Predictability in the Irish Leaving Certificate

Oxford University Centre for Educational Assessment and Queen’s University, Belfast

Jo-Anne Baird, Therese N. Hopfenbeck, Jannette Elwood, Daniel Caro and Ayesha Ahmed

with Anamaria Aricescu, Rhian Barrance, Roy Bowden, Quintin Brewer, Carol Brown, Daniel Cowling, Roger Firth, Jacqueline Gray, Steve Harrison, John Hoyes, Mary Jay, Malcolm Johnson, Joanne Hazell, Jane McNicholl, Robert Miller, Aisling O’Boyle Christine Paget, Jeanne Ryan, John Smith, Stephen Turner, Natalie Usher and Eileen Velarde

Oxford University Centre for Educational Assessment Report OUCEA/14/1

© University of Oxford and Queen’s University Belfast
Oxford University Centre for Educational Assessment
http://oucea.education.ox.ac.uk/
Table of Contents

Research commission ............................................................................................................................. 6
Introduction to the Irish context............................................................................................................. 9
Features of public examinations ....................................................................................................... 11
Setting and maintaining standards ................................................................................................... 11
Overview of findings ............................................................................................................................. 14
Research question 1 – What is known internationally about the effects of high-stakes testing upon teaching and approaches to learning, particularly in relation to predictability and rote learning? 14
Research question 2 – What kinds of learning are the Leaving Certificate examinations intended to promote? .......................................................................................................................................... 17
Research questions 3 and 4 – How predictable are examination questions in the Leaving Certificate in Ireland? Which aspects of this are helpful and which engender undesirable approaches to learning? ................................................................................................................... 19
Research question 5 – What are the syllabus and assessment design phenomena associated with predictability? ................................................................................................................................... 20
Research question 6 – Subject-specific phenomena associated with predictability ....................... 21
Research question 7 – What kinds of examination preparation strategies do teachers and students use? Which of these are influenced by the predictability of the examination? ............................... 22
Predictability of the Leaving Certificate compared with other assessments ................................... 23
Conclusions ....................................................................................................................................... 27
Issues for consideration in an Irish context ...................................................................................... 27
Chapter 1: Media analysis ..................................................................................................................... 30
Media coverage in 2012 .................................................................................................................... 30
Positivity about predictability ....................................................................................................... 31
Examinations, but not as we know them ...................................................................................... 31
English Paper 2 in 2012 ................................................................................................................. 32
Maths and predictability ............................................................................................................... 32
Question difficulty ......................................................................................................................... 32
Curriculum and revision load ........................................................................................................ 33
Rote learning ................................................................................................................................... 33
The grinds industry ....................................................................................................................... 33
Media coverage in 2013 .................................................................................................................... 34
Fairness ......................................................................................................................................... 34
Level of challenge and predictability ............................................................................................ 35
Research question 3 – How predictable are examination questions in the Leaving Certificate in Ireland? ............................................................................................................................................. 75

Research question 4 – Which aspects of this predictability are helpful and which engender unwanted approaches to learning? .................................................................................................. 78

Research question 5 – What are the syllabus and assessment design phenomena associated with predictability? ............................................................................................................. 79

Research question 6 – What subject-specific phenomena are associated with predictability? ......82

Research question 2 – What kinds of learning are the examinations intended to promote? ......85

Students’ views ......................................................................................................................................... 86

Research questions 3 and 4 – How predictable are questions and examination papers in the Leaving Certificate in Ireland? Which aspects of this predictability are helpful and which engender unwanted approaches to learning? .............................................................................. 86

Research question 7 – What kind of examination preparation strategies do students use? Which of these are influenced by the predictability of the examinations? ............................................. 88

Research question 2 – What kinds of learning are the examinations intended to promote? .....89

Conclusions ....................................................................................................................................... 91

Acknowledgements ............................................................................................................................... 92

Appendix A: Post-primary education and the Irish Leaving Certificate ................................................ 93

Appendix B: Subject specialists ............................................................................................................. 97

Appendix C: Command words ............................................................................................................... 98

Appendix D: Questionnaire ................................................................................................................... 99

Tables

Table 1 Leaving Certificate entries in 2012 ........................................................................................... 10

Table 2 Elements of examination predictability ................................................................................ 16

Table 3 Studies on criterion validity of the Leaving Certificate results ........................................... 19

Table 5 Number of spontaneous comments relating to assessment of knowledge rather than higher order thinking skills ........................................................................................................... 56

Table 6 Subject-specific problematical predictability ........................................................................ 63

Table 7 Cumulative percentages at each grade – questionnaire sample compared with population (Pop) ...................................................................................................................................................... 66

Table 8 Views on predictability by subject area – percentage who agree (%) and total valid responses (n) .......................................................................................................................................................... 67

Table 9 Mean exam scores (M) and valid responses (n) for those disagreeing and agreeing with each statement on examination predictability ......................................................................................... 69

Table 10 Learning strategies: Percentages of 'often' (%) and total valid responses (n) ....................... 70
Table 11 Memorisation strategies and exam scores: Average scores (M) and sample size (n) ....... 71
Table 12 What kinds of support for learning did students have? Percentages who agreed (%) and total valid responses (n) ........................................................................................................................ 72
Table 13 Number of interviews by school and subject ........................................................................................................................ 75

Figures
Figure 1 Supporting better transitions................................................................................................................................. 6
Figure 2 Leaving Certificate – elements of predictability profile for English, French, geography and DCG ........................................................................................................................................... 24
Figure 3 Leaving Certificate and PISA tests ........................................................................................................................ 25
Figure 4 Doctorate examination ............................................................................................................................................. 26
Figure 5 Excerpt from the 2010 biology question paper ..................................................................................................... 58
This research was sponsored by the State Examinations Commission (SEC) of Ireland, as part of the Department of Education and Skills (DES) (2013) policy, *Supporting a better transition from second level to Higher Education: Key directions and next steps*. The wider policy has three aims (Figure 1), and this research addresses the first.

Ruairí Quinn, Minister for Education and Skills, announced this project and his commitment to tackle any problematic predictability in the Leaving Certificate examinations. In introducing these policies, the Minister wrote,

*Ireland needs students and graduates who are critical thinkers and problem solvers with an intrinsic enjoyment of acquiring and using knowledge. Reducing over-reliance on rote learning and ‘teaching to the test’ which inhibit that kind of broad learning experience at second level is a key objective of this work. Part of achieving that will lie in addressing problematic predictability in the Leaving Certificate examination and the existence of an unnecessarily granulated grading system.*

Overall, the policies aim to improve the quality of experience in secondary and higher education and reduce the pressure at secondary level. The Oxford University Centre for Educational Assessment and Queen’s University, Belfast were commissioned to conduct independent research. This report summarises our research conducted on the predictability of the Higher Level Leaving Certificate examinations, which involved:

---

1. Analysis of the media coverage of the Leaving Certificate examinations in 2012 and 2013 (Chapter 1)

2. A review of the international research literature (Chapter 2)

3. Empirical work on the examinations materials from 2003 to 2012 (Chapter 3)

4. A survey of 1,002 Leaving Certificate candidates’ views and approaches to learning (Chapter 4)

5. Interviews with 70 teachers and 13 group interviews with students (Chapter 5)

This research was, therefore, broad in its approach to the question of predictability. We did not observe classroom practice, so we report students’ and teachers’ views rather than empirical work on behaviour. As we suspected that predictability could have different effects across subjects, we focused upon six: biology, economics, English, French, geography and design and communication graphics (DCG). Mathematics did not form part of the research due to ongoing work on Project Maths. To make the questionnaire manageable for respondents, the survey of students’ views reduced the number of subjects included to three: biology, English and geography.

In this summary, we bring together the research findings across the chapters to address the research questions we identified. Predictability and teaching to the test are fundamental concerns about examinations in many countries, including England, the US, Australia, India and Malaysia. Critiques of high-stakes testing systems internationally share the following common features:

- the standards are too low
- the tests do not prepare students for higher education
- students do not have the basic skills needed for employment
- problem-solving, social and communication skills are not fostered by the curriculum
- examinations are stressful for students
- students will not be able to compete internationally in the jobs market
- the examinations are not fit for purpose

Whilst there is little empirical work specifically on the predictability of examinations, the same issues underlie research on teaching to the test, rote learning, washback effects of high-stakes tests upon learning and even grade inflation. The current research programme will be of interest to assessment organisations and researchers internationally as this is the first study of this breadth, on an issue that concerns many education systems. There is no benchmark examination system with which we can compare, as there have been concerns about these issues internationally for some decades. Instead, it seems that the issues faced are common to high-stakes assessments.

---

2 For example see www.nytimes.com/2010/10/11/education/11scores.html?pagewanted=all&r=0
3 Personal communications – Dr Jon Twing and Professor Jim Tognolini.
Concerns about the predictability of the Irish Leaving Certificate are evident in the public domain. We must, of course, distinguish between the evidence base and perceptions. In Chapter 1, we see that the Leaving Certificate examinations get a very high level of media coverage and that in 2012 the issue of predictability was a common narrative. However, in 2013, following the government’s policy announcements, predictability and negativity about the examinations were less prevalent in the media coverage. The high level of interest in examinations in the media in Ireland is noteworthy in itself, outstripping coverage in other settings, with the possible exceptions of New York and Egypt (Gebril & Brown, 2014). Trust in the currency of public examinations is important (Simpson & Baird, 2013) and it is therefore essential to understand whether these media stories are issues of substance.

Our research questions were as follows [information sources from this research programme which address each question in brackets]:

1. What is known internationally about the effects of high-stakes examinations upon teaching and approaches to learning, particularly in relation to predictability and rote learning? [literature review]

2. What kinds of learning are the Leaving Certificate examinations intended to promote? [examination materials review, interviews with teachers and students]

3. How predictable are examination questions in the Leaving Certificate in Ireland? [examination materials review, student questionnaires, interviews with teachers and students]

4. Which aspects of this predictability are helpful and which engender unwanted approaches to learning? [literature review, examination materials review, student questionnaires, interviews with teachers and students]

5. What are the syllabus and assessment design phenomena associated with predictability? [examination materials review, interviews with teachers and students]

6. What subject-specific phenomena are associated with predictability? [examination materials review, interviews with teachers and students]

7. What kinds of examination preparation strategies do teachers and students use? Which of these are influenced by the predictability of the examinations? [literature review, student questionnaires, interviews with teachers and students]

References


Introduction to the Irish context

Post-primary education in Ireland consists of two cycles: a compulsory three-year Junior cycle culminating in the Junior Certificate examination and a two-year non-compulsory Senior cycle. A transition year between the Junior and Senior cycles can be taken, and students have a choice between three Senior cycle programmes each leading to a state examination. The median age on completion is 18, with 96% of candidates being aged 17, 18 or 19. The Leaving Certificate examination marks the end of upper secondary education in Ireland. In total, 52,767 students sat the Leaving Certificate in 2013. Taking account of the fact that this includes a limited number of ‘repeat’ candidates, this still represents well over 90% of the age cohort.

