DOCUMENT RESUME

ED 098 498 CS 001 384

AUTHOR Downing, John
TITLE The Effectiveness of i.t.a. (Initial Teaching Alphabet) in the Prevention and Treatment of Dyslexia and Dysgraphia.
PUB DATE Nov 69
NOTE 19p.; Paper presented to the World Mental Health Assembly (Washington, D.C., November 17-21, 1969)

EDRS PRICE MF-$0.75 HC-$1.50 PLUS POSTAGE
DESCRIPTORS Dyslexia; *Initial Teaching Alphabet; Literature Reviews; *Orthographic Symbols; Reading; *Reading Difficulty; Reading Failure; *Reading Instruction; Spelling
IDENTIFIERS British Schools Council; *Traditional Orthography

ABSTRACT

The Initial Teaching Alphabet (i.t.a.), devised by Sir James Pitman as a simplified alphabet for beginning readers, consists of 44 characters plus a set of rules for standard spellings of English words using these characters. The characters and rules are designed to ensure easy transition from i.t.a. to traditional orthography (T.O.). In September 1969 the British Schools Council published a comprehensive review of the use of i.t.a. for the teaching of literacy after nine years of research and experimentation in i.t.a. Research findings show that the unadulterated use of T.O. for beginning reading and writing reduces the potential of average and above average children in the early years of school and actually increases the incidence of reading and writing disabilities. In contrast, i.t.a. enriches the early school experiences of most children and also provides a highly effective preventive measure to guard against reading and writing disorders. For remedial treatment, i.t.a. seems to be most effective when students are exposed to it for the greater part of their working day. These conclusions may now be extended to literacy learning in English when students have some other mother tongue. (JM)

THE EFFECTIVENESS OF i.t.a. (INITIAL TEACHING ALPHABET) IN THE PREVENTION AND TREATMENT OF DYSLEXIA AND DYSGRAPHIA.

Paper presented to the World Mental Health Assembly, Washington, D.C., 17-21 November, 1960

by John Downing, B.A., Ph.D., A.B.Ps.S.
Professor of Education, University of Victoria, British Columbia, Canada.

I BACKGROUND

In September this year the British Schools Council published its comprehensive review of the use of the Initial Teaching Alphabet (i.t.a.) for the teaching of literacy. This marks the culmination of nine years of research and experimentation in i.t.a. by myself and other colleagues in the field of the psychology of literacy. The British Schools Council is the official body in regard to curriculum for England and Wales, whose position especially underlines the word independent in the title of the report which the Council commissioned - i.t.a.: An Independent Evaluation.

Hitherto, both Sir James Pitman, the inventor of the alphabet, and I, the research worker who designed and was responsible for the original research, have inevitably suffered from a 'credibility gap', partly because of our position, but even more because of the magnitude of the improvements in literacy skills which were produced by i.t.a. in my experiments. These improvements have been so great that they may be described as quite unusual in this area of research.

In this paper, the Initial Teaching Alphabet will be described briefly. Then the research resources will be indicated and their chief findings summarised. The main concern will be with i.t.a.'s effectiveness in preventing dyslexia and dysgraphia. Remediation of these conditions through the use of i.t.a. will be discussed also. The terms "dyslexia" and "dysgraphia" are used in this paper as very preliminary diagnostic labels. They are used only to indicate descriptively the symptoms of disturbed functioning in reading and writing respectively.

II THE INITIAL TEACHING ALPHABET (i.t.a.)

The i.t.a. was devised by Sir James Pitman as a simplified alphabet for beginners. It consists in 44 characters plus a set of rules (The rules are for conformity by publishers, printers, teachers and parents - not by children.) for standard spellings of English words with them. The i.t.a. characters and the spelling rules are designed to ensure that the configurations of whole words in i.t.a. are as similar as possible to such configurations as they appear in the traditional orthography (T.O.) of English - particularly in regard to the upper half of the line of print, which is known to provide the most important of the minimal cues used in normal fluent reading. The purpose of this similarity is to assist the i.t.a. learner to make an easy transition from i.t.a. to T.O. once he has become fluent in i.t.a.

in the field of the psychology of literacy. The British Schools Council is the official body in regard to curriculum for England and Wales, whose position especially underlines the word independent in the title of the report which the Council commissioned - i.t.a.: An Independent Evaluation.

Hitherto, both Sir James Pitman, the inventor of the alphabet, and I, the research worker who designed and was responsible for the original research, have inevitably suffered from a 'credibility gap', partly because of our position, but even more because of the magnitude of the improvements in literacy skills which were produced by i.t.a. in my experiments. These improvements have been so great that they may be described as quite unusual in this area of research.

In this paper, the Initial Teaching Alphabet will be described briefly. Then the research resources will be indicated and their chief findings summarised. The main concern will be with i.t.a.'s effectiveness in preventing dyslexia and dysgraphia. Remediation of these conditions through the use of i.t.a. will be discussed also. The terms "dyslexia" and "dysgraphia" are used in this paper as very preliminary diagnostic labels. They are used only to indicate descriptively the symptoms of disturbed functioning in reading and writing respectively.

II THE INITIAL TEACHING ALPHABET (i.t.a.)

The i.t.a. was devised by Sir James Pitman as a simplified alphabet for beginners. It consists in 44 characters plus a set of rules (The rules are for conformity by publishers, printers, teachers and parents - not by children.) for standard spellings of English words with them. The i.t.a. characters and the spelling rules are designed to ensure that the configurations of whole words in i.t.a. are as similar as possible to such configurations as they appear in the traditional orthography (T.O.) of English - particularly in regard to the upper half of the line of print, which is known to provide the most important of the minimal cues used in normal fluent reading. The purpose of this similarity is to assist the i.t.a. learner to make an easy transition from i.t.a. to T.O. once he has become fluent in i.t.a. and is reading in large part in terms of the upper half of the configurations of whole words and phrases, as well as from clues provided by context.

