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ABSTRACT

This study assessed teacher perceptions of research use and barriers to use. Specific purposes were to: (1) assess the frequency of review of the research literature, actual practice of research, and research dissemination by teachers; (2) describe the level of teachers' training in research methods; (3) describe views of the adequacy of training in research methods; (4) assess the attitudes toward different barriers to using and performing research; and (5) assess differences among teachers at different grade levels, in different content areas, and with versus without coursework in research methods in attitude toward and use of research. A questionnaire sent to 600 inservice teachers had 417 usable responses. Results suggest that teachers read research but do not do research. Also that teachers are more likely to read, perform, and present research findings if they have had some training in research methods. It is suggested that consideration should be given to the place of explicit education in research methods in the teacher education curriculum. (JD)

TEACHERS AS RESEARCHERS: TRAINING, ATTITUDES, AND PERFORMANCE

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Recent years have found much attention paid to the reform of teacher education. One suggested reform is to increase the research base of teacher education. Scholarship is held to be an essential element of good teaching; teacher educators without a commitment to scholarship "contribute to education's second class status" (Wisniewski, 1986). Just as scholarly activity is held by many to be essential at the university level, it is also argued that the practice of engaging in research and critical inquiry is essential to the classroom teacher's performance and sense of professionalism (e.g., see Fleming, 1988; Griffin, 1984; Rackliffe, 1988). To this end, a number of programs have been implemented that assist teachers in becoming classroom researchers and in using research findings to change teaching practices (e.g., Brown, 1976; Griffin & Barnes, 1986; Howe, 1988).

Those arguing for an increased knowledge and use of research by teachers state that teachers with an understanding of research can evaluate the products of research and identify their applications and limitations--"consumer protection" (Lanier & Glassberg, 1981). Conduct and knowledge of research allows for greater understanding of the school as a workplace, informs development of a technical core of teaching, promotes questioning and reflection, and helps articulate one's views of teaching by provision of counterpoint (Griffin, 1984). Teachers can compare their own understanding and experiences with the "truth" of research. With attention to critical thinking and research,

the teacher ideally is scholar as well as clinician. The teacher is a professional.

Programs linking researchers and practitioners are in part a response to the perception that classroom teachers are untrained in research methods, have negative attitudes toward research in general, and underutilize research (Adams, 1976; Brown, 1976; Kaplan, 1976; Rudduck, 1985; Rumstein, 1972; Zahorik, 1984).

The perceived failure to use educational research is thought to stem from several sources. Research may be viewed as irrelevant to classroom reality, lacking in utility, hard to understand, threatening, conflicting, and sometimes simply wrong (Adams, 1976; Brown, 1976; Castle, 1988; Huling & Johnson, 1983; Kaplan, 1976; Rumstein, 1972). "Researchers pursue their own narrow and parochial interests, publish in obscure language in obscure journals, and avoid all discussion of practical implications of their work" (Clark, 1988, p. 5). Fleming (1988) also cited negative past experiences with research, information overload, inaccessibility of research information, and researchers' overdependency on quantifiable data as barriers to research utilization. The language of research often makes it virtually inaccessible to teachers (Day, 1987). The perception of research as irrelevant may stem from the fact that teachers are rarely part of the research process except as passive participants (e.g., Pine, 1986). The most outspoken advocates of educational research are researchers not teachers. Teachers do not initiate research projects so the issues selected for investigation are not necessarily of interest to them.

The methodology used in conducting research may bear little resemblance to daily classroom life. As Finn (1988) states, "... the research train and the practice train run on different tracks" (p. 132). The methodology has in many cases driven choice of the problems addressed. Research done by outsiders, then, acts on a major stakeholder in the outcome with little input from that stakeholder.

Another reason offered for the failure to use educational research is that research is not part of undergraduate training. Teachers lack basic skills in understanding and interpreting research, much less conducting research (Fleming, 1988; Rackliffe, 1988). Since courses in research methods are only rarely a part of undergraduate training programs, this is not surprising. Research skills are not generally considered to be among the survival techniques preservice teachers need to learn (Kaplan, 1976). Research methods courses are required by numerous graduate programs, however (Doak, 1982) and so involvement in research by teachers with Masters' and doctorates should be greater.