The majority of Irish students will take the established Leaving Certificate programme. This is a broadly based programme, in which students typically choose seven subjects from a range of over 30 available subjects. They are required to study a minimum of five, of which one must be Irish. Matriculation requirements for universities and other third-level institutions are such that almost all students also take English and mathematics, and the great majority take a third language. Students also have the option of two other Senior cycle programmes: the Leaving Certificate Vocational Programme (LCVP) and Leaving Certificate Applied (LCA). The LCVP is based on the established programme; there are some restrictions on the combinations of subjects that may be taken, and these subjects are supplemented by vocationally oriented ‘link modules’. The LCA is a separate self-contained programme centred on the individual student’s needs in a cross-curricular (as opposed to subject-based) approach, and is for students not catered for by the other two Senior programmes. Students generally cannot progress directly from the LCA to higher education, but they can progress to further education and training.

It can be seen then that two characteristic features of the Irish education system are a high rate of retention, along with a highly comprehensive form of provision. While many other developed countries also have high retention rates, they often have structures that channel students into distinct academic, technical, and vocational routes. In Ireland, almost the entire age cohort is encompassed by a unified curricular programme through to the end of upper secondary education, which is not the case in every country. One effect of this is that the examinations in individual subjects in the Irish Leaving Certificate may need to cater for a broader range of achievement within the subject than comparable end-of-school examinations elsewhere. An outline of the Leaving Certificate is given in Appendix A.

Most subjects on the established Leaving Certificate programme offer examinations at two levels: Ordinary and Higher. Table 1 presents the number of students who sat the Leaving Certificate by subject and level for the six subjects that were focused upon in this research study.

---

4 In the 2013 examinations, 9% of school-based candidates took six subjects, 54% took seven, and 31% took eight.
5 In the 2013 examinations, 67% of school-based candidates took three or more languages.
### Table 1 Leaving Certificate entries in 2012

<table>
<thead>
<tr>
<th>Subject</th>
<th>Ordinary level candidates</th>
<th>Higher level candidates</th>
<th>Total (% age cohort)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>8,064</td>
<td>23,436</td>
<td>31,500 (60)</td>
</tr>
<tr>
<td>DCG</td>
<td>1,334</td>
<td>4,017</td>
<td>5,351 (10)</td>
</tr>
<tr>
<td>Economics</td>
<td>875</td>
<td>3,757</td>
<td>4,632 (9)</td>
</tr>
<tr>
<td>English</td>
<td>17,538</td>
<td>33,279</td>
<td>50,817 (96)</td>
</tr>
<tr>
<td>French</td>
<td>11,329</td>
<td>14,188</td>
<td>25,517 (48)</td>
</tr>
<tr>
<td>Geography</td>
<td>5,533</td>
<td>19,762</td>
<td>25,295 (48)</td>
</tr>
</tbody>
</table>

Note 1: cohort size = 52,877, a weighted average of the cohorts at ages 17 to 20, based on Central Statistics Office 2012 estimates.

Note 2: the quoted percentages of the age cohort are slightly inflated due to the presence of some repeat candidates among the examination entries.

The universities and other higher education institutions collaborate to implement a common entry procedure administered by a company that they have established for this purpose, the Central Applications Office (CAO). Subject to meeting certain general and course-specific basic entry requirements, places on most courses are allocated solely on the basis of a composite score based on Leaving Certificate grades. For each level and grade (A1–D3) points are awarded to the applicant. Points may be accumulated on up to six examination results. All subjects are equally weighted in the composite score, irrespective of the course being applied for, although ‘bonus points’ are currently being awarded for Higher Level Mathematics, on a trial basis since 2012.

The syllabus (specification) for each subject, including the assessment specification, is drafted by the National Council for Curriculum and Assessment (NCCA) and approved by the DES. The examinations on these syllabuses are then implemented by the SEC, which is a state agency. At each level, results are issued as grades. The grade boundaries (cut-scores) are fixed in advance and are the same for all subjects and levels. DES circulars also have an impact upon the taught curriculum and on assessment design. Restrictions upon what can be assessed are set down by the syllabus and examination specifications, circulars, and SEC procedures. When a syllabus is first introduced, sample papers are drawn up by the SEC in collaboration with the NCCA and the DES, to reflect a shared understanding of the syllabus intentions. These form a blueprint for how the examinations are subsequently operated by the SEC. It would therefore be a mistake to think that predictability of examinations is solely in the hands of the examiners who set the question papers. In this research, we do not focus on what systems or agencies have created any difficulties that emerge in this research. Rather, we concern ourselves with the net effect of all these on the learning and assessment experiences of students. It rests with Irish authorities to then determine whether and how any issues identified ought to be addressed and by whom.

While the Leaving Certificate examination in each subject is offered at two levels, this research focuses mainly upon the Higher Level examinations. This is because the concerns expressed in Ireland in relation to predictability have understandably focused more on the examinations at Higher Level, since good grades at this level should be characterised by the display of evidence of higher order thinking skills to a greater extent than at Ordinary Level.

The recent results of the Programme for International Student Assessment (PISA) tests conducted by the OECD constitute an independent evaluation of 15-year-olds’ performances in mathematics,
science and reading in Ireland. The main focus of the 2012 tests was mathematics, which is not a focus of this research. However, the reading and science results continued to be strong. Ireland outperforms most other European countries in reading and science, although the differences are not always statistically significant (OECD, 2013). These findings are for 15-year-old students and constitute a view of the education system prior to the Leaving Certificate. Nonetheless, it is in this context that the system must be viewed. The PISA test results in reading are of particular interest when it comes to the discussion on deep learning and achievement. Ireland ranked fourth of 27 OECD countries in the first PISA ranking on comprehension of continuous text and sixth on comprehension of non-continuous texts (Shiel, 2002), and continued to have high-performing readers in 2006 with 35% of students on the top two levels of reading (Shiel, 2006).

Features of public examinations

Curriculum-based public examination systems set assessments in relation to a defined syllabus, which is published so that people can determine which course to study in preparation for the examination. This is in contrast to other forms of assessment, such as the PISA tests, for which there is no syllabus. In curriculum-based examinations, publication of past question papers is common and seen as necessary to the fairness of the examination, as students can then see how they will be assessed and can determine how best to prepare for the examination.

Typically, the curriculum to be tested is broad and no single examination will assess the whole curriculum in any given year. Instead, the approach taken is to sample from the curriculum each year and to keep the test to a manageable duration. It follows that there is an onus upon the examining board to ensure that the sampling from the curriculum is appropriate. Central areas of the syllabus are often assessed more frequently than those topics that are less essential to the understanding of the subject. This report deals with issues related to sampling of the curriculum, specifically with whether the sampling is overly predictable.

Setting and maintaining standards

Standards in examinations are set by a range of methods internationally (Cizek & Bunch, 2007). Some of these processes involve pre-testing of the examination questions to ascertain their difficulties prior to the ‘live’ examination session. Without pre-testing, we cannot judge how difficult an item will be for the population of candidates taking the test (Brandon, 2004; Good & Cresswell, 1988; Impara & Plake, 1988; Wolf et al., 1995). There are inevitable fluctuations in the difficulty of newly set questions year on year. The examination system must take account of this or the grades would be easier to gain in one year compared with another.

Pre-testing of question papers is not undertaken in many national examination systems due to concerns about the security of the questions. Given the high-stakes nature of the assessments, it is possible that the questions could be made public, which would undermine the validity of the examination. Another concern about pre-testing is the cost. National examinations are already a large cost to the education budgets of countries and the added expense of pre-testing is not always seen as necessary when there are standard-setting methods that can compensate for the lack of pre-testing.
To maintain the difficulty of examinations year on year, examination systems can choose from two options. Either the grade boundaries can be moved to accommodate changes in the difficulty of the examination between years or the marks can be adjusted in some way (whether by re-scaling the raw scores or by amending the marking criteria) in order to produce the required proportions of candidates attaining each grade, with the grade boundaries staying the same each year. In England, Wales and Northern Ireland the grade boundaries are changed in standard-setting meetings each year for GCSE and A-level examinations. This is also true for Standard Grade and Higher Still examinations in Scotland. For a discussion of the various techniques that have been used in setting and maintaining standards in England, Wales and Northern Ireland, see Newton, Baird, Goldstein, Patrick and Tymms (2007).

Most systems use a combination of experts’ judgements of the standards and statistical techniques to compare the cohorts taking the examinations (Cizek & Bunch, 2007, p10). Curriculum-embedded examinations are usually intended to measure, not the candidates’ abilities, but their attainment in a given subject; how much they have demonstrated that they have learned from studying the curriculum. Typically, the standard-setting systems for such examinations explicitly or implicitly assume that the levels of achievement of a large cohort of students will not change radically from one year (or series) to the next, in the absence of some significant systemic intervention. Newton (2005) terms this assumption the ‘similar cohort adage’ and refers to the standard-setting procedures that arise from using a combination of statistics and expert judgement in this way as ‘attainment-referencing’.

The standard-setting system for the Irish Leaving Certificate has in common with other systems the desire for attainment-referencing and the fact that expert judgement and statistics are used in the process. However, it differs from other systems in the methodology used, given that grade boundaries are fixed and standardising transformations are not applied to raw scores. Standardising procedures are applied to the marking process as opposed to the grading process. In essence, the marking scheme is used as the primary mechanism for dealing with fluctuations in the difficulty of the examination. The approach involves the application of the draft marking scheme to a random sample of candidate work, a review of the marked sample, and a statistical analysis of the sample results. Following from this review, the draft marking scheme may be adjusted to deal with any misalignment with established standards. In most instances, marking schemes are finalised after this random sampling process. However, changes may occasionally also occur at a later stage of the marking process. All amendments to the marking scheme are applied to the work of all candidates, including candidates whose work has already been marked.

