

A Comparison of Australian and American Reading Teachers

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There is a general consensus that efforts toward the ultimate improvement of educational systems are largely dependent upon teachers and their education. The teaching of reading is no exception and the crucial importance of the teacher in the reading process has been realized. Gray concluded in the 1956 report on a comparative study of fundamental education that, undoubtedly, the teacher was the most important factor in promotion of the general development of children and their progress in reading. One of the better known studies of recent years, "The Cooperative Research Program in First Grade Reading Instruction" (4), concluded that if reading instruction was to be improved it was necessary to prepare better reading teachers. Various researchers and writers have reiterated these sentiments (2, 5, 9, 13, 18).

The future directions of any sincere endeavor to improve the teaching of reading must be based on scientific evidence rather than on conjecture, and this can only be fully realized when an unbiased evaluation is made of what presently exists. An examination of teacher education programs in various nations reveals that there are marked differences between countries and even between institutions within the same country. Thus, these various groups may often be unaware of their own cultural biases concerning teacher education and teaching (7). It would seem, therefore, that there is need for a new frame of reference—that of evaluating teaching through an international frame of reference. Obvious advantages provided by a global perspective might be 1) a greater awareness of the assumptions and procedures of teaching, 2) better comprehension of various issues of teaching and teacher education, 3) solutions to common needs of the various countries to evaluate their practices, and 4) revelation of new insights concerning the pressing problems of improving teacher preparation programs. As Foshay (10) stated, "If custom and law define what is educationally allowable within a nation, the educational systems beyond one's national boundaries suggest what is educationally possible." Along this same line of reasoning, Douglass (8) stated:

It is sometimes instructive to take a look at the ways of other people as they work with children: not because they warrant being copied, but rather for purposes of contrast so that one may be helped to entertain ideas that could lead to useful modifications in ways of helping children learn.

It would seem clear that, if we are to improve reading instruction, empirical cross-national studies should be made of the teacher variable in reading.

PURPOSE

It was the purpose of this investigation to assess and compare the characteristics of distinct populations of Australian and American teachers at two grade levels. The teacher characteristics investigated were teacher knowledge of reading instruction and the frequency of the following behaviors during reading instruction: teacher direction, teacher initiation, teacher correction, cognitive questioning, broad questioning, narrow questioning, teacher acceptance, teacher praise, student responsiveness, oral reading, silent reading, directed activity, and nonfunctional behavior.

HYPOTHESES

In order to compare the teacher populations on the selected teacher variables, the following null hypotheses were tested at the .05 level of significance:

1. There is no statistically significant difference between the differences in grade level vectors of the mean teacher variable scores across countries.
2. There is no statistically significant difference between the vectors of the mean teacher variable scores across countries.
3. There is no statistically significant difference between the vectors of the mean teacher variable scores across grade levels.

If a significant multivariate F was found, a discriminant analysis would be used to determine the relative contribution of each measure to overall significance and univariate F-tests would be used to test each variable separately.

SAMPLING PROCEDURES

SUBJECTS

Subjects for this study consisted of 1) a random selection of 15 second grade teachers and 15 third grade teachers who were teaching at one of 30 preselected schools in the St. George Area (Australia) and who were willing to participate in this study, and 2) a random selection of 15

second grade teachers and 15 third grade teachers who were teaching at one of 30 preselected schools in DeKalb County (United States) and who were willing to participate.

RATIONALE FOR SELECTION

There were several reasons for the selection of the two countries, the single communities within these two countries, and the two grade levels specified. First, the investigator considered himself intimately acquainted with the cultures, communities, and education systems of both countries. Second, it was deemed necessary to study teachers from countries which were solely English speaking in order to avoid the difficulty of measuring teacher characteristics across countries of different languages. Third, as both the United States of America and Australia have over one-half of their populations residing in urban areas, urban areas were considered a suitable source for subjects in both countries. Fourth, the inclusion of teachers at two grade levels enabled the comparison of the characteristics of teachers at two consecutive grade levels. Within the Australian elementary school, the division into infant school and primary school occurs between second and third grade levels. Teachers who intend to teach in either of these two schools usually receive different teacher training experiences; therefore, for the Australian teachers this entailed the comparison of infant school teachers with primary school teachers. Fifth, teachers at these grade levels were teaching children at early stages of learning to read.

Every effort was made to select communities of similar size, location, function, and socioeconomic status and which were representative of the two countries. Given full particulars, approval for the study was granted by the necessary authority in each country, and the names of 30 schools within each community were sent to the researcher. Approval was obtained on the condition that a teacher's involvement would be voluntary.

