



Coimisiún na Scrúduithe Stáit
State Examinations Commission

The Preparation of Test Items – Principles and Protocol



Mission Statement

To provide a high-quality state examinations and assessment system incorporating the highest standards of openness, fairness and accountability.

Mandate

The State Examinations Commission (SEC) was established on 6th March 2003 under Section 54 of the Education Act, 1998 and is mandated in its functions under Statutory Instrument 373/2003, the State Examinations Commission (Establishment) Order 2003. The order sets out the functions and responsibilities of the SEC as follows:

- To organise the holding of examinations
- To ensure the preparation of examination papers and other examination materials
- To determine procedures in places where examinations are conducted including the supervision of examinations
- To make arrangements for the marking of work presented for examination
- To issue the results of examinations
- To determine procedures to enable the review and appeal of results of examinations at the request of candidates
- To charge and collect fees for examinations and apply such monies to the carrying out of its functions
- To designate places where examinations may be held



Coimisiún na Scrúduithe Stáit
State Examinations Commission

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1 Executive Summary



The purpose of this document is to set out the principles and protocol which underpin and inform the preparation of test items used by the State Examinations Commission (SEC) in the state certificate examinations.

The role of the SEC is to provide a high-quality state examinations and assessment system incorporating the highest standards of openness, fairness and accountability. In providing this system, the SEC endeavours to ensure that the test items used in the state certificate examinations are prepared to the highest standard possible. These test items include examination questions, briefs for practical examinations, topics for coursework, and other materials used in the assessment of candidates.

Section 2 of this document describes the context in which the SEC fulfils its role. It indicates, in particular, the importance of the SEC's relationship with its partners and customers in the broad education community, with the Department of Education and Science and with the National Council for Curriculum and Assessment (NCCA) in the matter of the provision of state certificate examinations. Section 2 also describes the nature and extent of the operation engaged in by the SEC in providing a high-quality system which enjoys the confidence of the public and of key sectors in the community, such as educational institutions, training bodies, and employers.

Section 3 outlines the key principles that underpin and inform the preparation of test items. These principles include validity, reliability, freedom from bias, inclusiveness and equity, discrimination, and accessibility.

Section 4 sets out the protocol which personnel responsible for the preparation of test items follow in applying these principles. In the case of each examination, this process is normally managed by an Examinations and Assessment Manager (EAM) who is a full-time officer of the SEC's Examinations and Assessment Division. Each EAM has charge over the content of examinations and the maintenance of standards in his/her assigned examinations.

Section 5 outlines the roles and responsibilities of key personnel within the SEC in relation to the preparation of test items.



2 Introduction

The purpose of this document is to set out the principles and protocol which underpin and inform the preparation of test items used by the State Examinations Commission (SEC) in the state certificate examinations.

