

## **Title**

*Large scale assessment – maintaining public confidence in high stakes state examinations.*

**Dr Tim Desmond & Margaret Desmond**

## **Abstract**

*If high stakes assessment processes do not have quality assurance systems in place to ensure they can display the characteristics of fairness, openness and transparency, then they may fail to command the public confidence which high stakes assessment processes demand.*

*A brief description will be given of the processes and quality assurance measures put in place by the State Examinations Commission (SEC) in Ireland for the setting and marking of its Leaving Certificate examinations. This will be followed by a more detailed description of the measures which the SEC has in place to support the principles of openness and transparency in its marking of examinations. These measures include a process whereby marked examination scripts are returned for viewing by candidates and an appeal process which mirrors the original marking process.*

*The presentation will conclude with an open discussion of how these processes serve to support the characteristics of a system which commands public confidence.*

## **Introduction**

At the outset it may be helpful to give a short overview of our intentions for this presentation. We intend to

- 1 Situate the Irish State Examinations in an educational and assessment context
- 2 Examine the scale of the operation involved in delivering the State Examinations in Ireland
- 3 Briefly describe how examination material is prepared, including the quality assurance measures involved
- 4 Provide an overview the marking and grading process
- 5 Focus on the quality assurance processes, such as the publication of marking schemes, the return of marked scripts for viewing by candidates, and an appeals process that offers candidates further opportunity for assurance that the marking scheme has been applied correctly to their scripts
- 6 Facilitate discussion on how the processes we have in place contribute to maintaining public confidence in our examination system.

### **1. Placing the Irish State Examinations in an Educational and Assessment Context**

From the foundation of the Irish Free State (Saor Stáit na hÉireann) in 1923, the examination and certification of the school curriculum was carried out by the Inspectorate of the Department of Education and Science (DES). The advent of free education at second level in the late 1960s saw a massive increase in the numbers of candidates presenting for the State Examinations – at that time termed the Intermediate, Group and the Leaving Certificates. The efforts made in the 60s and 70s to increase access to second level and third level education are seen by many commentators as an instrumental factor in the economic success which followed in the so called “Celtic Tiger Era” from the 1990s. Various restructuring occurred in the Department for Education and Science from 1998 onward. This ultimately led to the devolution of its examination brief with the establishment of the State Examinations Commission (SEC) in March 2003.

The SEC is mandated in its functions under legislation - the State Examinations Commission (Establishment) Order 2003. The order devolved all functions and responsibilities in relation to the organisation, running and certification of the State Examinations from the Department for Education and Science (DES) to the SEC. The SEC was established as a public body staffed by civil servants comprising a permanent staff complement of 185. Almost 50% of the inspectors in the DES were seconded at that time to a newly established full-time designated 'professional wing' of the SEC, the Examinations and Assessment Division (EAD) under the new title of Examinations and Assessment Managers (EAMs).

The role of the SEC is the assessment and certification of the second-level examinations of the Irish State. These include the Junior Certificate, the Leaving Certificate, and certain trade and professional examinations.

However, in order to place the SEC in an overall context the following should be understood. The Minister for Education and Science determines all policy matters in relation to the state examinations, including the syllabus content, the assessment structure, and the duration of these examinations.

Responsibility for the elaboration of national curricula, the development of syllabi, as well as assessment specifications, rests with the National Council for Curriculum and Assessment (NCCA). The NCCA undertakes its work in consultation with a wide range of stakeholders, including representatives of teacher unions, school managerial bodies, parent organisations, subject associations and higher education interests including universities and colleges, as well as the DES and the SEC. All curricula and assessment specifications are presented by the NCCA to the Minister for approval and the role of the State Examinations Commission (SEC) is 'to provide a high quality State Examination and Assessment System incorporating the highest standards of openness, fairness and accountability' (SEC Mission Statement).

The SEC, like similar assessment bodies represented at this conference, delivers this service within a context where school curricula are changing, as is understanding of the concept of 'intelligence'. The range of skills and competencies which assessment bodies such as ours measure is also increasing, sometimes set against the context of global developments in technology.