As we will see later, the need for the marking schemes to be structured in such a way as to facilitate this standardising process may have implications for their transparency and their capacity to openly and consistently reward the right kinds of learning.

References


Overview of findings

Research question 1 – What is known internationally about the effects of high-stakes testing upon teaching and approaches to learning, particularly in relation to predictability and rote learning?

This question is addressed more fully in Chapter 2 of this report and in a Working Paper. Here, we outline the implications of the review of the international research literature for the definition of predictability and explain why it goes beyond the content of examination questions being the same year on year. Transparency of examinations, in terms of making the examination materials and assessment criteria publicly available, is a progressive assessment trend that can be observed in many countries over the past 30 years. This trend is connected with the increase in criterion-referencing as a feature of examination systems. Sharing assessment criteria has been shown to improve outcomes, but this can go too far in some systems. Striking the right balance is important, but there is no litmus test for this because of the complexity and subtlety of the issues involved. Valuable learning involves both knowledge and skills. Some degree of rote learning can be helpful in mastering a topic. Our definition of a problematically predictable examination indicates the negative effects found in the research literature.

A problematically predictable examination is one in which teachers and students can anticipate the test-taking conditions, performances required, question formats, and topics and scoring to the extent that undesirable effects upon the educational process are pervasive. These include narrowing of the taught curriculum, superficial rote learning, drilling on test content and failure to develop a broad and deep understanding of a subject.

Such an examination lacks validity because it measures test preparation narrowly rather than the intended assessment objectives. Predictability is not a necessary or sufficient condition for reliable assessment, but it is likely to foster reliability (consistent measurement). Reliability may be won at the expense of validity (measuring the right knowledge and skills).

Our definition goes beyond predictions of the content of examination questions because previous research indicates that the root concerns about predictability are really about the fitness for purpose of the examinations, ie whether they test the right skills at the right level. Research conducted in England (Ofqual, 2008, p1) defined a predictable examination as one in which ‘the nature of the examination paper could be sufficiently accurately predicted to mean either that the examination was not testing the full range of content expected or that it would not be assessing the assessment objectives as defined in the [syllabus]’. The report goes on to indicate that such an examination

---

6 http://oucea.education.ox.ac.uk/research/recent-research-projects/investigation-into-the-predictability-of-the-irish-leaving-certificate-examinations/
would have negative implications for the assessment of higher order thinking skills and would overly reward recall of knowledge. Conducted by the examination regulator, the research looked only at expert judgements of examination materials, as the responsibility of the regulator does not extend to the entire education system. The main finding from Ofqual’s project was that unpredictable question papers were just as poor assessments as overly predictable ones because both place too much emphasis upon test-taking skill and preparation, rather than knowledge and skill derived from studying the curriculum. Too much specification in the syllabus was a cause of predictability in the few cases in which it was found. The Ofqual study was conducted in the context of a deep concern about the standards of examinations in England, which manifested itself in a number of critiques of the system, such as whether students were being ‘stretched and challenged’ at A-level. Although conceptually distinct, there are connections between these allegations – predictable examinations, which overly focus upon rote learning, would not be as cognitively demanding. In fact, students and teachers said that the A-levels were demanding, but assessed the wrong kind of learning (Daly et al., 2012). By this, they meant that there was too much focus upon rote learning and test preparation. So, although the Ofqual report found little cause for concern relating to examination question content predictability, students and teachers identified the problem as being about the kinds of learning required. As such, the Ofqual report and any actions taken to address its findings alone would not be sufficient to quell wider societal concerns.

In the current research, SEC has commissioned an investigation into broad questions regarding the predictability of the Leaving Certificate, so that underlying concerns about the assessments which may be identified can be addressed. This research investigated the examination materials (as did Ofqual in their 2008 study), as well as interviewing teachers and students (as did Daly et al. in their 2012 study). Further, questionnaires were conducted with students and their responses analysed together with their examination results.

Predictability is not a technical assessment term – it is an expression of a public concern about examinations. One question for this research is whether the concern arises equally for teachers and learners as it does in the media. Equally, investigating predictability in a narrow way, without investigating the root causes in relation to the nature of learning provoked by the examinations, would be a wasted opportunity; the wider societal concerns about what ‘predictability’ means for learning are likely to resurface unless they are tackled, albeit perhaps in another guise.

Examination predictability can be broken down into a number of facets, any of which can be positive in the right circumstances. Predictability of examinations is not a continuum, with unpredictable being good. Much depends upon the interaction of different elements of predictability, in relation to the purpose and context of the examination. Table 2 indicates possible impacts of predictable and unpredictable examinations.

With unpredictable examinations, teachers and students have to guess what to teach and learn. The extent to which the examination aligns with individual students’ preparation becomes critical and the examination may be unreliable because good students were not well prepared for the examination. Striking the right balance of predictability is important for a curriculum-related examination. Teaching students test-wiseness related to any of the features in Table 2 should be beneficial for the validity of the Leaving Certificate, as this would reduce individual differences in knowledge about the examinations themselves (Anastasi, 1981). Knowledge of the curriculum and
skill in its application and evaluation are the features of interest in students’ performances, not how savvy they are about examinations, so transparency in the processes and preparation for the examinations is not necessarily problematical predictability. Where preparation strays into narrow coaching about the tests without broader teaching, the validity of the tests can be undermined (Anastasi, 1981). Test preparation by students is not controlled by the DES, NCCA, SEC or examiners, but the examinations give signals about the kinds of learning that will be rewarded.

**Table 2 Elements of examination predictability**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Predictable</th>
<th>Unpredictable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Curriculum coverage</strong></td>
<td><strong>Description</strong> • Know the topics that will be assessed</td>
<td>• Topics to be assessed not known in advance</td>
</tr>
<tr>
<td></td>
<td><strong>Possible impacts</strong> • May not need to study the breadth of material intended</td>
<td>• Do not know how to prepare for the exam</td>
</tr>
<tr>
<td></td>
<td>• Teachers may narrow the taught curriculum</td>
<td>• Performance based upon luck of studied curriculum/exam match</td>
</tr>
<tr>
<td></td>
<td><strong>Possible impacts</strong> • Test performances can be practised</td>
<td>• Students’ capacity to adapt is part of the assessment</td>
</tr>
<tr>
<td><strong>Test conditions</strong></td>
<td><strong>Description</strong> • Known in advance</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Possible impacts</strong> • Test performances can be practised</td>
<td></td>
</tr>
<tr>
<td><strong>Assessment format</strong></td>
<td><strong>Description</strong> • Nature of assessment (eg written, oral, practical) is known in advance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Weighting of assessment components is known</td>
<td>• Nature of the assessment may vary</td>
</tr>
<tr>
<td></td>
<td>• A set format for questions, perhaps even related to specific topic areas and question choice, is known in advance</td>
<td>• Weightings given to different components may change</td>
</tr>
<tr>
<td></td>
<td><strong>Possible impacts</strong> • Teachers can prepare students to think about what is required to respond to different question styles</td>
<td>• Novel question styles are used frequently</td>
</tr>
<tr>
<td></td>
<td>• The phrasing and structure of questions can be explained to students in advance and they can be taught test-wiseness</td>
<td>• What is being assessed changes</td>
</tr>
<tr>
<td><strong>Performance format</strong></td>
<td><strong>Description</strong> • How students will be required to respond is known in advance</td>
<td>• Changes are made to the ways in which students’ knowledge and skills are demonstrated</td>
</tr>
<tr>
<td></td>
<td><strong>Possible impacts</strong> • Teachers can school students on how to produce the kinds of performances required</td>
<td>• Match between performance required and student skills will affect results</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• What is being assessed changes</td>
</tr>
<tr>
<td><strong>Scoring</strong></td>
<td><strong>Description</strong> • How performances are credited is known openly (eg transparent marking schemes published)</td>
<td>• Information on rubrics is not available</td>
</tr>
<tr>
<td></td>
<td>• Detail is known regarding scoring</td>
<td>• Credit given to responses may vary</td>
</tr>
</tbody>
</table>
Research question 2 – What kinds of learning are the Leaving Certificate examinations intended to promote?

The stated purpose of the Leaving Certificate examinations is to measure the extent to which each candidate has fulfilled the objectives of the syllabus. Syllabus documents contained a broad range of aims and objectives, referring to knowledge, cognitive skills, practical skills, competencies and the development of attitudes and dispositions. Following Bloom’s taxonomy (1956), certain kinds of cognitive functions have been labelled as lower order or higher order, with knowledge recall being categorised as a lower order skill and application, analysis and evaluation being categorised as higher order skills. One concern relating to predictability is that it may involve the regurgitation of facts and therefore the examinations may only assess lower order skills. Therefore, the syllabuses were investigated to find out what skills the examinations intended to assess and therefore promote.

Higher order thinking skills of application and understanding were included as aims of all syllabuses and evaluation was mentioned in a number of them, although the weightings to be given to these skills were not specified. Evaluating the alignment between the syllabuses, question papers and marking schemes was therefore problematical. Nonetheless, the reviewers considered that the marking schemes did not clearly credit higher order thinking skills to the extent that they considered appropriate, and they also judged that questions did not always target the desired kinds of learning.

Over the past two decades, assessment practices in many countries have generally become more transparent and have emphasised higher order thinking skills to a larger extent. Comments were made about the syllabus and examination materials being old-fashioned in terms of syllabus content (economics, French, DCG), skills assessed (biology, economics, geography, DCG), design of marking
schemes (all subjects) and presentation of question paper resource materials (biology). Frequent changes can be disruptive to an education system, but in the extreme case of economics, the syllabus had not been revised since 1969. We recommend that consideration is given to revising the syllabus and examination materials more frequently, and trends in other assessments internationally should be reviewed as part of the process.

Teachers also identified gaps between the syllabus and question papers, although they were generally content with the transparency of the marking schemes. Further, many teachers reported that higher order skills were required to attain the highest scores.

The predictability of the Leaving Certificate would be problematical if it were the case that once students had graduated they could not subsequently use their knowledge and understanding in other situations. That is, if their learning had been so narrow that they could only reproduce performances for a specific examination. One purpose of courses leading to Leaving Certificate examinations is to prepare students for further study. Thus, a question that can be asked is whether students’ performances in the Leaving Certificate predict how well they do in other examinations.