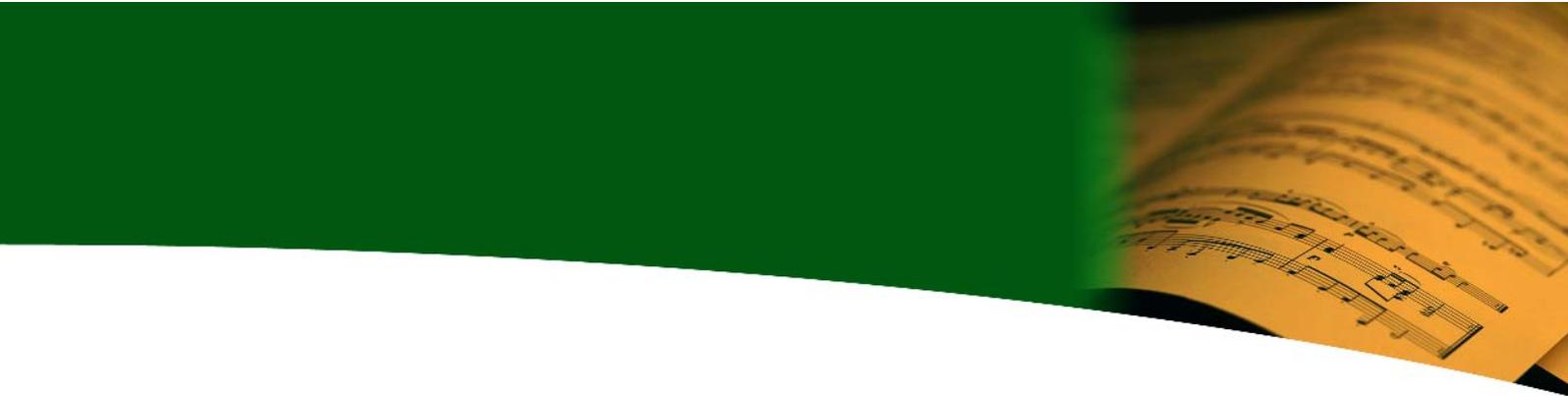
The SEC is a statutory body established by Government under Section 54 of the Education Act, 1998. The five non-executive members of the Commission are appointed for a fixed period by Government on the nomination of the Minister for Education and Science. The staff of the SEC is managed by the Chief Executive Officer. The functions of the SEC are defined in the State Examinations Commission (Establishment) Order, 2003. Deriving from this Order is the SEC's role of providing a high-quality state examinations and assessment system incorporating the highest standards of openness and transparency, fairness and accountability.

The Minister for Education and Science determines policy in relation to the certificate examinations, the content of syllabuses and programmes to be examined, their assessment structure, and the duration of examinations. This determination is made following advice from the National Council for Curriculum and Assessment (NCCA), which is responsible for developing curriculum through course committees representative of the education partners.

In discharging its responsibilities, the SEC is also cognisant of its partners and customers within the broad education community. These include students, teachers, parents, school management, the third-level sector and other interested parties.

The SEC employs various modes of examination in assessing the wide range of knowledge, skills and competencies specified in the various syllabuses and programmes. In addition to written examinations, for example, the SEC conducts oral examinations, aural examinations, practical examinations, and the examination of coursework. As part of this role, the SEC prepares test items which include examination questions, briefs for practical examinations, topics for coursework, and other materials used in the assessment of candidates.

The certificate examinations are, in the main, marked by examiners appointed by the SEC. They are conducted within a tight timeframe - the majority of them in the course of the summer when schools are closed and examiners are available to examine. There is a pressing requirement to have results made available as quickly as possible to candidates. This is particularly the case in relation to Leaving Certificate results which are required for purposes of progression into third-level and for entry into the world of work.



In a typical year, the state certificate examinations involve approximately:

- ▶ 114,000 candidates in four examination programmes: The Junior Certificate, Leaving Certificate (established), Leaving Certificate Vocational Programme and Leaving Certificate Applied
- ▶ 90 examination subjects
- ▶ 980,000 grades
- ▶ 3 million examination papers made up of 34 million A4 pages
- ▶ 250 different examination components - oral, aural, practical, project and portfolio items, as well as the written examination papers.

The state certificate examinations enjoy a high level of public confidence and are valued particularly by key sectors such as educational institutions, training bodies, and employers. There is widespread confidence in the quality of the examinations, in the standards established and in the fairness with which those standards are applied. Results achieved in the state examinations are generally seen as sound predictors of performance in further study and in the world of work.

The maintenance of an examination system providing valid and reliable certification requires rigorous quality assurance measures based on sound principles articulated through a comprehensive protocol.



3 Assessment Principles

The key principles that underpin and inform the preparation of test items and ensure their quality are:

- ▶ validity
- ▶ reliability
- ▶ freedom from bias
- ▶ inclusiveness and equity
- ▶ discrimination
- ▶ accessibility

3.1 Validity

Validity refers to the accuracy with which an examination measures what it is intended to measure.

The purpose of the state certificate examinations is to measure the extent to which each candidate has fulfilled the objectives of the relevant syllabus, in order to provide a certified record of the candidate's level of achievement. An examination must, therefore, reflect the aims, objectives and content of the officially approved syllabus. It should facilitate candidates in displaying knowledge and understanding of the syllabus content and in demonstrating the skills specified.

