FRAMEWORK FOR THE 2009 NATIONAL ASSESSMENT OF ENGLISH READING (NAER 2009)

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The 2009 National Assessment of English Reading (NAER 2009) is the seventh in a series of national assessments dating back to 1972. Up to 2004, pupils were assessed in Fourth/Fifth classes. In 2004, the assessment was in First and Fifth classes.

In 2009, pupils will be assessed at the end of Second and Sixth classes to coincide with the end of cycles in the primary school. As assessments have not previously been carried out at these levels, comparisons with earlier performances will not be possible.

Schools and pupils participating in NAER 2009 will also be asked to participate in the 2009 National Assessment of Mathematics Achievement (NAMA 2009), which will be administered in parallel with NAER (i.e., the same pupils will be invited to take part in both assessments).

NAER 2009 is being implemented by the Educational Research Centre on behalf of the Department of Education and Science. The Centre is supported in its work by a National Advisory Committee comprising representatives of the Department of Education and Science, the Catholic Primary School Managers Association, the Irish Primary Principals' Network, the Irish National Teachers' Organisation, the National Council for Curriculum and Assessment, the National Parents Council – Primary, An Foras Patrúntachta and Gaelscoileanna.

The Centre is also assisted in its work on NAER 2009 by an English Reading Expert Group. This group consists of members of the Inspectorate, teachers, lecturers in reading literacy, and ERC staff members.

In this document, the assessment framework and process of developing assessment instruments for pupils in Second and Sixth classes in NAER 2009 are outlined.

The Assessment Framework

An assessment framework attempts to describe what is being assessed, how it is being assessed, and why it is being assessed (Kirsch, 2001). It does this by making the assessment process and the assumptions behind it transparent, in the first instance for those who will construct the assessment instruments, but also for a wider audience which includes policy personnel, teachers, and curriculum developers. Thus, the framework describes the general aims of the assessment, which in turn will provide a basis for specifying what will be measured in terms of knowledge, skills, and other attributes.

The assessment framework for NAER 2009 is similar to that used in NAER 2004 with some modifications necessitated by the change in grade level.

The aims of NAER 2009 are

- to establish current reading standards of Second and Sixth class pupils;

- to provide high quality and reliable data for the Department of Education and Science to assist in policy review and formulation and in decisions regarding resource allocation related to English Reading;

- to examine school, teacher, home background, and pupil characteristics, and teaching methods which may be related to reading achievement;

- to provide a basis with which to compare future assessments of English reading at Second and Sixth classes.

Definition of Reading

As in NAER 2004, reading is defined as

the process of constructing meaning through the dynamic interaction among the reader's existing knowledge, the information suggested by the written language, and the context of the reading situation. Young readers read to learn, to participate in communities of readers, and for enjoyment (Eivers, Shiel, Perkins, & Cosgrove, 2005, p. 15).

The definition is based on research relating to the development of pupils' literacy skills, definitions in international studies of reading achievement, and the English curriculum for primary schools in Ireland.

The focus in the definition is on reading comprehension, and this also will be the focus in the national assessment. This means that the stimulus material in the assessment will comprise texts designed to activate an appropriate knowledge structure in the reader to organise new information contained in the text and connect it with what the reader already knows (represented in the reader's schemata).

While the focus in the assessment will be on comprehension, some items which will assess foundation components of reading (vocabulary) will be included at both grade levels.

Content and Processes in Reading Comprehension

Reading comprehension can be classified using two dimensions: content and process. In constructing items for the assessment, content categories of texts were cross-classified with processes involved in reading.

Reading Content

Psychological models of text comprehension have focused on three major types of text:

narrative text in which the main focus is to tell a story (whether fact or fiction);

expository text in which the main thrust is to communicate information or opinion (so that the reader might learn something). The text is designed to describe, explain, or otherwise convey factual information or opinion;

documents in which structural information is presented in the form of charts, tables, maps, groups, lists, or sets of instructions.

Both narrative and expository texts are presented in continuous form, while documents represent non-continuous form.

The distinction between narrative and expository texts is not always very clear. The crucial difference is at the level of rhetorical structure. For example, the structure of narratives can be described in terms of setting-complication-resolution, or story

grammar, or causal event chains. Expository texts, on the other hand, are typically described in terms of such schemata as classification, illustration, comparison and contrast, and procedural description (Weaver & Kintisch, 1991).

