact, each lesson in all the UCSMP textbooks includes selections for students to read, and contains a special set of questions called

Table 2
Opportunities for Cooperative Learning Provided in UCSMP Textbooks

Lesson	Transition	Algebra	Geometry	Advanced	Total
No. of LWOCL[a]	80	92	83	98	353
No. of all lessons	114	114	115	123	466
% of LWOCL in all lessons	71	81	72	80	76

[a]LWOCL = lessons with opportunities for cooperative learning.

"covering the reading". The purpose of this set of questions is to check students' understanding of the reading. In case the students cannot answer the questions, they are instructed to "go back and reread the lesson to help you find an answer" (McConnell, et al., 1996, p.8).

It should be noted that the above features are found when we compared UCSMP textbooks to the other then-used textbooks. Readers are reminded that the newer editions of the compared textbooks might have updates with regard to national standards, group work and technology.

Regarding students, there were 615 students from Grades 7 to 12 involved in the study, 311 in fourteen classrooms using UCSMP textbooks and 304 in fourteen classrooms using non-UCSMP texts. Among the fourteen classes in the UCSMP group, three used UCSMP *Transition Mathematics*, four *Algebra*, four *Geometry*, and four *Advanced Algebra*. Correspondingly, there were the same number of classes that used the matched non-UCSMP textbooks in the comparison group. The average size of the twenty-eight classrooms observed was twenty-two students, with the UCSMP classrooms ranging from fourteen to thirty-three students with a mean of 22.2, and the non-UCSMP classrooms from fourteen to thirty with an average of 21.7, very close to each other. The ethnic composition of the twenty-eight classes differed widely, with ten consisting of all white students, the rest being ethnically-mixed; among them, nine having considerably more white students and four having considerably more minority students (mainly African-American and Latino origin). They were distributed nearly equally in both groups. To a great extent, we believe that the whole student population in this study is very representative of the student cohort in the United States.

Three instruments were used in the study: classroom observation, teacher interview, and a questionnaire. Some training on how to use the instruments was given to the persons who went to observe classes and interview teachers, including a practical session of classroom observation and two sessions of teacher interviews in one Chicago suburban school. The aim of the training was to make sure that all the observers looked for the same criteria in every classroom observed and asked the same questions in the same way to all the teachers. The classes used for the training of the observers were not included in the study sample.

The classroom observations were conducted during the site visits mentioned earlier. Each classroom observation

focused on the following: (1) characteristics of the class, (2) goals of the lesson, (3) teaching strategies employed in the classroom, (4) students' use of mathematical language, (5) locus of classroom activities, (6) use of technology (mainly calculators and computers), and (7) general pace of teaching. In addition to classroom observations, the site visits were used to interview the pilot and comparison teachers with a pre-designed set of questions, and to talk to site coordinators and the principals. All the interviews were audiotaped and then transcribed for analysis. The site visits generated structured "Classroom Observation Reports" and "Teacher Interview Records", which composed the main original research data for this study.

The questionnaire was administered to all the pilot and comparison teachers to determine their level of education, subjects studied at each degree level, teaching experience, subjects taught, certification, and their general opinion on different aspects of the course. The usable responses were collected from thirteen pilot and thirteen comparison teachers respectively, as discussed earlier.

With respect to data analysis, as mentioned earlier, the purpose of this particular study is not to make an overall evaluation of the textbooks, but to investigate if there are different patterns of teaching strategies between the two textbook user groups, and if so, how they are related to the features of the textbooks. For this purpose, we particularly focused on the data which we believe have direct relation to our theme in both the observation and the interview records, although the other information provided from the field surveys also received our attention. Statistically, the data were analyzed by using chi-square test and the two-tailed *t* test.

Results and Discussions

Classroom Observation Data

The main results of the study are presented in Table 3, based on the data collected from classroom observations. The table reveals how teachers in the two groups, on average, devoted different amounts of time to different teaching strategies (activities) in their classrooms. The terms under teaching strategies in the table are self-explanatory, and commonly used in research.

Table 3
Average Amount of Time Devoted in Classes to Different Teaching Strategies

	UCSMP		Non-UCSMP				
Teaching strategy	*M* (%)	*SD*	*M* (%)	*SD*	Diff[a]	*t*[b]	p<
Lecture demonstration	16.0	15.25	35.79	29.53	-19.79	2.31	.038*
Reading of textbook	5.14	11.29	1.07	4.01	4.07	1.28	.221
Students' seatwork	14.64	17.92	26.36	25.54	-10.9	1.44	.173
Small group work	23.93	30.21	4.86	13.21	19.07	2.23	.044*
Whole-class discussion	4.64	8.42	5.50	12.77	-0.86	0.21	.836
Going over homework	18.43	17.82	16.36	16.80	2.07	0.32	.754
Other instructional activity	9.50	15.95	7.29	14.35	2.21	0.39	.703
Non-instructional activity	6.79	10.87	4.64	5.71	2.15	0.66	.521

Note: $n = 14$ for each group.
[a]Diff = Mean in UCSMP group - Mean in non-UCSMP group.
[b]Two-tailed *t* test, N = 14, $df = 13$.
*$p < .05$.

Table 3 reveals that the two biggest differences in teaching strategies employed by these two groups of teachers are in "lecture demonstration" and "small group work". In the UCSMP group, the teachers on average used only 16% of the classroom time on lecture demonstration, while in the non-UCSMP group, the average time used on this activity was nearly 36%, which is more than double the time devoted by the UCSMP text users. On the other hand, teachers in the UCSMP group spent almost five times as much time on group work as their colleagues in the non-UCSMP group. Both of the differences are statistically significant ($p < .05$). It seems reasonable from the results to argue that the special feature of cooperative learning in the UCSMP textbooks appeared to make a difference in the use of group work. As for the difference in lecture demonstration, we believe it is also closely related to the textbooks used. The reason is the fact that UCSMP texts encourage less teacher-dominant activities such as group work and students' reading of textbooks implies the discouragement for teachers to adopt lecture demonstration, for the amount of time in a class period is limited. The interview data we discuss later also show this kind of relation.

The next two biggest differences are in "students' seatwork" and "reading of textbook". The *t* test results show that the differences are not statistically significant at the .05 level, but they are considerable. The UCSMP group teachers allocated nearly five times as much time as their counterparts to students' reading of textbooks and about half the time to students' seatwork. Clearly, the differences are consistent with the characteristics of the UCSMP textbooks described earlier.

Table 3 also shows that there is little difference in the average time spent on "going over homework" and "whole class discussion" between the two groups. As to "other instructional activities" and "non-instructional activities" listed in the table, the former included classroom quiz, teachers' leading discussion, assigning homework, and so forth, and the latter referred to announcements, setting up the classes, management of the classes, and the like. In some sense, those two kinds of activities are to a lesser degree related to teaching strategies. However, they are components of classroom activities. Table 3 suggests that there is little difference in the amount of time spent on them in the classrooms taught by the two groups of teachers. The results are within our expectation, as we do not think that UCSMP textbooks have any unusual features in this aspect.

Table 4 presents the data on the "locus of classroom activity". The results are remarkable. In the UCSMP group, in more than 40% of the classrooms the students were the locus of the classroom activities. However, no teachers in the non-UCSMP group had such lessons. Most teachers (71%) in the non-UCSMP group still dominated the classrooms, whereas only two teachers (14%) in the UCSMP

group did so. According to chi-square test, the difference between the two groups was significant, $\chi^2(2, N = 28) = 11.73$, $p < .01$.

The difference is closely related to, as well as consistent with, the structure of teaching strategies presented in Table 3. Namely, the teachers using UCSMP textbooks allocated more time to group work and students' reading textbooks, in which the locus would be more on the students. In contrast, non-UCSMP group teachers spent much more time on lecture, in which the locus would be more on the teachers themselves.

Table 4
Locus of Classroom Activities in the Classrooms Observed

Locus	UCSMP	Non-UCSMP
Teachers	2 (14%)	10 (71%)
Teachers/Students[a]	6 (43%)	4 (29%)
Students	6 (43%)	0 (0%)

Note: $n = 14$ for each group.
[a]Sometimes the locus was the teacher, and sometimes the students.

Teacher Interview Data

Because each classroom was observed only once, it is important to know if the class observed was typical. Thus, in the interviews, each teacher was emphatically asked "Was the class period I observed typical?" and "Are there other periodic activities you have been doing in the classroom which you did not do today?" For the first question, among twenty-seven teachers (the data for one non-UCSMP teacher was missing), twenty-three answered "typical" or "very (pretty) typical", three answered "basically typical". Only one non-UCSMP teacher answered "not typical" but in terms of students' behavior not lesson content. For the second question, six teachers in the UCSMP group, and also six in the non-UCSMP group, answered that on other days they would have group work. Only one UCSMP teacher said that there was less lecturing time in other usual class periods (the actual percentage on the observed class period was 38%). It is easy to see that the difference of lecturing time between the two groups of teachers would be even larger if the actual percentage for that teacher was less than 38%. Therefore, we think that the comparison of the results from the classroom observations were reliable.

In the interviews, fourteen teachers in the UCSMP group, and thirteen in the non-UCSMP group were asked the question "Do you use group work in the classroom?" The results reveal that all the UCSMP textbook users employed group work as one of their teaching strategies, which is closely related to the feature of cooperative learning in the textbooks. For example, when explaining the influence of the textbooks, one teacher stated: "Yes, definitely, because there are really specific things in there: in-class activities, do this with a group; and this is important." In comparison, in the non-UCSMP group, less than half (six teachers, 46%) regularly used this strategy, and nearly one third (four teachers, 31%) rarely or never used it in their classrooms, and the rest (three teachers, 23%) sometimes used groups. A chi-square test for these data suggests that the difference between the two groups was significant, $\chi^2(2, N = 27) = 10.18$, $p < .01$, which is consistent with the findings from the classroom observations reported earlier.

During the interviews, teachers were also asked "Do you use technology, in particular, calculators and computers, in your teaching?" According to the responses, nearly 60% of the UCSMP textbook users used computers and all of them used computers or calculators in their classrooms. In contrast, only about 17% of the non-UCSMP textbook users used computers, and less than two-thirds used computers or calculators in their teaching. Furthermore, more than 40% teachers in the non-UCSMP group had not used even calculators in their classrooms. Table 5 summarizes the data obtained. Statistically, the difference between the two groups was significant, $\chi^2(2, N = 26) = 8.59$, $p < .05$.

Table 5
Numbers of Teachers Using Technology in Classrooms.

Technology	UCSMP (n = 14)	Non-UCSMP (n = 12)[a]
Computers	8 (57%)	2 (17%)
Calculators only	6 (43%)	5 (42%)
None of them	0 (0%)	5 (42%)

[a]Interviews with 13 teachers were collected and one of them was not asked the question.

The interview data revealed a relationship between the use of technology in the classroom and the textbook used. For example, one Algebra teacher using a non-UCSMP text said, "The book doesn't really offer itself much for any calculator use except for when you are doing maybe percents or something like that." Considering UCSMP textbooks' "use of technology" feature, we think that the textbooks' integration and requirement of the use of technology might have played an important role in making such a difference.

The last, yet very important, result to discuss is about the question: "Some people have suggested that the UCSMP textbook (*Transition Mathematics*, or *Algebra*, or *Geometry,* or *Advanced Algebra*, respectively) requires teachers to adapt their teaching style. From your experience do you think this is true?" The question was particularly for the UCSMP text users and directly related to the theme of this study. Of the thirteen teachers who were asked the question, eleven teachers (85%) responded: "Yes" or "Definitely". For example, one said,

> Yes, I had to get used to not teaching students everything. I wanted them to read; I know UCSMP wants them to read and figure it out first before the teacher teaches them, and this is difficult after 25 years of being a teacher. But after I got used to that system, and realized that it worked, I really liked it.

Another teacher replied, "Definitely. If you see three of my classes (using different texts) probably no two are the same....The change in my teaching style is that I'm not lecturing anymore." Still another answered,

> Yes. Because in the previous Geometry courses that I've taught, normally I would start each lesson by kind of lecturing about that particular lesson and we would do some discovery activities, maybe as it pertained to the theorem or the concept for that particular lesson. In this UCSMP book, I've tried to have the students read the material first, and also try to do as much of the problems as they can before I really said too much about it. So I haven't done the lecturing that I had with the other materials, with the other series. So from that part I had to change my approach that way.

With regard to the remaining two teachers who were asked the same question, one Algebra teacher said, "A bit. Not as much as I thought when I heard I was doing this last summer." But he believed it did support a particular teaching style where teachers "have to be open minded and a little bit looser." The other Advanced Algebra teacher answered,

> I have been trying to adapt my teaching style from a non-traditional to a more non-traditional ... to adapt away from a lecture format anyway. And one of the reasons that I chose this material was I felt that it limited itself to that much better than other materials. So I am not sure if it's the UCSMP that is helping me to change or I think it's really more I've used these materials because I think it's more open to different teaching styles.

This answer apparently contains the possibility that Krammer conjectured in his study reviewed earlier that teachers might choose a textbook that resembled their preferred teaching style. However, we should point out that this was the only case in this study, and we did not find any more evidence from the data to support the conjecture.

Finally, at the discretion of the observer, one teacher who taught UCSMP *Algebra* was not directly asked the same question, but a related one, "How do you feel about the content and teaching style advocated by the UCSMP?" The answer was, "I like it.... I liked the application, I liked the technology involved, and I would really like to be able to teach out of this book again." From this perception, it seems plausible that the textbook also had influence on his teaching style.

To summarize, from the data on teachers' perceptions revealed in the interviews, we can see that UCSMP textbooks did appear to have an impact on teachers' teaching strategies and the influence is closely related to the features of the textbooks. Moreover, textbooks conveyed certain pedagogical messages to teachers and provided them with an encouraging or discouraging curricular environment for utilizing different teaching strategies.

Conclusions and Implications

As we pointed out earlier, this study is based on two main data resources: classroom observations and teacher interviews. Both resources consistently led to some important results. In general, we believe there are several conclusions that can be drawn from this study, though we remind the readers that these conclusions are based on the results of a non-experimental situation and therefore are to be taken with some caution.

