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AN EXPERIMENTAL INVESTIGATION OF THE USE OF AN SRA READING LABORATORY IN IRISH SCHOOLS*

THOMAS KELLAGHAN
Educational Research Centre, St Patrick's College, Dublin

The pupils (n 219) of two fourth standard classes (mean age 10 years 5 months) in three Dublin boys' schools were randomly divided into two groups an experimental group that used the SRA Reading Laboratory IIa and a control group that followed their normal reading programme with minor innovations to balance possible Hawthorne effects in the experimental group Within each school both groups were taught by the same teacher Before and after the experimental period, which lasted fourteen weeks, pupils took tests in reading speed, reading accuracy, reading vocabulary, readmg comprehension and spelling, they also completed a subject preference inventory Significant differences, in favour of the experimental group, were found only for amount of improvement in readmg speed and reading accuracy

In recent years, educational practice has placed increasing emphasis on the individuality of children and on the need to tailor curricular materials to the varying levels of attainment and rates of development of children to be found even within a single class The new emphasis has necessitated a movement from class teaching to more individualized forms of teaching Obviously, it is difficult for a teacher to assess the developmental levels of children and to provide appropriate materials which will keep a whole class of children occupied, each at his own level The SRA series of reading laboratories is a commercial attempt to meet these two difficulties

Specifically, the SRA reading laboratories are designed to offer individualized instruction in readmg and listening comprehension, in speed of readmg, in vocabulary enrichment and in study habits The laboratories are built on the assumptions that the skills involved in readmg can be ranked on a continuum from 'easy' to 'hard' and that it is possible to determine each child's position on this continuum (7) The materials comprising the laboratory consist of reading material printed on separate

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sheets of cardboard Each child is started on the laboratory on the basis of a 'starting level guide', once started, he proceeds at his own pace, making his own selection of material and recording his progress

A number of attempts have been made to evaluate the effectiveness of SRA reading laboratory material The findings are far from being unambiguous Some studies have found that children who followed an SRA course have performed better on some measures (usually of vocabulary, comprehension, speed of reading, and sometimes of attitude to reading) than children who used other material (1, 6, 8, 10)* However, even in these studies, the performance of the SRA children was not superior on all measures For example, in one study (10), SRA children were compared with a control group which followed a basal reader, the SRA group scored higher on a test of comprehension, but lower on a test of vocabulary In another study, the superiority of the SRA children was lost after a period of some months (8) A number of studies have failed to find any difference at all between children using SRA materials and children taught with other materials (2, 3, 9) The conflict in findings may be epitomized in the statements of two researchers One regards the re adinglaboratory as 'a powerful instrument for learning' (6, p 22), the other suggests that his studies 'have been unable to disclose a single facet of reading skill development for which the Laboratory is better suited than is a regular development programme In fact, as a total programme, the Laboratory appears to be inferior to other methods' (9)

No clear pattern emerges from the research findings then This may arise in part from the fact that many of the studies are not comparable with one another For example, the studies vary in the age and background of the subjects, in the design and control of the experiments, in the laboratory kits they employed and in the measures which were used to assess progress Furthermore, whether or not one finds SRA 'superior' is probably very much dependent on the general context in which it is used For example, its effectiveness may be more readily apparent if existing standards are low As there is some evidence that standards of reading in Irish schools are lower than in English schools (4, 5), the introduction of new materials and techniques may have greater impact in an Irish setting than in some other countries At any rate, it is probably not legitimate to apply to Ireland results which were obtained in other countries, and so the present study

*There are several SRA reading laboratories, each designed to cover a range of reading levels The studies reviewed here did not all use the same laboratory In the investigation described later in this paper, SRA Reading Laboratory IIa was used, this laboratory is designed to cover reading ages from seven to twelve years

was deemed necessary to examine the effectiveness of an SRA laboratory in Irish schools