The SEC works towards four core goals. The first of those is

*To maintain and enhance the credibility of the Irish state examinations by providing a high quality examinations and assessment system and having a continual focus on **quality assurance and performance excellence**.*

Underpinning all of our work is the constant need to ensure an examination system of the highest standard which maintains public confidence and credibility and which operates within a constantly evolving educational, assessment and certification framework. This is of critical importance when one considers that the Leaving Certificate is a 'high stakes', 'point-in-time assessment' which determines all candidates end of second-level certification and serves as a selection mechanism for further education. There is essentially no continuous or school based assessment in Ireland.

## 2. The scale of the operation involved in delivering the State Examinations

Running the state examinations is an immense logistical operation. In 2007, the examinations involved the following:

- Providing examinations to 111,181 candidates across all examination programmes: 57,287 at Junior Certificate, 50,873 at Leaving Certificate and 3,021 at Leaving Certificate Applied Programme.
- Arranging for examinations in 89 curricular and 15 non-curricular examination subjects
- Engaging 575 drafters, setters and translators to develop 254 different test components – including oral tests, aural recordings, practical briefs, project briefs, portfolio and coursework items as well as the written examination papers
- Producing 3 million examination papers made up of 34 million A4 pages
- Arranging for the recording of some 90,000 oral tests
- Engaging 4,600 superintendents to supervise at 4,600 general examination centres
- Providing 14,700 reasonable accommodations arrangements to facilitate candidates with individual needs to access the certificate examinations and establishing 6,700 special examination centres as a result
- Engaging 6,000 examiners to mark the examinations; 4,000 written examiners, 1,000 oral examiners and 1,000 practical examiners
- Examining some 1.9 million individual test items including written examination scripts, art and craftwork pieces, project and practical pieces, oral tests, coursework journals, research reports and portfolios
- Generating 950,000 individual grades leading to the award of 111,000 examination certificates
- Returning 350,000 marked scripts to schools for viewing
- Processing some 12,000 appeals

<b>Overall view of the statistics for 2007</b>				
	Leaving Certificate	Leaving Certificate Applied	Junior Certificate	Totals
Candidates	50,873	3,021	57,287	111,181
Curricular Subjects	34	28	27	89
Non-curricular subjects	15	0	0	15
Test Instruments	127	58	69	254
Components Examined	808,565	63,104	1,036,407	1,908,076
Grades	353,323	37,356	571,957	962,636
Appeals	9,913	47	2,967	12,927

<b>Leaving Certificate (Established) Participation Rates for 2007</b>						
<b>Position 2007</b>	<b>Subject</b>	<b>Candidature</b>	<b>Percentage of cohort</b>	<b>Position 2006</b>	<b>Candidature</b>	<b>Percentage of cohort</b>
1	Mathematics	49,044	96.4%	1	49,235	96.6%
2	English	48,454	95.3%	2	48,406	95.0%
3	Irish	44,019	86.5%	3	43,928	86.2%
4	French	27,812	54.7%	4	27,809	54.6%
5	Biology	25,792	50.7%	5	24,887	48.8%
6	Geography	24,220	47.6%	6	24,661	48.4%
7	Business	18,958	37.3%	7	19,425	38.1%
8	Home Economics	12,260	24.1%	8	12,305	24.2%
9	History	11,366	22.3%	9	10,677	21.0%
10	Art	10,131	19.9%	10	9,981	19.6%
11	Construction Studies	8,342	16.4%	11	8,558	16.8%
12	German	7,539	14.8%	12	7,731	15.2%
13	Physics	7,251	14.3%	13	7,335	14.4%
14	Chemistry	6,927	13.6%	14	7,072	13.9%
15	Accounting	6,814	13.4%	15	6,898	13.5%

There has been no change in the order based on participation Rates

<b>Junior Certificate Participation Rates for 2007</b>						
<b>Position 2007</b>	<b>Subject</b>	<b>Candidature</b>	<b>Percentage of cohort</b>	<b>Position 2006</b>	<b>Candidature</b>	<b>Percentage of cohort</b>
1	English	56,674	98.7%	1	57,126	98.9%
2	Mathematics	56,539	98.5%	2	56,966	98.6%
3	CSPE	55,857	97.3%	3	56,171	97.2%
4	Geography	51,984	90.6%	4	52,256	90.4%
5	History	51,311	89.4%	5	51,310	88.8%
6	Science*	50,106	87.3%	7	50,072	86.7%
7	Irish	49,837	86.8%	6	50,871	88.0%
8	French	35,039	61.0%	8	35,701	61.8%
9	Business Studies	33,667	58.7%	9	33,821	58.5%
10	Religious Education	24,605	42.9%	11	23,997	41.5%
11	Art, Craft & Design	21,821	38.0%	10	21,726	37.6%
12	Home Economics	20,080	35.0%	12	20,416	35.3%
13	Materials Technology	15,804	27.5%	13	15,857	27.4%
14	Technical Graphics	12,150	21.2%	14	12,764	22.1%
15	German	10,135	17.7%	15	10,576	18.3%