First, there were important differences in the teaching strategies between teachers using UCSMP textbooks and those using non-UCSMP textbooks. Teachers using UCSMP texts spent significantly more time on group work, and considerably more time on the reading of textbooks in their teaching than those using non-UCSMP texts. In addition, they devoted significantly less time to lecture demonstration, and considerably less time to students' seatwork in their classrooms.

Second, significantly more teachers using UCSMP textbooks employed technology, in particular calculators and computers, in their teaching practices than non-UCSMP text users.

Third, the differences in the teaching strategies between the UCSMP group teachers and the non-UCSMP group teachers were closely related to, and consistent with, the special features of UCSMP textbooks. According to the perception of teachers using UCSMP textbooks, the textbooks appeared to affect their teaching strategies.

As a number of the studies we reviewed revealed, textbooks can, to varying degrees, influence on the content of teaching. This study suggests that textbooks can affect not only what to teach, but also how to teach. Textbooks with different features can convey different pedagogical messages to teachers and provide them with an encouraging or discouraging curricular environment, promoting different teaching strategies. Therefore, their role in teachers' teaching practices should be recognized by textbook authors, curriculum reformers, as well as school teachers and administrators.

A further implication of this study for policy matters is that it would be difficult to reform teachers' teaching methods without corresponding reform of the textbooks they are using because, as this study shows, textbooks play an important role in affecting teachers' teaching strategies. Particularly, in selecting mathematics textbooks in school districts, the policy makers need to identify their goals, objectives, and philosophies of teaching in order to choose the textbooks that would best support their view and promote the desired teaching strategies. In other words, by choosing appropriate types of textbooks, the policy makers can influence the practice of mathematics teaching in classrooms, which in turn may help to improve mathematics standards in the schools.

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Book Review

The Public Purpose of Schooling and Education

Richele O'Connor
Wright State University

Readers are asked to review recently published or classic books in education and research. In her review of *The Public Purpose of Schooling and Education,* O'Connor asserts that the contributing authors challenge readers to reflect on the roles public schools have played in the past and will play in the future.

Goodlad, J. and McMannon, T. (Eds.). (1997). *The public purpose of education and schooling.* San Francisco: Jossey–Bass.

For those considering the importance of public schooling and the role our public schools play in today's society, this book provides much food for thought. As a reader of this book, one can gain insights into the thinking of well-known and respected authors and educators such as John Goodlad, Ted Sizer, and Linda Darling-Hammond. This book is organized in three parts that facilitate an appreciation of the unique perspectives of each contributor and how each contribution advances the common theme championed by the book's title, the purpose of public schooling.

In part one, six different authors from various contexts of higher education explore concepts which surround issues suggested by the title. Benjamin Barber maintains that while the only way to sustain a democracy is through public education, "We stay afloat only if we recognize that we are all aboard a single ship" (Goodlad and McMannon, 1997, p. 22). Similarly, Roger Soder poses the question of whether or not democracy is something that the public actually wants due to a tendency on some of the public to exhibit elitist and condescending behaviors. In her chapter, Donna Kerr implores the reader to consider the basic needs of students, most importantly their need to experience meaningful relationships. "Short of love," writes Kerr, " . . . democracy is a failed project" (p. 79). Contributing authors Linda Darling-Hammond and Ted Sizer both do a wonderful job providing an historical perspective to the role of public education in our democracy. The sixth author to contribute to this book, Gary Fenstermacher, posits that "all schools, no matter how financed or how governed, are public schools in the sense that they bear a responsibility for the creation of a public within American society" (p. 69). Thus, Fenstermacher's chapter appeals to those who feel that we, in society, suffer from malaise and loose morals that can only be corrected if both the private and public realms of children's education and schooling are improved.

The second part of the book provides the reader with a second chance to interpret and comprehend what it is that they thought the authors said in the first place. The two chapters in this section are presented in a transcripted format that captures the essence of a panel discussion and a question-and-answer session that took place at a national conference in New York City. In part two, John Goodlad moderates a panel which discusses education for civility and civitas. Among other notions, the main thrust of this conversation is how to forward the agenda of educating students toward becoming more active participants in democracy in two ways: first, by improving the way in which civility improves "in regard to all human relationships," and secondly, that schools contribute to "the creation of civitas: an organized political entity that takes care of its business well" (Goodlad and McMannon, 1997, p. 100). The second discussion transcripted in part two entertains various issues that may impact educational reform. This includes the appeal of Goodlad to pursue innovations and conversations that should consider the "incredible importance of education to democracy" (p. 150).

In the third and final section of the book, Goodlad rekindles the theme that was suggested by McMannon's introduction in which the differences between education and schooling are explored. In doing so, Goodlad expands upon these differences by reiterating the need to distinguish between public and private interest and how an individual's schooling and education interact with both the public and private realm. While acknowledging the need to put forth one main theme for the preceding chapters, Goodlad eschews the type of liberalism which Fenstermacher defined as "the individual's freedom to pursue his or her own vision of the good life" (Goodlad and McMannon, 1997, p. 60) in favor of a more public and compassionate ideal: "We must take care of one another" (p. 157). He then closes by taking the opportunity to advance the four-part agenda of the National Network for Educational Renewal. This agenda includes, among other things, teacher education programs that include strong liberal studies and an introduction to a pedagogy that enculturates school children in moral and civil arts. Such programs of teacher education will eventually prepare these future teachers toward becoming moral stewards of the nation's schools, Goodlad believes, thereby furthering the cause to provide an education and schooling beneficial to sustaining a democratic way of life.

In closing, this book provides the reader with the opportunity to ponder the beliefs of leading educational reformers in relation to his or her own beliefs and experiences in both the public and private world that interact with what is commonly known as education and schooling. One cannot help but feel, as a reader of this book, that the time has come for public education to claim its rightful hold on the

Preparing Principals for New Roles: Advice from the Field

Carla Edlefson
Ashland University

Abstract

A university professor and a graduate student interviewed 10 high school administrators who were leaders of innovation. The interviews enabled the university team to conceptualize 3 new roles for principals that guided the revision of the university program in educational administration: the principal as Leader of Leaders, as Advocate, and as Catalyst for Change. The practitioners' advice to the university was to focus on leadership of change; shift from thinking about management to thinking of continuous improvement; develop learning opportunities outside the university classroom; prepare students for the incredible pace and workload; and assign ***quality work*** *to administration students.*

Among the many recent critiques of American education are some that question the ability of universities to prepare effective practitioners. For example, Public Agenda, a foundation-funded non-profit research organization, studied education professors' views of schooling. As reported in *Education Week*, the study of a national random sample of 900 teacher educators found that they tended to "define the essence of teaching as showing students how to learn . . . . an overwhelming preference for process over content," (Bradley, 1997, p. 3). Previous Public Agenda studies found that the public believes schools should emphasize the basic subjects, such as reading and math, as well as disciplined, orderly classrooms (see, for example, Johnson and Immarwahr, 1994), while the survey of professors found they believe in active learning and less emphasis on the right answer. Public Agenda concluded that what professors of education are teaching is very different "from the concerns of parents, taxpayers, teachers, and students" (Bradley, 1997, p. 3).

Haller, Brent, and McNamara, using concepts from the effective schools literature, analyzed the National Center for Education Statistics' Schools and Staffing Survey data and found that "neither the general level of principals' graduate training nor specific training in educational administration has a positive impact on their schools' effectiveness" (1997, p. 226). Clark and Clark (1996) cite studies and reports that support their contention "that many of the current leadership preparation programs are doing an inadequate job preparing leaders for dealing with the problems and issues they will face in the 21st century" (p. 18). Evidence suggests that there is a gap between what is taught in school administration programs and what both the public and the research literature say that school leaders need to know in order to produce the level of educational quality that society demands.

An earlier version of this paper, Edlefson, C., and Wilson, J., New Roles for Principals: Implications for Preparation Programs, was presented at the annual meeting of the Mid-West Educational Research Association, Chicago, October 16, 1997. The author gratefully acknowledges the research assistance of Janet Wilson and the cooperation of 10 central Ohio high school administrators who participated in the WOW project.

Organizing for Better Student Outcomes

The need to educate more students to a higher level than before has been the impetus behind the school restructuring movement. Firestone (1996), Schlechty (1997), and Short and Greer (1997) are among those who have argued that the appropriate way to begin conceptualizing restructured schools is with the question of how students learn. The problem then becomes how to organize schools in order for that learning to occur.

Firestone (1996) summarizes the research on cognition and learning. Teachers, he says, must bridge the gap between what youngsters know and what they need to know, and then design appropriate learning activities. In order to do this, teachers need a deep understanding of their subject matter and the ability to judge what their students do and do not understand. Then teachers must present the materials in different ways until the students do get it. The teacher's work requires a high level of **professional knowledge and judgement**. The organizational restructuring question then, he says, is what "characteristics of schools . . . facilitate or impede teachers' efforts to act as professionals" (p. 215). Similarly Short and Greer (1997) are among those who call for greater **teacher empowerment**, which they define as "the process that encourages teachers to help the school achieve its primary goal in improving the learning opportunities of its students" (p. 15).

Schlechty (1997) writes

> The observation that what students do is central to what they learn suggests that what they do and what teachers . . . get them to do ought to be at the heart of educational inquiry and discussion. These same matters ought to be of central concern to those seeking organizing principles for schools (p. 42).

Schlechty begins with Peter Drucker's concept of **knowledge work**, "the processing of information and the act of giving meaning, order, and form to facts and producing products based on this work" (Schlechty, 1997, p. 36). In order to develop students' ability to do knowledge work, teachers must design **quality work experiences** for their

students. The notion of quality work is based on the theory that students learn by doing. Quality work is defined as work that engages students; causes students to persist in their work; delights and satisfies students; and results in students learning what the schools, parents, and communities expect.

Schlechty also directs our attention to the "rules, roles, and relationships that shape, direct, and govern behavior" (p. 69). In restructuring schools, teachers' roles must change in ways that will enable them to produce quality work for students. Likewise, the school administrator's role must change in relationship to teachers' roles and responsibilities. These notions of quality work and professional roles formed the conceptual framework for this study.

This study was part of a Goals 2000-funded high school reform project. The primary goal of the project was to demonstrate how every school and every practitioner can move to a system of **quality work**. A second project goal was that the participating universities learn some ways to improve their programs for preparing professional educators. The project, called "Working on the Work for Quality Results," or WOW, involved a consortium of schools, universities, and other organizations in a sub-state region of the Mid-West, plus the Center for Leadership in School Reform, during the 1996-97 school year.

Premised on the belief that the leadership of the principal is key to a school's ability to support pervasive reform, this study focused on ways in which building administrators enabled teachers to innovate and provide quality work experiences for their students. Key research goals were to learn how high school administrators in restructuring schools describe their roles and what they think university training programs need to do to prepare leaders to assume these roles. As the project unfolded, the university partners used the data in making changes to their educational administration program.

Method

This study was a product of the Administration team, one subgroup within the WOW project. The Administration team was made up of two high school principals, two assistant principals, a university professor, and two high school teachers, one of whom was also a graduate student in administration. The team members included one African-American male, two white males, and three white females.

At the initial meeting, team members, led by the university professor, discussed Schlechty's (1997) concept of role changes as well as the use of time, space, information, people, and technology as **design resources**, key to the design of quality work experiences for students. This initial meeting of the Administration team was taped, and the discussion was treated as focus group data.

Administration team members also refined the research questions and planned the research activities. The research questions were:

1. How do preparing and practicing administrators describe their roles in terms of ensuring teachers provide quality work for students? In particular, what is their view of the use of time, space, information, people, and technology resources?

2. How should universities change their programs to prepare administrators for these new roles?

The university professor and graduate student developed an interview protocol (see Appendix A), based on the research questions and the focus group discussion. The graduate student interviewed eight principals, an assistant principal, and an administrative assistant from the WOW project high schools in their offices during the fall and winter of 1996–97. One was a white female, one was an African-American male, and the rest were white males. The interviews were audio-taped.

The purposive sample (Merriam, 1998; Patton, 1990) consisted of the administrators of eight high schools (two inner city, one small city, and five suburban). The schools in the study had been invited to participate in the larger WOW project. By accepting the invitation, the principals, a core group of teachers, their superintendents, and their district boards of education had committed to the larger project's goal of implementing Schlechty (1997) notions of quality work in their schools. They were not typical schools, but rather schools that were committed to improvement and that had the backing of their districts to pursue innovation.

The university professor and graduate student conducted a preliminary analysis of the interview data, and then convened a second meeting of the Administration team to discuss the findings. The meeting was taped, resulting in additional focus group data.

Data analysis consisted of looking for key phrases or themes across respondents' comments. Concepts from the literature on school leadership and change were used to organize the data as well as to compare researchers' and practitioners' views. As Huberman and Miles (1994) write, "qualitative studies ultimately aim to describe and explain (at some level) a pattern of relationships, which can be done only with a set of conceptually specified analytic categories. . . . Starting with them (deductively) or getting gradually to them (inductively) are both legitimate and useful paths" (p. 431). The inductive method was chosen for this study because the purpose was to discover practitioners' conceptual categories, as opposed to fitting the data into categories from the published literature.

The "trustworthiness" techniques used in this study were based on the procedures outlined in Lincoln and Guba (1985) and discussed in Guba and Lincoln (1994) and Merriam (1998). Researchers used the Administration team as a means of member checking. In addition, all interview respondents were later asked to repeat selected quotes for a video camera. The video tape was used for a presentation, and segments were incorporated into a CD-ROM. The video gave respondents an opportunity to correct or clarify the record of what they had said and the interpretation of it.

Triangulation techniques included collecting data from a number of different interview respondents and observing the respondents interacting with their staffs in several WOW project seminars and planning sessions. In these sessions university researchers could observe whether the administrators did what they said they did. The team of investigators was also a triangulation method, in that "the fact that any one team member is kept more or less 'honest' by other team members adds to the probability that the findings will be found to be credible" (Lincoln and Guba, 1985, p. 307). Finally, as a means of peer debriefing, university researchers presented preliminary findings and interpretations at two professional conferences, at the final WOW conference, and to university colleagues.

