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# READING AND WRITING TESTS

## EVIDENCE FROM A UK STUDY: 'PROGRESS IN ADULT LITERACY' 1998-1999

Fall Institute 2011  
IALS (INTERNATIONAL ADULT LITERACY SURVEY)  
ITS MEANING AND IMPACT FOR POLICY AND PRACTICE  
October 23-25, 2011  
Banff, Alberta





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# INTRODUCTION

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# ‘Progress in Adult Literacy’

- ‘Progress in Adult Literacy’ investigated the progress in literacy made by adults in mainstream basic skills provision in England and Wales, and the factors associated with that progress.
- The study tested both reading and writing, although the emphasis was largely on reading.

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# ‘Progress in Adult Literacy’

- The study was undertaken between 1998 and 1999, by the National Foundation for Educational Research for the Basic Skills Agency, and led by Professor Greg Brooks.
- The study was the first in the English-speaking world to provide reliable evidence of progress in adult literacy based on a representative national sample.

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# ‘Progress in Adult Literacy’

- A total of 2,135 students, representing provision in 71 Colleges of Further Education and Local Education Authorities, took the reading pre-test.
- 1,224 students also took the reading post-test (57% retention).
- Those who returned at post-test were fully representative of the whole pre-test sample.



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# HOW THE TESTS WERE DEVISED

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# Devising the tests

- The requirements for this study were that the tests should indicate how good the students' progress was in national terms.
- By 'in national terms' was meant that the tests should provide:



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## Devising the tests

- Norm-referenced statistics for the question, ‘How good was the progress made by these students in relation to national adult norms for literacy?’
- Some comparisons with the performance of school pupils.
- Criterion-references statistics for the question: ‘What proportion of the students tested moved up at least one level on a relevant set of literacy standards?’



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# Devising the tests

- Insufficient to have just one test form (any improvement at post test might be due solely to practice, having seen the test before).
- Two parallel or equatable forms would be necessary, used in an AB/BA or swop over design.



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## Devising the tests

- Half the students, randomly assigned, would take form A at pre-test and form B at post-test, and the other half vice versa.
- (If all students took one form at pre-test and the other at post-test, any improvement might be due solely to the second form being easier.)



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# Norm referenced items

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# Norm referenced items

- Only one existing reading test from which standardised (norm-referenced) results for the adult population of Britain had been derived.
- This was the test used in the IALS, using a nationally representative sample of adults aged 16-65.
- This test was therefore norm-referenced to a relevant population.



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# Norm referenced items

- However, because IALS tested adults from the whole range of ability the test contained items with a wide range of difficulty.
- It also contained items of three types: testing Prose, Document and Quantitative Literacy (roughly, tasks based on continuous texts, tasks based on non-continuous texts such as timetables, and tasks based on text but requiring computation).



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# Norm referenced items

- Neither the more difficult items nor those testing quantitative literacy would have been fit for the purpose of this study, but a few Prose and Document items were suitable for the target group.



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# Norm referenced items

- It was therefore decided to use 25 Prose and Document items (11 tasks) from the IALS test.
- These items already had values on the scale used in IALS.



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# Norm referenced items

- On the assumption that they would behave, statistically, in approximately the same way in this study as they had in IALS, it was possible to use these items to ‘anchor’ the other items in this study to the IALS scale.
- That is, calculate IALS values for the non-IALS items; and then use scaled values for all the items to calculate standardised scores for each student.



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# Norm referenced items

- Though items were borrowed from the IALS test, there were two problems.
- There were only enough of them to create one test form, not two.
- And none of the IALS items was simple enough for people with very limited literacy.



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# Norm referenced items

- Both problems implied a need to ‘create the lower rungs of the ladder’, a set of very simple items which would provide detailed statistical discrimination at the lower end of the scale.
- This was done by borrowing very simple items, some from a school-level-test, others from criterion-references sources.



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# Comparison with school performance

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# School level performance

- To meet the requirement to provide some comparison with school-level performance, three tasks (containing 12 items in all) were borrowed from the tests used with 9 year olds in a 1991 Reading Literacy Study.



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# School level performance

- The three tasks were included in the study to provide a minimal indication of how well English and Welsh adults performed compared to 9 year olds in the same countries.



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# Criterion referenced items

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# Criterion referenced items

- In 1992-3 NFER developed a battery of literacy and numeracy tests intended to assess adults' attainment against the BSA's Communication and Numeracy Standards.



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# Criterion referenced items

- For 'Progress in Adult Literacy' eight tasks (28 items) were used from those developed by NFER.
- Thus there was in the tests a set of items which were intended to be criterion-referenced against the BSA Standards.