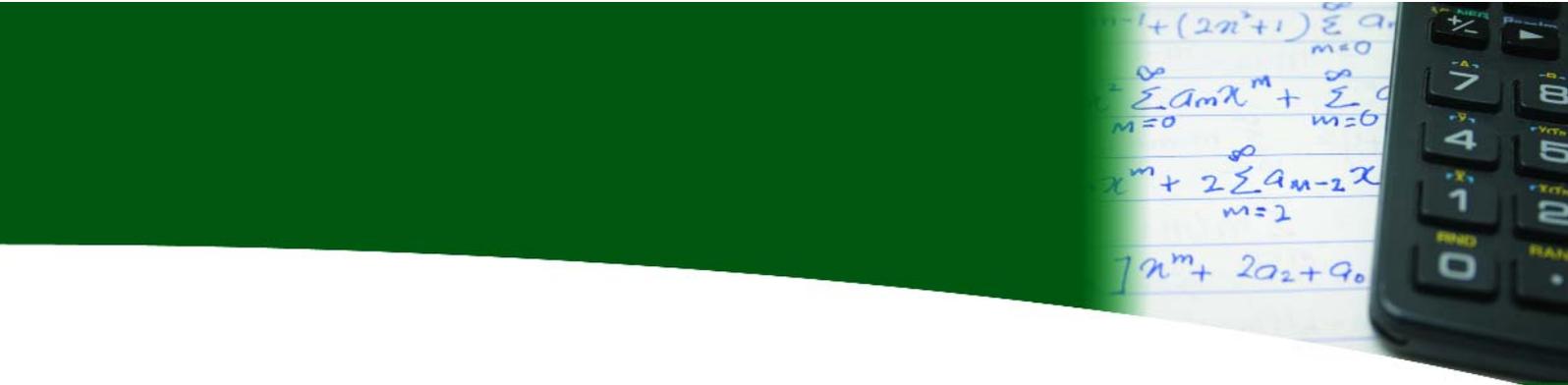
Validity requires that the syllabus content be covered in a balanced and proportionate manner and that the types of competencies measured in the examination are those actually intended to be measured. For example, the syllabuses in many subjects require the assessment of topics from within the candidates' range of experience in everyday situations. The examinations, therefore, must in these instances reflect this particular emphasis on what is topical and relevant to candidates. To exclude such material would be to undermine the validity of the examination.

3.2 Reliability

Reliability refers to the consistency of the results produced by an examination.

Many aspects of examination paper preparation can have a significant bearing on the reliability of the examination. These include, for example, the level of difficulty of the examination, the availability to candidates of options and choices within the examination, the selection of content to be examined, and the readability of instructions and questions.

It is essential, therefore, that these aspects be considered with care when test items are being prepared. Indeed, a failure to address these issues could undermine the principle of



equity for all candidates. For example, reliability requires that all forms of an examination paper, including those modified for particular candidates, such as candidates with a visual impairment, are similar in demand, and that candidates' marks are not inappropriately affected by the form of examination they take.

There may be external factors outside the control of those involved in the preparation of test items that could affect the reliability of an examination for one candidate or for a group of candidates. For example, certain examination content, such as that dealing with serious illness, violence or death, might be disturbing for some candidates. However, such content is only used when required for valid measurement. For example, such content would be unavoidable in the case of a particular prescribed novel, play or poem which has for its theme illness, violence or death.

It is sometimes suggested that such content should be replaced for the candidates affected. However, such an intervention would be difficult to justify for a number of reasons. Firstly, it is difficult to measure accurately the extent to which individual candidates might be affected by such events. Establishing clear criteria for the evaluation of the individual impact of personal trauma would be highly problematic, if not impossible, to achieve. Secondly, any change to the examination would require a consequential change to the marking scheme and this in itself has the potential of affecting the reliability of the examination. Thirdly, although some events are widely reported in the media or otherwise brought to the attention of the SEC, many other events or experiences are private and personal, and the SEC cannot be aware of, and make provision for, all such cases.