New Roles: New Skills

The data about the things that building administrators in the WOW project said they do to enable quality work in their schools clustered into three roles: Leader of Leaders, Advocate, and Catalyst for Change (see Table 1).

Leader of Leaders

The first thing that virtually every WOW administrator said in the interview was that they don't make decisions by themselves. They used the terms " bossy style," "managed bureaucracy," and "directive leadership" as examples of the old way of thinking about being a principal. To describe what they do now, one thinks of himself as a "transformational leader" and two others used the term "facilitator." They try to give "everyone a piece of the action," use a "shared leadership" style, and give teachers "opportunities for leadership."

A Leader of Leaders treats the staff as professional colleagues. One principal advised, "sit down in a collegial way [with staff] and have a conversation about values and beliefs and attitudes toward teaching and learning." Another principal credited a staff retreat for getting such conversations going at his school. Some of his staff members agreed that such off-campus meetings are important for enabling teachers and administrators to relate to each other in a less-formal, more equal manner.

Advocate

The principal has "a delicate balancing act" to interpret the change process to district leaders, while giving the building staff freedom to experiment. In the words of one, the principal has to be "politically savvy."

An assistant principal demonstrated his willingness to "take the heat" and "do whatever it takes" in a planning session with his school's WOW team. The plan called for excusing students from classes one day and bringing them in for a community involvement experience on a day when other students didn't have school. The assistant principal took the time to deal with complaints of other staff and work out arrangements with parents and transportation. Without his attention to the aggravating details, a successful quality work experience would not have happened.

Catalyst for Change

One principal pointed out that in order not to "get sidetracked on trends like block scheduling and interdisciplinary team teaching," schools must "develop the capacity to change in a meaningful, systemic way."

Framing. Several respondents said that the WOW project provided a framework for their staffs to begin thinking of more creative ways to teach. One called it "a jumping off point," a way to talk about "what if?" Another described his school's systematic and deliberate process for arriving at a vision of change based on "areas of dissonance between beliefs and practice."

Vision and behavior modeling. As one leader reflected, "I guess because [mine] is a new school, I've really found it important to try to get my finger every place I can, at least to give this message: I want the students and the staff and classified people to feel that this is a community of learners here, and that we all agree on our goals and objectives, and that we are a very student-oriented building." Respondents said principals need to "walk the talk" of giving responsibility to the teachers to design the "bigger picture" educational program.

Progress assessment and staff development. An administrative assistant noted the power of linking professional development to a vision of change. An assistant principal said, "you really need to get to know your teachers and . . . their strengths and their weaknesses," and then steer them toward professional development opportunities.

Risk taking. Creating a climate that is safe for risk-taking is crucial for school reform. One principal expressed a common theme: "I've found it very, very important to keep the dialogue going throughout the innovation . . . and to make people feel that if something doesn't work out, it isn't the end of the world, that they can try it again . . . . " In order to help their staff

Table 1
New Roles for Administrators

Leader of Leaders	Advocate	Catalyst for Change
• Shares decision making	• Finds the resources	• Frames the questions
• Interacts with teachers as colleagues	• Encourages and facilitates	• Creates a shared vision
• Views teachers as experts and leaders	• Takes the heat	• Models the behavior
	• Gives recognition	• Creates a climate for risk
	• Demonstrates success	• Assesses progress
	• Does whatever it takes	• Uses staff development
		• Rekindles the fire
		• Builds organizational capacity for change

understand that there will be disappointments during implementation of something new, some principals gave that disappointment a name, a Schlechty term, "implementation gulch." (In his presentations, Schlechty often uses a western frontier metaphor to help practitioners visualize the change process. The first to adopt an innovation are referred to as "trailblazers," for example. "Implementation gulch" refers to experiences common to change processes in schools, in which "a downturn in performance is likely to occur before the benefits of the change begin to become clear. . . . things often get worse before getting better. . . ."(Schlechty, 1997, p. 120).)

Trust. One principal observed that as he gains administrative experience, he is "much more comfortable encouraging the faculty to investigate what is in their field." Trust was a concept that came up in just about every interview. Principals have to trust teachers to be responsible and professional when they try new things. Likewise, teachers need to trust that principals will give them the latitude to experiment and that there will be no penalty if the experiment doesn't work.

Rekindling the fire. Staff who became involved in creating quality work experiences for students "rekindled that fire" that caused them to become professional educators in the first place. When the principal regarded teachers as professionals and would support their ideas, they "blossomed." Students who were involved in quality work projects were "thrilled with the level of creativity that they've been able to exhibit."

All of the respondents could probably be characterized as enthusiastic about innovation and school reform; that's why they agreed to participate in the project. It was striking however, to see the extent to which their language about their work indicated that they had adopted beliefs consistent with cultural theories of organizational leadership and change, as well as notions of teacher professionalization and empowerment. They talked about modeling the behavior they want to encourage staff to exhibit, building a shared vision of the future, and creating a climate that encourages risk. These are all notions found in the cultural theories of organization (see, for example, Bolman and Deal, 1991; Schein, 1992; Short and Greer, 1997).

The Literature on Leadership for School Change

The literature on leadership for school reform corroborates these research findings. For example, in a study of principals who were involved in the Coalition of Essential Schools through a Re:Learning project in South Carolina, Anderson and Shirley (1995) identified three types of principals whose behavior "conformed to the conceptualization of 'principal' advocated by those currently in the coalition:" the enthusiastic buffer, the catalyst, and the implementer (p. 420). These types correspond closely with the three roles identified in this project. The enthusiastic buffer demonstrated to teachers that the principal could be relied upon to "run interference" for them with the district office and the community, to protect their efforts at reform, similar to the Advocate role identified in this study. The catalyst (respondent's own word) worked hard to "get things going" and then stepped aside and let the teachers develop and implement the change, a comment that would fit with the Leader of Leaders role (fostering teacher leadership and professionalism) in this study, as well as with the Catalyst for Change role (change and continuous improvement orientation). The implementer took pride in "getting the job done," a notion consistent with responses associated with the Advocate role in this study.

Clark and Clark (1996) identified skills school administrators need in order to be "transformational leaders." In Table 2 the skills identified in this study are compared with those listed by Clark and Clark. Again, there is a great deal of correspondence.A third study that contains many parallels with these findings is Short and Greer, (1997). The WOW project respondents echoed themes that Short and Greer found in the schools they studied: building a trusting environment; stimulating risk taking and innovation; removing traditional school boundaries; and teacher empowerment. The views of the WOW administrators about necessary skills for leading schools in the late 1990's correspond closely with what the theoretical and research literatures are recommending for programs that train educational leaders. But the WOW administrators suggested some specific things that university preparation programs might do to help candidates learn these skills more effectively.

Advice to University Preparation Programs

The WOW administrators had four general admonishments on how graduate programs that prepare administrators should be changed.

Table 2
Skills Needed for New Administrator Roles

Skills implied in data	Clark and Clark's transformational leadership skills
• Relate to the teaching staff in a collegial manner; • Share decision-making; • Assess the strengths and weaknesses of the staff and help them choose appropriate professional development activities; • Create an environment that supports risk-taking; • Locate and secure resources; and • Negotiate district politics.	• Lead from the center, use collaborative decision-making; • Enable and support teacher success; • Manage reform, secure the necessary resources; and • Extend the school community by promoting the school and working with the district board.

Change and Continuous Improvement

In terms of philosophical approach and theoretical content, the respondents urged that administrator preparation programs shift from thinking in terms of "management" to "continuous improvement," and "speak in a holistic sense to the principal as the leader of change." The program should "model what we're supposed to be doing as leader of leaders that changed the paradigm . . . . "

On-site Learning

Pedagogically, the advice from all of the respondents was to give students more opportunities to learn on site in the secondary schools, outside of the university classroom. They agreed that the best preparation for becoming an administrator is a high quality apprenticeship with an outstanding practitioner. A common sentiment was, "you can't learn how to be an administrator sitting in the classroom at [X University] or [State U]."

Incredible Pace and Workload

One of the principals remarked that her novice assistant was a bit overwhelmed by the demands on his time. She said new administrators need to be

> prepared for . . . the incredible pace that administrators have to keep. Often times we're in the building here at 6:30 [a.m.] . . . we deal with everything from trying to find substitutes to cover classes, to building issues, to angry parents. . . . And then of course when school is out you're expected from the community to be visible at so many functions . . . .You're going to put in 60-65 hours a week . . . .

Quality Work

Already convinced of the value of Schlechty's quality work principles for their high school students, respondents thought the same should apply to graduate professional education. One principal said universities should have higher expectations of administration students and assign them more authentic tasks. The administrative practicum of field experience needs to be "a demonstration, an exhibition of work, not a report or notebook." Another said "engage students into the practical work that they are studying for . . . . "

Changes in a Principal Preparation Program

While the WOW project was going on, the university faculty program team in educational administration was redesigning the principal preparation program. Some of the changes that were responsive to practitioner feedback are discussed here as examples.

To help focus on the principal as a leader of change, a new course, "Human Behavior in Educational Administration," incorporates decision-making; successful risk-taking; effective group functioning, including cultural and diversity factors; and school change processes. Students will design, carry out, and evaluate a plan to effect change and demonstrate interpersonal communication skills, team-building, negotiation, and staff empowerment.

Reflecting a shift to a continuous improvement philosophy, a new school finance course emphasizes decisions at the building level for employing time, space, people, and money towards educational objectives. Students will demonstrate skills in collection, presentation, and use of data for team decision making.

The primary means for giving students opportunities to learn outside the university classroom and to prepare for the pace and workload of the principal is the internship. The university requirement for a masters' research practicum was integrated into the state's requirement for supervised field experience. Students now spend a year as interns working with a mentor in the field and simultaneously do a major project that requires research and production of a new product or process needed by their school. A full-time faculty member, in partnership with a field-based practitioner, supervises each intern. Interns produce a portfolio demonstrating their skills and documenting their research.

Some program changes illustrate ways in which administration students are given quality work assignments. For example, Schlechty advocates that student work should be product-focused and real-world authentic. The new preparation program has fewer traditional examinations and more opportunities to apply new skills. As a project in the new school-community relations course, a student may participate in a school levy campaign and write a policy memo to a practicing administrator with tips for the next campaign.

Schlechty calls for students to have opportunities to organize knowledge.Through the research requirement students reflect on how reading relates to field work. Through the internship they integrate learning from throughout the program and apply it to the field setting.

Another Schlechty principle is that students should work toward clear and compelling product standards. The university faculty developed a rubric for an "A" internship portfolio (See Appendix B), and the portfolios will be archived for future reference.

Conclusion

One major outcome of this research was the conceptualization of three new roles: Leader of Leader, Advocate, and Catalyst for Change. This simple but useful way of thinking helped the university faculty to organize the improvement of administrator preparation programs and to convey to both graduate students and adjunct faculty how the components of their program fit together.

A second major outcome was a confirmation that the thoughtful, reflective practitioner can indeed be found among colleagues in the field. This project showed again that the

most successful among them are intellectual leaders who know how to apply both theoretical knowledge and practitioner lore to their work.

Finally, just as the Schlechty notions about quality work are valuable to practitioners in designing teaching and learning at the high school, they can be valuable in designing programs for graduate professional students.

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Appendix A

Interview Protocol

1. Background information on the school, the innovations that are in progress, and the principal's career.
2. What do you do to enable the kind of teaching and learning involved in **quality work** to happen? Probe: what do you differently with time, space, information, people, and technology?
3. What do you do differently than you used to do as an administrator?
4. What have you read; what workshops have you attended; what other sources have helped you to think as you do about your job?
5. What would you say to encourage other administrators to adopt **quality work** in their schools?
6. What advice do you have for universities that prepare school administrators?
7. How will you expand **quality work** beyond this pilot project to the rest of your building?

Appendix B

Rubric for an "A" Internship Portfolio

1. The portfolio contains all the required components: log sheet; major project report, cover memo, administrative activity reports; visitation and observation reports; conference report; readings.
2. The portfolio looks professional and is well organized. It has tabbed dividers. The typing and printing are neat and there are no errors. The intern's name and project title are on a label on the spine of the notebook.
3. The required amounts of time across the required activities are documented.
4. The cover memo contains all the component parts and is clearly and thoughtfully written. It gives the reader a good idea of what the intern did and how it turned out, even if the reader knows nothing else about the project.
5. The major project is one that the school will be able to use profitably. If it is a product, it is professional-looking and well organized. The project is well documented.
6. The reports of administrative activities are complete; there is at least one report for each of the areas. The reports of each activity contain a description, the date and time of the activity, and a reaction to or analysis of the activity. The report shows evidence of thoughtfulness; it is more than simple compliance with the assignment.
7. The visitation and observations reports and the conference report are complete. The reports show evidence of thoughtfulness; they are more than simple compliance with the assignment.
8. The portfolio of readings contains references to articles from high quality journals; each summary contains a reference in APA style; and each summary includes a thoughtful reflection about how it might be linked with the fieldwork.

Mid-Western Educational Research Association

2001 Annual Meeting Call for Proposals

PROPOSAL DEADLINE: April 2, 2001

October 24-27, 2001
Holiday Inn Mart Plaza, Chicago, IL

Robert S. Barcikowski, Program Chair
barcikow@ohiou.edu

The 2001 Annual Meeting of the Mid-Western Educational Research Association (MWERA) will return to Chicago with an exciting program of invited speakers, focused workshops, peer-reviewed papers presented in a variety of session formats, and activities for participants and their families. The 2001 program will feature speakers of interest to anyone involved in education, with talks and follow-up small-group discussions that are sure to engage and energize. Workshops will be scheduled throughout the four-day meeting, allowing attendees to participate in a wide range of focused, longer-term sessions on a variety of interesting topics. Peer-reviewed papers continue to form the backbone of the 2001 conference, with authors/presenters encouraged to consider a variety of presentation formats: traditional *Paper Presentation* (3-5 papers per session with a Session Chair and a Session Discussant), *Roundtable Discussion/Poster* (for heightened presenter-attendee interaction), *Symposium* (focusing on specific topics from a variety of perspectives), *Workshop* (longer-term focused work on a topic of interest), or *Alternative Format* (with a range of different time lengths and interactive activities). The meeting returns to Chicago's Holiday Inn Mart Plaza featuring spacious, comfortable guest rooms, excellent meeting facilities, an indoor pool and exercise room, and many shops and restaurants within a short, safe walk of the hotel. Chicago's museums, planetarium and aquarium, theater district, and lively nightlife are also just minutes from our central hotel location!