Reading Processes

Four processes may be specified.

Retrieval processing requires the reader to decode a text accurately, to understand what is stated in the text, and how it relates to the information that is sought; e.g., looking for specific information, events, ideas, definitions or phrases; identifying the setting of a story (e.g., time, place); finding the main theme of a text when explicitly stated.

Straightforward inferential processing requires direct inference from a text; e.g., deducing or inferring that one event caused another; determining the main point of a series of arguments; identifying generalisations in a text; describing the relationships between two characters.

Interpretation and integration requires some integration of personal knowledge or experience with meaning that resides in a text to construct a more complete understanding of the text; e.g., discerning the overall message or theme of a text; considering an alternative to actions of characters; comparing and contrasting text information; inferring the mood or tone of a story; applying text information to a real world situation.

Examination and evaluation involves evaluation of a text, either from a personal perspective or a more critical and objective viewpoint; e.g., evaluating the plausibility of events described in a text; identifying and commenting on the structure and organisation of texts, including grammatical and presentational features; judging the completeness or clarity of information in a text; determining an author's perspective on the central topic in a text; identifying and commenting on the writer's purposes and viewpoints, and the overall effect of the text on the reader; and relating texts to their social, cultural, and historical contexts and literary traditions (Cosgrove, Milis, Shiel, Forde & Wardle, 2004; Eivers et al., 2005; Martin, Forde & Hickey, 1991).

Pupils' Experience of Reading Content and Processes in Second and Sixth Classes

Content. Data are available in Eivers et al. (2005, pp. 16-18) on reading content and processes likely to be encountered by pupils in First and Fifth classes. In textbooks, based on word counts, the proportion of narrative short stories fell from First class (80%) to Fifth class (65%). The proportion of expository and representational texts increased from First class (20%) to Fifth class (35%). Common themes/topics in First class included animals, monsters, fantasy, books and reading, playing, sleeping and transport. Topics in Fifth class were more varied and included nature and science, sports and hobbies, history and geography, people and cultural, art, personal health and safety, and transport. These data are taken as guidelines for the Second and Sixth class assessments.

Process. Data from Eivers et al. (2005, p. 18) relating to pupils' experience of processes refer to curriculum for First/Second and Fifth/Sixth class. For example, the curriculum states that First/Second class pupils should be able to recall details and

events (*retrieve*), assimilate facts (*infer*), and retell stories (*infer*). Pupils are also expected to be able to respond to characters and events in a story, to imagine what it would be like to be certain characters, and to give an opinion of a text (*interpret*, and, to some degree, *evaluate*). However, the emphasis on these latter processes is considerably less than the emphasis on retrieve and infer. The First class test for NAER 2004 mainly assessed the retrieve and infer processes, with a lesser emphasis on interpret, and did not contain any items classified as requiring evaluative processing.

At Fifth/Sixth class, the primary school curriculum indicates that pupils should be able to engage in multiple higher order skills, including using comprehension skills to aid deduction, problem-solving, and prediction; supporting arguments and opinions with text-based evidence; relating personal experience to ideas and emotions conveyed in the text; distinguishing fact from opinion; and examining similarities and differences in various types of text. Relating these to reading processes, Fifth/Sixth class pupils are expected to be able to infer, interpret and evaluate (with greater emphasis on interpretation and evaluation). The Sixth class test will be similar to the Fifth class test for NAER 2004 in mainly assessing the interpret and evaluate processes, but will also include the retrieve and infer processes so that the reading skills of basic level readers can be reported (Eivers et al., 2005, p. 18).

Components of the NAER 2009 Framework

A revised framework is being used for the 2009 assessment which is more closely based on the most recent PIRLS. It involves a classification based on two purposes of reading and the four processes identified in earlier studies. Purposes are defined as (i) reading for literary experience and (ii) reading to acquire and use information:

(i) *reading for literary experience*: 'the reader engages with the text to become involved in imagined events, setting, actions, consequences, characters, atmosphere, feelings, and ideas, and to enjoy language itself. To understand and appreciate literature, the reader must bring to the text his or her own experiences, feelings, appreciation of language and knowledge of literary forms' (Mullis et al., 2006, p. 18).

