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ABSTRACT

The purpose of this study was to examine several of the leading journals in science education in order to determine how many of the research studies reported contained followups of a retention nature. Four journals were examined: (1) Journal of Research in Science Teaching, (2) Science Education, (3) Journal of College Science Teaching, and (4) School Science and Mathematics. Results of the survey indicate that few studies are performed that make any attempt to continue their work beyond the close of the experiment. The survey does clearly indicate that more and more researchers are continuing to followup on the results of their research. (Author/EB)

RETENTION STUDIES SINCE 1960

by

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The purpose of this paper was to survey the literature contained in the Journals of Research in Science Teaching, College Science Teaching, Science Education, and School Science and Mathematics in order to determine the number of retention studies which have been performed since 1960.

Of the 41 retention studies found in these journals, 9 or approximately 22% were concerned with mathematics education. These were included in the survey because of the obvious relationship between science and mathematics, however, in Tables 2 and 3 the science and mathematics data is separated. In addition to reporting the total number of retention studies which have been performed, data on the length, grade level, and degree of success of each study is also provided.

Only recently, Tyler[1] stated that one of the most serious deficiencies relating to research in Science Education is the short time span covered by most of the investigations. The information collected by this investigator only substantiates Tyler's statement.

Table 1 indicates the total number of published papers, the total number of research papers, and the number of retention papers printed not only for each year but also totals for the time span covered by the survey. It may be of interest to note that over the 15 year span of time, 31.4% of all the papers published were research papers, but of this 31.4% only 3.8% were retention studies.

The testing time for retention varied from only one week

[1]Tyler, R.W. Research in Science Teaching in A Larger Context Journal Research Science Teaching, 11:133-139, 1974.

to over two years with 44% of the studies being tested at 6 weeks or less. A quick glance at Table 2 will provide the reader with a time breakdown. One of the most startling facts was the presence of four studies which claimed to be retention studies but which did not indicate any time period.

The data in Table 3 provides not only a breakdown by grade level but also the degree of reported success by the author of the paper. Since some of the studies involved more than one variable, it follows that the retention study did not always provide favorable results for each variable, therefore a partly successful category was established.

Conclusions

From the information collected, the following tentative conclusions have been drawn:

1. That approximately 2 out of every 3 published papers are descriptive rather than research.
2. That only 7.3% of the retention studies were unsuccessful.
3. That 44% of the retention testing was performed in 6 weeks or less after the study's completion.
4. That junior high and college level students seem to be the most favored for testing.
5. That none of the surveyed papers dealt with major national curriculum projects.

It is not, of course, always possible to perform a retention study, but it is or should be a matter for concern that less than 4% of the research papers examined were retention studies.

The author wishes to emphasize that all of these conclusions are tentative. There are many research papers in

the field of science education that have been published in journals other than those surveyed. In addition, if any paper has been inadvertently overlooked, I would appreciate a communication from the author.

TABLE 1

Year	Total No. of Published Papers	Total No. of Research Papers	Total No. of Retention Papers
1960	193	25	0
1961	183	33	0
1962	182	43	2
*1963	257	60	0
1964	246	40	2
1965	236	54	2
1966	243	72	1
1967	237	102	2
1968	184	55	0
1969	221	93	5
1970	228	100	2
**1971	283	113	10
1972	256	104	4
1973	243	100	6
1974	259	92	5
Totals	3451	1086	41

* The year that the Journal of Research Science Teaching was first published.

** The year that the Journal of College Science Teaching was first published.

TABLE 2

Time	Science	Mathematics	Totals
0 - 3 wks.	6	1	7
3 - 6 wks.	8	3	11
6 wks.-3 mons.	5	3	8
3 - 6 mons.	5	0	5
6 - 12 mons.	1	0	1
1 yr. or more	3	2	5
Undeclared	4	0	4
Totals	32	9	41

TABLE 3

Grade Level	Science S	Science PS	Science ND	Science U	Mathematics S	Mathematics PS	Mathematics ND	Mathematics U	Totals
Elementary	0	0	2	0	2	2	1	0	7
Junior High	7	2	1	1	2	0	1	0	14
Senior High	2	1	3	0	0	0	0	1	7
College	6	1	5	1	0	0	0	0	13
Totals	15	4	11	2	4	2	2	1	41

S - Successful
PS- Partly successful
ND- No differences
U - Not successful

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