Please accept this invitation to participate in the 2001 Annual Meeting!

The Mid-Western Educational Research Association offers scholars and practitioners, researchers and instructors, and educators from all levels and perspectives an opportunity to share ideas with others in a supportive environment of collaboration. The MWERA meeting is where people from all over North America come to hear the latest in educational thought and progress, and to make new contacts and renew existing acquaintances, in a spirit of professional friendship and collegiality!

General Information

The 2001 MWERA Annual Meeting will be held **Wednesday, October 24 through Saturday, October 27,** at the Holiday Inn Mart Plaza in Chicago, Illinois. The program will consist primarily of presentations, selected through a peer review process, by divisional program chairpersons. In addition, there will be invited speakers and symposia, panel discussions, special sessions for graduate students and new faculty, a luncheon and other social events open to all attendees.

Proposals may be submitted either on paper, or electronically over the World Wide Web. **All proposals submitted on paper must be sent only to the Program Chair at the address given below, and must follow the *Guidelines for Submitting a Proposal* in this booklet.** Questions about a proposal or the meeting, whether submitted on paper or electronically, should also be directed to the Program Chair:

Dr. Robert S. Barcikowski
MWERA-2001 Program Chair
201 McCracken Hall
Ohio University
Athens, OH 45701

Office: (740) 592-2982

e-mail: barcikow@ohiou.edu

Electronic proposals must be submitted using the form available on the meeting Web site. Proposals e-mailed to the Program Chair will not be processed. Further, each proposal should only be submitted once in one format, electronic or paper. Specific instructions for electronic submission can be found at the meeting web site:

http://etra.cedu.niu.edu/MWERA

Any educational professional may submit a proposal for MWERA-2001, whether or not that person is currently a member of MWERA. *All Annual Meeting presenters must be members in good standing of MWERA (non-members must join MWERA upon notification of proposal acceptance).* To promote broader participation in the program no one person should appear as a presenter on more than three proposals.

All proposals, regardless of submission format (electronic or paper), must be received by the Program Chair no later than the deadline of **April 2, 2001**. Each Division Chair will coordinate a number of volunteers in a system of blind (without author identification) review. Appropriate criteria, depending on the format and type of scholarly work being presented, have been developed and are used for the review process. These criteria include: (a) topic (originality, choice of problem, importance of issues); (b) relevance of topic to the Division and MWERA membership; (c) contribution to research and education; (d) framework (theoretical/conceptual/practical, rationale, literature review, grounding); (e) analyses and interpretations (significance, implications, relationship of conclusions to findings, generalizability or usefulness); and (f) overall written proposal quality (clarity of writing, logic, and organization).

Papers presented at MWERA are expected to present original scholarship, conducted by the author(s), which has not been previously presented at any other meeting or published in any journal. Further, it is a violation of MWERA policy to promote commercially available products or services (except as Exhibits), which go beyond the limits of appropriate scholarly/scientific communication. Individuals who wish to display educationally related products or services are encouraged to contact Dr. Sharon McNeely, Assistant Program Chair for Exhibits, P. O. Box 34421, Chicago, Illinois 60634, (913) 794-2788.

All persons presenting at the 2001 Annual Meeting are expected to register for the full meeting. All sessions listed in the program will be open to any registered meeting participant; however, enrollment may be limited, and a small additional fee required, for some Workshop sessions. Tickets for the Friday luncheon and speaker are available to all pre-registrants. *Ticket availability is not guaranteed for late and on-site registrants*. Registration materials for the 2001 Annual Meeting will be published in the *Mid-Western Educational Researcher*, on the Web site, and can be obtained by contacting the Program Chair.

Presenters whose papers have been accepted to a session with a Session Chair and/or Session Discussant are responsible for submitting a completed version of their conference paper to the Session Chair and Discussant no later than September 24, 2001. *Papers not available to the Session Chair and Session Discussant may be dropped from the program.* Presenters must also provide complete copies of their papers (or detailed handouts) to attendees at their sessions. Overhead projectors and screens will be provided by MWERA in most presentation rooms. Presenters needing additional A/V equipment are responsible for arranging such with the hotel at the presenter's own additional expense.

MWERA reserves the right to reproduce and distribute summaries and abstracts of all accepted proposals, including making such works available in a printed Program Abstract, through the meeting's World Wide Web site, and in press releases promoting the Annual Meeting and the organization. *As a condition of acceptance all authors of papers accepted to the 2001 Annual Meeting explicitly grant MWERA the right to reproduce their work's summary and/or abstract in these ways*. Such limited distribution does not preclude any subsequent publication of the work by the author(s).

Authors of accepted proposals assume the ethical and professional responsibility to appear at the Annual Meeting and to participate in their presentation or assigned session. When circumstances preclude the author(s) from doing so, it is the responsibility of the author to arrange a suitable substitute and to notify the Program Chair in advance.

Proposals must be sent to the Program Chair, Robert Barcikowski. Proposals sent to the Division Chairs will not be processed.

Divisions

A - Administration and Leadership
This division is concerned with research, theory, development, and the improvement of practice in the organization and administration of education. The Senior Co-Chairs of Division A are: George Bowdouris, Ashland University, 6255 Cloverly Drive, Solon, OH 44139 and Micheal Supley, Texas A&M University, Kingsville, P.O. Box 610, Kingsville, TX 78364

B - Curriculum Studies
This division is concerned with curriculum and instructional practice, theory, and research. The Senior Chair of Division B is: Nancy G. Saunders, Graduate Studies in Education, Indiana Wesleyan University, 4301 W. Riverside, Muncie, IN 47304

C - Learning and Instruction
This division is concerned with theory and research on human abilities, learning styles, individual differences, problem solving, and other cognitive factors. The Senior Chair of Division C is: Stephen R. Wallace, Dept. of ETRA, Northern Illinois University, DeKalb, IL 60115

D - Measurement and Research Methodology
This division is concerned with measurement, statistical methods, and research design applied to educational research. The Senior Chair of Division D is: Susan Cashin, University of Wisconsin-Milwaukee, Dept. of Educational Psychology, PO Box 413, Milwaukee, WI 53201-0413

E - Counseling and Development
This division is concerned with the understanding of human development, special education, and the application and improvement of counseling theories, techniques, and training strategies. The Senior Chair of Division E is: Linda Bakken, Wichita State University, ACES, 1845 Fairmount Ave., Box 123, Wichita, KS 67260

F - History and Philosophy
This division is concerned with the findings and methodologies of historical research n education. The Senior Chair of Division F is: Elizabeth Johnson, Eastern Michigan University, 234 Boone Hall, Ypsilanti, Mi 48197

G - Social Context of Education
This division is concerned with theory, practice, and research on social, moral, affective, and motivational characteristics and development, especially multi cultural perspectives. The Senior Chair of Division G is: Anne Stinson, UWW – Department of Curriculum and Instruction, 800 Main Street. Whitewater, WI 53190

H - School Evaluation and Program Development
This division is concerned with research and evaluation to improve school practice, including program planning and implementation. The Senior Chair of Division H is: Sharon Valente, Ashland University, 35A Miller Hall, Ashland, OH 44805

I - Education in the Professions
This division is concerned with educational practice, research, and evaluation in the professions (e.g., medicine, nursing, public health, business, law, and engineering). The Senior Chair of Division I is: Francine Michel, Rehabilitation Director, Swissre Insurance Company, 2220 Canton Street #108, Dallas, TX, 75201

J - Postsecondary Education
This division is concerned with a broad range of issues related to two-year, four-year, and graduate education. The Senior Chair of Division J is: Rodney Greer, Horrabin Hall, 1 University Circle, Macomb, IL 61455

K - Teaching and Teacher Education
This division is concerned with theory, practice, and research related to teaching at all levels and in-service and pre-service teacher education, including field experience supervision and mentoring. The Senior Chair of Division K is: Elizabeth Wilkins-Canter, Towson University, Dept. of Secondary Education, 8000York Road, Towson, MD 21252-0001

Important Dates

Proposal Submission Deadline	April 2, 2001
Notification of Acceptance	June 16, 2001
Papers to Session Chairs/Discussants	September 24, 2001
Meeting Registration and Hotel Reservations	October 2, 2001
MWERA 2001 Annual Meeting	October 24-27, 2001

Guidelines for Submitting a Proposal

Session Format Descriptions

Paper Presentation

Paper sessions are intended to allow presenters the opportunity to make short, relatively formal presentations in which they overview their papers to an audience. Three to five individual papers dealing with related topics are grouped into a single session running from 1.5 to 2 hours. The presenter(s) of each paper is(are) allowed approximately 15 minutes to present the highlights of the paper. A single Session Discussant is allowed approximately 15 minutes, following all papers, for comments and critical review. A Session Chair moderates the entire session. Presenters are expected to provide complete copies of their papers to all interested audience members.

Roundtable Discussion/Poster

Roundtable Discussion/Poster sessions are intended to provide opportunities for interested individuals to participate in a dialogue with other interested individuals and the presenter(s) of the paper. Presenters are provided a small table around which interested individuals can meet to discuss the paper. Presenters may elect to provide small, table-top poster-type displays, ancillary handouts, or other table-top A/V materials to augment their discussions. Interested individuals are free to move into and out of these discussions/posters as they wish. Presenters are expected to make available complete copies of the paper on which the roundtable discussion/poster was focused.

Symposium

A symposium is intended to provide an opportunity for examination of specific problems or topics from a variety of perspectives. Symposium organizers are expected to identify the topic or issue, identify and ensure the participation of individual speakers who will participate in the session, prepare any necessary materials for the symposium, and Chair the session. It is suggested, though not required, that the speakers or symposium organizer will provide interested individuals with one (or more) papers relevant to, reflective of, or drawn from the symposium.

Workshop

Workshops are intended to provide an extended period of time during which the workshop leader helps participants develop or improve their ability to perform some process (e.g. how to provide clinical supervision, using the latest features of the Internet, or conduct an advanced statistical analysis). Organizers may request from 1.5 to 3 hours, and are responsible for providing all necessary materials for participants. Many workshops are scheduled for Wednesday afternoon, although others may be scheduled throughout the conference. Organizers may, if they wish, receive an honorarium based upon the number of paid participants in their workshop and the fee schedule.

Alternative Session

The form, topics, and format of alternative sessions are limited only by the imagination and creativity of the organizer. These options are intended to afford the most effective method or approach to disseminating scholarly work of a variety of types. Proposals for alternative sessions will be evaluated on their appropriateness to the topic and audience, their suitability to meet the limitations of time, space, and expense for MWERA, and the basic quality or value of the topic. The organization of alternative sessions is responsible for all major participants or speakers, developing and providing any necessary materials, and conducting or mediating the session. Because a variety of approaches may be proposed within this category, alternative session proposals should include a brief rationale for the alternative being proposed.

Materials to be Submitted

The following materials list applies to proposals submitted on paper. Separate guidelines exist for electronically submitted proposals (see the Web site for details).

Proposal Cover Sheet

Six (6) copies typewritten with all items completed. Session descriptors must be chosen from the list of descriptors provided (see table to the right).

Summary

Six (6) copies of a two to three page summary for use in judging the merits of the proposal. Summaries can be single-spaced, but must be typed on 8.5" x 11" paper in no smaller than 10-point type using 1" margins. All copies of the summary should include the title of the proposed session in the upper left-hand corner of the first page. On three of the summaries only include the name of the presenter, with his or her complete mailing address, telephone and FAX, and e-mail, in the upper right hand corner of the first page. Proposals, which do not meet these criteria, may be refused by the Program Chair without review.

Summaries for **Paper** and **Roundtable Discussion/Poster** proposals should explicitly address as many of the following as appropriate, preferably in this order:

(1) Objectives, goals, or purposes;
(2) Perspective(s) and/or theoretical framework;
(3) Methods and/or techniques (data source, instruments, procedures);
(4) Results and conclusions; and
(5) Educational and/or scientific importance of the work.

Summaries for **Symposium**, **Workshop**, and **Alternative Session** proposals should explicitly address as many of the following as appropriate, preferably in this order:

(1) Descriptive title of the session;
(2) Objective, goals and purposes of the session;
(3) Importance of the topic, issue, or problem;
(4) Explanation of the basic format or structure of the session;
(5) Listing of the Presenter and Co-Presenter(s), with an explanation of each person's relevant background and role in the session;
(6) Anticipated audience and kind of audience involvement.

Abstract

Three (3) copies of a 100 - 150 word narrative abstract. The abstracts of accepted papers will be published the *MWERA 1999 Annual Meeting Abstracts* book, and will be available on the World Wide Web site. Abstracts must be typewritten, single-spaced, using a 12-point Arial or Times New Roman font. Use clear, precise language, which can be understood by readers outside your discipline. In the upper left hand corner of each abstract page type the title of the paper, and the name and institutional affiliations of each author.

Envelopes

Four (4) stamped, self-addressed, business size (#10) envelopes. These will be used to inform you of: (a) receipt of the proposal by the Program Chair; (b) the decision about your paper's acceptance; (c) your scheduled session time, Session Chair, and Session Discussant; and (d) meeting registration and hotel reservation information.