DESCRIPTION OF THE COMMUNITIES

The two communities nominated to represent the two countries were the St. George area, Sydney, Australia, and DeKalb County, Georgia, United States of America.

St. George, one of six school areas in Sydney, operates 98 elementary schools and 21 high schools. The percentage of white-collar workers and professional men, as well as of partly skilled workers, is slightly above average for Australia.

The DeKalb County school system, in the northeastern section of Atlanta, operates 82 elementary schools and 21 high schools. As with St.

George, DeKalb County is dormitory in nature and its percentage of white-collar workers, professional people, and partly skilled workers is slightly above average for the United States.

DESCRIPTION OF TEACHER POPULATION

The teacher population to which the findings of this study may be generalized includes those second and third grade teachers who taught at one of the 30 designated schools in either DeKalb County or the St. George area and who were willing to participate in the study. In DeKalb County, a total of 34 second grade teachers and 35 third grade teachers indicated a willingness to participate; and in St. George, a total of 37 second grade teachers and 30 third grade teachers indicated a willingness to participate.

In an attempt to delineate the contextual framework of this comparison, a description of the teachers, their reading practices, and their pupils was obtained through teacher responses to data sheets.

INSTRUMENTATION

To assess teacher characteristics, the Test of Knowledge of Reading Instruction and the Reading Instruction Observation Scale were developed. The Test of Knowledge of Reading Instruction is a single form, 86-item, researcher-constructed, four-option, multiple-choice instrument designed to assess the knowledge of reading instruction of second and third grade teachers in Australia and the United States. The Reading Instruction Observation Scale incorporates 13 categories of behaviors and was designed to analyze cognitive and affective aspects of teacher behavior during reading instruction. Information on the reliability, validity, construction, and use of these instruments can be obtained from the author.

DATA COLLECTING PROCEDURES

The study was conducted during the 20th and 21st weeks of the school year. For the Australian schools, this occurred June 18, 1973 to June 29, 1973; for the American schools, January 7, 1974 to January 18, 1974. On each school day during this period, two, three, or four teachers were scheduled for observation and testing.

Each teacher's was observed during the teaching of a reading lesson; and each responded to the Test of Knowledge of Reading Instruction and completed data sheets. At a previously specified time, one of two observers, who had been randomly assigned to this class, spent 25-35 minutes observing a reading lesson. This observer used the Reading Instruction Observation Scale to categorize teacher behaviors every five seconds or every time the behavior changed into one of 13 categories. At

no time was the teacher aware of the specific behavior being categorized. Teachers had been instructed to give the reading lesson planned for that day and they were asked to neither introduce the observer nor react to the presence of the observer in their class. These directions appeared to have been followed. Later the same day, while away from their classes, the teachers responded to questions on the Test of Knowledge of Reading Instruction and completed data sheets.

DESIGN OF THE STUDY

The research design was a 2 x 2 quasiexperimental design. This design is shown in Table 1. The following variables represent the sources of variation within the design. The independent variables are country and grade level. C represents countries: $c=2$. C_1 represents the Australian teachers; C_2 represents the American teachers. G represents grade levels: $g=2$. G_1 represents the second grade; G_2 represents the third grade.

There were 14 dependent variables in the design. The Reading Instruction Observation Scale was used to obtain each subject's measure on 13 of these variables and each subject's score was expressed as a transformed score through the use of an arc sine transformation. The variables included teacher direction, teacher initiation, teacher correction, cognitive questioning, broad questioning, narrow questioning, teacher acceptance, teacher praise, student responsiveness, oral reading, silent reading, directed activity, and nonfunctional behavior. The Test of Knowledge of Reading Instruction was used to obtain each subject's score on the 14th of these variables. Unlike the other 13 variables, the raw score of each subject was used.