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# Criterion referenced items

- Just as IALS items were used to derive IALS scaled values for non-IALS items, so the NFER items were used to anchor other items to BSA Communication Standards, so that all 70 items would be criterion-referenced.



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# Compiling the test forms

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# Compiling the test forms

- The items were assembled into two tests, each with two opening sections and a common main section.
- Each opening section had 10 items, the common section of Form A 16 items, and the common section of Form B 14 items.
- Thus each student was faced on each test occasion with only 26 or 24 items.



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# Compiling the test forms

- There were 11 Prose tasks yielding 37 items; and 11 Document tasks yielding 33 items.
- These were approximately evenly distributed between the test forms.
- The tasks made the reading demands which could be considered largely functional; that is, they simulated public or other real-world literacy demands likely to be faced in everyday life.



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# Task administration

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# Task administration

- In all cases the student was required to read the stimulus unaided.
- But in all cases the tester told the student what the task was, even though this was also stated on the stimulus sheet.



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# Task administration

Differences between tasks concerned the modes of response:

- There were a few items where students had only to circle the response (for example, two dates on a calendar)
- There were several items where the tester read the questions to the student and then wrote the student's answers down verbatim



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# Task administration

- 12 items were multiple choice: students ticked one of four boxes to indicate the response.
- Here students had to read not only the stimulus text but also the questions and the four choices of answer to each question, but still did not have to write the answer.



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# Task administration

- For the items based on IALS tasks (which all occurred in the main sections of the tests), the student was required not only to read the stimulus unaided but also to write the response unaided.



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# Task administration

- Thus in the opening sections of the four test versions, the response varied from the very simple (circling) to a mode somewhat simpler than having to write the response unaided, namely multiple-choice.
- In no case in the opening sections did the student have to write an answer.



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# Task administration

- Where the answer did have to be written down in the opening sections, the tester did this (in addition to reading the question to the student).
- There was least support for the students' literacy in the main sections of the tests.



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# The writing tests

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# Instrument for assessing writing

Two simple one-sentence prompts were devised, one each for pre- and post-test:

- Pre-test: *please write a bit about what you hope to learn here.*
- Post-test: *please write a bit about what you have learnt here.*



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# Instrument for assessing writing

- These were printed on sheets which had spaces for the student's name, ID number and college or centre.
- The reading test administrators left these with the student's tutors to be completed as soon as possible after the administrator's visit.



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# Analysing the writing samples

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# Writing samples

The length of the script was noted for two reasons:

- Any change in the average length of student's writing would be of interest in itself.
- An allowance was made for the length of script, so as not to penalise students simply on the basis of the number of errors made.



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# Writing samples

- If a script was returned blank, it was dropped from the analysis.
- Scripts that had been scribed for a student were dropped from the analysis.
- Under Grammar, Style, Spelling and Other Orthographic Conventions the numbers of errors were noted.



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# Writing samples

- Results were calculated first for each of these four categories separately, and then for the total number of errors (by adding together the errors in each category).
- The Handwriting category was an assessment, on a simple three-point scale, of the quality of the handwriting, largely in terms of letter formation.



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# What could students at each level do?

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# What could students do?

- In IALS, student performance at each level was characterised in terms of what students at that level had an 80 per cent probability of being able to do.
- Therefore listing items which students at a level had an 80 per cent probability of being able to do gave a general impression of the kinds of literacy skill which people at that level possessed.



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# What could students do?

Students who had scores in the IALS Level 1/New Standards Entry Level had an 80 per cent probability of being able to:

- ring dates on a calendar
- locate the amount of milk needed for a Custard recipe
- locate information in a note from a neighbour.



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## What could students do?

- This shows that even students approaching the top of the New Standards Entry Level could generally cope with only a few items, these being very simple information-retrieval tasks.
- Students at Entry Levels 1 and 2 generally could not cope even with these items – and students at these levels were 29 per cent of the full sample at pre-test and 23 per cent at post test.



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# What could students do?

- None of the students below IALS Level 2/New Standards Level 1 had yet achieved functional literacy
- Students at this level comprised 48 per cent of the full sample at pre-test and 43 per cent at post-test.



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# What could students do?

- The very short list of items which students at IALS Level 1/New Standards Entry Level could generally manage suggests that, despite the success of achieving finer statistical discrimination at the lower end of the scale, the 'lower rungs of the ladder' were still not numerous enough for the students with the lowest levels of literacy.



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# What could students do?

- The implication is that, for the weakest students, there need to be 'very small steps' on which they can demonstrate progress.



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# What could students do?

Students who had scores in the IALS Level 2/New Standards Level 1 also had an 80 per cent probability of being able to:

- Locate phone numbers; locate the amount of sugar needed for a Custard recipe;
- Retrieve information about quicksand; retrieve simple information from a notice about a meeting
- Answer questions about a simple map.