Session Descriptors

Ability Grouping
Accountability
Accreditation
Achievement
Action Research
Adaptive Testing
Administration
Admissions
Adolescence
Adult Education/Development
Affective Education
Aging
Anthropology
Aptitude
Artificial Intelligence
Arts Education
Asian Education
Assessment
At-Risk Students
Attitude
Attribution
Bilingual/Bicultural
Black Education
Business Education
Career Development
Case Studies
Certification/Licensure
Child Development
Classroom Management
Classroom Research
Clinical Education
Cognition
Cognitive Processes/Develop
Collaboration
Community Colleges
Comparative Education
Compensatory Education
Comprehension
Computer Applications
Computerized Testing
Computers and Learning
Conceptual Change
Constructivism
Continuing Education
Cooperative Learning
Counseling
Counselor Training/Supervision
Critical Theory
Critical Thinking
Cross-Cultural Studies
Curriculum
Data Analysis
Decision Making
Demography
Desegregation
Differential Item Functioning
Dimensionality
Dropouts
Early Childhood
Economics of Education
Educational Policy
Educational Reform
Elementary Schools
Equating
Equity
Ethics
Ethnicity
Evaluation
Experimental Design
Facilities
Factor Analysis
Faculty Development
Family/Home Education
Finance
Gay/Lesbian Studies
Gender Studies
Generalizability Theory
Gifted Education
Governance
High Schools
Hispanic Education
History
Indian Education
Indicators/Information Systems
Individual Differences
Information Processing
Instructional Design/Development
Instructional Practices
Instructional Technology
Intelligence
International Education/Studies
Item Response Theory (IRT)
Language Comprehension/Devel
Language Processes
Law/Legal
Leadership
Learning Environments
Learning Processes/Strategies
Life-Span Development
Literacy
Literature
Mainstreaming
Mathematics Education
Measurement
Media
Medical Education
Memory
Mentoring
Meta-Analysis
Metacognition
Middle Schools
Military Education
Minorities
Moral Education/Development
Motivation
Museum Education
NAEP
Networking
Organization Theory/Change
Peer Interaction/Friendship
Performance Assessment
Philosophy
Physical Education
Planning
Politics
Postsecondary Education
Principals
Private Education
Problem Solving
Professional Development
Program Evaluation
Psychometrics
Qualitative Research
Race
Reading
Research Methodology
Research Utilization
Restructuring
Retention
Rural Education
School/Teacher Effectiveness
Science Education
Self-Concept
Social Class
Social Context
Social Processes/Development
Social Studies Education
Sociology
Special Education
Staff Development
Standard Setting
Statistics
Stress/Coping
Structural Modeling
Student Behavior/Attitude
Student Cognition
Student Knowledge
Student Teaching
Studying
Supervision
Survey Research
Teacher Assessment
Teacher Characteristics
Teacher Cognition
Teacher Education/Development
Teacher Knowledge
Teacher Research
Teaching Context
Technology
Testing
Test Theory/Development
Textbooks
Tutoring
Urban Education
Validity/Reliability
Vocabulary
Vocational Education
Women's Issues
Work
Writing

Proposal Submission Cover Sheet (All Session Types)
Mid-Western Educational Research Association 2001 Annual Meeting

Presenter's Name: _____
(First Name) (Middle Initial) (Last Name)

Affiliation: _____

Mailing Address: _____

_____

Telephone: ( ) _____ FAX: ( ) _____

E-mail: _____

Are you a member of MWERA? ❑ Yes ❑ No *(Reminder: If your proposal is accepted and you are not a member, you will need to join!)*

Are you a graduate student? ❑ Yes ❑ No *(Student presentations are automatically entered in the annual competition/prize contest!)*

Co-Presenter(s)/Co-Author(s) Name	Affiliation

Title of Submission: _____

_____

Division	**Desired Session Type** 1st Choice	2nd Choice	**Workshop Detail** (Workshop Proposals Only)	**Session Descriptors** (From Prior Page Only)
❑ A ❑ E ❑ I	❑ Paper	❑ Paper	❑ 1 Hour Maximum	_____
❑ B ❑ F ❑ J	❑ Roundtable	❑ Roundtable	❑ 1.5 Hours enrollment of	
❑ C ❑ G ❑ K	❑ Symposium	❑ Symposium	❑ 2 Hours _____	_____
❑ D ❑ H	❑ Workshop	❑ Workshop	❑ 2.5 Hours persons at	
❑ Cross-List (indicate):	❑ Alternative Session	❑ Alternative Session	❑ 3 Hours $_____ per	_____

By submitting this proposal I hereby certify that: (1) this proposal is original scholarship written and conducted by the author(s); (2) this proposal has not been previously submitted to MWERA either on paper or in electronic form; (3) this submission has not been previously published or presented at any other professional meeting; and (4) if this submission is accepted and placed on the program I will register for the full MWERA-2001 meeting, attend the conference, and deliver this presentation at the assigned date & time.

_____ _____
Signature of the Principal Presenter Date

Be certain to enclose all of the following material with your proposal:

- Six (6) copies of this Proposal Submission Cover Sheet, typewritten, with all items completed
- Six (6) copies of a two to three page Summary: (3) copies with author information, three (3) copies without author information
- Three (3) copies of a 100 – 150 word narrative Abstract, typewritten, in 12-point Arial or Times New Roman font
- Four (4) stamped, self-addressed, business size (#10) Envelopes

THE COMPLETE PROPOSAL SUBMISSION MUST BE RECEIVED BY THE PROGRAM CHAIR NO LATER THAN APRIL 2, 2001.

Effective School Administration in an Age of Educational Reform

Theresa A.Quigney
Cleveland State University

Abstract

A major educational reform issue relates to the evolving role of school leadership. This study investigated which characteristics and behaviors educators perceived as being in the repertoire of successful school administrators in this time of educational restructuring. Interpretation of the results yielded a prioritization of competencies valued in today's educational administrators, as well as differences in perception among specific groups of educators. The results were also compared to a similar investigation completed more than 10 years ago, which provided insight regarding the influence of school leadership reform initiatives on educators' views of effective school administration.

A major focus in educational literature is school reform and restructuring. There are numerous references to such initiatives as outcome-based education, multi-age grouping, community-referenced instruction (Udvari-Solner and Thousand, 1995), team-based approaches to teaching (Caldwell, 1999), authentic assessment (Kirk, Gallagher and Anastasiow, 1997), increased parental involvement in curricular decisions (English and Hill, 1990), and the inclusion of students with special needs in general education (Roach, 1995; Rogers, 1993; Sage and Burrello, 1994).

An additional movement receiving much attention is the evolving role of school leadership, which has been acknowledged as a critical component of school reform (Silins, 1994). Whether one describes this restructured role of educational leaders in terms of collective responsibility (Lambert, 1998), transformational leadership (Kirby, Paradise, and King, 1992; Silins), decentralization, teacher empowerment, or site-based management (Beyer and Ruhl-Smith, 1996; Kirby and Colbert, 1994; Michel, 1991; Peel and Walker, 1994; Raisch, 1993; Sage and Burrello, 1994; Terry, 1995-1996; Wohlstetter, Van Kirk, Robertson, and Mohrman, 1997), the implication is that there is a divergence from some of the more traditional management techniques to shared responsibilities and collaborative decision-making.

While this paradigm shift has been espoused in the professional literature for some time, has it affected how educators perceive an effective school administrator? What do teachers and other educational personnel want or expect from educational administrators as they enter a new century? Do they value characteristics and behaviors which directly reflect these current trends in educational thought or do their perceptions of successful school administration transcend temporal limitations? This research was undertaken to gain some insight regarding these issues. Specifically, the study investigated which characteristics and behaviors field-based educational professionals perceived as being in the repertoire of a successful school administrator in this time of educational reform and site-based management. Interpretation of the results not only yielded a prioritization of competencies valued in today's school administrator, but through comparison to a similar investigation completed more than ten years ago, provided information regarding the influence of approximately a decade of school leadership reform initiatives.

The author presented some of the information contained in this manuscript at the October, 1999, meeting of the Mid-Western Educational Research Association.

Method

Participants

The sample was composed of 149 educators from Ohio, who had direct experience in the school setting. While various groups of educational personnel were represented, the largest group of participants was composed of teachers, primarily general education teachers, who represented 104 (69.8%) of the respondents. Other participants included such personnel as special education teachers, special education supervisors/administrators, speech/language therapists, and tutors. A total of 490 surveys were distributed, resulting in the aforementioned 149 respondents, and a 30.4% rate of return of the survey instrument.

The largest percentage of respondents was female and in the age range of 20-29 years. While various types of school communities were noted, 87 (58.4%) of the participants reported working in suburban communities, followed by the next largest group of 43 (28.9%) of the respondents who worked in urban environments. Responses were collapsed into categories to make the information more cohesive, in regard to the grade levels in which the participants had experience and years of experience in education. Of those 140 participants who responded to the question, 69 (49.3%) had experience in grades pre-kindergarten through fifth grade, 65 (46.4%) worked in grades 6 through12 and 6 (4.3%) were involved with grades kindergarten through 12. Additionally, 83 (56.8%) of the 146 participants who responded to the question, reported that they had less than 7 years of experience in education, while 63 (43.2%) noted 7 or more years of educational experience.

Instrumentation/Procedure

The research instrument was an open-ended survey. Participants were simply asked to list the characteristics and be-

haviors associated with the "best" administrators with whom they had worked. There was also a sheet requesting demographic information. The instrument was similar to one used in an unpublished study (Quigney, Kovacevich, and Robinson, 1987), which assessed the same type of information in the same format from educational personnel in Ohio.

The survey information was disseminated to individuals participating in various graduate level courses in education at a major university in Ohio. The participants were required to have had direct professional experience working in the schools, beyond experiences like practicum activities and student teaching. They were provided with a self-addressed envelope for the return of the information to the investigator. The respondents were assured of the confidentiality of their responses and the maintenance of anonymity.

Analysis of Data

The responses were categorized and tabulated. To be included in the final listing, an item had to have a frequency of 15 or greater, which equated to being listed by approximately 10% of the total sample (N=149). Responses were also divided into two domains: task-oriented and personal-social characteristics/behaviors. In addition to the frequency count and percentage of participants offering the response, the characteristics/behaviors were ranked by frequency count within and across the two domains. A comparative analysis was also completed to determine the relationship between the task-oriented and personal-social characteristics/behaviors. This was accomplished by dividing the total pool of ranks in half, into "higher" and "lower" frequency response groups. This procedure assisted in deciphering the percentage of responses related to the two domains within these "higher" and "lower" categories.

One-way analyses of variance were also completed for each domain (task-oriented and personal-social) in regard to the following three variables: (a) gender, (b) grade level with which one had experience, and (c) years of experience in education. In addition, the results of this study were compared to those of the aforementioned investigation (Quigney, et al., 1987) to yield insights regarding the influence of the school reform initiatives of the late 1980's and 1990's on the role of the school administrator. While the number of participants in the 1987 study was less (N=80), the 28 characteristics/behaviors resulting from that investigation were rank ordered and divided into the same two domains as the current study. A Spearman rank correlation coefficient was

Table 1
Frequency and Rank Order Within Domains of Characteristics and Behaviors

Domain/Item		Frequency	Percent	Rank within domain
Task-oriented				
1.	supports/helps and is loyal to staff	90	60.4	1
2.	visible; involved in school	56	37.6	2
3.	involved with/concerned for students	51	34.2	3
4.	organized; manages time well; efficient	44	29.5	4
5.	effective disciplinarian	42	28.2	5
6.	willing to delegate/share authority; team player	41	27.5	6
7.	effective listener	37	24.8	7
8.	provides feedback/ information to staff	31	20.8	8
9.	effective in communication skills	28	18.8	10
10.	motivates staff and others	28	18.8	10
11.	available to staff; makes time for staff	28	18.8	10
12.	knowledgeable about education/issues	26	17.4	12.5
13.	has leadership skills; is role model	26	17.4	12.5
14.	has goals/high expectations/standards	24	16.1	14
15.	gives recognition/ complements	22	14.8	15
16.	knows/involved with community/parents	17	11.4	16
17.	effective in making decisions	16	10.7	17.5
18.	follows through	16	10.7	17.5
Personal-social				
1.	fair; consistent	70	47.0	1
2.	strong interpersonal skills; friendly; approachable	59	39.6	2
3.	considerate; sensitive; kind	49	32.9	3
4.	firm; assertive; strong-minded	43	28.9	4
5.	open-minded; open to suggestions/change/ innovation	42	28.2	5
6.	honest; sincere; trustworthy; has integrity	24	16.1	6.5
7.	professional	24	16.1	6.5
8.	understanding/concerned about staff's ideas/ problems, etc.	22	14.8	8
9.	flexible; adaptable	21	14.1	9
10.	conscientious; hard worker; disciplined; dedicated	20	13.4	10
11.	has positive outlook	18	12.1	11
12.	has sense of humor	15	10.1	12

computed in reference to ranks of characteristics/behaviors of the current and 1987 investigations (Quigney, et al.).

Results

Frequencies and Ranks

With the requirement that a characteristic/behavior had to have a frequency of 15 or greater to be included in the final listing, the study yielded a total of 30 items, 18 of which were categorized under the task-oriented domain, and 12 of which fell under the personal-social subset. The consequent ranking of these characteristics/behaviors based upon their frequency counts, indicated their importance to the role of the school administrator. **Table 1** summarizes the frequency information and rank order of the characteristics/behaviors, within their respective domains, for the total sample of participants.

Perhaps an even clearer picture of the relative importance of these characteristics/ behaviors to the role of the administrator is provided in **Table 2**, which lists the items in their rank order across domains, from a rank of 1 to 30. The characteristic/behavior which was ranked first by the total sample, both within and across domains, was task-oriented item #1 "supports/helps and is loyal to staff." This item was reported by a total of 90 (60.4%) of the respondents. The item ranked second across domains was personal-social item #1 "fair, consistent," reported by 70 (47.0%) of the participants. As the reader continues inspection of this listing, it becomes evident that the 10 highest ranked items were equally divided between the task-oriented and personal-social domains. However, this trend shifted beyond these top 10 items.

When the ranks of the total pool of items were divided into "higher" and "lower" frequency groups, it was determined that 16 items fell into the "higher" frequency group and 14 in the "lower" grouping. This type of split occurred, rather than an exact division of 15 items in each frequency group, because of ties in ranks. Eleven of the top 16 ranked items (68.75%) were from the task-oriented domain, while the remaining five items (31.25%) were in the personal-social domain. Thus, although the 50/50 split of the top 10 items between the two domains would seem to indicate that the participants perceived both types of characteristics/behaviors to be of a relatively similar degree of importance to the role of a school administrator, this comparative analysis revealed that the larger percentage of "higher" frequency items fell within the task-oriented domain.