A separate, ‘criterion’, test can be used to investigate whether the Leaving Certificate results are correlated with scores on other relevant tests. Two recent studies were identified on this topic. Research by Breen et al. (2009), conducted with 316 students across three Irish universities, showed that the Leaving Certificate results in mathematics were correlated with a PISA-style assessment \( r=0.42 \). A separate study, conducted by Faulkner et al. (2010) with 5,949 students at the University of Limerick, found that the relationship between Leaving Certificate mathematics results and diagnostic test scores had remained stable between 1998 and 2008.

Predictive validity is the term for assessment results being highly associated with people’s future performance on a relevant activity. In the case of secondary school leaving examinations, they are expected to have predictive validity for performance in higher education examinations and are often used for selection to higher education, as is the case for the Leaving Certificate. A further three studies on the predictive validity of the Leaving Certificate were identified that had been published this century (Table 3); all of them showed that the Leaving Certificate results were predictive of university examination scores. The results of the five studies on criterion validity are positive, although there are many gaps in the available research in terms of Leaving Certificate subjects and university courses.
### Table 3: Studies on criterion validity of the Leaving Certificate results

<table>
<thead>
<tr>
<th>Higher education subject</th>
<th>LC predictor</th>
<th>Study details</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>CAO points</td>
<td>Accountancy undergraduates at Dublin City University 2004/5 (n=121) Byrne and Flood (2008)</td>
<td>Significant association with first-year examination performance (regression analysis) Studying accounting as part of the Leaving Certificate also significant impact upon first-year examination results (although not upon financial accounting or management accounting results separately)</td>
</tr>
<tr>
<td>Chemistry</td>
<td>CAO points</td>
<td>Chemistry undergraduates at a large tertiary institution in Dublin (n=89) Seery (2009)</td>
<td>Significant correlation of points with year 1 examination performance ($r=0.37$), semester 2 test ($r=0.34$), and lab scores ($r=0.21$), although not with semester 1 test scores ($r=0.21$) Significant correlation of chemistry Leaving Certificate results with year 1 examination performance ($r=0.57$), semester 1 test scores ($r=0.59$), semester 2 test ($r=0.53$), and lab scores ($r=0.38$)</td>
</tr>
<tr>
<td>Dentistry</td>
<td>CAO points</td>
<td>Dental undergraduates at the University of Cork 1997–1999 (n=95) Lynch, McConnell and Hannigan (2006)</td>
<td>Significant correlation with first dental examination ($r=0.22$) No significant correlation with final dental examination ($r=0.09$)</td>
</tr>
<tr>
<td></td>
<td>Mathematics results</td>
<td>Three Irish universities (n=316) Breen, Cleary and O’Shea (2009)</td>
<td>Significant correlation with PISA-style test scores ($r=0.42$)</td>
</tr>
</tbody>
</table>

Note: Low correlations would normally be expected between tests used for entry to university and undergraduate assessments because the weakest students are not selected, university experience has an impact upon rank order etc.

### Research questions 3 and 4 – How predictable are examination questions in the Leaving Certificate in Ireland? Which aspects of this are helpful and which engender undesirable approaches to learning?

In each subject, external subject specialist reviewers considered that the question formats were helpfully predictable because they allowed students to prepare for the examination and to show what they know and can do without being distracted by irrelevant features of the questions.
Contrary to the media narrative about Leaving Certificate examinations, no subject was considered to be very problematically predictable overall by the subject specialists, the teachers or the students.

Problematic predictability was found to some extent in economics, French and DCG and this manifested itself in different ways. Subject specialists considered that in economics not enough critical engagement with the theories was required, meaning that it appeared that students could learn model responses. Receptive rather than productive skills were overly emphasised in French, while in DCG there was too much emphasis upon technical drawing, with similar questions being set annually.

Unfortunately, the three subjects selected for inclusion in the questionnaire were those that were not subsequently deemed problematically predictable overall by the external subject specialist reviewers: biology, English and geography. Many students felt that they knew what the examiners wanted and that they could predict the examination questions well (with the exception of biology). However, those who reported that they felt they could leave topics out of their preparation did significantly worse in the examinations in English and biology. As would be anticipated for a high-stakes examination, students reported using memorisation learning strategies. Control strategies in terms of checking that they had understood were also prevalent. Somewhat surprising was the low level of reported use of elaboration strategies (‘meaning-making’), especially in English, which had the lowest reported use of these strategies.

The distinction between helpful predictability in question paper format and unhelpful predictability of content of questions was sustained by data in the teacher interviews. Teachers generally considered that there was helpful predictability in the examination questions, but they generally disagreed with the external subject specialists about content predictability, which they did not believe was present in the examinations. In the teacher and student interviews, reference was made to central aspects of the syllabuses being examined more frequently, but this was seen positively and there was no suggestion that the specific questions were the same year on year.

**Research question 5 – What are the syllabus and assessment design phenomena associated with predictability?**

Some of the students and teachers felt that the Leaving Certificate experience was stressful and that there was too much crammed into a short time. With a wider number of subjects studied at this level than in some other countries, there could be an argument for reducing the breadth and increasing the depth of study. However, it could be argued that the breadth of the Irish curriculum is an advantage in producing educated 18-year-olds.

At times, interviewees suggested that the points system was to blame for this predicament, rather than the examinations. As Hyland (2011) noted, students tend to conflate the Leaving Certificate with the points system. Simply changing the points system will not alleviate these issues – the underlying problem relates to the fact that education levels have risen globally, not only in Ireland. This means that competition for higher education places and jobs is fierce and students need those points to improve their life chances. As such, many are driven, strategic learners. Changes to the assessment system are unlikely to change this, nor would that be desirable.
Syllabuses are revised infrequently in Ireland compared with other countries. Updating the syllabuses and examination materials would no doubt counteract some of the design phenomena associated with predictability. There has been a general trend in assessment design to move towards the assessment of higher order skills. Syllabus revisions should consider how best to incorporate the requirement for more higher order skills and review other countries’ assessments as part of this process. Small changes to the questions and marking schemes could help to bring about these effects.

The Irish Leaving Certificate has transparency associated with its fixed grade boundaries for examination grades, but to achieve this the SEC needs flexibility in the marking process. This means that the marking schemes are not as transparent as in other systems. Other examination systems have separate post-marking standard-setting processes, which adjust the cut-scores annually to adapt to changes in the demands of a particular year’s question paper. Doing so in the Leaving Certificate may make it more straightforward to assess higher order skills to a larger extent than is currently possible.

Research question 6 – Subject-specific phenomena associated with predictability

Teachers did not generally consider any of the subjects to be problematically predictable.

**Biology** was not considered to be problematically predictable and was viewed favourably overall by the subject specialists, students and teachers. Teachers recognised that it is a content-driven subject, which placed a duty on them to ensure that students knew the facts and were prepared for the examination.

Those students who considered that they knew what the examiners wanted did significantly better. This could reflect more able students who better understood the criteria. Students who thought that the curriculum could be narrowed in biology tended to do worse in the examination, which suggests that this was not a good strategy and reflects well on the Leaving Certificate examination. Memorisation strategies had a significant and positive association with examination scores in biology, which we might expect in a content-driven subject.

**Economics** was also considered to be a content-driven syllabus by teachers and was thought to be somewhat problematically predictable in its questions by the subject specialists because central topics came up frequently.

**English** was considered to be a skill-driven subject by teachers and was not considered to be problematically predictable overall by the subject specialists.

As in biology, students who thought they could still do well without studying many of the topics did worse in English. Again, this suggests that narrowing the curriculum was not a good strategy for the Leaving Certificate examination in this subject. Memorisation strategies did not have a significantly positive association with examination scores when they were used more frequently in English. This is to be expected in a skill-driven subject, which requires only some memorisation approaches to learning.
French was considered to be a skill-driven subject by teachers and was considered to be a little problematically predictable overall by the subject specialists. Here, the concern was about the focus upon receptive rather than productive skills in the assessment style.

Geography was considered to be a content-driven subject by teachers and was not considered to be problematically predictable overall by the subject specialists.

Narrowing of the curriculum did not have a significantly negative association with students’ scores in geography. It is likely that this is due to the level of curriculum choice in this subject, such that narrowing the curriculum is an intended feature of the syllabus.

DCG was considered to be a skill-driven subject by teachers and was considered to be a little problematically predictable overall by the subject specialists. This subject was most controversial in relation to the subject specialists’ views, as the Irish subject specialists saw the syllabus very differently. As with other subjects, teachers did not think there was problematical predictability in DCG either. Two sources of this difference in views were evident: a) the Irish subject specialists emphasised the technical drawing nature of the syllabus to a larger extent than the subject specialists who participated in this research and b) predictability in the questions was viewed as good curriculum alignment by the subject specialists in Ireland. This controversy illustrates how predictability can be seen positively or negatively in different contexts. On the one hand, predictability can be positive transparency that promotes a match between assessment and instruction (Wilson, 2009, p719). On the other hand, if taken too far, it narrows the curriculum or makes the learning too superficial. Which position is taken depends upon the views of the learning objectives of the judge. In this case, the Irish education community appears to be agreed that the DCG syllabus meets those aims, whilst judges from outside the system, emphasising other aspects of the syllabus document, considered that more could be done to meet the syllabus aims. We return to these issues below, when we compare the predictability of the Leaving Certificate with other examinations.

Research question 7 – What kinds of examination preparation strategies do teachers and students use? Which of these are influenced by the predictability of the examination?

In keeping with high-stakes testing situations in other countries, teachers prepared their students by tutoring them on the subject broadly and through specific test preparation. Students had a lot of test-wiseness. The topics that were likely to come up, the marking criteria, past papers and model answers were all part of the preparation from teachers. Private tuition schools (so-called ‘grinds schools’) were used less frequently than we anticipated. Memorisation strategies were also used a lot by students. However, these could be associated with positive aspects of predictability. Some degree of rote learning and cramming is usually a feature of high-stakes testing. Students did not generally believe that they could narrow the curriculum and used techniques to check that they had understood the most important points. Related to the above issues of assessing higher order
thinking skills, however, students did not use meaning-making and elaboration learning strategies very often, especially in English.

Importantly, questionnaire respondents who reported narrowing the curriculum did significantly worse in the examinations in English and biology. Therefore, the examinations in those subjects at least did not seem to reward this strategy.