\* Includes Science (Revised) syllabus, Science (1989) syllabus and Science (1989) with Local Studies.

Changes in order, based on participation rates, occurred in Science (7<sup>th</sup> to 6<sup>th</sup>) and Irish (6<sup>th</sup> to 7<sup>th</sup>)

### 3. How Examination Material is prepared including quality assurance measures

The process whereby test items and examination material are produced is administered by the personnel attached to the Question Paper Unit on the SEC's premises in Athlone. The Chief Examiner, usually an Examinations and Assessment Manager, has a central managerial role in the process which also typically involves a

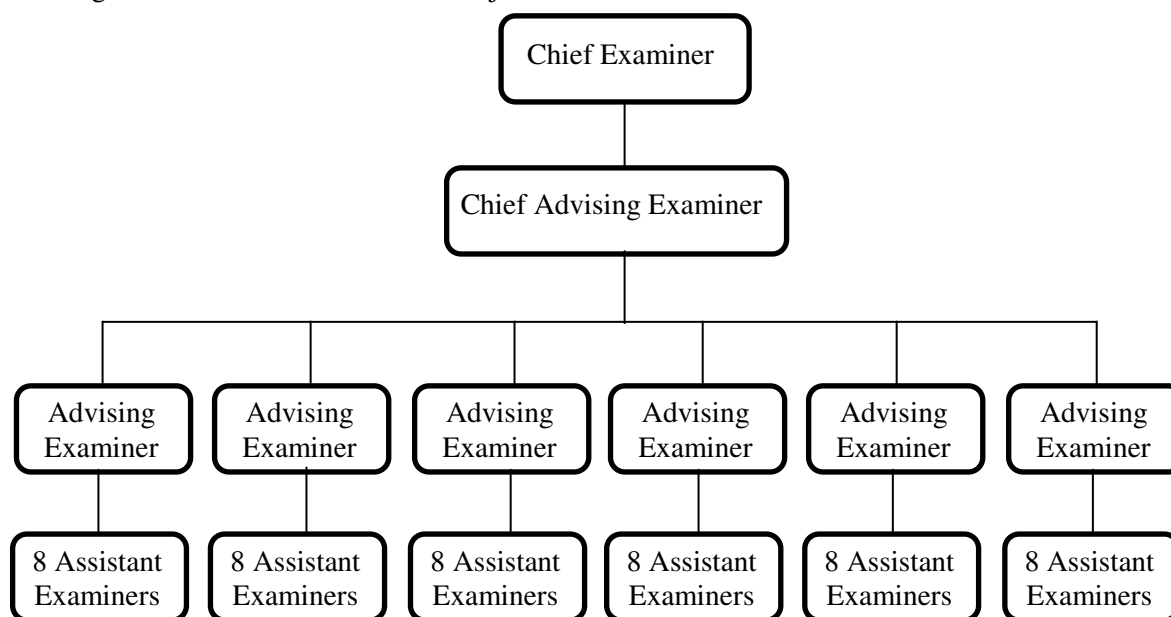
- Drafter
- Setter
- Assistant Setter (in certain circumstances)
- Translator
- Irish Editor
- Translation Services Manager
- University representatives (at Leaving Certificate level)
- Graphic artists, typesetters, etc., as appropriate

Formal training, delivered by EAMs, takes place each year for some 600 contract personnel - Drafters, Setters, Assistant Setters and translators. This involves a one day seminar for new personnel and individual update of training for experienced personnel. This is fundamental to our quality control. Assessment grids are used to check compliance with syllabus requirements, to verify the balance of assessment items and to ensure year-on-year comparability of standard. Draft marking schemes are developed in parallel with the preparation of test items and examination papers.