Table 2
Frequency and Rank Order Across Domains of Characteristics and Behaviors

Domain/Item (T-O = Task-oriented; P-S = Personal-social)			Frequency	Percent	Rank across domains
T-O	1.	supports/helps and is loyal to staff	90	60.4	1
P-S	1.	fair; consistent	70	47.0	2
P-S	2.	strong interpersonal kills; friendly; approachable	59	39.6	3
T-O	2.	visible; involved in school	56	37.6	4
T-O	3.	involved with/ concerned for students	51	34.2	5
P-S	3.	considerate; sensitive; kind	49	32.9	6
T-O	4.	organized; manages time well; efficient	44	29.5	7
P-S	4.	firm; asertive; strong-minded	43	28.9	8
T-O	5.	effective disciplinarian	42	28.2	9.5
P-S	5.	open-minded; open to suggestions/ change/innovation	42	28.2	9.5
T-O	6.	willing to delegate/ share authority; team player	41	27.5	11
T-O	7.	effective listener	37	24.8	12
T-O	8.	provides feedback/ information to staff	31	20.8	13
T-O	9.	effective in communication skills	28	18.8	15
T-O	10.	motivates staff and others	28	18.8	15
T-O	11.	available to staff; makes time for staff	28	18.8	15
T-O	12.	knowledgeable about education/issues	26	17.4	17.5
T-O	13.	has leadership skills; is role model	26	17.4	17.5
T-O	14.	has goals/high expectations/standards	24	16.1	20
P-S	6.	honest; sincere; trustworthy; has integrity	24	16.1	20
P-S	7.	professional	24	16.1	20
T-O	15.	gives recognition/complements	22	14.8	22.5
P-S	8.	understanding/concerned about staff's ideas/ problems, etc.	22	14.8	22.5
P-S	9.	flexible; adaptable	21	14.1	24
P-S	10.	conscientious; hard worker; disciplined: dedicated	20	13.4	25
P-S	11.	has positive outlook	18	12.1	26
T-O	16.	knows/involved with community/parents	17	11.4	27
T-O	17.	effective in making decisions	16	10.7	28.5
T-O	18.	follows through	16	10.7	28.5
P-S	12.	has sense of humor	15	10.1	30

Keeping in mind the limitations of making comparisons between the current research and the 1987 study of Quigney, et al., it is nevertheless enlightening to compare some of the results. There was a very noticeable similarity between the items listed in both studies. In fact, there were only 5 of 30 items noted in the current investigation, which were not reported in some manner in the former study.

While 10 of the remaining 25 characteristics/behaviors of the current research were similar to those reported in the earlier study (Quigney, et al., 1987), the individual items in one study were represented by combinations of items in the other investigation. For example, the combination of task-oriented item #7 "effective listener" and task-oriented item #9 "effective in communication skills" in the current investigation, may be likened to the task-oriented item of the former study, which stated "possesses good communication skills-is a good listener." Thus, while these 10 characteristics/behaviors were noted in both investigations, because of the combination factor, their rankings could not be directly analyzed for statistical purposes.

However, the ranks of 15 (50%) of the 30 items of the current study could be directly compared to the ranks of the 15 equivalent items of the former study (Quigney, et al., 1987). Regarding these items, a Spearman rank correlation coefficient of .639 was obtained and was found to be significant at the .05 level.

Table 3 compares the 30 items and their ranks of the current research to their ranks or status in the former investigation (Quigney, et al., 1987). It is noteworthy that the item ranked first in both the current and the former research was task-oriented item #1 "supports/helps and is loyal to staff."

One-Way Analyses of Variance

A one-way analysis of variance was run on each of the two domains of characteristics/behaviors (task-oriented and personal-social) in relation to the variables of gender, grade levels with which the participants had experience, and years of experience in education. The results of the one-way analysis of variance in reference to gender showed a significant difference at the .05 level in the perceptions of males and females in relation to the items of the task-oriented domain

Table 3
Comparison of Ranks of Current Study's Items with Ranks in 1987 Study (Across Domains)

Domain/Item of Current Study (T-O=Task-oriented; P-S=Personal-Social)	Current Rank across domains (N=30)	1987 Rank across domains (N=28)
T-O 1. supports/helps and is loyal to staff	1	1
P-S 1. fair; consistent	2	5
P-S 2. strong interpersonal skills; friendly; approachable	3	6
T-O 2. visible; involved in school	4	Combination*
T-O 3. involved with/concerned for students	5	Combination*
P-S 3. considerate; sensitive; kind	6	Combination*
T-O 4. organized; manages time well; efficient	7	4
P-S 4. firm; assertive; strong-minded	8	not included**
T-O 5. effective disciplinarian	9.5	27
P-S 5. open-minded; open to suggestion/change/innovation	9.5	13
T-O 6. willing to delegate/share authority; team player	11	3
T-O 7. effective listener	12	Combination*
T-O 8. provides feedback/information to staff	13	not included**
T-O 9. effective in communication skills	15	Combination*
T-O 10. motivates staff and others	15	Combination*
T-O 11. available to staff; makes time for staff	15	Combination*
T-O 12. knowledgeable about education/Issues	17.5	7
T-O 13. has leadership skills; is role model	17.5	28
T-O 14. has goals/high expectations/standards	20	10
P-S 6. honest; sincere; trustworthy; has integrity	20	Combination*
P-S 7. professional	20	not included**
T-O 15. gives recognition/complements	22.5	Combination*
P-S 8. understanding/concerned about staff's ideas/problems, etc.	22.5	Combination*
P-S 9. flexible; adaptable	24	14
P-S 10. conscientious; hard worker; disciplined; dedicated	25	17
P-S 11. has positive outlook	26	24
T-O 16. knows/involved with community/parents	27	not included**
T-O 17. effective in making decisions	28.5	24
T-O 18. follows through	28.5	not included**
P-S 12. has sense of humor	30	21

* Items in one study were represented by combinations of items in the other study.
** Items not specifically noted in the 1987 investigation.

(F= 5.088, df=1/139, p=.026). The mean of the female respondent group was greater than that of the male participants. There was no significant difference found in regard to gender and the personal-social domain (F=.142, df=1/139, p=.707).

The variable of grade levels with which the respondents had experience was collapsed into classifications: (a) pre-kindergarten through grade 5 (49.3%), (b) grades 6 through 12 (46.4%), and (c) kindergarten through grade 12 (4.3%). Because of the small number of the kindergarten through grade 12 participants, it was decided to run the one-way analysis of variance only in regard to the pre-kindergarten through grade 5 and grades 6 through 12 categories. No significant differences were found at the .05 level between grade level groups in relation to either the task-oriented domain (F=1.426, df=1/132, p=.235) or the personal-social domain (F=1.977, df=1/132, p=.162).

The final variable to be considered regarding the one-way analysis of variance was the years of educational experience of the participants. This variable was also collapsed into the following two categories: less than 7 years of experience (56.8%) and 7 or more years of experience (43.2%). The results of the one-way analysis of variance showed a significant difference at the .05 level in the perceptions of the two categories of educational experience in relation to the task-oriented domain (F=5.993, df=1/144, p=.016). The mean of the participants who had 7 or more years of educational experience was greater than the mean of the participants with less than 7 years of educational experience. There was no significant difference found in regard to years of educational experience and the personal-social domain (F=2.612, df=1/144, p=.108).

Discussion

Implications for Educational Practice

There is general consensus that strong school leadership is an essential characteristic of an effective school (Ubben and Hughes, 1987). However, as Rossow (1990) notes, research studies have taken different approaches in attempting to delineate which aspects of leadership have the most influence on a school's effectiveness. While some studies have focused on the functional and contextual areas of leadership, others have concentrated on the school administrator's personal characteristics.

Because of its open-ended format, this investigation did not have any specific restrictions for the participants' responses. As a result, both personal characteristics and task-related behaviors were noted, which would seem to be in many ways a more holistic approach, and a more pragmatic and realistic perspective in determining the factors which contribute to effective school administration.

In response to the research question of which characteristics and behaviors were perceived by educational personnel as being exhibited by an effective administrator, there was a greater occurrence of task-oriented characteristics/behaviors than those of a personal-social nature. As noted previously, more than two-thirds of the "higher" frequency items fell within this domain. There was a very cogent message from the participants that a school administrator should be supportive and helpful to the staff, and stand behind its members when the need arises. This result concurred with the findings of Littrell, Billingsley, and Cross (1994) who found "that teachers who experience higher levels of principal support are more likely to experience greater job satisfaction and school commitment" (p. 307).

It was also clear from the "higher" frequency items categorized in this domain that educators value an administrator who is organized, motivating, visible in the school, actively involved with students, available to staff, and a strong disciplinarian. Further, very much in conjunction with the tenets of site-based management, the participants reported the importance of strong communication and listening skills, shared information and authority, and the team approach to educational governance.

Although there were less characteristics/behaviors of the personal-social domain in the "higher" frequency grouping, several items received high rankings. Forty-seven percent of the participants reported the importance of the school administrator to be fair and consistent, followed in rank by the need for administrators to be friendly and have good interpersonal skills. Educators also seemed to value administrators who were strong and assertive, balancing these characteristics with being considerate, open-minded, and innovative.

It is probably not surprising that the respondents appreciated humanistic skills, such as consideration, empathy and sensitivity, in an educational administrator. These are characteristics which have been espoused for some time in the literature dealing with leadership (Gorton, 1979; Sergiovanni, Burlingame, Coombs, and Thurston, 1980). However, the value that the respondents appeared to place on an administrator's need to be broad-minded and open to suggestions may be indicative of educational reform initiatives, as it is in accordance with the concept of reflective practice and openness to innovation, one of the school reform features of an effective school noted by Lambert (1998) in her discussion of school leadership.

While there was relative agreement among the respondents regarding the importance of the two domains of characteristics/behaviors to the role of an effective administrator, there were two notable differences in perception among variable groupings. There was a significant difference in how the gender groupings perceived the task-oriented domain.

The female participants noted this domain more frequently than the males in the study. The second significant difference in perception again related to the task-oriented domain, when considering the variable of years of educational experience. The participants with 7 or more years of experience cited this domain as important to the role of a successful

administrator significantly more often than did those individuals with less than 7 years of educational experience.

Although we cannot be certain of the reasons why these differences in perception occurred, one might speculate as to the influence of the educational reform efforts, particularly in regard to the variable of educational experience. One might conjecture that the more experienced group of educators may have had more training and involvement with a traditional, task-specific approach to educational leadership, whereas the less experienced participants may have been exposed to educational preparation and expectations more reflective of recent school restructuring efforts, like shared decision-making, teacher empowerment, and site-based management.

While the overall list of characteristics/behaviors may act as a type of blueprint for effective school administrators, the notation of differences in perception between participant groups enables them to be more aware of the expectations, needs, and particular priorities of staff members as they reflect these demographic variables. Further, this information may provide insight on the possible influence of educational reform initiatives regarding how specific groups of educators perceive successful educational leadership.

Comparison of the Two Studies

How different are the task-oriented and personal-social characteristics/behaviors in the current study from those cited over ten years ago (Quigney, et al., 1987)? Has more than a decade of school leadership reform initiatives changed how educators view effective school administrators? One of the most striking conclusions which resulted from the comparison of the two studies was the many similarities in the actual items listed. The great majority of characteristics/behaviors may be found noted in some manner in both investigations. As previously discussed, there were only five items reported in the current study which were not covered in the former study.

Perhaps the need for school administrators to follow through on what they say was implied in the former study's notation of effective decision-making skills (Quigney, et al., 1987), but it was specifically reported in the current investigation (task-oriented characteristic #18). Similar logic may be applied to the current investigation's personal-social item #7, "professional." One might assume that if an administrator exhibits the reported characteristics/behaviors, he or she would be a true educational professional. However, the need for an administrator to act in a professional manner was specifically mentioned in the current study, while only being suggested in the list of characteristics/behaviors of the 1987 study. Because of this lack of clarity, it is difficult to draw any inferences regarding the effect of school restructuring on these items' inclusion in the current study.

However, one might hypothesize that the inclusion of personal-social item #4 "firm; assertive; strong-minded" in the current study, may be more a result of the tenor of the times as opposed to the influence of school reform issues. When considered with the ranking information of task-oriented item #5 "effective disciplinarian," a theme begins to develop. Although the competency of being a strong disciplinarian was noted in the former study (Quigney, et al., 1987), its rank was considerably lower (rank of 27 of 28 items) than its rank of the current investigation (9.5 of 30 items). Thus, there appears to be a very noticeable difference in how the participants in the two studies perceived the role of the administrator in regard to being a strong authority figure and disciplinarian, with much more importance being associated with it today. With the current wave of school shootings in the last few years, perhaps this is not that surprising a finding. Images of traumatized students and terrified parents have left a deep impression on the educational community. Although these types of tragedies are certainly not the norm, they have resulted in a heightened awareness of the need for strong leadership in providing safe learning environments for the nation's youth.

In regard to the two remaining items which were listed currently but not in 1987 (Quigney, et al., 1987), one might attribute their more recent importance to the school restructuring efforts. Task-oriented characteristic #8, "provides feedback/information to staff," may reflect the concepts of teacher collaboration and empowerment advocated in much of the reform literature. For example, Lambert (1998) refers to shared decision-making and how "information loops follow a spiraling process that keeps all informed and provides for reflective interpretation and construction of shared meaning" (p. 16). Number 16 of the task-oriented subset, "knows/involved with community/parents," seems to be very related to a goal of site-based management "to get teachers, students, school staff, and parents working to meet school goals" (Michel, 1991, p. 35).

Therefore, in response to the question of whether more than a decade of school leadership reform initiatives affected how educators perceived effective administrators, this study's results yielded some important implications. While the characteristics and behaviors listed in both the current and former (Quigney, et al., 1987) studies were strikingly similar, except for the five aforementioned items, their degrees of importance to the role of an effective administrator were not always in agreement. Some administrator characteristics like being supportive, fair, friendly, considerate, and organized seem to be more timeless in their importance, while the emphasis placed on other characteristics/ behaviors, such as being a strong disciplinarian and visible presence in the school, who is open to faculty input and innovation may be more reflective of the current trends in society and educational thought.