Table 1. Experimental Layout of Teacher Comparison

	C_1				C_2				
G_1	$Y_{1,11,1}$	$Y_{1,11,2}$	...	$Y_{1,11,14}$	$Y_{1,12,1}$	$Y_{1,12,2}$	...	$Y_{1,12,14}$	$\bar{Y}_{...1,1}$

	$Y_{15,11,1}$	Y	.	Y	Y	Y	.	Y	\bar{Y}
G_2	$Y_{1,21,1}$	$Y_{1,21,2}$	...	$Y_{1,21,14}$	$Y_{1,22,1}$	$Y_{1,22,2}$	...	$Y_{1,22,14}$	$\bar{Y}_{...2,1}$

	$Y_{15,21,2}$	$Y_{15,21,2}$	...	$Y_{15,21,14}$	$Y_{15,22,2}$	$Y_{15,22,2}$	...	$Y_{15,22,14}$	$\bar{Y}_{...2,14}$
	$\bar{Y}_{...1,1}$				$\bar{Y}_{...2,1}$				$\bar{Y}_{...1}$
	$\bar{Y}_{...1,14}$				$\bar{Y}_{...2,14}$				$\bar{Y}_{...14}$

STATISTICAL PROCEDURES

A multivariate analysis of variance was used as the major method of data analysis in this study because it was most appropriate for testing the significance of differences between comparison groups in terms of a number of dependent variables considered simultaneously (20). If a significant multivariate F was found, an a priori decision was made to use a discriminant analysis to determine the relative contribution of each measure to overall significance. Univariate F-tests would also be examined to locate the significance. The decision to refer to analyses of variance matrices was based on an empirical comparison of univariate and multivariate procedures by Hummel and Sligo (15). These researchers found the above procedure to be superior to either a series of univariate analyses or a completely multivariate approach.

RESULTS

The means and standard deviations of the teacher samples on the 14 variables is presented in Table 2. The Test of Knowledge of Reading Instruction measured teacher knowledge and the total possible raw score was 86. The Reading Instruction Observation Scale was used to obtain each teacher's measure on the other 13 variables. For each of these 13 variables, a teacher's score was expressed as a percentage of the total frequency of behavior for all 13 variables.

ANALYSIS OF THE TEACHER DATA

by MONOVA

The computer multivariate F statistic for the combined vectors of teacher variable scores produced a significant ($p < .001$) chi-square of 90.58 with 42 degrees of freedom. Since the results of the multivariate F test were significant, statistical hypotheses were tested relating to interactions of grade level and country and main effects of country and grade level. Table 3 summarizes the multivariate tests.

1. Interaction: country x grade

The multivariate test of significant interaction between country and grade reported indicates that the multivariate F statistic of .0000 was not significant ($p < .05$). Therefore, the null hypothesis that there is no statistically significant difference between the differences in grade level vectors of the mean teacher variable scores across countries was accepted.

2. Main effect of grade

The results of the multivariate test of significant main effect of grade indicate that the multivariate F statistic of 1.2717 was not significant ($p < .05$). Therefore, the null hypothesis was accepted that there is no

Table 2. Means and Standard Deviations of Australian and American Teachers on the 14 Variables at Two Grade Levels

Variable Name/Teacher Sample		Mean	Standard Deviation
Knowledge of Reading Instruction	Australia		
	Grade Two	48.20	5.95
	Grade Three	48.93	7.39
	United States		
Grade Two	47.60	11.42	
Grade Three	48.33	12.57	
Teacher Direction	Australia		
	Grade Two	13.00	5.48
	Grade Three	9.70	3.44
	United States		
Grade Two	14.64	3.49	
Grade Three	12.38	4.75	
Teacher Initiation	Australia		
	Grade Two	6.34	2.68
	Grade Three	8.57	6.17
	United States		
Grade Two	4.43	4.56	
Grade Three	5.04	3.82	
Teacher Correction	Australia		
	Grade Two	6.86	4.28
	Grade Three	6.59	3.12
	United States		
Grade Two	4.74	4.17	
Grade Three	3.60	3.09	
Cognitive Questioning	Australia		
	Grade Two	4.47	2.37
	Grade Three	5.57	2.93
	United States		
Grade Two	7.34	3.41	
Grade Three	6.30	3.33	
Broad Questioning	Australia		
	Grade Two	1.72	1.23
	Grade Three	1.36	1.24
	United States		
Grade Two	2.61	2.01	
Grade Three	3.01	2.39	
Narrow Questioning	Australia		
	Grade Two	2.86	2.74
	Grade Three	2.44	1.56
	United States		
Grade Two	4.12	2.34	
Grade Three	4.13	2.15	
Teacher Acceptance	Australia		
	Grade Two	4.06	2.19
	Grade Three	5.40	3.41
	United States		
Grade Two	8.72	3.99	
Grade Three	7.26	2.47	
Teacher Praise	Australia		
	Grade Two	3.91	1.59
	Grade Three	1.75	1.86
	United States		
Grade Two	1.19	1.76	
Grade Three	1.48	1.61	
Student Responsiveness	Australia		
	Grade Two	14.88	4.86
	Grade Three	16.25	6.52
	United States		
Grade Two	19.85	7.76	
Grade Three	22.44	7.62	
Oral Reading	Australia		
	Grade Two	17.03	9.83
	Grade Three	14.89	13.49
	United States		
Grade Two	9.65	10.02	
Grade Three	8.41	7.12	
Silent Reading	Australia		
	Grade Two	.29	.97
	Grade Three	.34	.86
	United States		
Grade Two	4.43	9.58	
Grade Three	10.23	17.45	
Directed Activity	Australia		
	Grade Two	5.93	8.29
	Grade Three	6.82	8.27
	United States		
Grade Two	2.32	3.22	
Grade Three	2.36	3.16	
Nonfunctional Behavior	Australia		
	Grade Two	18.22	11.99
	Grade Three	20.75	10.22
	United States		
Grade Two	15.93	11.58	
Grade Three	13.78	8.52	