It is probably worthy of note that the SEC also produces Irish versions of most of its test instruments. There is a comprehensive system of quality assurance in place to ensure that there is no difference in content or standard between the English and the Irish versions of test instruments.

### 4. Overview of the Marking and Grading processes

A hierarchical structure is employed in managing the marking process in each individual subject. The Chief Examiner (usually an EAM) has under his/her direction contract staff consisting of Advising and Assistant Examiners to mark and apply the established quality assurance procedures so as to ensure adherence to marking criteria and schemes, accuracy of marking and uniformity of standard. The following illustrates the structure for a subject cohort of ca. 12,000 candidates.



A sample chart – 1 Chief Advising Examiner, 6 Advising Examiners and 48 Assistant Examiners for c. 12,000 scripts/candidates.

The marking operation involves the following processes:

1. Conferencing of examiners:  
Pre-Conferences (generally of 2 days duration)  
Main Conferences (generally of 2 days duration)
2. Sampling and Monitoring
3. Post Conferences
4. Continued monitoring throughout the marking process

At Pre-Conferences, the Chief Examiner (EAM) meets with the Chief Advising Examiner and the Advising Examiners for each component and level of a subject. The draft marking schemes developed at the examination preparation stage are reviewed, expanded in light of requirements made in previous schemes and the contributions made by experienced examiners within the team. Sample marking is carried out to further assist the development of the marking scheme.

The draft scheme is further developed at the main conference and is further refined, as necessary. At the main conference, a number of sample scripts are test marked by all Assistant Examiners to ensure uniformity of marking i.e. inter-rater reliability. Assistant Examiners receive their allocated scripts at this point. Following the completion of administrative work, they mark a mathematically devised random sample of scripts. Scripts marked by Assistant Examiners are monitored to ensure compliance with the marking scheme and other procedures. Monitoring involves a full remarking of scripts by the Advising Examiners.

At the Post-Conference, the results of the sampling process are considered by the Advisory Team. Minor amendments may be made to the marking scheme in the light of candidates' responses to the questions. Assistant Examiners are informed of any changes, and are instructed to apply the revised scheme to all scripts. At this stage, the marking scheme is now effectively finalised.

The monitoring of marked scripts by Advising Examiners continues throughout the marking process. A minimum of 5% of scripts are re-remarked in this way. Grade distributions are tracked and monitored throughout the process also. It should be noted that at Leaving Certificate level, the SEC operates a system of fixed grade boundaries, with 5% sub-division of grades in most instances.

<b>Grade</b>	<b>Percentage</b>
A1	90+
A2	85 < 90
B1	80 < 85
B2	75 < 80
B3	70 < 75
C1	65 < 70
C2	60 < 65
C3	55 < 60
D1	50 < 55
D2	45 < 50
D3	40 < 45
E	25 < 40
F	10 < 25
No Grade	0 < 10

## **5. Openness and Transparency – Publication of Marking Schemes, Returning of marked scripts for viewing and a detailed Appeal Process**

In order to ensure that the marking of test items is as open and transparent as possible, a transparent appeals system is operated. Since 1998, all Leaving Certificate candidates have the opportunity to view their marked examination scripts in advance of the appeals process. The Irish state examination system was one of the first national examination systems to introduce this measure. The marking schemes are published in advance of the viewing. This provides candidates with the opportunity to see how the marking scheme was applied to their work and assists them in deciding whether to appeal or not. Incidentally, in 2008, the SEC has started a process whereby it provides Irish versions of the marking schemes for publication in addition to the English versions.

The basic principle underpinning appeal marking is that every appealed script is fully remarked in accordance with the agreed marking scheme by a different examiner to the one who originally marked the work. The remarking is done during the limited timeframe between the closing date for the receipt of appeal applications and the issue of appeal results some four weeks later. Examination scripts must be sent to schools, collected from schools, distributed to Appeal Examiners, fully remarked by appeal examiners, monitored by Appeal Advising Examiners, and returned to the State Examinations for results processing during those four weeks.