Conclusion

As we enter a new century, the leadership role of the school administrator is being redefined. It will no doubt continue to evolve in response to the current and future school

reform efforts. New dimensions of leadership theory and educational practice will be promoted and assessed. Traditional perspectives will continue to be examined and perhaps reconstructed. Some perspectives of successful educational administration may be modified and others may be validated as universal in appeal and effectiveness. The results of this study seem to exemplify this contention, as well as support the critical role that school administrators play in the educational process.

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Mary K. Bendixen-Noe (740) 366-9469, Bendixen-Noe.1@osu.edu

Kim Metcalf (812) 855-4438, kmetcalf@indiana.edu

Teacher-Centered Fallacies of Classroom Assessment Validity and Reliability

Craig A. Mertler
Bowling Green State University

Abstract

The general purpose of this descriptive study was to examine the current assessment practices of teachers in the state of Ohio. Specifically, the aim of this study was to gain an understanding of the methods used to insure the validity and reliability of their classroom assessments. It builds on previous research by incorporating verbal explanations and categorizations of techniques used to insure classroom assessment validity and reliability. Similar to previous research, it was determined that teachers do not spend much time conducting statistical analyses of their assessment data. Teachers seemed to have a better understanding of assessment reliability than validity; although, many of the steps provided by teachers to determine classroom assessment validity and reliability would be considered poor and inadequate, at best. Recommendations include providing additional inservice training to teachers, as well as tailoring measurement courses to fit the needs of future classroom teachers.

Background

A sizable amount of classroom time is devoted to the assessment of student learning. Since teachers must give even more time to the preparation and scoring of tests and other assessments, a substantial proportion of a teacher's day is devoted to issues surrounding student assessment. One could argue, then, that careful consideration of testing within formal teacher preparation programs is certainly warranted. If educators, particularly those in teacher preparation programs, are to help teachers use their student testing time efficiently and to be effective at it, more must be learned about how teachers perceive and use classroom tests and other forms of assessment (Gullickson, 1984).

Several research studies examining the overall assessment practices of classroom teachers have been conducted; however, little research on the topic of practices with respect to insuring classroom test validity and reliability exist in the literature. Much of the research has focused on the use of various types of items and differences that exist across school levels (i.e., elementary, middle, and high schools) and school locations (i.e., urban, suburban, and rural). For example, Marso (1985; 1987) found several differences between elementary and secondary teachers. Secondary teachers tended to use more self-constructed tests rather than published tests; whereas, the opposite was true for elementary teachers, especially those in grades K-4. Similarly, others have found that the higher the grade level, the greater the tendency for teachers to use their own assessments (Stiggins and Bridgeford, 1985). Secondary teachers reported relatively more use of essay and problem-type items and less frequent use of completion and multiple-choice items than did elementary teachers (Marso and Pigge, 1987). Marso (1985) also found that teachers perceived matching, multiple-choice, and completion type items as being most useful.

Establishing the validity of classroom assessments has undergone a recent shift in focus. In the past, measurement experts wrote about three types of validity: content, construct, and criterion. The most important of these for the classroom teacher was arguably content validity—the extent to which the content of a test or other assessment activity corresponds to the performance to be observed (Oosterhof, 1999). Prior planning was a key to establishing a test's content validity, and this planning typically consisted of the careful development of performance objectives. These performance objectives not only guided instruction, but also served as the catalyst for the development of actual items or activities that made up the assessment (Oosterhof, 1999). A valid assessment is one that provides students with the opportunity to show what they have learned following instruction (Airasian, 2000). Therefore, when developing a valid assessment, teachers should focus attention on instructional objectives as well as the actual instruction that took place, and should do so *during* the development of the assessment (Airasian, 2000; Oosterhof, 1999).

More recently, however, validity is seen as a dynamic concept, referred to as "construct validity" (Gredler, 1999), that incorporates all three—previously separate—types of validity. Gredler (1999) advises that teachers should ask themselves a series of questions regarding their classroom assessments as a means of determining validity:

- *Does the item or task match the instructional method used?*
- *Does the item or task relate directly to the class objectives?*
- *Can all students who understand the concepts demonstrate their knowledge with the particular assessment?*

Even with this revised view of validity, teachers are still advised to establish classroom assessment validity by means of professional judgment (Airasian, 2000; Gredler, 1999;

McMillan, 1999) and by comparing the items or tasks to instructional methods and objectives.

Establishing the reliability of classroom assessments is a more structured—and decidedly, more objective—process. There are six statistical methods which can be used, depending on the specific situation and what type of consistency information is desired (Gredler, 1999). Reliability can be established for assessments that yield a range of scores through one of the following methods: test-retest, equivalent (or alternate or parallel) forms, split-half, Kuder-Richardson (KR-20), or coefficient alpha (Gredler, 1999; Oosterhof, 1999). Since most classroom assessment activities are administered only once, and typically consist of right or wrong answers, the split-half and KR-20 methods are most appropriate. If performance or portfolio assessments are used, a percentage agreement between raters can be calculated (Gredler, 1999; Oosterhof, 1999).

For years, measurement experts have told us how teachers *should* establish classroom assessment validity and reliability. However, very little empirical information exists on how teachers *actually* determine the extent to which their assessments are valid and reliable. However, some research on teachers' use of statistical analyses of test data does exist. Several studies have documented the infrequent use of statistical analyses of test data (Gullickson, 1986; Marso and Pigge, 1987; Marso and Pigge, 1988). This may be due to the fact that teachers are not convinced of the value of using statistical procedures to improve the quality of their tests or that they simply do not have a good grasp of statistical concepts and this discomfort may lead to a devaluing of their use.

This study was part of a larger research endeavor which had as its main purpose the examination of the current assessment practices of K-12 teachers in the state of Ohio. The researcher sought to explore how practicing teachers assess student performance with their students in their own classroom settings. Specifically, the goal of this research study was to gain an understanding of the processes and techniques used by classroom teachers to insure that their assessments are both valid and reliable, and to determine the extent to which they engage in these processes.

Methodology

The researcher made use of resources available through the Ohio Department of Education in order to obtain a stratified random sample of K-12 teachers throughout the state of Ohio. The sample was stratified so that various subgroups in the population of K-12 teachers in the state were represented in the sample in the same proportion that they exist in the population. These subgroups of teachers included the following four categories: (1) female elementary, (2) female secondary, (3) male elementary, and (4) male secondary. A random sample of 3,000 teachers was obtained.

An original survey instrument, the *Ohio Teacher Assessment Practices Survey*, was developed by the researcher for purposes of collecting the data. The literature was relied upon heavily in order to guide the development of the specific items appearing in the survey instrument. The instrument consisted of 47 items and included both scaled (forced-choice) and open-ended items. For purposes of the study at hand, teachers were asked to respond to items concerning the validity and reliability of their classroom assessments, specifically requesting information on the steps that they follow and the extent to which they do so.

In mid-January, each teacher received a packet containing a full-page cover letter, copy of the survey, and a self-addressed, postage-paid return envelope. They were instructed to return the survey within four weeks from the date appearing on the cover letter. In mid-February, a follow-up reminder postcard was sent to those teachers who had not yet returned completed surveys. The final sample upon which the analyses were conducted consisted of 625 completed surveys. Analyses were conducted using SPSS (v. 6.1) and NUD*IST (v. 4).

It should be noted that the 21% response rate may initially seem problematic, especially with respect to the generalizability of results. However, two important points can justify their generalizability. First, Gay and Airasian (2000) state that once a population surpasses approximately 5,000 members, its "size is almost irrelevant and a sample size of 400 will be adequate" in order for the researcher to be confident in the generalizability of the results (p. 135). Based on this fact, this study's stratified random sample of $n = 625$ teachers is representative of the more than 100,000 teachers in the state of Ohio. Second, in order to insure representativeness, the researcher compared general respondent characteristics in the sample to those in the entire target population, utilizing data obtained from the Ohio Department of Education web site (http://www.ode.state.oh.us/). Since the obtained sample was based on proportional representation within the four subgroups previously listed above, comparisons were made to the analogous proportions within the target population. The result of this informal comparison is presented in Table 1. The proportion of representation within the four

Table 1
Comparison of sample and population characteristics by frequencies (and percentages)

Demographic Characteristic	Sample (n = 625)	Population (N = 101,092)
School Level by Gender		
Elementary – Female[a]	114 (70%)	56,160 (82%)
Elementary – Male[b]	50 (30%)	12,703 (18%)
Secondary – Female[c]	158 (45)	16,868 (52%)
Secondary – Male[d]	191 (55%)	15,361 (48%)
Years of Teaching Experience[e]		
1-5 Years	84 (14%)	17,879 (18%)
6-10 Years	103 (17%)	15,184 (15%)
11+ Years	434 (70%)	63,487 (63%)

[a]Calculated as the percentage of elementary teachers who are female
[b]Calculated as the percentage of elementary teachers who are male
[c]Calculated as the percentage of secondary teachers who are female
[d]Calculated as the percentage of secondary teachers who are male
[e]Calculated as the percentage of the total sample or population

subgroups is fairly similar, with the larger discrepancy occurring between males and females at the elementary level. As is also shown in the table, there exists a great deal of similarity between the sample and population with respect to years of teaching experience. Based on this combined information, it was concluded that the resultant sample findings could indeed be generalized to the population of Ohio teachers.

Results

The sample consisted of 53% females and 47% males. The majority (42%) of teachers were from suburban settings, followed closely by rural (32%) and urban (25%). Nearly half (47%) were teaching at the senior high level; just over one-fourth (26%) were teaching at the elementary level, followed closely by those teaching at the junior high/middle school level (25%). Twenty percent of the teachers had 26-30 years of teaching experience, followed by 21-25 years (19%), 6-10 years (17%), 1-5 years (13%), 16-20 years (13%), 11-15 years (11%), and 31-35 years (6%). Two teachers in the sample had 36 years or more of teaching experience.

Validity of Classroom Assessments

Teachers were asked to list specific steps they followed to insure that their assessments were valid and to indicate how often they followed these steps. Specifically, they were asked to respond to the following open-ended question:

> *"What specific steps should teachers follow to make sure their written tests or other assessments are* ***valid*** *(that is,* ***actually*** *measure what students have learned)?"*

Following their responses to this item, teachers were then asked to respond to the following:

How often:

a. *are* ***you*** *able to closely follow these steps?*
   1 2 3 4 5

b. *do you believe* ***teachers*** *closely follow these steps?*
   1 2 3 4 5

where 1 = never, 2 = not very often, 3 = about half of the time, 4 = most of the time, and 5 = always. One-fourth (25%) of the teachers responded that they followed specific steps to insure validity about half of the time or less; the median response was "most of the time." Two-thirds (66%) of the teachers believed that teachers, in general, followed those steps about half of the time or less; the median response was "about half the time."

With respect to the specific steps that teachers follow to insure validity, a wide variety of responses was provided. Six hundred and eleven responses were examined and categorized based on common approaches. The resulting hierarchical coding system is shown in Figure 1.

The teachers' responses were coded into six major categories, with the vast majority falling into roughly two of those categories. The major categories, with the numbers and percentages of response appearing in parentheses, were as follows:

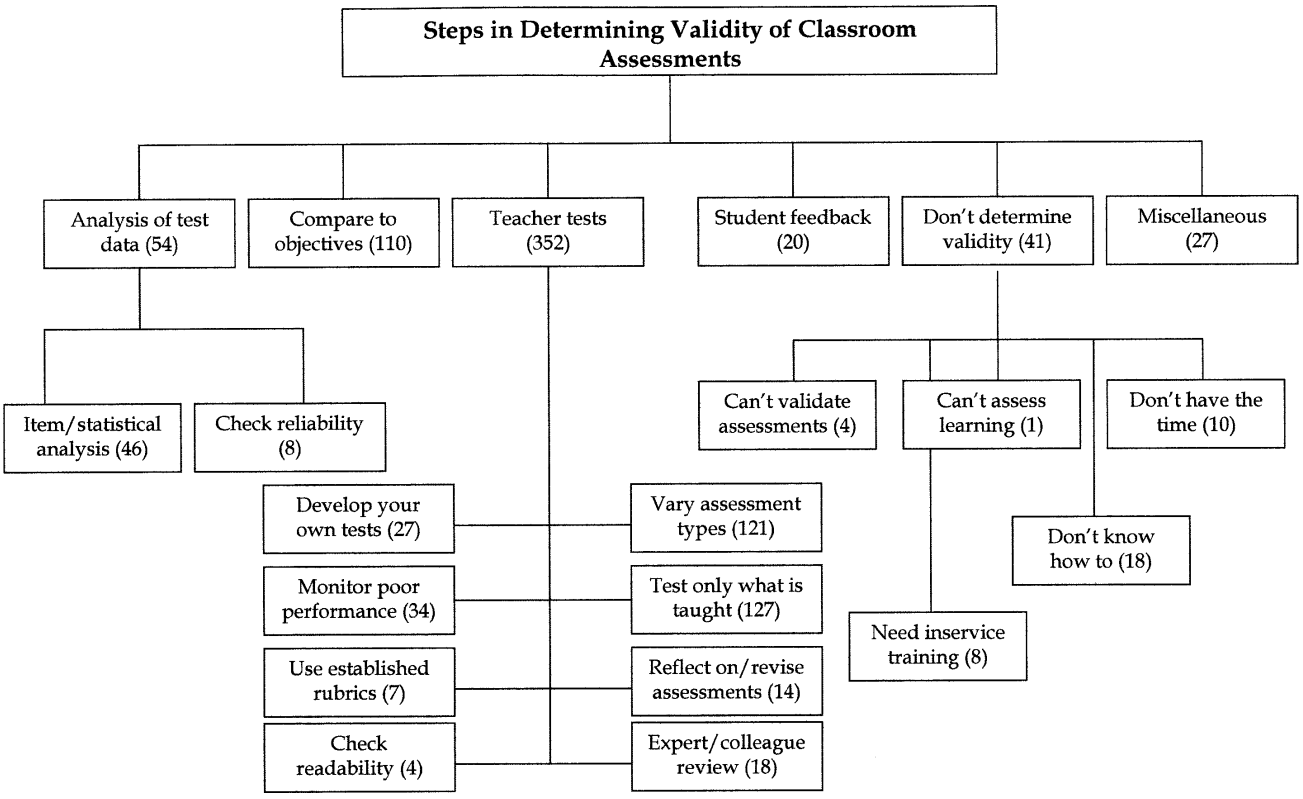

Figure 1. Coding scheme for teachers' approaches to determining classroom assessment validity.