Alterations to an examination for one candidate or for a group of candidates in response to trauma or illness could, therefore, result in a loss of equity for all candidates and undermine the reliability of the examination.

3.3 Freedom from Bias

Bias is the presence of some characteristic of an examination that results in different levels of performance by candidates of the same level of achievement, but from different groups, such as ethnic or gender.

Bias is likely to occur when the context, the language, the examples or the illustrations used in an examination are more meaningful to one group of candidates than to another. In so far as is reasonable, examinations should reflect the experiences of all candidates in a balanced way.



It should be noted that different levels of performance by different groups of candidates do not necessarily indicate bias in the examination. For example, different groups such as girls and boys, could have genuinely different levels of achievement in relation to the syllabus concerned. However, in other cases bias might arise because of an unbalanced representation of experiences which are familiar to some sections of the cohort but not to others. For example, if all essay titles in an examination were exclusively based on urban experience, this part of the examination could be biased in favour of urban candidates.

3.4 Inclusiveness and Equity

Examinations should reflect an inclusive view of society and a respect for diversity.

This requires examinations to contain an appropriate balance in relation to such matters as gender, religion, culture, or socio-economic factors and to have all members of society treated with respect.

Having due regard to the syllabus and assessment requirements, the tasks set in an examination, the language in which they are presented, and the accompanying illustrative material should reflect an inclusive view of society. For example, in developing a test item it is necessary to consider how the item portrays the activities which people are engaged in, the attitudes they display, and whether these activities and attitudes suggest inappropriate stereotyping.

However, there may be instances when stereotyping or negative representation can be justified for purposes of valid measurement. It may, for example, be necessary on occasion to portray stereotypical or negative representations in order to allow candidates an opportunity to comment critically on such representations. However, all such instances require careful consideration.

3.5 Discrimination

Discrimination refers to the extent to which an individual test item, or an examination as a whole, effectively distinguishes between candidates of different underlying levels of achievement.



An examination must provide opportunities for candidates across the achievement range to show what they know, understand and can do.

Marks awarded in an examination are used for the purposes of grading and certification. In order to discriminate effectively, examination papers and marking schemes must be constructed to facilitate a spread of grades across the available range.

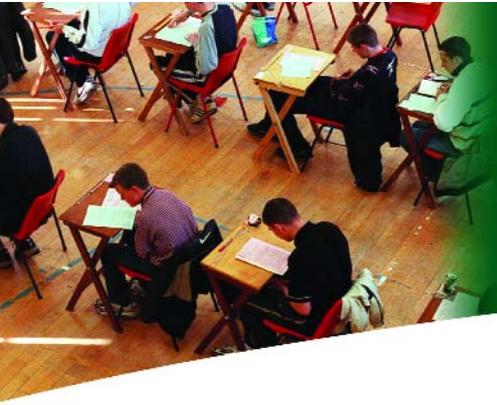
If all candidates answer a particular test item correctly or if all candidates answer it incorrectly, the test item is regarded as being a poor discriminator, since it is failing to distinguish between candidates of different levels of achievement. However, it is not necessary that each individual test item be equally discriminating. For example, an item designed to be accessible to candidates with lower levels of achievement will normally result in good scores by the majority of candidates across the achievement spectrum. What is important is that the test items, when taken together, should allow for overall differentiation of performance among the total candidature for that examination.

3.6 Accessibility

The accessibility of an examination refers to the extent to which all candidates are facilitated in demonstrating their achievements, in the context of the need to preserve the integrity, fairness and standards of the examination.

Accessibility, in this context, generally refers to access to the examination for candidates with disabilities. Accessibility is primarily achieved through the following strategies.

The first strategy is to ensure that due regard is given to access issues when test items are being prepared. All examination materials are reviewed in the course of this process, therefore, with a view to eliminating inappropriate barriers. Careful consideration is given to whether the means of assessment relies on a skill or competence not properly part of the focus of the assessment but which would exclude candidates with certain disabilities. For example, it would not be appropriate to present information on a diagram or chart, unless the interpretation of information presented in this way is part of what one intends to assess. However, this principle must be considered in the light of the requirement for examinations to support good practice in teaching and learning, and for test items to reflect the forms of communication appropriate to the discipline.