This design of i.t.a. faced a difficult problem, the need to maintain a similarity to T.O. for transitional purposes at a later stage had to be borne in mind constantly when devising a system which would remove from the initial stages of learning to read the confusing elements of T.O., which were hypothesised as being an important cause of failure in learning to read and write. Pitman (1963) has described this problem and the particular solutions he has advanced for it.

A complete description of the i.t.a. system is given in Downing (1964), Downing (1967), Mountford (1964), and Mountford (1965). Sir James Pitman (1961 and 1969), within the limits set by the need to ease transition from i.t.a. to T.O., attempted to remove all major violations of the alphabetic principle which exist in the conventional English spelling and to reduce the number of alternative representations in T.O. for whole words and for phonemes (sound units). The psychological effect of these changes has been described in another recent article (Downing - 1969b).

Briefly, i.t.a. seems to prevent the development of that "general cognitive confusion" which M.D. Vernon (1957) found to be "the fundamental and basic characteristic of reading disability". Her comprehensive review of research on the causes of reading failure led her to that conclusion. She said, "the child with real reading disability.....appears hopelessly uncertain and confused as to why certain successions of printed letters should correspond to certain phonetic sounds in words".

The Initial Teaching Alphabet removes the causes of the child's uncertainty and confusion which are inherent in a large number of the words as now printed in our conventional T.O. system. There are at least four ways in which i.t.a. provides certainty and clarity to aid the child's understanding of the structural relations between the printed and spoken forms of the English language. These four ways are:

1. FEWER ALTERNATIVE REPRESENTATIONS PRODUCES HIGHER FREQUENCY OF PRINT-TO-SPEECH REGULARITIES

   T.O. I like my ice-cream

   i.t.a. ie lick mi is-creem

2. ABOLITION OF GROSS IRREGULARITY REMOVES FALSE CLUES TO STRUCTURE

   T.O. on, go, do, oven

   i.t.a. on, gc, dœ, uven

3. REMOVAL OF MULTIPLE-CHARACTER REPRESENTATIONS FOR PHONEMES CLARIFIES NUMBER OF PHONEMES IN THE WORD

	T.O.				i.t.a.		
CHARACTERS	t h	r	o u g h		ṯ	r	ω
SOUND UNITS	1	2	3		1	2	3

4. PARALLEL SPATIAL ORDER OF CHARACTERS FOR TEMPORAL

her to that conclusion. She said, "the child with real reading disability......appears hopelessly uncertain and confused as to why certain successions of printed letters should correspond to certain phonetic sounds in words".

The Initial Teaching Alphabet removes the causes of the child's uncertainty and confusion which are inherent in a large number of the words as now printed in our conventional T.O. system. There are at least four ways in which i.t.a. provides certainty and clarity to aid the child's understanding of the structural relations between the printed and spoken forms of the English language. These four ways are:

1. FEWER ALTERNATIVE REPRESENTATIONS PRODUCES HIGHER FREQUENCY OF PRINT-TO-SPEECH REGULARITIES

   T.O. I like my ice-cream

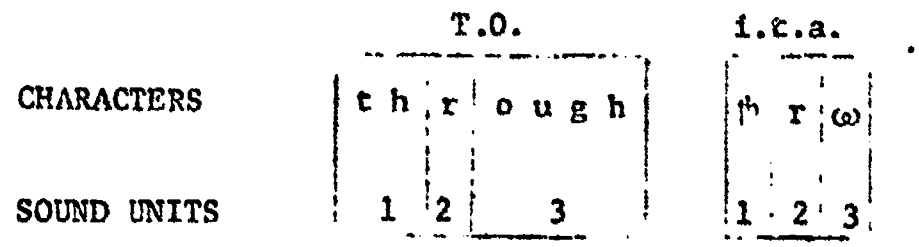
   i.t.a. ie liek mie ies-cream

2. ABOLITION OF GROSS IRREGULARITY REMOVES FALSE CLUES TO STRUCTURE

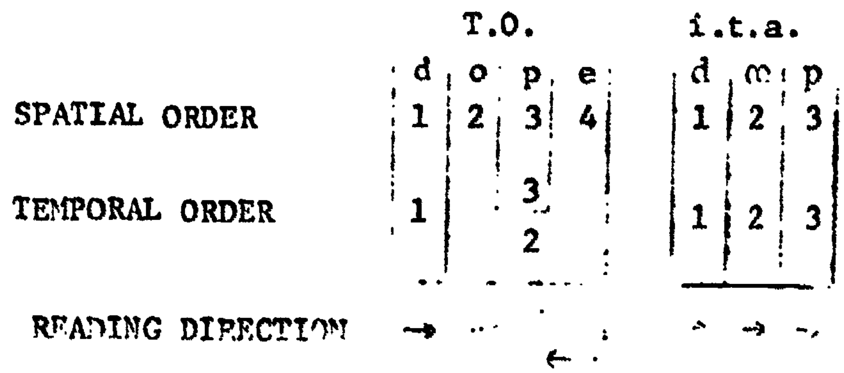
   T.O. on, go, do, oven

   i.t.a. on, go, dω, uven

3. REMOVAL OF MULTIPLE-CHARACTER REPRESENTATIONS FOR PHONEMES CLARIFIES NUMBER OF PHONEMES IN THE WORD



4. PARALLEL SPATIAL ORDER OF CHARACTERS FOR TEMPORAL ORDER OF PHONEMES



These then are the characteristics of i.t.a. as it has been used in the experiments to be described next in this paper. Some variations of i.t.a. when employed for teaching English as a second language will be mentioned later in connection with that special use.