- teacher-developed tests (352 or 58%);
- compare to objectives or curriculum (110 or 18%);
- analysis of test data (54 or 9%);
- don't determine validity (41 or 7%);
- ask for student feedback (20 or 3%); and
- miscellaneous (27 or 4%);

Several of these major categories included anywhere from a couple to several sub-categories. The sub-categories, along with the frequencies of response, are provided in Figure 1.

As evident in Figure 1, more than half of the responses dealt with teacher-made tests. The vast majority of teachers stated that they insure assessment validity by following conventional rules of sound test development, varying the types of items and assessments (thus providing students different means of showing what they know), and by simply testing what is taught. Several comments exemplifying these points follow:

> *Vary the type of questions in terms of difficulty and questioning types.*
>
> *Use essay questions, not multiple guess or True or False...I did not know what students understood giving multiple choice and True or False tests. Essays are more time consuming to grade, but well worth the effort.*
>
> *Make sure all tests are varied enough in questioning to accommodate all learning styles, not just one or two styles of questions.*
>
> *Written tests should be based entirely on what was taught.*

Many teachers believe that simply developing your own assessments, as opposed to using published materials, will insure assessment validity. Other teachers tend to monitor their students' performance on their self-developed assessments; if students perform poorly, they make adjustments accordingly. One teacher stated

> *I take the tests as I go. If there are questions that most students bomb, I'll eliminate it, but if I feel they were well prepared for it, I'll keep the question.*

Several teachers believe that simply reflecting on the success of an assessment instrument, evaluating how well students performed, and then revising the instrument would insure validity. Along these lines, teachers suggested asking questions of the students in order to gather feedback concerning the assessment. For example,

> *I...have them evaluate the test according to what I taught or thought I taught.*

Finally, with respect to teacher-made assessments, a small sampling stated that they have "experts" or other teachers review their tests and other assessments as a means of checking the validity:

> *My colleagues and I pass tests around to each other to see if everyone is on the same level.*

Many teachers insure validity by comparing their assessments to instructional objectives or the district/statewide curriculum.

> *Compare assessment to objectives in order to evaluate individual questions.*
>
> *Ask questions based on the material to be learned/ course of study/curriculum...try to see what they know as well as what they don't know.*

Many teachers rely on the results of statistical analyses of test data or other information resulting from assessments. Several teachers stated that they simply "checked reliability" as a means of insuring validity, without providing any details of how they did so. Others specifically stated that they conducted item analyses of student data, although their approaches to doing so may have been a little vague:

> *Use statistics to validate the reliability.*

A small proportion of teachers stated that they didn't attempt to validate their assessments for a variety of reasons including the fact that validation cannot be done, student learning cannot truly be assessed, and there just is not enough time to do so. However, the majority of teachers who responded in this category confessed that they simply did not know how to validate their assessments and that inservice training was desperately needed.

> *Get professionals to inservice with applications for practical use. Experiment with these methods. Choose the methods which best fit the specific needs.*
>
> *Teachers need concrete examples and explicit instruction on how to create valid assessment items for written tests.*

Miscellaneous comments covered a wide range and encompassed several areas not covered by the broad categories. These included comments related to comparisons to proficiency test scores, the issue of cheating, and taking the test yourself to see if it appears valid.

It is clear that, although many of these comments provide sound advice for teachers to follow, these "steps" simply are not appropriate—or are incomplete and lack thoroughness—for determining the validity of classroom assessments. By following good test development guidelines, teachers will certainly be more likely to achieve tests that are valid, but simply following those rules will not insure validity. Several teachers seemed to have the concept of reliability confused with that of validity when they identified item analyses as a means of validation.

For many classroom assessments, content validity would be the most important type of validity to establish. Unfortunately, less than 20% of the teachers' comments focused on specific comparisons of assessment items and activities to instructional objectives, although another 21% of the com-

ments identified the matching of assessments to what was actually taught. The idea of simply using self-developed tests and varying the types of assessments alone is not enough to insure validity. Careful planning of this type certainly helps with assessment validity, but it must be accompanied by the establishment of congruency with objectives.

It should be noted that several teachers provided miscellaneous comments that definitely could *not* be considered means of establishing validity and appeared to be somewhat troublesome. These included:

> *Although my techniques are not written down any longer, I use a mental format which I change as needed. Experience is a wonderful resource.*
>
> *Over the years, you'll find out what works for you.*
>
> *It takes me over an hour to even write a new test. To be honest, other than using my experience, I don't have much time to worry about how valid my test is.*
>
> *I don't know. Most of the time I am so busy I don't have time to check validity. I guess I leave this job up to someone else.*
>
> *No clue! I have no training is doing this, and never really thought about it until reading this question.*
>
> *Teachers don't have time for this type of analysis! Why don't you teach in a public school for a year and find out what it is really like.*

Reliability of Classroom Assessments

Teachers were also asked to list specific steps they followed to insure that their assessments were reliable and to indicate how often they followed these steps. Specifically, they were asked to respond to the following open-ended question*:*

> *"What specific steps should teachers follow to make sure their written tests or other assessments are **reliable** (that is, **consistently** measure what students have learned)?"*

Following their responses to this item, teachers were again asked to respond to the following:

How often:

*a. are **you** able to closely follow these steps?*
1 2 3 4 5

*b. do you believe **teachers** closely follow these steps?*
1 2 3 4 5

where 1 = never, 2 = not very often, 3 = about half of the time, 4 = most of the time, and 5 = always. Nearly one-third (30%) of the teachers responded that they followed specific steps to insure reliability about half of the time or less; the median response was "most of the time." Two-thirds (66%) of the all teachers believed that teachers followed those steps about half of the time or less; the median response was "about half the time."

When asked to provide the specific steps that they follow to insure reliability, the teachers again provided a wide variety of responses. Four hundred and thirty-one responses were examined and categorized based on common approaches. The resulting coding system is shown in Figure 2.

The teachers' responses were coded into five major categories, with the vast majority falling into one of those categories. The major categories, with the numbers and percentages of response appearing in parentheses, were as follows:

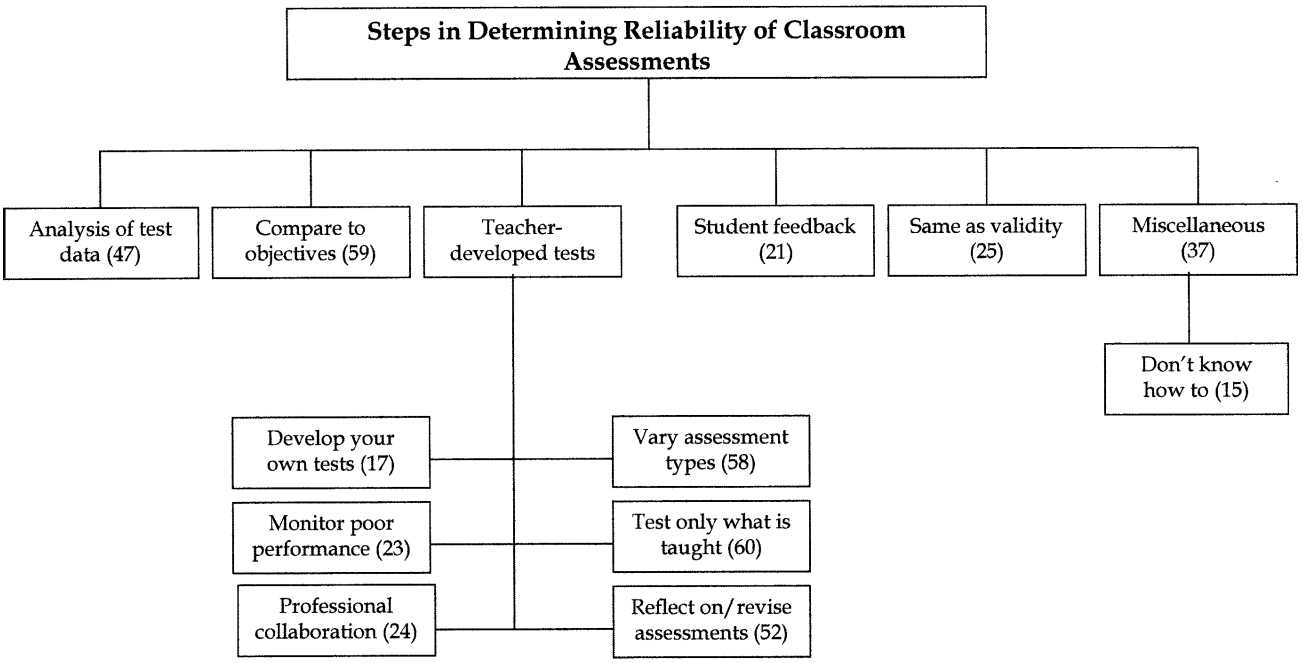

Figure 2. Coding scheme for teachers' approaches to determining classroom assessment reliability.

- teacher-developed tests (234 or 54%);
- compare to objectives or curriculum (59 or 14%);
- analysis of test data (47 or 11%);
- same process as validity (25 or 6%);
- ask for student feedback (21 or 5%); and
- miscellaneous (37 or 9%);

Several of these major categories included anywhere from a couple to several sub-categories. The sub-categories, along with the frequencies of response, are provided in Figure 2.

As is evident from Figure 2, many teachers belief that insuring assessment validity and reliability are very similar procedures. Many of the same coding categories emerged as a result of examination of the responses to question addressing classroom assessment reliability. Again, the majority of teachers stated that they insure assessment reliability by following conventional rules of sound test development, varying the types of items and assessments, and by simply testing what is taught.

Similar to the responses regarding validity, teachers tend to monitor their students' performance on the self-developed assessments and revise them accordingly, as well as gathering oral feedback from students themselves about the assessment instruments or activities.

Again, many teachers identified professional collaboration as a means of insuring reliability, as well as comparing assessments to instructional objectives. Unfortunately, few teachers (11%) rely on the results of statistical analyses of test data or other data resulting from assessments to insure reliability. However, several teachers explicitly stated that they utilized "test-retest" or "equivalent forms" methods of determining the extent to which their assessments are reliable.

A small proportion of teachers again stated that they did not know how to demonstrate the reliability of their assessments and that inservice training was necessary.

Miscellaneous comments included those related to comparisons to proficiency test scores, a teacher's knowledge of the content, performing readability tests on assessment instruments, and establishing a consistent grading system.

It seems that many teachers have a slightly better grasp of the concept of validity than that of reliability, especially in terms of establishing those characteristics for their classroom assessments. However, the overriding majority of comments provided would not be considered acceptable methods of determining either classroom assessment validity or reliability.

It should be noted that several teachers provided miscellaneous comments that should again "raise a red flag" concerning their knowledge and ability to appropriately assess reliability. These included:

...techniques such as test-retest are possible, but they aren't practical in day to day classroom.

Check grades...compare scores with what was taught. Use common sense.

I would determine the percentage of students who demonstrate the ability you're looking for. Determine a ranking (90% answer correctly, then it is reliable).

No specific steps. There are too many other things required of teachers.

I really don't understand the difference between validity and reliability...sorry! Is it just me?

...with all the other tasks at hand, worrying about the reliability of my tests is way down at the bottom of my priority list. I use my experience to determine reliability...

What's the difference between reliable and valid -- really?

Conclusions

This study was part of a larger research endeavor which had as its main purpose the examination of the current assessment practices of K-12 teachers in the state of Ohio. Specifically, the goal of this research study was to gain an understanding of the processes and techniques used by classroom teachers to insure that their assessments are both valid and reliable, and to determine the extent to which they engage in these processes.

This study was successful in that it resulted in a somewhat thorough description of these teachers' assessment practices with respect to issues of validity and reliability of their classroom assessments. It builds on previous classroom assessment practices research by incorporating information about validity and reliability analyses, which is quite scarce. Similar to previous research, it was determined that teachers do not spend much time conducting statistical analyses of their assessment data.

Previous research has shown that many teachers do not believe that they are well prepared to assess student performance. Mertler (1999, 1998) asked teachers to indicate their level of preparation—in terms of assessing student learning—that resulted from their undergraduate teacher education program. Teachers were asked to respond on a five-point scale, where 1 = not at all prepared, 2 = not very prepared, 3 = slightly prepared, 4 = somewhat prepared, and 5 = well prepared. The median response from the more than 600 teachers was "slightly prepared," with only 13% indicating that they felt "well prepared." Similarly, Quilter and Chester (1998) reported that many teachers in their study admitted that their training in testing and measurement is somewhat deficient.

The results of this study, coupled with previous research, perhaps imply that some attention needs to be re-focused on

undergraduate teacher preparation measurement courses, especially in the areas of validity and reliability. Although these teachers *claim* they do a good job of following steps to insure sound assessments, they do not possess a solid foundation of what those steps should be. In other words, they frequently evaluate validity and reliability, but do so in the wrong ways. Therefore, they are really not evaluating those critical characteristics of classroom assessments. To further complicate this problem, the participating teachers believed that they use these techniques—albeit, the wrong techniques—more frequently than most other teachers. Only when measurement courses provide solid foundational understanding of these concepts will we have adequately prepared our teachers to assess their students' performance.

However, it may be more appropriate to focus teaching and training efforts on inservice—rather that preservice—teachers. McMillan (1999) stresses the importance of training and other opportunities that allow teachers to "brush up on their assessment skills." He continues by stating that teachers are "simply expected to be able to administer most any kind of assessment without adequate training…" Others (Quilter and Chester, 1998) have also cited implications for inservice training in educational assessment—specifically to help teachers see the *value* in the appropriate use of their various approaches to assessment, instead of simply showing them how to do the assessment. It may be the case that teachers in general need to and should have some teaching and assessment experience—beyond the training received during undergraduate coursework and student teaching—prior to being able to completely understand the concepts of validity and reliability, be able to consider those concepts during the development of their classroom assessments, and be able to appropriately assess these characteristics. Professional development in the form of inservice training is definitely something that numerous teachers in this study identified as being necessary, useful, and needed.

Acknowledgement

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