METHOD

Subjects

Pupils in fourth standard attending three boys' primary schools in Dublin city took part in the experiment (n 219) The schools were selected to include pupils from a wide range of socio-economic backgrounds At the beginning of the experiment, the average age of subjects in the three schools was 10 years 5 months, with a range of 9 years 4 months to 11 years 6 months

Procedure

In each school, two classes were pooled and half the pupils were randomly assigned to the SRA (experimental) group, the other half to a control group The same teacher took the experimental group for the SRA programme and the control group for English reading In this way it was hoped to control variations in teacher influence While a class was engaged in the SRA programme or in English reading, the second teacher took the other group for mathematics The experimental group used the SRA Reading Laboratory IIa for forty minutes a day over a period of fourteen weeks The control group used materials normally used in the school These varied somewhat from school to school, but consisted mainly in a basal reader and supplementary books Two novelties were introduced into the control group in an attempt to match any Hawthorne effect that might be associated with the introduction of a reading laboratory The control pupils produced a class newspaper about once a month, they were also given a booklet in which they recorded their progress in spelling This latter procedure was similar to the SRA technique of recording progress in reading

Due to administrative difficulties, it was not possible to run the experiments concurrently in the three schools One school started in the autumn term, the other two in the spring term One holiday period (Christmas or Easter) intervened in all cases

Before the experiment commenced, teachers of experimental and control classes took part in a twelve-hour workshop in the use of SRA reading laboratories Also before the experiment began, all children took the Drumcondra Verbal Reasoning Test, the Gates-McGinitie Reading Tests, Survey D, Form 2 (which give separate scores for reading speed and

accuracy, vocabulary and comprehension) and the Schonell Graded Word Spelling Test A At the end of the experiment, the children took parallel forms of the reading and spelling tests (Gates-McGinitie Reading Test, Survey D, Form 1 and the Schonell Graded Word Spelling Test B) In addition before and after the experiment pupils completed a subject preference inventory This consisted of a list of nine school subjects which the children were asked to rank in order of preference from 1 to 9

RESULTS

Pre-experiment scores

Scores on tests taken before the experiment commenced are set out in Table 1 Standardized scores for the Gates-McGinitie Test are based on

TABLE 1
PRE-EXPERIMENT SCORES
(Standard scores)

	Control			Experimental		
	n	M	SD	n	M	SD
Verbal Reasoning (DVRT)	113	101 9	13 2	106	104 4	15 9
Reading Speed* (Gates-McGinitie)	92	41 8	12 2	83	42 5	13 8
Reading Accuracy* (Gates-McGinitie)	92	39 9	13 8	83	40 4	16 1
Reading Vocabulary (Gates-McGinitie)	113	47 5	12 9	105	49 4	13 9
Reading Comprehension (Gates McGintie)	111	48 2	11 3	106	48 3	12 9
Spelling (Schonell)	111	9 4	1 2	106	9 3	1 9

American grade four norms The average score for American children on each sub-test is 50, thus the Irish means fall below those of the American standardization sample The average verbal reasoning ability of the children taking part in the experiment was very slightly above average for the Irish population Scores on the Schonell Spelling Test are in terms of 'spelling age' and are based on British norms

Improvement scores in reading and spelling

The pre-experiment scores of pupils were subtracted from their post-experiment scores to assess improvement in reading and spelling over the period of the experiment (cf Table 2)

*The numbers for these tests are low because the scores from one class had to be discarded due to an error in timing in the administration of the tests The variation in the numbers taking the other tests is due to absence from school of pupils on the day the test was administered

TABLE 2

MEAN DIFFERENCE SCORES
(Raw scores)

	Control			Experimental		
	n	M	SD	n	M	SD
Reading Speed	92	1 23	4 05	83	3 02	5 05
Reading Accuracy	92	1 89	3 49	83	3 33	3 77
Reading Vocabulary	113	3 67	4 49	105	3 91	5 19
Reading Comprehension	111	2 56	7 36	106	3 45	6 33
Spelling	111	4 98	6 08	106	4 96	7 09