**Predictability of the Leaving Certificate compared with other assessments**

The Leaving Certificate, like many public examinations, is predictable for students in terms of test conditions, assessment and performance formats and scoring. Additionally, there is a range of examination support materials (such as revision guides) that increase the predictability of the examination experience. We found that the curriculum coverage of the examinations is not very problematically predictable in any of the six subjects investigated.

This section illustrates the following points:

1. Assessment predictability profiles vary in assessments
2. Acceptable predictability in one context may not be acceptable in another
3. Predictability (even of question content) does not necessarily produce superficial learning
4. Highly predictable assessments (eg the driving test) can be viewed as appropriate
5. Where predictability reduces the depth or breadth of learning from that intended, it is inappropriate
6. Unwanted reduction in the breadth and depth of learning (narrowing of the curriculum) is a reduction in educational standards

In Table 2 (page 16), some elements of examination predictability were outlined. Here, we illustrate how a range of real assessments can have very different predictability profiles, using the elements of examination predictability outlined earlier and representing the findings about those elements using spider diagrams. These two-dimensional charts show the elements of predictability as spokes, and the extent of predictability is plotted on each of these spokes. In Figure 2, a spider diagram summarises some of the findings of this research. If all of the elements had been predictable, the blue line would circle the outer points of the spokes. Alternately, if all of the elements had been unpredictable, the blue dots would be gathered in the middle of the diagram. Finally, if all elements had been a little predictable, the dots and the lines joining them would have been in the middle of the diagram.

Test conditions, assessment and performance formats were considered to be positively predictable by subject specialists, teachers and students. These features were rated as predictable in all six subjects investigated and are therefore plotted at the end of the predictability scales (or end of the spokes) in Figure 2.
As teachers and students indicated that the scoring was very transparent, we have shown that as predictable in Figure 2. Assessment materials also foster predictability because they are in abundance for each of these subjects. In four of the subjects, the external subject specialists rated the content of the questions as quite (not very) similar year on year, so this has been shown as a little predictable in Figure 2.

**Figure 2 Leaving Certificate – elements of predictability profile for English, French, geography and DCG**

In Figure 3, we contrast the predominant Leaving Certificate profile (from Figure 2) with that of OECD’s PISA tests. OECD claim that the tests are curriculum-independent (Stanat & Lüdtke, 2013; OECD 2001), there is little by way of examination support materials available for students, scoring is not made public and the items and performances required are not taught to students in advance (although they are somewhat similar to other tests). Only the test conditions will be predictable for students taking the PISA tests. The key difference is that the PISA tests are intended to be curriculum-independent and students are not supposed to prepare specifically to take them. As the PISA tests are not high stakes for the test-takers, this is deemed acceptable. High-stakes public examinations are usually required to have more transparency.

The high-stakes, publicly transparent nature of the Leaving Certificate examinations means that concerted, strategic test preparation is rational and advisable for students and teachers alike. The predictability profile exhibited by PISA (Figure 3) would be hard to sustain for a high-stakes examination in a modern democracy, especially once there has been transparency in the system.
Predictability profiles take very different forms. Doctoral examinations differ internationally, but let us take the standard format in the UK (Figure 4). Typically, students know in advance that they will be asked a series of questions by identified examiners who have been appointed due to their knowledge of the field being examined. Students must answer the questions orally and know that the examiners must assess the topic being presented, but can come at this from many different angles. Little can be specified about the scoring criteria, beyond general performance descriptors. Only descriptions of the general format and experiences of the examination are available. In this kind of assessment, so much depends upon the examiner, as the result will be how the examiner calls it (Wiliam, 1996).

The process of being a successful doctoral student involves knowing what is expected of you and being involved in producing the assessment question, but also being able to work independently towards answering such a question, over a period of years. To be able to do so, students need to be self-regulated, they need to be able to plan, set goals for their learning, use learning strategies which are adapted to the assessment question they try to address, and monitor their own learning progress over years (Pintrich, 2004).
Highly able students are able to change strategies for learning depending upon the task and context, which is at the heart of self-regulation. This is also what characterises expert learners and separates them from novices. As students progress through the education system, it is a goal that they will become both self-regulated and have subject knowledge. An important skill for the future is to be able to work independently and know how to learn after they have left school. If students are not given the opportunity to become self-regulated, if they are never given choices on how to solve problems, and never given tasks in exams that challenge their critical independent thinking, it is less likely they will develop self-regulation. If students are told they should work on reflection, but are given tasks on factual knowledge, it is more likely they will continue to use surface strategies such as memorisation rather than elaboration strategies when preparing for their exams. The challenge is to find the right balance between testing the factual knowledge that is needed, with the tasks that challenge students to reflect, think critically and learn valuable knowledge and skills that will stand them in good stead for their futures. Furthermore, that balance may be different as students progress through the education system.

Massey (1994) argued that examination standards were composed of the breadth and depth of a student’s learning. Where predictability is seen as problematical for an assessment, the claim is that it undermines standards by reducing the breadth, depth or volume of intended learning. The breadth of learning can be undermined by students being able to constrain their studies to particular topics that will come up on the examination, narrowing the learned curriculum. Thus, breadth can be undermined by predictable curriculum coverage (including via the over-use of question choice).

Depth of learning can be undermined by students knowing examination requirements to the extent that they can gain high scores without understanding, for example by learning pre-prepared responses by rote. As such, depth can be undermined by transparent scoring criteria that reward superficial knowledge. The source of either of these forms of problematic predictability may be in the examination support materials (eg revision guides) rather than the examinations and marking schemes, as the support materials could induce such familiarity with the assessments that they are predictable.
Conclusions

i. Concerns about the predictability of the Leaving Certificate examination question content were not sustained by the findings of this research overall. None of the examinations was found to be very problematically predictable in these terms.

ii. It follows that media concerns about the predictability of the examinations were not supported by this research. As the media influences stakeholders’ views of the examinations, it is important for the currency of the Leaving Certificate that it is a trusted assessment. We therefore recommend that action be taken specifically to address the media portrayal of the examinations to maintain trust in these important national examinations.

iii. The predictability of examinations is a more subtle issue than question content alone, however. Concerns often relate to the effect of the examinations upon the kinds of learning that students engage in. Areas that could beneficially be addressed were noted in all six subjects investigated.

iv. In economics, French and DCG, subject specialist reviewers considered that the examinations were quite (not very) predictable overall.

v. Consideration should be given to placing more emphasis upon the assessment of higher order thinking skills in the examinations, in keeping with international trends in assessment.

vi. A more regular programme of revision of syllabuses is needed for the Leaving Certificate examinations to remain current. This is important for keeping up with improvements in assessment design (such as assessing more higher order thinking skills), as well as syllabus content.

vii. Marking schemes were thought to be lacking in transparency by the subject specialist reviewers, although not by the teachers and students. Any changes to the marking schemes to make them more transparent could have implications for the manageability of fixed grade boundaries (cut-scores) in the Irish Leaving Certificate. Thus, there are decisions to be taken about whether marking schemes can be changed in this way whilst maintaining the current standard-setting system. The feasibility of this could be investigated in pilot studies.

viii. This research has added to the international research literature by providing a broader programme of research on the predictability of a national examination than was previously available. New scales for measuring student perceptions of the predictability of examinations were devised and the relationships between them and scores on the examination were investigated. To tackle wider issues of test preparation, the research took into account teachers’ and students’ views of the Leaving Certificate examinations and of preparing for them.

Issues for consideration in an Irish context

A number of issues that warrant consideration in an Irish context arise from this research. Some issues may be amenable to being addressed in the short term, but others may need a more fulsome consideration due to the culturally embedded nature of assessment systems. The possibility of
unintended consequences needs to be considered and it may be that some changes need a longer-term plan.

1. Consider how best to address the media narrative about predictability in the Leaving Certificate examinations, which has little basis in fact. The Leaving Certificate examinations are important life events for young people and have a great deal of pressure associated with them. Undermining the value of the Leaving Certificate with claims that the content of examination questions is overly predictable is unwarranted.

2. Contemplate monitoring the frequency with which questions focus upon particular topics and compare this with syllabus intentions.

3. Discourage drilling of students with pre-prepared examination answers that they do not fully understand. Although a minor issue in the findings of this research programme, this is a matter of concern where it arises. Understanding of examination formats is necessary, but teachers and students should be dissuaded from taking this too far as it will not prepare students for the future. High-stakes assessments encourage highly strategic (even if only in the short term) behaviours by students and teachers who want to get the best results. The DES, NCCA, SEC or even teachers are not fully in control of this issue. The best that can be done is to send the right signals.

4. Consider revising syllabuses more frequently and move towards the assessment of more higher order skills in the next round of revisions. Ensure that changes are reflected in the marking schemes as well as the syllabuses and question papers. Consider the ways in which students could narrow the intended curriculum and design the assessments so that this is not rewarded.

5. Maintain the transparency of the Leaving Certificate examination process, as students need to know what will be expected of them in the examination. To withdraw this would undermine the validity of the examinations. In no way do we mean this to imply that students should only be assessed on things they have already practised. Authentic learning and assessment involves being presented with novel questions and applications to some extent.

6. Consideration should be given to examining the strengths and weaknesses of the current and possible alternative approaches to standard setting. Unavoidable fluctuations in difficulty that arise in all public examinations from year to year need to be addressed through such a standard-setting system and the question is whether handling this in the current manner is the most effective approach for the Leaving Certificate.

References


Massey, A (1994) ‘Standards are slippery!’ British Journal of Curriculum and Assessment, 5, 37–8

OECD (2001) *Knowledge and Skills for Life. First results from the OECD Programme for International Student Assessment*. Organisation for Economic Co-Operation and Development


Chapter 1: Media analysis

In this chapter, we depict the media interest in the Leaving Certificate examinations in Ireland to give background information on how they are treated in this public forum. This helps to contextualise the research programme, as part of the reason for the research arises from the public perception of predictability in the examinations.

Media interest in the Leaving Certificate examination in Ireland differs from other countries in the volume of coverage and in the detail of the analysis of the examination questions (eg the topics covered, wording and structure). It is unusual to see so many reviews of question papers on a day-by-day basis by stakeholders and media commentators. Also apparent is an unwritten understanding in the education culture, and in society more generally, that the examinations will not contain major surprises, as commentators used this as a point of evaluation of the examinations. In keeping with the findings from research conducted in other countries, there was some indication that some students intended to rely on strategies involving pre-prepared responses and rote learning of examination materials. Media coverage of the Leaving Certificate examinations reduced, was less focused upon predictability, and was more positive in 2013 compared with 2012. Policy announcements about tackling predictability could have impacted upon the media narrative in 2013.