Barriers to teachers' use of research also stem from the reactive orientation of a teacher's job. Many teachers lack the time and institutional support to engage in reflection and research. If school administrators and colleagues provide no incentives, teachers may have no interest or motivation to do or use research.

Finally, an obstacle to use of research may lie in the teacher's personality. Fleming (1988) suggests that persons who are more educated, less dogmatic, and more favorable to risk and change may be more likely to use research. Ward (1988) cites personal apathy and rejection as the greatest potential barrier to use of research.

If irrelevance of research, lack of training, the nature of the teacher's job, and personality seem to be barriers to use of research, what would facilitate research use? Available, pre-digested, packaged sets of articles and summaries have been suggested (Castle, 1988; Fleming, 1988; McClellan, 1988; Rackliffe, 1988). Other suggestions include giving teachers release time for conducting and reading research, for group discussion of research topics, and for inservice presentations. An additional suggestion is to provide motivation to use research via support from the school administration. This support may come in release time, formation of discussion groups, and support for taking university courses emphasizing research. Teachers need time to reflect on what they're doing in the classroom and assistance in changing, if change is desirable. A further suggestion is to provide a group setting for discussing aversion to research, potential personal benefits of research, and the creative, affective components of the research process. Gifford and Gabelko (1987) discuss an example of overcoming the initial stage of involvement in research--the resistance stage.

While teachers may view research findings as contradictory, many reported valuing research that focuses on classroom teaching (Eaker & Huffman, 1981). The perceived underutilization of research by teachers has not, in fact, been substantiated by empirical study (Gunter & Brady, 1984). While teachers may not publish research or conduct formal research projects, they may often use research findings and methods in their classrooms.

The primary purpose for this study was to empirically assess teacher perceptions of research use and barriers to use. Specific

purposes were: (1) to assess the frequency of review of the research literature, actual practice of research, and research dissemination by teachers; (2) to describe the level of teachers' training in research methods; (3) to describe views of the adequacy of training in research methods; (4) to assess attitudes toward different barriers to using and performing research; and (5) to assess differences among teachers at different grade levels, in different content areas, and with versus without coursework in research methods in attitude toward and use of research.

METHODS

Subjects were inservice teachers from two midwestern states. Six hundred names were randomly selected from the State Department of Education lists of inservice teachers in the fall of 1987, 300 from each state.

The authors constructed a 54-item questionnaire (two pages double-sided) eliciting demographic information, information on coursework in research methods and perceptions of training (5 items), conduct of research activities (12 items), and attitudes toward research (23 items). A six-point Likert scale was used for attitude and use of research items. Also included were open-ended questions asking about membership in professional organizations, journal subscriptions, and research projects conducted by the respondent. Of these items, 46 were fixed response items and 5 were open-ended. Length of time for survey completion was estimated at approximately 10-15 minutes. Response rate to the survey was 70.5% after two follow-ups with a total of 416 usable responses.

Internal consistency reliability estimates were calculated for the attitude and conduct of research measures which were multi-item indices. These estimates were .81 (research literature review), .65 (research observation/data collection), .76 (research presentation), and .76 (attitude toward research). Item means are also reported individually where appropriate. Attitudes and use of research were measured on a 6-point scale with higher values indicating more positive attitudes/greater use of research.

RESULTS

Table 1 presents the means and standard deviations for items assessing use of research. Original research was infrequently done (presentation of results M=1.6, conduct of research M=1.9). Reported review of research literature was more frequent (M=3.4). While 372 teachers reported occasionally discussing research with their colleagues, only 19 reported having published a research paper. However, the majority (72%) have recorded observations of effects of teaching methods at some point in their careers.

College coursework in research methods was reported by 40% of the sample (n=174). Of these, 67 (19%) had a research course in their undergraduate program, 139 (33%) had a course in graduate school, and 14 (3%) had inservice training in research methods. Most teachers viewed their training in research as inadequate (80%). Most teachers agreed that undergraduate programs should provide training in reading research (77%) and in doing research (66%).