statistically significant difference between the vectors of the mean teacher variable scores across grades.

3. Main effect of country

The results of the multivariate test of significant main effect of country indicate that the multivariate F statistic was significant ($p < .05$). Therefore, the null hypothesis that there is no statistically significant difference between the vectors of the mean teacher variable scores across countries was rejected. Instead, it was accepted that there was a statistically significant difference between the vectors of the mean teacher variable scores across countries.

The relative contribution of each measure to overall significance was examined to determine for which dependent variables significance occurred. To determine the relative contributions, a correlation between each original variable and the discriminant function for the main effect of country was computed and then examined to determine which dependent variables contributed most to the difference between factor level means. The correlations are reported in Table 4. The dependent variables which discriminated strongest and thus contributed most to the significant main effect of country were teacher initiation, teacher correction, narrow questioning, teacher acceptance, teacher praise, student responsiveness, oral reading, and silent reading. The univariate F-tests reported in Table 5 lend confidence to this interpretation. Significant main effects for country occurred on teacher initiation ($p < .05$), teacher correction ($p < .01$), narrow questioning ($p < .05$), teacher acceptance ($p < .001$), teacher praise ($p < .001$), student responsiveness ($p < .01$), oral reading ($p < .05$), and silent reading ($p < .01$). The Australian teachers displayed more teacher initiation, teacher correction, teacher praise and had more oral reading. American teachers displayed more narrow questioning, teacher acceptance and had more student responsiveness and silent reading.

Table 3. Results of the Multivariate Analysis of Variance of the Teacher Data

Source of Variation	df Hypothesis	df Error	F-value
Country	14	43	6.2776***
Grade	14	43	1.2717
Country x Grade	14	43	.0000

*** $p < .001$

Table 4. Main Effect of Country: Correlation between Discriminant Functions and Original Scores

Variable	Structure Correlation Coefficient
Knowledge of R.I.	.002
Teacher Direction	-.173
Teacher Initiation	.251
Teacher Correction	.282
Cognitive Questioning	-.203
Broad Questioning	-.205
Narrow Questioning	-.271
Teacher Acceptance	-.383
Teacher Praise	.379
Student Responsiveness	-.281
Oral Reading	.228
Silent Reading	-.302
Directed Activity	.183
Nonfunctional Behavior	.166

Table 5. Main Effect of Country: Univariate F-tests

Variable	Mean Square	F(1,56)
Knowledge of R.I.	5.40	.05
Teacher Direction	.073	3.42
Teacher Initiation	.262	7.22*
Teacher Correction	.273	9.10**
Cognitive Questioning	.102	4.74
Broad Questioning	.002	4.83
Narrow Questioning	.162	8.42*
Teacher Acceptance	.295	16.75***
Teacher Praise	.288	16.40***
Student Responsiveness	.310	9.03**
Oral Reading	.727	5.95*
Silent Reading	1.273	10.43**
Directed Activity	.359	3.83
Nonfunctional Behavior	.290	3.16

* $p < .05$

** $p < .01$

*** $p < .001$

LIMITATIONS

Certain inherent limitations must be considered in the interpretation of the results.

1. This investigation was limited to the populations used herein and results may be generalized only to similar groups of teachers.
2. The investigation was limited to those variables measured by the instruments employed in this study and the degree to which these instruments were effective in measuring those variables.
3. The present study was subject to the usual limitations of a quasiexperimental design. While factors or circumstances which accompany certain phenomena can be isolated, the failure to schedule these variables makes difficult discernment of causal relationships.