Coverage of the Leaving Certificate in the Irish media had distinctive characteristics compared with an analysis of coverage of A-level examinations in England (Warmington & Murphy, 2004). The content of the English coverage was on students’ experiences, pass rates, higher education entry, standards, hard or easy subjects, examination reforms and examination boards. Generally, the coverage was less detailed and less focused upon particular examination subjects and questions in England. Warmington and Murphy (2004) concluded that much could be done to influence the narratives about examinations presented in the media. As important life events, they have a large human interest value and negative stories can create scandalisation and interest. Whether or not the media narratives have basis in fact, there needs to be public engagement with them if trust in the examinations is to be upheld in the long term. Notably, media use of the term ‘predictability’ took the meaning to be positive in some coverage and negative in other articles. A more detailed working paper on this part of the project is available at:

http://oucea.education.ox.ac.uk/research/recent-research-projects/investigation-into-the-predictability-of-the-irish-leaving-certificate-examinations/

Media coverage in 2012

A search of mainstream online Irish news outlets was conducted using the terms 'leaving certificate' and 'leaving cert'. The search was narrowed to the period 1 April 2012 to 15 September 2012 to focus on the examination period, when there was the most active media interest in the Leaving
Certificate. Articles relevant to predictability and related issues were saved on a social bookmarking site, delicious.com, and tagged to indicate the main topics and actors in the article. A total of 238 sites were bookmarked, with the most frequent tags being 'good exam' (68 sites), 'predictability' (58 sites), 'bad exam' (43 sites), 'students' (40 sites), and 'maths' (35 sites). The news outlets searched were: thejournal.ie, irishtimes.com, independent.ie, herald.ie, thestar.ie and irishexaminer.com. Also, a small number of blogs and other sites found through links in the newspapers, Google and YouTube were included.

The articles reviewing each of the major Leaving and Junior Certificate exams, offered question-by-question breakdowns, and were based around quotations from students, teachers, teachers at ‘grinds’\(^7\) companies and representatives of subject teacher associations. We give counts relating to particular codes, but it is obvious that media representation cannot be taken to reflect the views of stakeholders generally and there are sometimes different views about the same examination paper expressed in the media.

### Positivity about predictability

Referring to such reviews, and in the context of the NCCA and HEA report,\(^1\) released in September 2011, Ruairí Quinn, Education and Skills Minister, was quoted in the Irish Independent (Donnelly, 2011) as follows:

> When the exams come out for both the Junior Cert and the senior Leaving Cert the commentary from education commentators frequently is, 'It was a good exam, there were no surprises, it was as predicted',

Sixty-eight articles from summer 2012 reviewed the exams as largely 'good'. Positive features mentioned were: consistency with past papers, conventional format of the examination, predictable range of questions, inclusion of 'key' or 'popular' topics and the range of topics tested.

The adjectives used were: 'nice' (9 times) ‘manageable’ (7), 'straightforward' (6), 'do-able' (6), 'accessible' (5), 'appropriate' (4) and 'student-friendly' (3). 'Fair' was also used 23 times to describe 'good' exams. Fairness was equated with the clarity of questions (5), these being praised as 'well structured' or 'well scaffolded' (3), 'interesting' (6) and 'relevant' (4). Four reviews of 'good' exams also mentioned that papers gave a 'good balance of theory and practice' or 'theory and application'.

### Examinations, but not as we know them

Examinations were criticised in 43 newspaper review articles. When exams did not meet expectations, emotive language was used: ‘betrayal’, ‘disastrous’, ‘traumatic’, ‘one of the worst in the history of the State’, and prompted student ‘outrage’. The new maths papers were seen as being ‘quite different to’ or ‘not reflective of the sample paper’ (2).

Some articles implied that there was a change in the style of questions in 2012 in response to the political announcements about predictability; this is presented largely positively in subjects where the shift was considered to be slight (The Irish Times, 2012; Holden, 2012a; Holden 2012b; Faller, 2012; Irish Independent, 2012). For example, one article (Donnelly, 2012) claimed that

---

\(^7\) This is the term used for crammer colleges and/or private tutoring.
the trend towards requiring Leaving Certificate candidates to apply their knowledge rather than simply regurgitate what they could learn off was evident in today’s Business Higher Level paper.

A ‘grinds’ teacher is quoted as judging it as a ‘good paper with lots of choice, no nasty surprises,’ noting that while one question asked students to make an unexpected comparison in their calculations, another had come up for the fifth consecutive year.

**English Paper 2 in 2012**

The *Irish Times* reported that teachers saw English Paper 2 as a ‘game changer,’ with one anonymous teacher quoted as saying

> the days of the pre-cooked, single transferable response to questions on the English paper are over. This was a much more searching exam (Flynn, 2012).

A student writing for the *Irish Independent* considered the absence of the expected poets, Seamus Heaney and Sylvia Plath, on English Paper 2 as a ‘betrayal’ and the Leaving Certificate examinations as a ‘battle.’ She (McGirr, 2012) described it as fortunate that one of her prepared poets did appear on the paper, writing that

> otherwise the examiner would have gotten a Heaney essay whether they wanted one or not.

Other student writers also saw the selection of poets as unfair (*The Irish Times*, 2012; Freeman, 2012). An unpredictable exam here is seen as a bad exam as it confounds the preparation tactic of some candidates in their use of pre-prepared essay plans.

**Maths and predictability**

Similarly, the maths exams received negative reviews in the press, and the lack of predictability was an issue. The lack of a corpus of past papers was seen as a problem for exam preparation. One student blogger (Kelleher, 2012) wrote that

> we haven’t really got a clue what to expect. Anything on the entire course could come up, which is certainly making things more difficult for us.

One student referred to Maths Paper 1 as leaving students ‘distraught’, writing that

> Most of the classmates I spoke to had ‘never seen a paper like it’. I found there were a few unusual questions I really had to think about (MacSweeney, 2012).

**Question difficulty**

When individual questions were criticised, they were often considered difficult, even as part of a ‘good’ paper. Thirteen mentions of difficulty include ‘unfairly difficult,’ ‘extremely difficult,’ ‘too taxing’ and ‘too demanding’. This was sometimes linked to the question being ‘unusual’ (2). For instance, the German exam included an applied grammar task that was considered unfamiliar, which was reported to have caused alarm amongst students.
The wording and the level of vocabulary used was seen to affect question clarity and also difficulty (18). For example, some of the language used on the ordinary paper was ‘slightly unfair’.

**Curriculum and revision load**

Some articles voiced concern about curriculum and revision load (O’Brien, 2012; *The Irish Independent*, 2012. A student blogger expressed this concern about Project Maths (Kelleher, 2012). Derry Cotter (2012), a university lecturer, argued that

> the time teachers can devote to higher-order learning is limited by the pressures of syllabus coverage.

Predicting topics and questions was seen by some as a tactic that allows students to reduce the revision load. A student who achieved six A1s advised others to use past papers to narrow the revision focus as ‘you can’t learn everything’ (Faulkner, 2011). Similarly, a teacher writing in the *Irish Times* (O’Brien, 2012), claimed that

> however unwisely, students begin to gamble on certain questions because they feel overwhelmed by the sheer volume of work.

Reviews from teachers were more balanced, highlighting their concerns about the wording of the questions, but also more positive responses on the content of questions (Holden, 2012a; Murray, 2012).

**Rote learning**

Some articles featured students reporting their use of past papers as rote learning material. Writing an article about how to prepare for the exams, one student advised compiling ‘collections of past papers’ not just in order to familiarise oneself with the format and task styles but also

> the repetition of the more common topics [which] will mean that if they do crop up again, you’ll know the subject inside out.

The student goes on to assert that

> the best way to learn anything is through repetition, and making your way through the past papers is pure repetition (Crean, 2012).

Similar tactics are recommended elsewhere (Faulkner, 2011) and this is in keeping with the finding by Daly et al. (2012) in England.

**The grinds industry**

A key source of exam practice papers is the private tuition sector. A survey conducted with nearly 1,500 students in Ireland concluded that 45% had received private tutoring in their last year of school and this had risen from 32% in 1994 (Smyth, 2009). These figures were higher than those in countries such as France, Germany and England (EC, 2011, 22–23). The grinds market is reported overall as being worth between €20 and €50 million per year (Murphy, 2012b; Newenham, 2013), although a report in the mid-market tabloid the *Evening Herald* suggested that some parents were
cutting back on tuition as a result of the recession (Murphy, 2012a). Online grinds services are reportedly becoming more popular, with the *Irish Times* recently running a review of grinds sites (Holden, 2013a). Smyth (2009) noted that this commodification of education did not appear to advantage students in terms of their Leaving Certificate examination grades, once she controlled for the effects of social characteristics, prior performance and attitudes to school.

Public perceptions of the predictability of examinations might allow grinds providers to flourish, by conveying the message that they have the key to unlocking more advantageous pathways to examination success. The owners of mocks.ie do not have a background in education or assessment (Newenham, 2013). They launched the website in 2009, offering study notes devised with the help of two students who had achieved A grades in their Leaving Certificates. The website now offers the services of teachers who also work as examiners for the SEC to offer marking and feedback services and supplies schools with mock papers (ibid), as do other private companies. An advantage of this process, according to an article in the *Irish Independent* (Bielenberg, 2013), is that the mock tests are not biased by the class teacher, as

*the teacher cannot pack the test with questions that have been well covered in class.*

**Media coverage in 2013**

A search was undertaken for the terms ‘leaving certificate’ and ‘leaving cert’ on the mainstream media websites of the *Irish Examiner, Irish Times, Irish Independent* and thejournal.ie. The date range was 1 May 2013 to 1 September 2013. In total, 86 articles were imported into NVivo for further analysis and then coded inductively.

The majority of examination papers sat in 2013 were presented in a positive light by commentators, with only five articles focusing on the negative reception of papers or parts of papers, such as chemistry ordinary level, Irish Paper 2 ordinary level, applied maths, religious education, Spanish and home economics.