III RESEARCH SOURCES

A very valuable guide to sources of research on i.t.a. is contained in the British Schools Council's report, i.t.a.: An Independent Evaluation (Warburton and Southgate, 1969). However, it has three limitations: (a) it does not deal with i.t.a.'s remedial use; (b) it does not cover i.t.a's use in teaching English as a second language; (c) although it is the most comprehensive review of i.t.a.'s effects in normal beginning reading classes, it does not cover some of the most recent research in this field.

Therefore, this paper will refer to (i) the Schools Council's report, (ii) researchers which it evaluates as being valid, and (iii) other researches which it did not consider because they have been completed subsequently.

IV RESEARCH FINDINGS

(A) PREVENTION OF READING AND WRITING DISABILITIES WHERE ENGLISH IS THE FIRST LANGUAGE.

The Schools Council report provides two kinds of information on i.t.a.'s effectiveness in reducing the incidence of reading and writing disabilities. The first part of the report is a wide ranging survey of the professional opinions of British teachers who have used i.t.a. and of head teachers (principals), inspectors and others who have observed its use closely over long periods. The second part of the report consists in a searching critical analysis of experimental research on i.t.a. This concludes that "we are mainly indebted to the work of Downing', a reference to my own research published in 1967. I mention this here only because it shows that it is appropriate to draw on both the Schools Council's survey of professional opinions and on the data from the original Downing experiments. The latter have been extended in follow-up studies and data from these should be considered as well.

The Schools Council report, in assessing the "verbal evidence" of informed professional opinion, concludes:

> 'There was almost total agreement concerning its favourable effect on children's reading progress.....The comments most frequently made by teachers were that i.t.a. enables children to make a good beginning with reading; the task is simpler and consequently children can begin earlier, learn more quickly and achieve greater pleasure and satisfaction in so doing.

(c) although it is the most comprehensive review of i.t.a.'s effects in normal beginning reading classes, it does not cover some of the most recent research in this field.

Therefore, this paper will refer to (i) the Schools Council's report, (ii) researchers which it evaluates as being valid, and (iii) other researches which it did not consider because they have been completed subsequently.

IV RESEARCH FINDINGS

(A) PREVENTION OF READING AND WRITING DISABILITIES WHERE ENGLISH IS THE FIRST LANGUAGE.

The Schools Council report provides two kinds of information on i.t.a.'s effectiveness in reducing the incidence of reading and writing disabilities. The first part of the report is a wide ranging survey of the professional opinions of British teachers who have used i.t.a. and of head teachers (principals), inspectors and others who have observed its use closely over long periods. The second part of the report consists in a searching critical analysis of experimental research on i.t.a. This concludes that "we are mainly indebted to the work of Downing", a reference to my own research published in 1967. I mention this here only because it shows that it is appropriate to draw on both the Schools Council's survey of professional opinions and on the data from the original Downing experiments. The latter have been extended in follow-up studies and data from these should be considered as well.

The Schools Council report, in assessing the "verbal evidence" of informed professional opinion, concludes:

> "There was almost total agreement concerning its favourable effect on children's reading progress.....The comments most frequently made by teachers were that i.t.a. enables children to make a good beginning with reading; the task is simpler and consequently children can begin earlier, learn more quickly and achieve greater pleasure and satisfaction in so doing."

My own experimental work provides objective data which fully confirms the professional opinions summarised by Warburton and Southgate. Briefly, I compared an experimental group of i.t.a. beginners with a matched control group of T.O. beginners. The treatment of both i.t.a. and T.O. learners was identical apart from the critical difference in the alphabets used. For instance, both groups were presented with the same basal reading books, the experimental group having them printed in i.t.a., and the control group having the same materials in T.O. The backgrounds of the students in the two groups were matched on each test for non-verbal and verbal intelligence, social class, age, sex, and the following school variables; urban/rural location, type of school organisation (grades 1 through 3: or grades 1 through 7), size of school, pupil/teacher ratio,

and amenities of the school building. The matching procedure was applied to each measure separately. Thus, although the numbers of children tested fell quite rapidly during the experiment, these losses should not cause any bias.

A number of reading tests were administered during the experiment. When the majority of i.t.a. children were still reading i.t.a., the i.t.a. sample were tested on i.t.a. versions of the same test as was used in T.O. with the T.O. sample. All such tests showed that the i.t.a. reading was dramatically superior to T.O. reading. In general, by the end of the first school year, i.t.a. pupils could read more than twice as many English words in i.t.a., as the T.O. pupils could read in T.O.

As regards writing, the Schools Council report says:

> "The common features which most teachers noted in children's free writing when i.t.a. was used were as follows: it begins at a much earlier age; it is greater in quantity; and the quality has improved in content."

Again, my objective experimental research data are completely in accord with the School Council's survey of professional opinions. In one experiment, I found that i.t.a. pupils wrote fifty per cent more words than T.O. pupils in a week's work selected at random, and that the range of written vocabulary was forty-five per cent greater in the i.t.a. group. In another study, independent judges had to grade i.t.a. and T.O. compositions for the quality of creative writing. They did this blind, i.e. they could not tell whether the compositions had been written originally in i.t.a. or T.O. The i.t.a. compositions achieved much higher grades. (Downing, Fyfe, and Lyon, 1967.)

PROPORTION OF FAILURES IN i.t.a. AND T.O. CLASSES.

So far, the research quoted has presented a general picture of the effects of i.t.a. on normal young children beginning to learn to read and write. Now, attention will be focussed on the incidence of reading disability in i.t.a. classes as compared with T.O. classes. Does i.t.a. reduce the incidence of failure?