Furthermore, a measure that improves access for one group of candidates might be deemed to be a barrier for others. For example, the provision of a diagram to assist in interpreting a written text may improve accessibility for some but could be regarded as disadvantaging others (such as those with a severe visual impairment). In such circumstances, a careful judgment must be made as to the relative merits of including or excluding the material and consideration must be given as to how any negative impact arising from such a decision might best be reduced or eliminated.

The second strategy is the provision, where possible, of alternative means of accessing the test item. Special arrangements are provided to enable candidates with disabilities to demonstrate their levels of achievement. These include, for example, the provision of enlarged and braille versions of question papers for candidates with visual impairment.

The third strategy for facilitating access is the provision, where possible, of an alternative means of examining the same syllabus objective. Special arrangements are also provided in these instances and include, for example, the provision of modified versions of test items.

Despite the effectiveness of these strategies in most circumstances, there will always be cases in which assessment of one or more of the syllabus objectives cannot occur. This arises either when the candidate's disability has prevented him/her from achieving the syllabus objective(s) concerned, or when, in particular instances, the disability precludes any feasible means of assessing the objective.

4 Protocol for the Preparation of Test Items



4.1 Introduction

The SEC is committed to maintaining the highest standards of fairness in its examinations. To achieve this, it is essential that test items and examinations are consistent with the principles of validity, reliability, freedom from bias, inclusiveness and equity, discrimination and accessibility.

This protocol sets out the procedures to be followed by personnel involved in the preparation of test items in applying these principles. This process is normally managed by an Examinations and Assessment Manager (EAM) who is a full-time officer of the Examinations and Assessment Division of the SEC. He/she has charge over the content of test items and the maintenance of standards in his/her assigned examinations from year to year.

4.2 Validity

Validity refers to the accuracy with which an examination measures what it is intended to measure.

In order to produce examinations that are valid, the SEC will:

- ▶ Appoint personnel with appropriate subject expertise and experience as drafters and setters of test items
- ▶ Provide training to all drafters and setters
- ▶ Provide test items and examinations which have been prepared in accordance with the *Manual for Drafters, Setters and Assistant Setters*, in order that every examination will
 - be governed by the aims and objectives of the relevant syllabus
 - be representative of the syllabus content
 - comply with the examination specification, (e.g. short answer section, multiple choice question, essay) as exemplified by sample papers and previous years' papers
 - be similar in demand to previous years (allowing for officially approved and publicly notified changes)
 - include, in accordance with the relevant syllabus, subject matter/topics/themes which, as far as possible, are meaningful in the context of the candidates' experience



- include materials/topics/themes which have been carefully selected and thoroughly researched as appropriate
 - minimise the effect of knowledge or skills extraneous to those which the test item is intended to measure
 - avoid the use of stimuli not consistent with valid measurement
 - be clear, precise and use language appropriate to the examination level
 - use terminology, and where necessary, visual and diagrammatic representations appropriate to the subject and level
 - be amenable to completion by the generality of candidates in the time available.
- ▶ Develop marking schemes, including, where appropriate, anticipated responses and worked solutions in tandem with the development of the examination paper
 - ▶ Ensure that proposed modifications to the examination under the Reasonable Accommodations Scheme are evaluated by the relevant subject expert to assess the impact of the proposed modification on the validity of the examination.

4.3 Reliability

Reliability refers to the consistency of the results produced by an examination.