**Fairness**

In 34 of the articles, examination papers were described as ‘fair’, as seen in the example below, in which Art History is commented upon:

*Students were very happy with the paper, described as fair but challenging. The Iron Age came up as predicted, and there were no trick questions (Donnelly, 2013c).*

The French examination was presented as follows:

*The ordinary level paper was fair and well pitched, said Ms Ni Chiarba, with topics including festivals, French culture and celebrities (McGuire, 2013a).*

The same paper was described elsewhere as ‘approachable’, a term that implies an appropriate level of challenge:
An approachable and fair paper that offered students a good choice of questions on a range of interesting, relevant and topical subjects, was how one teacher described Leaving Certificate French Higher Level (Donnelly, 2013b).

Sixteen out of 34 reviews that referred to examinations as fair also considered the level of challenge as appropriate.

**Level of challenge and predictability**

In some articles, whether the level of challenge presented by a paper was appropriate was linked to whether it met the commentator’s expectations based on past papers.

Five sources contained references which were coded for both some kind of deviation from what the commentator saw as usual and also an inappropriate level of challenge. For instance, ordinary level Irish Paper 2 was described as:

*tough and quite challenging for weaker students...This was a lot more challenging than last year’s paper and some of the questions, especially in the Prose section, were unpredictable* (Donnelly, 2013a).

Here, unpredictability appears to be associated with an unreasonable level of demand for ‘weaker’ students.

Four sources contained references that were coded for both predictability or expectedness and a welcome or appropriate level of challenge. In contrast with 2012, when the examinations were poorly reviewed in the media and perceived to be difficult, in 2013 the maths Paper 1 was reviewed positively. One detailed review noted the consistency of parts of the paper with sample papers, implying that predictability ensures an appropriate level of challenge:

A senior maths teacher at the Institute of Education said:

*All the questions in section A were fully anticipated and wouldn’t have posed any difficulty for students who were prepared. The questions in section B were similar to those posed in the sample paper provided during the year; this would have taken the sting out of them for students. Section C, meanwhile, was much easier than previously, with no challenging integration whatsoever* (McGuire, 2013b).

Predictability is therefore seen to be a positive feature of the examination.

**English 2013**

Similarly to maths, English Paper 2 was poorly reviewed in 2012 but reviewed more positively in 2013. Sixteen sources in the search period referred to English. Before the examination, one student writer explained the relationship between the ‘notorious’ English Paper 2 and predictability:

*Every year it promises to break some hearts through the poets it does, or doesn’t examine. It has become de rigueur for Leaving Cers to try predicting which poets will appear on Paper 2* (Gaynor, 2013).
Most reviews made a comparison to the 2012 paper, in which the popular poet Sylvia Plath did not come up. A more detailed review of the paper opened as follows:

A ‘delightful, dream paper’ and the ‘most settled English Paper 2 for many years’ were among the comments of teachers to what Leaving Certificate higher-level candidates were treated to yesterday afternoon. Even Sylvia Plath obliged (Donnelly, 2013d).

Similarly, another review welcomed the predicted and expected nature of both the choice of poets and other parts of the examination:

‘There were no surprises, in either the selection of poets or the questions set: a huge relief for everyone,’ said teacher Jim Lusby of the Institute of Education. […]

The majority of candidates studied the Shakespeare play Macbeth, and the expected focus on character and language appeared on the paper (Holden, 2013b).

There were a few negative comments, such as:

On the comparative study question, Mr Lusby said examiners should give more thought to the phrasing of the questions (Donnelly, 2013d).

However, the tone of the reviews was overwhelmingly positive as most of the paper complied with commentators’ predictions and expectations.

References


Cotter, D (2012, 16 May) In My Opinion: First-year students entering third level have been taught to learn – not to reason. The Irish Independent. www.independent.ie/lifestyle/education/in-my-opinion-firstyear-students-entering-third-level-have-been-taught-to-learn-not-to-reason-26854569.html


McGirr, I (2012, 8 June) Blood will be spilled; betrayal like that comes at a high price The Irish Independent. www.independent.ie/lifestyle/education/blood-will-be-spilled-betrayal-like-that-comes-at-a-high-price-26862548.html


Murphy, C (2012b, 4 September) Quinn to target €20m spent on grind schools. The Evening Herald. www.herald.ie/news/quinn-to-target-20m-spent-on-grind-schools-28016805.html


The Irish Times (2012, 7 June) Two exams down. Timing abominable, but sure we’ll see. www.irishtimes.com/news/two-exams-down-timing-abominable-but-sure-we-ll-see-1.1064403

Chapter 2: Research background

Examinations have a large impact upon teaching and learning in classrooms. Some have argued that it is teachers, rather than examinations, that change the learning experience. Aligning the curriculum and teaching with the examination can be seen as positive but becomes problematic if it narrows the taught curriculum too far. Producing rote, superficial learning has also been seen as an undesirable feature of examination ‘washback’. Modern examinations need to produce positive washback upon learning to meet the needs of the twenty-first century. A working paper which includes other material on this part of the project is available at:

http://oucea.education.ox.ac.uk/research/recent-research-projects/investigation-into-the-predictability-of-the-irish-leaving-certificate-examinations/

Transparency

Glaser (1963) is credited with the first definition of criterion-referenced assessment:

the determination of the characteristics of student performance with respect to specified standards (p519).

Thus, there was a shift towards being more open and explicit about the achievement standards expected of students. The criterion-referencing zeitgeist is likely to have affected the way of thinking about examining in Ireland, as well as in other countries. In a review of standards in public examinations between 1975 and 1995 in England, the School Curriculum and Assessment Authority and Office for Standards in Education commented that

---

8 Although Wiliam (1996) correctly pointed out that this is typically cohort-referencing as it usually applied to each year group rather than compared with a sample population.
Subject coverage and assessment requirements are set out in syllabuses in far more detail now than was the case 20 years ago. Clearer examination papers and the publication of mark schemes have enabled teachers and candidates to see more precisely than before what is expected (1996, p15).

Additionally, they pointed out that, since 1990, the objectives, aims and philosophy of the examinations had been increasingly more explicit and available in the public domain (ibid, p17).

In more recent years, the rise of formative assessment (Black & Wiliam, 1998) has been a dominant shift in the assessment research literature. One aspect of successful formative assessment is sharing assessment criteria with students. This has been found to have positive effects upon student learning and is related to the capacity to self-assess (McDonald & Boud, 2003).

Torrance (2007, p291) argued that transparency undermined the development of learner autonomy and wrote that

Making learning objectives and instructional processes more explicit calls into question the validity and worthwhileness of the outcomes achieved (p389).

Implications of predictability

Some elements of predictability for teachers and learners are necessary to ensure that a structured educational experience can be provided. To be able to learn, practice and perform, students need to know the topics to study, what performances are expected, how they will be assessed and what counts as progress in a subject.

Making the assessment criteria transparent can increase outcomes in assessments (Jonsson, 2010), but can also foster rote and superficial learning, as well as drilling and instrumentalism. On the positive side, students might be less anxious taking predictable examinations because they can prepare for them and there are few surprises.

Using an experimental design and structural equation modelling, Kleinmann, Kuptsch and Köller (1996) found that people’s performances were explained by ability to a larger extent when the scoring criteria were made transparent in an occupational assessment centre. Thus, making the criteria transparent increased the construct validity of the assessments. However, too much transparency led to undesirable implications for teaching and learning in England (Daly et al., 2012; Torrance, 2007) and in Texas (McNeil & Valenzuela, 2001).

Using unpredictable or novel questions in examinations makes it difficult for students to use a pre-prepared response strategy. As such, using novel questions and materials is one technique for assessing higher order thinking skills rather than rote learning (Brookhart, 2010, p26). Innovative item types are a feature of e-assessment systems that have widely espoused advantages, albeit with little empirical research evidence to back up the claims (Wan & Henly, 2012, p61). The research that does exist does not investigate the impact of unpredictability itself. Rather, it looks at the properties of the item design. Parshall, Harmes, Davey and Pashley (2010, p216) provide a taxonomy of testing innovations. The extent to which we would consider particular items to be innovative depends upon the norm for item design in our own context. In the US, multiple-choice items are used frequently
and constructed response items are sometimes seen as innovative. We are lacking research on assessment design looking at what an appropriate balance between the use of novelty and transparency would be.

Whether students’ knowledge and skills gained in studying for the Learning Certificate transfer to other situations is a critical question relating to problematic predictability. If students can only regurgitate specific examination performances, the learning has failed to deliver curriculum intentions. Shepard (2000, p11) pointed out that we should not get into a situation where there is an implicit learning contract with students in which only familiar and well-rehearsed assessment tasks are considered to be fair.

On the other hand, in line with the literature on subject-specific knowledge and self-regulated learning, we expect that the predictability of exams may vary from one subject to another and is context dependent.

**Washback**

*Washback* and *backwash* are terms for the influences of testing upon teaching, attitudes, students’ approaches to learning, and behaviours. Tests will have washback effects on some teachers and learners, but not for others, and it is likely that high-stakes tests will have more influence than tests that do not have any important consequences for the learner or teacher (Alderson & Wall, 1993).

Madaus (1988) stated that

*It is testing, not the ‘official’ stated curriculum, that is increasingly determining what is taught, how it is taught, what is learned, and how it is learned* (p83).

In other words, those who control testing control the real curriculum in school, and therefore learning. Looking at empirical research we will see that this is not always the case and the picture is more complex when we look at (1) what is taught and how (which involves syllabus content and the teacher) and (2) what is learned and how (which involves the student).

In the late twentieth century, the *measurement-driven instruction* movement in the US promulgated the notion that tests should drive the instruction through clear goals for students, which could be tested on a high-stakes test (Popham, 1987). The process of matching the content of the teaching with the items on the tests is often referred to as *curriculum alignment* (Shepard, 1990, 1993). In the US, measurement-driven instruction has been viewed by some as positive reinforcement for the students, but there is no consensus (Madaus, Russell, & Higgins, 2009).

*The National Commission on Testing and the Public Policy* warned that high-stakes testing could drive teaching away from ‘instructional practices that would help to produce critical thinkers and active learners’ and narrow the curriculum (Madaus et al., 2009).

It has been found that states and districts in the US that rely primarily on test-based accountability have not been successful in supporting their most vulnerable students (Darling-Hammond, 2010). Instead, teaching was primarily focusing upon rote learning, memorising pieces of information and low level learning, which was particularly evident in schools with disadvantaged students (Darling-
Hammond & Rustique-Forrester, 2005). In England, high-achieving students reported being taught test techniques at the expense of deep learning in the classroom in a research study investigating the introduction of reformed A-level exams in 2008 (Daly et al., 2012).