The Schools Council report suggests that teachers were not unanimous in their judgments on this question:

> "More than half the teachers with whom discussions took place were convinced that the use of i.t.a. was beneficial to children of all levels of intelligence. This conviction related to earlier, easier beginnings, as well as to increased standards in both reading and written expression. Of the teachers who did not hold this view, a proportion thought that it was most effective with children of low intelligence and least effective with

"The common features which most teachers noted in children's free writing when i.t.a. was used were as follows: it begins at a much earlier age; it is greater in quantity; and the quality has improved in content."

Again, my objective experimental research data are completely in accord with the School Council's survey of professional opinions. In one experiment, I found that i.t.a. pupils wrote fifty per cent more words than T.O. pupils in a week's work selected at random, and that the range of written vocabulary was forty-five per cent greater in the i.t.a. group. In another study, independent judges had to grade i.t.a. and T.O. compositions for the quality of creative writing. They did this blind, i.e. they could not tell whether the compositions had been written originally in i.t.a. or T.O. The i.t.a. compositions achieved much higher grades. (Downing, Fyfe, and Lyon, 1967.)

PROPORTION OF FAILURES IN i.t.a. AND T.O. CLASSES.

So far, the research quoted has presented a general picture of the effects of i.t.a. on normal young children beginning to learn to read and write. Now, attention will be focussed on the incidence of reading disability in i.t.a. classes as compared with T.O. classes. Does i.t.a. reduce the incidence of failure?

The Schools Council report suggests that teachers were not unanimous in their judgments on this question:

"More than half the teachers with whom discussions took place were convinced that the use of i.t.a. was beneficial to children of all levels of intelligence. This conviction related to earlier, easier beginnings, as well as to increased standards in both reading and written expression. Of the teachers who did not hold this view, a proportion thought that it was most effective with children of low intelligence and least effective with children of high intelligence; the remainder reversed this conclusion."

My original experiments provide objective data which explain why teachers are not agreed as to which type of child benefits most from i.t.a. Judged in terms of improvement in reading test scores, the high achieving child gains most from i.t.a. The slow learner gains the smallest increment of improvement in test scores from i.t.a. The teacher observing this result may form the opinion that i.t.a. is best used with children who achieve well anyway with T.O. But, if the teacher focusses attention on the difference between slow learners in i.t.a. and slow learners in T.O., she may draw a separate and different conclusion about i.t.a.'s effectiveness with these children.

In another recent article (Downing, 1969a), I have made a special analysis of the incidence of poor and very poor readers in i.t.a. classes as compared with T.O. classes. The results show a substantial reduction in the incidence of reading disability through the use of i.t.a.

TRANSITION FROM i.t.a. TO T.O.

> "Of all the verbal evidence collected in this enquiry, the fact most frequently and most emphatically stated was that children did not experience difficulty in making the transition in reading from i.t.a. to T.O. Teachers and those experienced visitors to schools who had observed the transition taking place had no doubts whatsoever on this score."

Thus the Schools Council's report summarises the professional opinions regarding the stage of transition from i.t.a. to T.O. The report is quite definite that children have no real difficulty in making the actual change over from i.t.a. to T.O. However, Warburton and Southgate seem less certain about the end results beyond the transition period. The i.t.a. children's attainments in T.O. reading and writing are certainly at least as good as when T.O. is used from the outset. But are they any better? Do the T.O. children catch up with the i.t.a. pupils at a later stage? These questions are not fully answered in the Schools Council's report. This is due chiefly to the fact that Warburton and Southgate did not have access to the results of later follow-up data published since the Schools Council report.

In 1967, the evidence from my own research also was not clear then, although two of the latest tests included in my report showed i.t.a. pupils to be significantly superior in T.O. reading and in T.O. spelling. It should be noted that when these children were tested in T.O., not all of the i.t.a. pupils had been transferred to T.O. by their teachers. The children in the i.t.a. classes were transferred to T.O. as each individual pupil was judged ready for the transition phase by his teacher. Thus, when they were tested in T.O. the i.t.a. children had had varying amounts of experience of T.O. reading. The poorest readers of all were still reading and writing in i.t.a., but were tested in T.O. as part of the total experimental group.

Subsequently, I and a colleague (Downing and Latham, 1969) have followed these children further. Two tests of T.O. reading and writing attainments were administered to the remnants of the original i.t.a. and T.O. samples, now in their fifth year of school. The results show that the i.t.a. pupils maintained their advantage in T.O. reading and writing until at least the end of five years.

When these data were analysed in terms of the incidence of disorders of reading and writing in the two groups, it was seen that the pattern established before transition is maintained afterwards too. There were substantially fewer failures in T.O. reading and in T.O. writing in the i.t.a. sample than in the T.O. sample.

In reading, the success of the transition is probably due chiefly

observed the transition taking place had no doubts whatsoever on this score."

Thus the Schools Council's report summarises the professional opinions regarding the stage of transition from i.t.a. to T.O. The report is quite definite that children have no real difficulty in making the actual change over from i.t.a. to T.O. However, Warburton and Southgate seem less certain about the end results beyond the transition period. The i.t.a. children's attainments in T.O. reading and writing are certainly at least as good as when T.O. is used from the outset. But are they any better? Do the T.O. children catch up with the i.t.a. pupils at a later stage? These questions are not fully answered in the Schools Council's report. This is due chiefly to the fact that Warburton and Southgate did not have access to the results of later follow-up data published since the Schools Council report.