So, following the issue of provisional results in August, scripts are returned to schools for viewing by candidates. The schools are agents of the SEC in this process and are designated with the duty of ensuring the conduct of the viewing is carried out in accordance with a strict protocol. If a candidate wishes to view a script or scripts, the Organising Superintendent within the school locates the script, supplies the candidate with the marking scheme and supervises the viewing process. The candidate is entitled to be accompanied by another person whilst viewing a script. Having viewed the script, the candidates may complete a form where they can identify specific points in their script which they feel merited additional marks. This form accompanies the script throughout the appeal process and includes a section where the Appeal Examiner responds to any points raised by the candidate. Appeal Examiners are drawn from the original team of examiners and they operate within a process that mirrors the original marking. The same hierarchical structures are retained with Appeal Examiners working to Appeal Advising Examiners, a Chief Advising Examiner and a Chief Examiner who is normally an Examinations and Assessment Manager. All personnel involved are required to attend an Appeal Conference. Here examiners are re-familiarised with the marking scheme and procedures and instructed as to what is involved in appeal marking. Where a re-grading is recommended by an Appeal Examiner, the Appeal Advising Examiner monitors the script. In addition, further monitoring of other scripts where no grade change is recommended is also carried out to ensure quality of marking within the appeals process.

At this stage, if anomalies are detected such as high incidences of grade changes from a particular batch of scripts, the SEC has set protocols for sampling the batch and if necessary can remark the entire allocation of scripts from an original Assistant Examiner, including scripts which have not been appealed. This is, in fact, a rare occurrence. In rare circumstances, interventions arising from the appeals process can give rise to up-grades being awarded to candidates who have not appealed. Appealed scripts may also be downgraded. This is not common, however, due to the fact that appealed scripts are more likely to be just below a grade boundary than just above one.

Typically, just under 3% of Leaving Certificate scripts are appealed and, of these, about 20% result in a grade change. Thus, approximately 0.5% of provisional grades awarded in August are changes as a result of the appeal process.

<b>Statistics for the appeal session in 2007</b>				
	<b>Leaving Certificate</b>	<b>Leaving Certificate Applied</b>	<b>Junior Certificate</b>	<b>Total</b>
Grades	353,323	37,256	571,957	962,536
Grades Appealed	9,913	47	2,967	12,927
Upgrades	2,026	7	755	2,788
Downgrades	3	0	0	3

Candidates who are dissatisfied with the outcome of an appeal can review their remarked script and have recourse to a further marking by the Chief Examiner. If a candidate still remains dissatisfied they have recourse to the Independent Appeals Scrutineers. The role of the Independent Appeals Scrutineers is to ensure that due process was followed at each stage of the marking and appeals processes.

## **6. Open discussion on how the processes we have in place contribute to maintaining public confidence in our examination system.**

The openness and transparency of our processes places a particular onus on ensuring that the highest standards are maintained at all stages of our work. If examination papers are not pitched at the correct level and have the inherent characteristics of validity and reliability then there is little scope for subsequent adjustments due to the predetermined grade boundaries and the publication of marking schemes. The availability of scripts for viewing ensures transparency in the marking process.

Chief Examiners' Reports in a selected number of subjects and programmes are also published annually. Chief Examiners' Reports provide a review of the performance of candidates in the examination and contain detailed analysis of all aspects of the examining process. They also contain recommendations for teachers and students and generally include exemplars of candidates' answers. All examination papers and examination briefs are published on our website within hours of being sat. Also, marking schemes are put on the website as soon as the initial marking is complete and the marking scheme has been finalised.

The current level of openness and transparency is relatively new in the Irish examination system. For example, the publication of marking schemes commenced in 1996, the viewing of scripts commenced in 1998. The SEC views the openness and transparency within the system as a positive development and would contend that these measures serve, if anything, to make processes more rigorous.

A number of questions may be posed arising from the developments in the openness, transparency and quality assurance agenda. What, for example, are the organizational implications of this level of transparency? What vulnerabilities they highlight?

One may suggest that the issues exist at each stage of the process

- for examination setting
- for examination delivery
- for marking
- for reviewing
- for appeals

The old adage "a chain is only as strong as its weakest link" probably applies well in this regard. We would suggest that only if the work is good enough at each stage can it hold up to scrutiny.

In conclusion, then, we have presented the range of measures to further the transparency and quality assurance agenda within the State Examinations in Ireland. We would contend that these measures



have served to enhance public confidence in the system. Some of you may contend, however, that “fools rush in”. We might prefer to view it as “fortune favours the brave” and would suggest that the benefits of increased public confidence in the system outweigh any perceived challenges in operating at this level of transparency and accountability.