In order to produce examinations that are reliable, the SEC will:

- ▶ Provide test items which
 - are clear and unambiguous with respect to instructions, content, language, punctuation and numbering
 - indicate the depth and breadth of response required, as appropriate
 - are free from the undue influence of a particular textbook or textbooks
 - are free, as far as possible, from controversial material, images, content or language, unless consistent with or required for valid measurement
 - are reviewed and revised as necessary at the various stages of development.
- ▶ Select and/or prepare graphics, maps, photographs and other stimulus material that are relevant, clear and labelled, as appropriate
- ▶ Prepare optional elements in examinations, and related marking schemes, with due care so that they are similar in demand
- ▶ Provide modified versions of test items, and related marking schemes, that are similar in demand to the original versions, and prepared under the direction of the designated EAM



- ▶ Provide Irish versions of examination papers that are prepared by approved translators and checked by editors in accordance with *Nósanna Imeachta - Aistritheoirí agus Eagarthóirí Gaeilge*, under the direction of the designated EAM
- ▶ Train personnel involved in the development of test items to exercise the highest standards of security, integrity and confidentiality, in accordance with the relevant codes of practice of the SEC.

4.4. Freedom from Bias

Bias is the presence of some characteristic of an examination that results in different levels of performance by candidates of the same level of achievement, but from different groups, such as ethnic or gender.

In order to produce examinations that are free from bias, the SEC will:

- ▶ Select contexts, language, examples and illustrations used in examinations so as to ensure, as far as is practicable, that the test item is not more meaningful to one group of candidates than to another
- ▶ Scrutinise all content of an examination so as to avoid advantaging or disadvantaging any group of candidates through the presence of inappropriate reference to features such as gender, age, status and life experience.

4.5 Inclusiveness and Equity

Examinations should reflect an inclusive view of society and a respect for diversity.

In order to produce examinations that are inclusive and equitable, the SEC will:

- ▶ Develop test items in accordance with the checklists for equity, as set out in the *Manual for Drafters, Setters and Assistant Setters* in order to
 - reflect an inclusive view of society
 - take account of diversity
 - avoid stereotyping unless required for valid measurement
 - avoid material which may be inflammatory or offensive unless such material is required for valid measurement.



4.6 Discrimination

Discrimination refers to the extent to which an individual test item, or an examination as a whole, effectively distinguishes between candidates of different underlying levels of achievement.

In order to ensure that examinations discriminate between candidates of different levels of achievement, the SEC will:

- ▶ Provide examinations at different levels, as appropriate
- ▶ Provide test items, which when taken together, present opportunities for candidates across the achievement range to show what they know, understand, and can do in relation to the relevant syllabus objectives.

4.7 Accessibility

The accessibility of an examination refers to the extent to which all candidates are facilitated in demonstrating their achievements, in the context of the need to preserve the integrity, fairness and standards of the examination.

In order to produce examinations that are as accessible as possible, the SEC will:

- ▶ Prepare test items in accordance with the guidelines, as set out in the *Manual for Drafters, Setters and Assistant Setters*, in order to minimise the requirement to make later modifications for candidates with particular needs
- ▶ Provide enlarged and braille versions of examination papers as necessary
- ▶ Provide modified versions of test items as appropriate. These modified versions will be in accordance with the principles set out in the *Report on Arrangements for the Assessment of Candidates with Special Needs in Certificate Examinations, 2000*.

5 Roles and Responsibilities



The Examinations and Assessment Division (EAD) is responsible for ensuring the quality and standards of all the SEC's examinations. This involves taking the necessary actions to maintain the highest standards in each examination annually and requiring compliance with the specified protocols and procedures. This section outlines the roles and responsibilities of EAD personnel in relation to the preparation of test items.

5.1 Role of the Examinations and Assessment Manager (EAM)

The Examinations and Assessment Manager, as Chief Examiner for assigned examinations, has charge over the quality and content of the relevant test items. The Chief Examiner manages the relevant contract staff and arranges that test items are consistent with the prescribed principles and protocol. This role is delegated to him/her by the Head of the Examinations and Assessment Division.

5.2 Role of the Assistant Head of Examinations and Assessment

The Assistant Head of the Examinations and Assessment Division manages the work of the EAM. This includes providing support and advice to the EAM in his/her work as Chief Examiner.

5.3 Role of the Head of Examinations and Assessment Division

The Head of the Examinations and Assessment Division has overall responsibility for the quality of all test items. He/she delegates responsibility in relation to individual examinations to an EAM, who acts as Chief Examiner for the assigned examinations.