In 1967, the evidence from my own research also was not clear then, although two of the latest tests included in my report showed i.t.a. pupils to be significantly superior in T.O. reading and in T.O. spelling. It should be noted that when these children were tested in T.O., not all of the i.t.a. pupils had been transferred to T.O. by their teachers. The children in the i.t.a. classes were transferred to T.O. as each individual pupil was judged ready for the transition phase by his teacher. Thus, when they were tested in T.O. the i.t.a. children had had varying amounts of experience of T.O. reading. The poorest readers of all were still reading and writing in i.t.a., but were tested in T.O. as part of the total experimental group.

Subsequently, I and a colleague (Downing and Latham, 1969) have followed these children further. Two tests of T.O. reading and writing attainments were administered to the remnants of the original i.t.a. and T.O. samples, now in their fifth year of school. The results show that the i.t.a. pupils maintained their advantage in T.O. reading and writing until at least the end of five years.

When these data were analysed in terms of the incidence of disorders of reading and writing in the two groups, it was seen that the pattern established before transition is maintained afterwards too. There were substantially fewer failures in T.O. reading and in T.O. writing in the i.t.a. sample than in the T.O. sample.

In reading, the success of the transition is probably due chiefly to Sir James Pitman's ingenious design of i.t.a. which makes its configurations so similar to those of T.O. for fluent reading. However, it is probable that children are helped through the transition phase also by retaining their understanding of the phonemic structure of English (which they have learned through i.t.a.). This clearer perception of the phonemic structure of spoken English and its connection with the graphemic structure of written language seems to be the chief cause of the superiority of the i.t.a. pupils in T.O. spelling after they have had time to adapt to the change.

An independent investigation of i.t.a.'s effects on children's T.O. spelling attainments by Peters (1967) found more direct evidence that i.t.a. provides perceptual training which later influences their

method of attacking the spelling of words in T.O. Peters compared the spelling attainments of pupils in their third year in a school using i.t.a. with matched pupils in two T.O. schools. She concluded that the differences between i.t.a. and T.O. 'lead' to differences in perception which show themselves in the type of spelling error made". More specifically, "i.t.a. children thus attack spelling (in T.O.) more systematically, evidence being: (1) Fewer unclassified errors, (2) Fewer perseverations, (3) Fewer transpositions of syllables, (4) Fewer errors suggesting faulty auditory perception or encoding." Therefore, Peters suggests, that "it would seem that i.t.a. taught children, with their more systematic and economical attack, present a more receptive base for the teaching of spelling conventions.

Peters' theory that i.t.a. children have the sort of non-redundant 'skeletal' structure from which conventional English spellings can be readily developed' seems the most likely explanation of the i.t.a. pupils' superior T.O. spelling found in the tests administered after 3½ years in my original experiment and after 5 years in the follow-up study.

There are other factors which would tend to enhance the effect of i.t.a.'s perceptual training. The i.t.a. pupil, because of his earlier start in reading, has had more experience of English spelling. Also his early success with written language will have a positively reinforcing effect in later motivation is spelling.

MOTIVATIONAL EFFECTS OF i.t.a.

The Schools Council's report provides valuable insight into the effects of i.t.a. on children's attitudes towards reading and writing.

(i) Motivation to read:

> "Teachers' comments thus represented a general conclusion, which was confirmed by the investigator's observations in schools, that usually children who learned to read by i.t.a. both want to, and do, spend more time on reading than children taught by T.O. This conclusion refers to all ages and all intelligence levels of children, and covers lesson times, free times, break-times and time at home."

(ii) Self-confidence

> "The interviewer's observations in schools, which included talking to many children and listening to them read, confirmed what teachers had to say. Adverse attitudes to reading were not noticeable. Children's enjoyment, confidence, sense of achievement and eagerness to try to read were patently obvious."

This improvement in children's motivation and self-confidence has been noted by other researchers in i.t.a. In my first interim report on the original i.t.a. experiment (Downing - 1964), I noted that a number of the headteachers in the research had commented "that children appear to be more confident in their approach to reading". This was

redundant 'skeletal' structure from which conventional English spellings can be readily developed' seems the most likely explanation of the i.t.a. pupils' superior T.O. spelling found in the tests administered after 3½ years in my original experiment and after 5 years in the follow-up study.

There are other factors which would tend to enhance the effect of i.t.a.'s perceptual training. The i.t.a. pupil, because of his earlier start in reading, has had more experience of English spelling. Also his early success with written language will have a positively reinforcing effect in later motivation is spelling.

MOTIVATIONAL EFFECTS OF i.t.a.

The Schools Council's report provides valuable insight into the effects of i.t.a. on children's attitudes towards reading and writing.

(i) Motivation to read

> "Teachers' comments thus represented a general conclusion, which was confirmed by the investigator's observations in schools, that usually children who learned to read by i.t.a. both want to, and do, spend more time on reading than children taught by T.O. This conclusion refers to all ages and all intelligence levels of children, and covers lesson times, free times, break-times and time at home."

(ii) Self-confidence

> "The interviewer's observations in schools, which included talking to many children and listening to them read, confirmed what teachers had to say. Adverse attitudes to reading were not noticeable. Children's enjoyment, confidence, sense of achievement and eagerness to try to read were patently obvious."

This improvement in children's motivation and self-confidence has been noted by other researchers in i.t.a. In my first interim report on the original i.t.a. experiment (Downing - 1964), I noted that a number of the headteachers in the research had commented "that children appear to be more confident in their approach to reading". This was only a tentative suggestion based on subjective evidence. It was a challenge to obtain more objective evidence, and Rose (1968) more recently has tried to obtain a more objective assessment of i.t.a.'s effects on children's self-confidence. He administered the Stanford Achievement spelling test to second grade i.t.a. and T.O. pupils in a low socio-economic neighbourhood in Stockton, California. The i.t.a. pupils wrote their words in i.t.a., the T.O. pupils wrote them in T.O. The relative difficulty of writing in T.O. and i.t.a. is indicated by the difference in the mean scores. (i.t.a. 10.5 - T.O. 2.0). The harmful effect of the difficulties of T.O. on children's self-confidence is shown by Rose's data on the number of attempts the children made to spell the twenty words in the test. In i.t.a. the mean number of attempted words was [illegible], but in T.O. it fell to only eight. In both the i.t.a.

and the T.O. classes the children were not put under any pressure from time limits. Also, any pencil mark on the answer paper was counted as "an attempt". This was being especially generous to the T.O. pupils. Despite this generosity, the T.O. pupils were willing to make a try at less than half as many words as the i.t.a. pupils.