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# What could students do?

- Say why a scrambled Eggs recipe calls for sugar (IALS L1, Prose)
- Underline information in a newspaper article (IALS L1, Prose)
- Retrieve simple information from a newspaper article (IALS L2, Prose)
- Answer a simple question about a Nuclear Waste chart (IALS, L2, Document)



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# What could students do?

- Students at this level (IALS Level 2) could generally cope with a much wider range of information items, including many where they had to write their own answers, but not yet with items requiring inference or the relating of separate pieces of information.
- Even the question about why a scrambled eggs recipe called for sugar required only the location of the relevant sentence in the recipe.



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# What could students do?

- Students at this level could be said to have largely achieved functional literacy - but not yet able to cope with more demanding literacy tasks.



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# What could students do?

Students who had scores in the IALS Level 3/New Standards Level 2 also had an 80 per cent probability of being able to:

- Choose the best title for a piece about quicksand
- Make a simple inference from information about seedsticks
- Locate the date of the lowest point in a chart



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# What could students do?

- Make a difficult inference about a new law on fighting fires (IALS, L3, Prose)
- Retrieve two pieces of information about fighting fires (IALS, L3, Prose)
- Relate two pieces of information from a chart (IALS, L3, Document)
- Make an inference about information in a Nuclear Waste chart (IALS, L3, Document)



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# What could students do?

- Students at this level – IALS Level 3 – could generally cope with items requiring them to make inferences or relate separate pieces of information or distinguish relevant from distracting information.
- In other words, they had quite well developed reading skills.



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# What could students do?

Students with scores in the IALS L3/New Standards L2 had **less than** an 80% probability of being able to:

- State when a recipe custard should be stirred (IALS, L3, Document)
- Combine/transform two pieces of information for an employment application form (IALS, L3, Document)
- Transcribe three pieces of information from a medicine label (IALS, L3, Prose)



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# What could students do?

- This shows the few tasks that even the highest-scoring students in the sample were generally not yet able to do.
- These were tasks requiring complex inferences or the interpretation of difficult text.



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# What could students do?

- Students in the study at the various IALS levels as shown by their scores were not necessary generally able to cope with tasks which the IALS study itself showed could be managed by people at those levels within a nationally representative sample.
-



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# What could students do?

- This was odd.
- Students in this study exhibited different literacy behaviour than adults in the same part (mainly the lower half) of the national distribution: they achieved scores at a higher IALS level than their performance on the IALS items alone would have earned.



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# What could students do?

- A part of the explanation may lie in the ‘turbulence’ in the results.
- That is, every instrument for measuring reading attainment has some degree of unreliability.



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# What could students do?

- A more general explanation might relate to differential performance on the Prose and Document items.
- The proportions of students in this study who produced the correct answers to IALS items were closer to the national proportions on Document than on Prose items.



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# What could students do?

- They could cope better with non-continuous texts (such as application forms for employment and for theatre tickets, and graphic information in charts) than with continuous texts (such as a dense piece about fighting fires, a newspaper article, etc.).



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# What could students do?

- Thus, basic skills students seem to have learnt to cope better with the sorts of literacy skills that are also life skills, but not at all well with stretches of prose – which may require more sustained attention and more focussed skills.



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# What could students do?

- It may also be that the students in this study are unrepresentative of adults in the lower half of the national distribution of literacy attainment in this disjunction of reading skills.



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# ‘Appendix’: writing

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# Writing

- Writing is difficult to assess in the context of large scale surveys, which therefore tend to provide limited information on this aspect of literacy.
- The IALS literacy levels do not include writing.
- 'Progress in Adult Literacy' included only limited evidence on writing.



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# Writing: what is required?

- Need to distinguish writing tasks undertaken in workplace, educational, social and other contexts.
- Further distinctions within each context: eg, workplace - large, medium and small businesses.
- And need to distinguish between the demands made on adults by the business they work in and the skills which adults need and deploy to meet those demands.



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# Writing

- Data are required which stem from direct observation, interviews and analysis of documents.
- Focus on what, and how much, and at what level people actually write, and are expected to write, in specific contexts.



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# Writing

- There is a pressing need, therefore, to gather data on a central area of literacy that large-scale surveys tend not to include, as with IALS, or include only to a limited extent, as in 'Progress in Adult Literacy'.



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# Thank you

- Thank you for inviting NRDC
- John Vorhaus and Greg Brooks are happy to provide more information on any aspect of this presentation.
- Email: [j.vorhaus@ioe.ac.uk](mailto:j.vorhaus@ioe.ac.uk)