DISCUSSION

In considering the rationale of cross national studies, Hußen and Postlethwaite (16) suggested that countries contain far greater differences than can be found or created in any one system. As many writers have contended, this allows the global delineation of similarities and differences and provides a new frame of reference for the appraisal of education. The data of the present study supported this suggestion. When comparing the teachers across country and grade level, the multivariate F-test and the main effect of country were significant. Neither the interaction of grade level and country nor the main effect of grade was significant. The frame of reference of the present study provided a number of insights which afforded the following appraisals.

1. Australian teachers tended to be autocratic and their instruction was teacher-centered; whereas, American teachers appeared indirect and child-centered. Australian teachers exhibited more teacher correction, teacher initiation, teacher praise, and oral reading but less teacher acceptance, narrow questioning, silent reading, and student responsiveness. One might consider, therefore, that Australian teachers were less accepting, more corrective, and more reinforcing and their pupils less responsive than were the American teachers.
2. Insofar as the Australian and American teachers obtained mean scores on the Test of Knowledge of Reading Instruction, which were only slightly more than one-half the possible score for this test, the teachers in both countries were limited in their knowledge of reading instruction. Given that this finding coincides with the

results obtained in past studies of American teachers (1, 12, 14, 17, 19), and based upon the assumption that teachers with a limited knowledge will be unable to effectively teach reading, concerted efforts should be initiated to ensure the attainment of a higher level of knowledge of reading instruction and thus effective reading instruction.

3. With respect to questioning, the teachers in both countries dwelled on cognitive memory questioning; rarely elicited convergent, divergent, or evaluative questions; and many of the teachers, especially the Americans, asked questions requiring only "yes" or "no" responses. This same trend has been apparent from studies of American teachers (3, 6, 12, 21). Obviously, greater emphasis needs to be given to the development of the questioning techniques of the teachers in both countries if the ultimate goal of developing higher levels of thinking is to be attained among our pupils.
4. Oral reading, in lieu of silent reading, was the most frequent, directed, instructional activity in both the Australian and American classrooms. Although the acceptability of having children read aloud has varied through the years and while most educators would agree that oral reading should be included in a well-balanced reading program, most would consider its role to be secondary to that of silent reading. Most teachers appeared to be unaware of the appropriate role oral reading assumes in the total reading program. Furthermore, it seemed that silent reading was not considered a viable instructional mode, especially by the Australian teachers.
5. In both countries, effective reading instruction appeared hampered by inefficient teaching. Of the three variables which dealt with affective aspects of teacher behavior—teacher praise, teacher correction, and teacher acceptance—teacher praise is often assumed to be most effective in promoting learning. Nevertheless, teacher praise was rarely elicited by the teachers of either country. In fact, of the three affective teacher variables, teacher praise occurred least frequently.
Nonfunctional behavior, which referred to that category of behavior labelled confusion and irrelevant behavior, was the most frequently occurring behavior during the reading lessons in both countries. While some time must be spent organizing for instruction and managing extrinsic and intrinsic interruptions, the time spent by most teachers entails inefficient use of reading instruction time.
6. The logic of the present study prevents relating differences in the teacher characteristics across the two countries to the influence of specific variables; however, one can postulate that differences

arising from the contextual attributes within the two environments influenced the characteristics of teachers. Relative to the background of the teachers, differences were noted in their training, qualifications, and number of reading courses taken. Relative to the reading practices, differences were noted in their specification, the amount and type of support personnel, organization, pupil evaluation, and the time of day reading was taught. The actual influence of these variables can be assessed only through further experimentation.

RESEARCH RECOMMENDATIONS

1. To ensure the validity of the findings, the present study should be replicated using more sophisticated sampling procedures and other forms of teacher and pupil assessment.
2. The periodical study of teacher and pupil characteristics across several nations would be a significant step toward improving the quality of teaching throughout the world. By providing objective evidence, this method would enable the needs in certain areas to be discerned; by providing contrasts, it would allow for the suggestion of alternative means toward these ends.
3. Future cross national studies of teacher characteristics should also be broader in scope. Aspects including the teacher's philosophy, personality, role, and attitude should be assessed; and carefully delineated aspects of her affective and cognitive behavior should be compared.
4. The ultimate improvement of educational systems is dependent largely upon improved teacher preparation. For this purpose, cross national studies should be extended to include periodical, objective evaluations of teacher preparation programs.

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