(B) PREVENTION OF FAILURE WHERE ENGLISH IS THE SECOND LANGUAGE.

Failure to develop literacy in English is a frequent problem also when the student's native language is not English. The irregularities and heavy burden of alternatives in T.O. seem likely to be an important cause of difficulty with these students. An additional problem may be hypothesised - the pronunciation of English may become faulty due to the misleading coding of English phonemes in T.O. The more regular code of i.t.a. should provide a better guide to English pronunciation.

There is, however, an additional problem in coding pronunciation. There is no indication in T.O. of the pattern of stressed and unstressed syllables in speech. To overcome both problems, Sir James Pitman has devised a modified form of i.t.a. - "Speech i.t.a." also known as World Initial Teaching Alphabet (W.I.T.A.). This uses the same 44 characters as i.t.a., but makes them larger and darker for stressed syllables, and smaller and lighter for unstressed syllables. In the case of the unstressed syllables, Speech i.t.a. is modified also to indicate whether it is the unstressed /i/ sound or the unstressed /ə/ sound (symbols /i/ and /ə/ are International Phonetic Alphabet notations). When the unstressed syllable contains the /i/ sound the (smaller) syllable is printed above the base line.

A large-scale experiment with Speech i.t.a. was completed recently in Nigeria, and a comprehensive report has been written by Abiri (1969). His experiment was proposed by the Commonwealth Education Conference at Ottawa, Canada in 1964, and financed by the British Ministry of Overseas Development.

Abiri's Nigerian subjects were young Yoruba-speaking children either in the Lagos city area or in more rural districts near Ibadan. Over 600 of these pupils were in the experimental group using Speech i.t.a. Approximately 500 were in a control group using T.O. Both groups have been tested periodically over a period of three years.

The results of Abiri's experiments show quite clearly that Speech i.t.a. is superior to T.O. for teaching reading and English pronunciation to these children whose native language was, not English, but Yoruba. The children taught by Speech i.t.a. were superior, not only during the period when Speech i.t.a. was being read, but also after the Speech i.t.a. pupils had made the transition to T.O.

One limitation to the above findings was reported by Abiri: Speech i.t.a. was not effective if the Yoruba children had had substantial contact with T.O. before being introduced to Speech i.t.a. Abiri suggests that such pupils' "former contact with T.O. probably interfered with their efforts in learning to read through w.i.t.a. later".

[illegible] of difficulty with these students. An additional problem may be hypothesised - the pronunciation of English may become faulty due to the misleading coding of English phonemes in T.O. The more regular code of i.t.a. should provide a better guide to English pronunciation.

There is, however, an additional problem in coding pronunciation. There is no indication in T.O. of the pattern of stressed and unstressed syllables in speech. To overcome both problems, Sir James Pitman has devised a modified form of i.t.a. - "Speech i.t.a." also known as World Initial Teaching Alphabet (W.I.T.A.). This uses the same 44 characters as i.t.a., but makes them larger and darker for stressed syllables, and smaller and lighter for unstressed syllables. In the case of the unstressed syllables, Speech i.t.a. is modified also to indicate whether it is the unstressed /i/ sound or the unstressed /ə/ sound (symbols /i/ and /ə/ are International Phonetic Alphabet notations). When the unstressed syllable contains the /i/ sound the (smaller) syllable is printed above the base line.

A large-scale experiment with Speech i.t.a. was completed recently in Nigeria, and a comprehensive report has been written by Abiri (1969). His experiment was proposed by the Commonwealth Education Conference at Ottawa, Canada in 1964, and financed by the British Ministry of Overseas Development.

Abiri's Nigerian subjects were young Yoruba-speaking children either in the Lagos city area or in more rural districts near Ibadan. Over 600 of these pupils were in the experimental group using Speech i.t.a. Approximately 500 were in a control group using T.O. Both groups have been tested periodically over a period of three years.

The results of Abiri's experiments show quite clearly that Speech i.t.a. is superior to T.O. for teaching reading and English pronunciation to these children whose native language was, not English, but Yoruba. The children taught by Speech i.t.a. were superior, not only during the period when Speech i.t.a. was being read, but also after the Speech i.t.a. pupils had made the transition to T.O.

One limitation to the above findings was reported by Abiri: Speech i.t.a. was not effective if the Yoruba children had had substantial contact with T.O. before being introduced to Speech i.t.a. Abiri suggests that such pupils' "former contact with T.O. probably interfered with their efforts in learning to read through w.i.t.a. later".

The special concern of this part of my paper is with the prevention of failure in literacy. Abiri comments that Speech i.t.a. "helped both the more and the less intelligent pupils", and that "the result is that a greater proportion of pupils using w.i.t.a. reached a criterion level in reading than the proportion of those using T.O." (italics added). In other words, by the same criterion, there were fewer failures in the Speech i.t.a. classes.

(C) REMEDIAL TREATMENT OF READING DISABILITY

The evidence on the effectiveness of i.t.a. in remedying cases of reading disability is less consistent, but there appears to be a tenable hypothesis which may explain the variation in results.