(ii) *reading to acquire and use information:* 'the reader engages … with aspects of the real universe. Through informational texts, one can understand how the world is and has been, and why things work as they do. Readers can go beyond the acquisition of information and use it in learning and in action' (Mullis et al., 2006 p. 19). Informational texts may be ordered (a) chronologically, (b) logically, (c) in expository form, or (d) as non-continuous text or in some combination of these:

a) *Chronological presentations* generally involve recounting of events (e.g., historical facts, biographies) or presentation of procedures (e.g., recipes).

b) *Logical presentations* involve presentation of ideas in an orderly sequence (e.g., text comparing and contrasting weather conditions, persuasive arguments).

c) *Expository texts* present explanations or describe people, events, or things.

d) *Non-continuous texts* may be presented in the form of lists, diagrams, charts, graphs, timetables, advertisements (Mullis et al., 2006).

Format of Test Questions

In line with recent national and international assessments at primary level, it was decided that questions prepared for Second class pupils would all follow a multiple-choice format, since many pupils at this class level might not have developed sufficient writing/spelling skills to demonstrate their knowledge on constructed response items. For Sixth class, it was felt that about two-thirds of the items should follow a multiple-choice format, and one-third a short, constructed response format, where pupils would be asked to respond in writing. The inclusion of constructed response items at Sixth class level would also facilitate the proposed emphasis on interpret and evaluate questions at that class level. It was intended that, in developing scoring rubrics for the constructed response items, pupils would be marked on the appropriateness of the answers they wrote, rather than on the quality of the writing or spelling.

Since the foundation component tests were designed to assess reading vocabulary, it was decided that all questions on these tests would follow a multiple-choice format.

Item Specifications for the Reading Tests

The specifications in Tables 1 and 2 provided a blueprint for the development of the pilot tests for NAER 2009. The data were extrapolated from NAER 2004 (Sixth class based on Fifth class; Second class based on First class) and projected onto the framework for NAER 2009. In doing so, equivalence between texts types in NAER 2004 and reading purposes in NAER 2009 was assumed, as was equivalence between process categories in the two years.

Table 1: Table of Specifications – Numbers of Items by Reading Purpose and Process – Sixth Class

Processes	Purposes	
	Reading for literary experience	Reading to acquire and use information
Focus on and retrieve explicitly stated information	30	50
Make straightforward inferences	30	20
Interpret and integrate ideas and information	20	10
Examine and evaluate content	5	5
Core Test Subtotal	85	85
Foundation Component (Vocabulary)	20	

Table 2: Table of Specifications – Numbers of Items by Reading Purpose and Process – Second Class

Processes	Purposes	
	Reading for literary experience	Reading to acquire and use information
Focus on and retrieve explicitly stated information	30	30
Make straightforward inferences	25	25
Interpret and integrate ideas and information	20	20
Examine and evaluate content	-	-
Core Test Subtotal	75	75
Foundation Component (Vocabulary)	20	

Development of Reading Texts and Questions

A team of five experienced primary school teachers and three researchers at the Educational Research Centre was asked to source suitable texts and to develop questions based on the texts, with a view to trying out the texts and questions in a pilot study in May 2008. The team met on a regular basis to review texts and test items. Feedback on the suitability of individual texts related to the links between the text and the framework, whether or not the topic was covered in other texts, and the readability of the text. Care was taken to ensure that as wide a range of topics as possible would be covered.

The team was asked to take the following considerations into account in selecting texts:

- level of interest evoked by text
- context
- familiarity with content/prior knowledge
- coherence of macrostructure/organisation (ease in computing relationships among successive words, phrases, sentences)
- coherence of microstructure
- number of bridging inferences required in a text
- word length/number of syllables per word
- word difficulty (usually based on frequency)
- sentence length
- grammatical complexity
- texts not to exceed 300/400 words (less than a page).

In writing items, the team was advised to:

1.   Focus on main ideas and viewpoints (not minor details)
2.   Select items representative of the four item processes described in the framework
3.   Generate between 6 and 12 items per text.