Two-way analyses of variance (treatment × school) were carried out to test the significance of differences between the amount of improvement shown by the experimental groups and the amount shown by the control groups Raw scores were used for these analyses, as the use of the American norms gave rise to certain difficulties, for example, several children obtained scores outside the range for which standard scores were supplied The only significant difference between treatments occurred on the tests of reading speed (F 6 92, df 1,169, $p < 01$) and of reading accuracy (F 7 02, df 1,169, $p < 01$) In both cases the improvement of the pupils using SRA material was greater than that of the control pupils Significant differences between schools occurred in gains in vocabulary (F 4 02, df 2,212, $p < 05$) and in comprehension (F 4 56, df 2,211, $p < 05$) This means that the pupils in some schools (experimental and control) made greater gains during the course of the experiments than pupils in other schools To examine this further, increases in score were plotted against initial reading scores, and then against verbal reasoning scores, an inspection of the resulting scattergrams revealed no relationship between improvement in score and either initial reading score or verbal reasoning score

Attitude to reading

In the attitude to school subjects, a close correspondence in rankings was found for both groups in each of the three schools on the two occasions on which the inventory was completed In the present context, our only interest was in the pupils' preference for English reading as against other subjects, and in possible changes in that preference over the period of the experiment Pre-experiment preference placed English in third place for both experimental and control groups, change after the experiment was

marginal For the statistical analysis, the numbers of children who gave English reading as their first choice, second choice, third choice and so on, were calculated for experimental and control groups The application of chi-squared tests showed no significant difference between the groups either before or after the experiment

Teachers' comments

Teachers who took part in the experiment recorded their impressions of the experiment's progress The class newspaper for the control group was not regarded as very satisfactory, pupils seemed interested at first, but as the novelty wore off, responsibility for collecting and writing material fell more and more on the shoulders of a few pupils Teachers felt it was doubtful if pupils of this age were capable of the organization involved in running a paper Record books for spelling, on the other hand, were enthusiastically completed by control groups throughout the experiment

The classes using the SRA material also presented problems These were most acute at the beginning when children experienced considerable difficulty in learning the procedures involved in scoring, recording and charting progress After about three weeks, most pupils had mastered the procedures, though a few continued to have difficulty in following some written directions Interest in the programme ran high until towards the end of the period, when evidence of boredom appeared When the experiment was in full swing, teachers noted that practically every pupil in the SRA class was kept busy and that disciplinary problems were non-existent However, while it was true that the class could work for whole periods without any help, teachers complained that they could devote little time to the very weak readers, for whom the SRA material was not suitable

Many pupils reported that they found the information in some of the stories quite interesting Teachers, however, judged that the stories are rather restricted in scope The children regarded some of the stories as being too short and 'silly' They also complained about the American vocabulary and content More basically, teachers felt that the Laboratory approach encouraged pupils to approach reading in a somewhat mechanistic way, a number of pupils would read a question and then skim through the story to find the answer The programme did not encourage them to enjoy reading for its own sake That is not to say that the children did not enjoy the programme, they certainly did, but the things they enjoyed were things like self-checking, recording progress and moving on to a higher level It was not the kind of enjoyment, for example, that one associates with reading good literature

CONCLUSION

Like so many experiments designed to assess the value of methods or materials in teaching, this one produced no startling results The SRA laboratory used in the experiment was not more effective than traditional methods in improving the important areas of vocabulary and comprehension as measured by the Gates-McGinitie Reading Tests Neither was it more effective in raising standards of spelling, nor in improving attitudes towards reading It was more effective however in improving speed of reading and accuracy of comprehension while reading fast The rapid reading of material to extract information is an important feature in reading certain kinds of material, and the ability to read rapidly is a valuable asset

While the scholastic advantages associated with the use of the SRA laboratory cannot be regarded as dramatic it is important (though not so readily measured) that teachers and pupils seemed to enjoy using the laboratory very much And anything that makes the process of education more pleasant—for teacher and pupil—is certainly worthy of very serious consideration

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