The major reported barrier to conducting or using research was related to the source of information: Teachers reported being more likely to use ideas they heard from other teachers than ideas obtained from journals. Researchers were viewed as having insufficient experience in dealing with practitioners. Lack of time and lack of training were also barriers to use of research. Attitudes were neutral regarding administrative support for research. Attitudes were also neutral regarding applicability and specificity of research reports and regarding whether university faculty are the most appropriate people to do research. Professional journals were seen to be useful sources of information but results were seen to be boring and contradictory. Table 2 presents means and standard deviations for items assessing attitudes toward research.

Differences in use of research and attitudes toward research among levels taught (elementary, middle level, senior high) were assessed using multivariate analyses of variance. Differences were not significant for either set of variables. There was a significant relationship between level taught and research methods training, however (χ^2=7.5, $p<.03$), with elementary level teachers being less likely to have taken a research methods course.

Multivariate differences in attitudes toward research were not significant across content area taught but differences in use of research were (Wilk's lambda = .52, $p<.01$). Exceptional education teachers were the most likely to review the research literature with art/music teachers the least likely. Exceptional education teachers

were the most likely to record observations related to teaching and to gather data regarding effectiveness of teaching methods. Science teachers were the most likely to have worked with university colleagues on a research project and English teachers were the most likely to have written a research report. Overall, exceptional education teachers reported the most frequent use of the literature and English teachers the most frequent written presentation of research results. Table 3 lists the means by group for these items.

Multivariate differences between teachers with and without a course in research methods were significant for use of research (Wilk's $\lambda = .80$, $p < .01$) and also for attitudes toward research (Wilk's $\lambda = .80$, $p < .01$). Tables 1 and 2 note items for which differences were significant. For all items, reported use of research was higher for teachers with a research methods course. Attitudes toward research were also more positive for teachers with a research methods course. Teachers with a course in research methods were also significantly more favorable toward the inclusion of research training in the undergraduate curriculum.

DISCUSSION

Why are research findings used less that they could be? This study supports the results of Eaker and Huffman (1981) in finding teachers to have positive attitudes about the value of research. But, at the same time, research reports were found to be boring and

contradictory. The language and sources of research are impediments to its use. The literature, then, is not meeting the needs of the audience for whom it is eventually intended. Published research may reflect the interests of academic researchers, funding agencies, journal editors, and conference chairs more than the interests of teachers.

One of the greatest barriers to conducting research was lack of time and resources. If teachers are to become researchers, the nature of the teacher's job may need to change. Many university faculty job descriptions incorporate a component for research. Teachers' job descriptions may also need to incorporate a component for research.

Teachers appear to have little personal or professional involvement in conducting research. Teachers do, however, seem to appreciate that research has great potential value. Dissemination, adoption, and utilization of research products might be enhanced by greater ownership by teachers of the educational research process. Projects promoting such ownership were the subject of the studies cited earlier (e.g., Gifford & Gabelko, 1987). In conjunction with this change in the educational research structure, research methodologies more appropriate to the classroom that still yield valid results need to be emphasized along with ways of managing data that are less obscure.

Consistent with Fleming (1988) and Rackliffe (1988), teachers reported feeling inadequately prepared to understand and conduct research. Some envision the classroom of the future as a place where

teaching methods and the curriculum itself are continually shaped by the results of empirical research and the concomitant measurement techniques. In a research-based educational system, he who controls the research process controls the curriculum. The teacher with the skills to evaluate research, conduct research, and assess the outcomes of instruction with designs and tools of his/her own choosing will have far greater control of the classroom, the instructional methods used, and the curriculum than the teacher without those skills. Results of the present study suggest that teachers read research but do not do research. Results also suggest that teachers are more likely to read, perform, and present research findings if they have had some training in research methods. However, less than half of the teachers report any training in research methods. Consideration should be given to the place of explicit education in research methods in the teacher education curriculum.