The first experiment using i.t.a. for remedial treatment was conducted by Mr. Keith Gardner of the University of Nottingham Institute of Education, and reported in Downing and Gardner (1962). Eight-year-olds who had previously failed to learn to read were given four periods of special remedial teaching each week. Each period was half an hour only in duration. Two small classes used i.t.a. and were compared with two other matched groups using T.O. During the i.t.a. treatment, the i.t.a. pupils made significantly better progress than the T.O. pupils. After transition to T.O., the i.t.a. pupils retained their superiority in reading attainments.

Later, Georgiades (1964) surveyed a number of other similar experiments some of which obtained positive improvement with i.t.a., while others did not. Recently, Georgiades (1969) has published the results of a rigorously controlled experiment with i.t.a. which, in the particular circumstances of the experiment, produced no significant difference between remedial treatment with i.t.a. as compared with T.O.

On the other hand, two types of application of i.t.a. in remedial treatment have resulted in consistently favourable effects. These are with adult illiterates and semi-literates, and with mentally retarded pupils. Pollard (1967) has reported the outstanding success obtained with adult students who were recruits in the British Army. This experiment produced such marked and rapid improvement that the Army has adopted i.t.a. as its normal medium for all initial literacy training courses. The use of i.t.a. for mentally retarded pupils also has led to consistently favourable results. In a recent article (Downing, 1968), I have reported the results of a survey of 25 special schools with mentally retarted pupils. All these schools found i.t.a. superior. Pupils' motivation and self-confidence improved as well as a measureable benefit in reading levels. Ward and Beauchamp (1966) also have reported successful use of i.t.a. in a New York State School for mentally retarded children.

The Army situation had one factor in common with the special schools for the mentally retarded. In both the Army classes and in the special schools, the students were exposed to i.t.a. for long periods of time each day for several months. This is in sharp contrast with the amount of time given to i.t.a. teaching in the Georgiades experiment in which only four hours per week were given to i.t.a. teaching and for a limited period.

Two other experiments with i.t.a. for remedial treatment should be noted. Evans (1966) found i.t.a. effective in teaching reading to the interjacent child. Brown (1966) in an experiment at the University of Oregon Medical School concluded that with i.t.a.:

> "Growth in reading level, while slower than that of other children instructed in i.t.a.,

olds who had previously failed to learn to read were given four periods of special remedial teaching each week. Each period was half an hour only in duration. Two small classes used i.t.a. and were compared with two other matched groups using T.O. During the i.t.a. treatment, the i.t.a. pupils made significantly better progress than the T.O. pupils. After transition to T.O., the i.t.a. pupils retained their superiority in reading attainments.

Later, Georgiades (1964) surveyed a number of other similar experiments some of which obtained positive improvement with i.t.a., while others did not. Recently, Georgiades (1969) has published the results of a rigorously controlled experiment with i.t.a. which, in the particular circumstances of the experiment, produced no significant difference between remedial treatment with i.t.a. as compared with T.O.

On the other hand, two types of application of i.t.a. in remedial treatment have resulted in consistently favourable effects. These are with adult illiterates and semi-literates, and with mentally retarded pupils. Pollard (1967) has reported the outstanding success obtained with adult students who were recruits in the British Army. This experiment produced such marked and rapid improvement that the Army has adopted i.t.a. as its normal medium for all initial literacy training courses. The use of i.t.a. for mentally retarded pupils also has led to consistently favourable results. In a recent article (Downing, 1968), I have reported the results of a survey of 25 special schools with mentally retarted pupils. All these schools found i.t.a. superior. Pupils' motivation and self-confidence improved as well as a measureable benefit in reading levels. Ward and Beauchamp (1966) also have reported successful use of i.t.a. in a New York State School for mentally retarded children.

The Army situation had one factor in common with the special schools for the mentally retarded. In both the Army classes and in the special schools, the students were exposed to i.t.a. for long periods of time each day for several months. This is in sharp contrast with the amount of time given to i.t.a. teaching in the Georgiades experiment in which only four hours per week were given to i.t.a. teaching and for a limited period.

Two other experiments with i.t.a. for remedial treatment should be noted. Evans (1966) found i.t.a. effective in teaching reading to the interjacent child. Brown (1966) in an experiment at the University of Oregon Medical School concluded that with i.t.a.:

> "Growth in reading level, while slower than that of other children instructed in i.t.a., is higher than when minimally neurologically involved dyslexic children are instructed in traditional orthography."

In summary, i.t.a.'s effectiveness in remedial treatment seems uncertain when students are exposed to i.t.a. for only a brief time each school day over a short period and must cope with T.O. for most of the time. Under such conditions i.t.a. is sometimes successful but sometimes neutral in its effect. In conditions where i.t.a. is used for the greater part of the day for several months, it is generally much superior to T.O. in the large majority of cases.

V CONCLUSIONS

In earlier reports on i.t.a. research, I have urged caution in drawing general conclusions about its effectiveness. But the publication of the Schools Council's report radically changes the level of certainty with which we may make a judgment on the effectiveness of i.t.a. as compared with T.O. The evidence now gives overwhelming support to the conclusion that the use of unadulterated T.O. for beginning reading and writing, reduces the potential of average and above average children in the early years of school, and actually increases the incidence of reading and writing disabilities. In contrast, i.t.a. not only enriches the early school experiences of most children, but also provides a highly effective preventive measure to guard against reading and writing disorders.

These conclusions may now be extended to literacy learning in English, where the students have some other mother tongue, judging from Abiri's careful and rigorous research in Nigeria.

For remedial treatment, i.t.a. seems to be most effective when students are exposed to it for the greater part of their working day. If only a brief daily period of i.t.a. teaching is available, its chances of remedying reading and writing disabilities are much less certain.