The team sourced texts in narrative and information books for children, in magazines and newspapers, and on the Internet. A small number of texts developed by the ERC were also considered. For Sixth class, the pool of selected texts included adventure stories, brochures (advertisements), biographical pieces, dictionary pages, DVD jackets, information pieces, timetables, and web pages. For Second class, it included descriptions, lists, narratives, instructions, recipes, timetables and weather maps. Suitable illustrations were identified, and, in some cases, commissioned for each text.

For Sixth class, the team selected and/or developed 26 texts for inclusion in the pilot study, and wrote 213 associated test questions. The texts and questions were distributed over 5 test booklets, so that individual pupils participating in the pilot study would be expected to read to 5 or 6 texts, and answer about 40 questions. Forty vocabulary items were prepared for the Foundation Component at Sixth class. Each one consisted of a target word embedded in a low-context sentence, and four response options. Pupils were expected to select the option that was closest in meaning to the target word. All pupils were asked to attempt the set of 40 vocabulary items.

For Second class, the team selected and/or developed 24 texts and wrote 151 questions. These were distributed over 5 booklets with individual pupils in the pilot study asked to read between 4 and 6 texts (depending on length) and answer about 35 questions. Twenty vocabulary items were also prepared for the Foundation Component for Second class, with all pupils asked to attempt the full set.

Development of Questionnaires

As well as assessing reading achievement, NAER 2009 will gather contextual information about pupils, their homes and the schools in which they are enrolled. Table 3 summarises the types of instruments used to gather such information. All the instruments listed include questions that relate to both reading and mathematics. All were developed in advance of the field trial, and were subsequently revised in preparation for the main study.

The content of the questionnaires was selected with reference to the aims of NAER 2009, and drew on items used in earlier national assessments, as well as on suggestions by members of the National Advisory Committee and English Expert Group.

Table 3: Instruments included as part of the National Assessments of English Reading and Mathematics (2009)

Instrument	Completed by . . .
School Questionnaire	Principal
Teacher Questionnaire (2nd and 6th class versions)	Class teacher
Parent Questionnaire (2nd and 6th class versions)	Parent / guardian
Pupil Questionnaire (2nd and 6th class versions)	Pupil
Pupil Rating Form	Class teacher

School Questionnaire
This questionnaire is targeted at principal teachers. Six pages in length, it seeks information on the following areas:

- o Background characteristics, including school size, location and enrolment profile.

- o Additional support, including numbers of pupils in need or receipt of learning or language support, or resource teaching (for English and mathematics).

- o Resources, including access to and deployment of physical (e.g., library books, computers) and human resources (e.g., special needs posts).

- o School policies and practices for assessment and planning for teaching reading and mathematics.

Teacher Questionnaire
Teacher Questionnaires have been developed for both Second and Sixth class teachers. Although covering the same broad content areas, some questions refer to teaching practices and curriculum coverage that are specific to one or other grade. The following are the main areas covered:

- o Background, including qualifications and teaching experience.

- o Instructional practices and resources used for the teaching of reading and mathematics.

- o Planning for the teaching of reading and mathematics.

- o Classroom organisation and grouping practices.

- o Assessment practices.

- o Access to resources (e.g., interactive whiteboards) and support (e.g., the special education team).

Parent Questionnaire

Parents will be asked to complete a very short questionnaire (three pages), with slightly different versions for Second and Sixth class. The questionnaire will also be available in a small number of other languages (based on the language needs identified by school principals). The main topics covered are:

- o Homework, including frequency of, and assistance provided to the child.

- o Contact with the school.

- o Parental engagement in leisure reading.

- o Resources in the home, including access to books and computers.

- o Demographic information, including parental educational attainment, employment status, and family size.

Pupil Questionnaire

There are two Pupil Questionnaires – a very simple version for Second class pupils (mainly Yes/No questions), and a slightly more complex version for Sixth class pupils. The main topics covered, at both class levels, are:

- o Attitudes to reading and mathematics.

- o Activities and processes in reading and mathematics lessons.

- o Free time activities (e.g., playing computer games, watching TV, playing sport).

- o Background information, including country of birth, language spoken in the home, and resources in the home.

Pupil Rating Form

A Pupil Rating Form in respect of each selected pupil is provided to the pupil's class teacher. It is a single-page form with a pre-filled list of pupil names. Teachers will be asked to provide information about each pupil, including:

- o Attendance record for the preceding term.