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Table 1
Use of Research by Teachers With and Without A Research Course

Item	Total M	Total SD	Total n	With M	With SD	With n	Without M	Without SD	Without n	t	p
Discussed research	4.0	1.6	412	4.4	1.5	162	3.8	1.5	226	3.5	.01
Reviewed literature	3.8	1.5	437	4.2	1.6	173	3.6	1.4	239	4.0	.01
Tried research result	3.6	1.5	410	3.8	1.5	160	3.5	1.5	225	2.3	.03
Recorded observations of effects of teaching methods	2.9	1.7	411	3.3	1.8	160	2.7	1.6	226	3.0	.01
Gathered data	2.7	1.6	436	3.1	1.6	174	2.4	1.5	237	4.6	.01
Worked on local project	2.3	1.4	413	2.6	1.5	162	2.0	1.4	226	4.0	.01
Wrote research reports	1.9	1.2	439	2.4	1.2	174	1.6	1.0	240	7.5	.01
Worked with college/university colleagues	1.6	1.0	414	2.0	1.2	162	1.3	.8	227	5.8	.01
Worked on regional project	1.5	1.0	414	1.8	1.1	162	1.4	.9	227	3.8	.01
Presented to class	1.5	1.0	412	1.9	1.2	161	1.3	.7	226	6.2	.01
Presented at conference	1.2	.6	413	1.4	.9	162	1.1	.3	226	4.8	.01
Published paper	1.1	.4	413	1.2	.6	162	1.0	.0	226	3.8	.01
Summary Measures:											
Literature review	3.4	1.2	413	3.7	1.3	162	3.2	1.1	226	4.4	.01
Conduct of research	1.9	1.1	413	2.1	1.0	162	1.6	.8	227	5.5	.01
Presentation	1.6	.8	413	1.9	.9	162	1.3	.5	226	7.7	.01

Note. Items rated on a 1-6 scale with 1=never and 6=3+ times per year.

Table 2
Attitudes Toward Research

Item	M	SD	n
Research done by teachers should be taken seriously.	5.0	1.1	404
Teachers are more likely to use research ideas if they hear them from other teachers.	4.9	1.1	410
Research attempts to organize what is known about a subject.	4.6	1.1	407
Research in education is of great value.	4.3	1.1	406
Research findings about teaching should be given more emphasis in inservice programs.	4.3	1.2	406
Research is done to find new ways of doing things.[a]	4.2	1.3	413
Professional journals are useful sources of practical information.[a]	4.2	1.2	406
Reading research improves thinking skills.[a]	4.0	1.3	411
Research is designed to meet administrative needs.	3.9	1.2	406
Research done by teachers would be taken seriously.	3.9	1.3	402
Research findings on teaching have been helpful to me.[a]	3.8	1.2	407
Research reports are hard to understand.[b]	3.8	1.2	406
Research is done so people at colleges can publish.	3.7	1.5	410
Research is important to my supervisor.	3.7	1.5	396
Research results are applicable in practice.	3.6	1.1	405
Research as currently done does apply to the real world.	3.6	1.1	401
Survival (not research) is a focus of my time.	3.5	1.6	401
Research reports are boring.	3.5	1.4	407
Research reports are often contradictory.	3.4	1.6	406
Research results suffer from lack of specificity.	3.3	1.3	399
Research is conducted for the benefit of university employees not classroom teachers.	3.0	1.6	404
Education faculty of colleges and universities are the most appropriate people to do research.	3.0	1.4	401
Researchers have sufficient experience in dealing with practitioners.	2.9	1.1	400
I have resources to evaluate research results.[a]	2.8	1.4	403
I have the time to conduct research.	2.1	1.4	406
Overall attitude toward research[a]			

Note. Rated on a 1-6 scale with 1=strongly disagree and 6=strongly agree.

[a]Differences significant at $p<.05$ with $M_{with} > M_{without}$ research methods course.

[b]Differences significant at $p<.05$ with $M_{with} < M_{without}$ research methods course.

Table 3
Differences in Use of Research by Content Area Taught

Item	Math	Science	Soc Sci	Art/Music	English	Exc Ed
Reviewed literature	3.7	3.2	4.0	3.2	4.2	4.5
Recorded observations	2.5	3.2	3.3	2.7	2.8	4.0
Gathered data	2.4	3.0	2.7	2.3	2.9	3.8
Worked with college/ university colleagues	1.3	2.0	1.8	1.7	1.5	1.5
Written research report	1.4	2.2	2.2	1.9	2.4	1.9
Summary Measures:						
Review of literature	3.2	3.3	3.5	3.0	3.6	4.0
Presentation of research results	1.3	1.7	1.7	1.7	1.8	1.6

Note. All univariate differences were significant at $p<.05$.