VI REFERENCES

ABIRI, J.O.O. (1969), World Initial Teaching Alphabet Versus Traditional Orthography. Ph.D. thesis, University of Ibadan, Nigeria.

BROWN, J. (1966), "i.t.a. and the Minimally Neurologically Involved Dyslexic Child." In Mazurkiewicz, A.J. (Editor), The Initial Teaching Alphabet and the World of English. Hempstead, N.Y.: Initial Teaching Alphabet Foundation.

DOWNING, J. (1964), The i.t.a. Reading Experiment. London: Evans Bros., and Chicago: Scott Foresman.

DOWNING, J. (1964), The Initial Teaching Alphabet Explained and Illustrated. London: Cassell, and New York: Macmillan.

DOWNING, J. (1967), Evaluating the Initial Teaching Alphabet. London: Cassell.

DOWNING, J. (1968), "The Initial Teaching Alphabet and Educationally Sub-normal Children." Developmental Medicine and Child Neurology, Vol.10, pp. 200-205.

DOWNING, J. (1969a), "New Experimental Evidence of the Effectiveness of i.t.a. in Preventing Disabilities of Reading and Spelling." Developmental Medicine and Child Neurology, Vol.11, pp. 547-555.

DOWNING, J. (1969b), "The Perception of Linguistic Structure in Learning to Read." British Journal of Educational Psychology, Vol.39 (November 1969), pp. 267-271.

These conclusions may now be extended to literacy learning in English, where the students have some other mother tongue, judging from Abiri's careful and rigorous research in Nigeria.

For remedial treatment, i.t.a. seems to be most effective when students are exposed to it for the greater part of their working day. If only a brief daily period of i.t.a. teaching is available, its chances of remedying reading and writing disabilities are much less certain.

VI REFERENCES

ABIRI, J.O.O. (1969), World Initial Teaching Alphabet Versus Traditional Orthography. Ph.D. thesis, University of Ibadan, Nigeria.

BROWN, J. (1966), "i.t.a. and the Minimally Neurologically Involved Dyslexic Child." In Mazurkiewicz, A.J. (Editor), The Initial Teaching Alphabet and the World of English. Hempstead, N.Y.: Initial Teaching Alphabet Foundation.

DOWNING, J. (1964), The i.t.a. Reading Experiment. London: Evans Bros., and Chicago: Scott Foresman.

DOWNING, J. (1964), The Initial Teaching Alphabet Explained and Illustrated. London: Cassell, and New York: Macmillan.

DOWNING, J. (1967), Evaluating the Initial Teaching Alphabet. London: Cassell.

DOWNING, J. (1968), "The Initial Teaching Alphabet and Educationally Sub-normal Children." Developmental Medicine and Child Neurology, Vol.10, pp. 200-205.

DOWNING, J. (1969a), "New Experimental Evidence of the Effectiveness of i.t.a. in Preventing Disabilities of Reading and Spelling." Developmental Medicine and Child Neurology, Vol.11, pp. 547-555.

DOWNING, J. (1969b), "The Perception of Linguistic Structure in Learning to Read." British Journal of Educational Psychology, Vol.39 (November 1969), pp. 287-271.

DOWNING, J., Fyfe, T. and Lyon, M. (1967), "The Effects of the Initial Teaching Alphabet (i.t.a.) on Young Children's Written Composition." Educational Research, Vol.9, pp. 137-144.

DOWNING, J. and GARDNER, W.K. (1962), "New Experimental Evidence on the Role of the Unsystematic Spelling of English in Reading Failure." Educational Research, Vol.5, pp. 69-76.

DOWNING, J. and LATHAM, W. (1969), "A Follow-up of Children in the First i.t.a. Experiment." British Journal of Educational Psychology, Vol.39 (November 1969), pp. 303-305.

EVANS, H.D. (1966), "i.t.a. and the Interjacent Child". In Mazurkiewicz, A.J. (Editor), The Initial Teaching Alphabet and the World of English. Hempstead, N.Y.: Initial Teaching Alphabet Foundation.

GEORGIADES, N.J. (1964), A Report on the Uses of the Initial Teaching Alphabet in Remedial Classes in Primary, Secondary and Special Schools. Edinburgh: Chambers.

GEORGIADES, N.J. (1969), The Initial Teaching Alphabet in Remedial Groups. London: Harrap.

MOUNTFORD, J. (1964), Short Notes for Reference on i.t.a. Transliteration. Edinburgh: Chambers.

PETERS, M.L. (1967), "The Influence of Reading Methods on Spelling." British Journal of Educational Psychology, Vol.37, pp. 47-53.

PITMAN, I.J. (1961), "Learning to Read: An Experiment." Journal of the Royal Society of Arts, Vol.109, pp. 149-180.

PITMAN, I.J. (1963), "Convention and Conformity." In Figurel, J.A. (Ed.), Reading as an Intellectual Activity. New York: Scholastic.

POLLARD, M. (1967), "i.t.a. in the Army" New Education, Vol.3, No.11, pp. 24-25.

ROSE, I.M. (1968), "Fostering Logical and Creative Thinking Through i.t.a." In Douglass, M.P. (Editor), Claremont Reading Conference Thirty-second Yearbook. Claremont, California: Claremont University Center. pp. 286-291.

VERNON, M.D. (1957), Backwardness in Reading. London: Cambridge University Press.

WARBURTON, F.W., and SOUTHGATE, V. (1969), i.t.a.: An Independent Evaluation. London: Murray, and Edinburgh: Chambers.

WARD, B.J. and BEAUCHAMP, J. (1966), "i.t.a. and Teaching Techniques for the Mentally Retarded." In Downing, J. (Editor), The First International Reading Symposium. London: Cassell and New York: Day.