- o Receipt of additional support for reading and / or mathematics.

- o General academic ability and the grade level of materials used in mathematics and English classes.

Implementation of Pilot Study in 2008

The pilot study was implemented in 29 randomly selected primary schools in May, 2008. The schools were all vertical (i.e., included Second and Sixth classes), and were located in Dublin City, Dun Laoghaire/Rathdown, Fingal, Kildare and Meath. At Second class, 1191 pupils (92% of the selected sample) completed the reading assessment, while at Sixth class level 1015 pupils (89.2%) did so. Completion rates for the other instruments were: School Questionnaire (84% completion rate), Teacher Questionnaire (85% at Second class, and 92% at Sixth class), Pupil Rating Form (94% at both class levels), Pupil Questionnaire (which was administered in one-half of

schools) (89% at Second and 86% at Sixth), and Parent Questionnaire (also administered in one-half of schools) (75% at Second and 71% at Sixth). While electronic versions of the questionnaires were available, take-up was very low.

In one-half of schools, the mathematics tests were administered on the first day of testing, and the English tests on the second. In the other half, the order was reversed.

ERC staff and members of the Inspectorate of the Department of Education and Science visited 7 schools to observe the quality of the test administration and to identify possible areas for improvement in the Test Administration Manual and related materials. The observers reported that, in all cases, the guidelines on test administration in the Administration Manual were adhered to, and identified a small number of areas in which the instructions provided could be improved.

Outcomes of the Pilot Study

Prior to scoring open-ended test questions, a scoring guide was prepared, and raters were trained to implement the guide in a consistent manner. Item statistics based on the field trial questions were examined for difficulty and discrimination. At Sixth class, average booklet-level difficulty levels ranged from .62 to .67. These were more are less in the expected range. Forty-one items (including two test units) were dropped, either because they were too easy or too difficult, or did not discriminate well between students who performed well on the test a whole and those who did poorly. Differential item functioning (DIF) was examined using the BILOG programme. None of the retained items was deemed to be significantly biased in favour of male or female pupils. Table 3 gives a breakdown of the 179 remaining items, by reading purpose and by process. The items and units were re-distributed over 4 test booklets for the main study. In addition to 5-6 texts and 42-44 items, each booklet contains a common block of 20 vocabulary items – 20 fewer than in the pilot study. The selected 20 were chosen on the basis that they provided a broad range of item difficulties, with an average difficulty of 0.65, they discriminated well between high- and low-achieving pupils, and they had no gender DIF.

Of the 179 Sixth class items, 121 (or 67.6%) were multiple choice, and 58 (32.4%) were constructed response (open-ended).

At Second class level, item difficulties on the pilot booklets ranged from .59 to .69. The difficulty and discrimination indices for individual items were examined, and 17 items (including 2 units) were dropped because they were deemed to be too easy, too difficult or poorly discriminating. Again, the outcomes of DIF analysis did not reveal any retained items that were significantly biased in favour of male or female pupils. Table 4 gives a breakdown of the remaining 134 items by reading purpose and process. These were spread over 4 test booklets for the main study. Each booklet consists of 5 texts and 33-35 questions. In addition to the texts and accompanying questions, all pupils will be asked to complete a common block of 20 vocabulary items.

In general, the questionnaire items used in the pilot study were deemed to have worked well. However, a small number were modified to improve language clarity and to eliminate overlap.

Table 3
Reading: Final Item Pool by Reading Purpose and Process – Sixth Class

Process	Purposes	
	For literary experience	To acquire and use information
Focus on and retrieve explicitly stated information	35	53
Make straightforward inferences	33	21
Interpret and integrate ideas and information	21	8
Examine and evaluate content	5	3
Subtotal	94	85
Foundation Component (Vocabulary)	20	

Table 4
Reading: Final Item Pool by Reading Purpose and Process – Second Class

Processes	Purposes	
	For literary experience	To acquire and use information
Focus on and retrieve explicitly stated information	26	45
Make straightforward inferences	25	16
Interpret and integrate ideas and information	18	4
Examine and evaluate content	-	-
Subtotal	69	65
Foundation Component (Vocabulary)	20	

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