A recent review of the effects of testing on student achievement between 1910 and 2010 found positive effects of testing both in qualitative and quantitative studies, with moderate to fairly large effect sizes across hundreds of studies (Phelps, 2012). Rote learning and coaching for tests and predictable tests can increase scores, but there is less understanding of how much deep knowledge students have or how prepared they are for future learning.

With reference to the work by Alderson and Hamp-Lyons (1996) and Watanabe (1996; 2000), Spratt (2005) argued that there were large differences in the way teachers teach towards the exam, and that an exam cannot dictate what and how teachers teach and learners learn. Degrees of washback varied depending upon the teacher. Some teachers used ‘teaching to the test’ and ‘textbook slave’ approaches, while others adopted more creative and independent approaches. Alderson and Wall (1993) claimed that any test – be it good or bad – may result in beneficial or problematic washback, depending upon how it is used.

Thus, the role of the teacher and the content of the instruction are important mediators between the test and learning. Anastasi (1981) distinguished three types of training: that focused upon understanding of the test, coaching on test materials, and broad skills. She argued that teaching about the test itself increases test validity, as it reduces variation between students that is not of interest. Drilling on test materials reduces the validity of the test because students’ performances are not generalisable to other situations. Teaching of broad skills should also be consistent with test validity. Distinguishing between teaching understanding of the test and drilling on test materials is, however, not straightforward, especially in the absence of a separate test of students’ understanding. A great deal of interest in coaching effects was evident in the 1980s and early 90s in the US literature, especially in relation to the SAT (eg Messick & Jungeblut, 1981). However, this research is not entirely generalisable to the current research programme because the SAT is not a curriculum-embedded examination and is therefore not supposed to be taught in schools. Coaching effects have also been shown for eleven-plus examinations in Northern Ireland (Bunting & Mooney, 2001) and a relationship between test preparation and school-level performance in science was found in England by Sturman (2003).

In an experiment conducted in Germany, Brunner, Artelt, Krauss and Baumert (2007) found that exposure to the test (pre-testing) and coaching together had significant effects on PISA scores, as would be expected. The coaching lasted approximately three hours, being delivered in four 45-minute sessions. PISA items were presented to students, as were materials produced by the teachers. More frequent use of repetition and rehearsal techniques was evident in these sessions than in the normal teaching and half of the teachers in the coaching group taught at least one test-taking strategy. Interestingly, this research concluded that coaching did not present a validity threat to the PISA study because the items are not publicly available and coaching did not have a significant additional effect upon scores. However, there was no condition in the study in which the effects of coaching alone were investigated.

There are several differences between the context of the Brunner et al. (2007) study on PISA and that of public examinations. First, students are supposed to be able to prepare for the Learning
Certificate and other such examinations. Second, ‘authentic coaching’ is teaching for public examinations; again, something to be recommended. Third, authentic coaching for the Learning Certificate examinations would involve many more hours of regular teaching than the three hours in this study, as well as additional test preparation activities. Fourth, students themselves engage in test preparation activities, which are known to have an impact upon test scores, even when the tests are supposed to be curriculum-independent (Powers & Swinton, 1984, p276). Fifth, public examinations supposedly test knowledge, whilst PISA tests thinking skills. Although the distinction between knowledge and thinking is moot (Sfard, 1988), we know that PISA reflects prior knowledge as well as IQ (Baumert, Lüdtke, Trautwein & Brunner, 2009) and the Leaving Certificate is intended to assess higher order cognitive skills as well as factual knowledge. Thus, this caricature cannot be sustained – the Leaving Certificate and PISA both test knowledge and skills.

Bangert-Drowns, Kulik and Kulik (1983) conducted a meta-analysis of 30 studies of coaching programmes upon achievement tests (rather than the SAT). Using Anastasi’s (1981) classification of different approaches to coaching, they found that short coaching programmes had a small positive effect upon grades (effect size 0.17) and longer cramming and drilling programmes also had a small effect (effect size 0.25). Only one study was identified which investigated broad instruction, but it had a moderate effect size (0.66). Longer coaching programmes were more effective than shorter programmes, but there were no significant effects of test-wiseness or anxiety-reduction coaching.

Powers (1986) also used meta-analysis to show that complex item formats were more susceptible to coaching. However, all of the item types included in the research were closed format multiple-choice tests, which is not the typical format of the Leaving Certificate examinations. Complexity was associated with the number of words used to give directions, so test familiarity is important for questions that require a lot of explanation in the instruction.

The implications of these studies for the Leaving Certificate are likely to be that relatively long periods of test preparation in schools on complex item types will have an influence on students’ examination performances. However, this would be entirely appropriate so long as the learning is valuable in nature, being higher order thinking skills as well as knowledge and being generalised to performances in other situations.

**Deep and surface learning**

Problematic predictability can lead to undesirable teaching and learning behaviours, primarily focusing on the tests instead of broad, deep learning and higher order thinking. In their classic research on the quality of students’ learning, Marton and Säljö (1976) found that students in higher education adapted their study strategies according to how they perceived the test items and how they believed they would be assessed. Students’ approaches to learning could be classified as either deep or surface approaches. Deep approaches to learning were characterised by students’ active search for meaning in texts they read, while surface approaches to learning focused primarily upon rote learning and factual knowledge (Biggs, 2003; Diseth & Martinsen, 2003; Entwistle & Entwistle, 1991; Entwistle, 1988; Ramsden, 1988; Shepard et al., 2005).
While other researchers have used different classifications of approaches to learning (Weinstein & Mayer, 1986; Pressley 2002) it is generally accepted that students who are strategic learners will adapt their approaches to learning based upon the exams given.

One example of how students adapted their approaches to learning based upon their knowledge of how they are assessed was given in the longitudinal project *Effectiveness of Higher Education* in the Netherlands, which involved 565 first-year students at the University in Groningen (Bruinsma, 2004). During the first two academic years, students answered self-report questionnaires about their motivation, deep information processing approach and on student achievement. It was predicted that the use of a deep information processing approach would lead to higher achievement, but it did not. The researchers (Bruinsma, 2004) offered the following explanation:

...the relationship between a deep information processing approach and academic achievement might be mediated by other characteristics of the learning environment, e.g. the assessment procedure. The assessment procedure might focus on memorization knowledge rather than on a conceptual mastery of the subject matter. ...if students need to learn deep information processing strategies, they should be assessed on these strategies and not on surface learning strategies (p564).

In other words, if the assessment procedures do not ask for deep approaches, strategic students will not use deep approaches such as elaboration strategies for learning.

This is also emphasised in the US National Research Council report *How People Learn*; if teachers stress the importance of understanding in their teaching, but give students tests that focus upon memorisation for procedures and facts, the latter will be what students focus upon. In fact, the report claims that most teachers over-emphasise memorisation in their classroom assessments, rather than depth of understanding (Bransford et al., 2000).

One goal of the education system is to develop students’ autonomy, intrinsic motivation and their ability to be self-regulated learners. Self-regulated learners are known for being able to apply domain-appropriate learning strategies (Boekaerts, 1997; Zimmerman, 1990; 1994). They are active learners who know how to use different learning strategies, such as memorisation strategies, elaboration and control strategies, and they are able to know when the different strategies are useful.

Previous studies have provided evidence that students’ use of deep-level strategies such as elaboration and control (monitoring) strategies is linked to better text comprehension (National Reading Panel, 2000; Trabasso & Bouchard 2002). Further, use of learning strategies have shown positive correlations to academic performance (Alexander, Graham & Harris, 1998; Hattie et al., 1996; Weinstein, Husman & Dierking, 2000).

Even though the use of deep approaches to learning such as elaboration strategies is considered to be an important part of developing deep knowledge, it is also found that good learners use memorisation and rehearsal strategies when it is useful. Learning is complex, and it is not necessarily the case that one strategy is better than others (it is too easy to state that elaboration strategies are better than memorisation strategies). Instead, it is found that good learners know when and how to use the different strategies and they choose the strategies that are most effective,
while poor learners tend to use the same strategies over and over again, without adapting them to the specific task, subject or situation (Zimmerman, 2013). This is one of the reasons why it can be too simplistic to use Bloom’s taxonomy (1956) and rank some strategies above others. The question is rather how and when it is useful to use the different strategies.

In 1982, Kellaghan, Madaus and Airasian published *The Effects of Standardized Testing*, a joint Irish and American investigation that examined the impact on Irish schools of introducing standardised tests. The study examined washback effects on schools, teachers, pupils and parents of Grade 2 and 6 students, and found no harmful effects of introducing standardised tests. However, this study has been criticised as an artificial situation, in which tests were introduced as part of the study experiment, with no currency in the Irish education system, and therefore it was no surprise that little negative impact was perceived (Alderson & Wall, 1993).

In a study of washback effects from the National Matriculation English Test (NMET) in China, Qi (2007) suggested that high-stakes tests were not an efficient agent for changing teaching practices. It was found that teachers neglected the communicative features of the NMET writing task, and no practice was observed in the schools that prepared the students for the task. It was concluded that language testing seems to influence teaching content, but has limited influence on teaching methodology. In another study, Cheng (2003) examined the impact of changes in public examinations on secondary school English teaching in Hong Kong, where major changes were introduced into the Certificate of Education Examination in English with the intention of creating positive washback effects on classroom teaching. Data from teacher observations and interviews showed little change in classroom practice.

In an American study, Smith (1991) reported different ways teachers responded to tests by studying their test preparation in the classroom, ending with categorising eight different responses:

1. no special preparation (teachers showing resistance to test)
2. teaching test-taking skills
3. exhortation, such as encouraging students to have a good night’s sleep
4. teaching the content known to be covered by the test
5. teaching to the test, using material which would help students to understand the item format
6. stress inoculation, and boosting students’ self-esteem before the test
7. practice on items from the test or parallel forms
8. cheating.

In this American study, teachers defined cheating as providing students with extra time on the test, giving hints and rephrasing the wording of items, providing correct answers or altering the marks on answer sheets (Smith, 1991).
In England, Sturman (2003) reported a variety of responses from science teachers, arguing that teaching to the test can in some forms become a positive phenomenon, claiming that the science test already provided opportunities for students to apply their knowledge, not simply recall facts.

**Predictability research**

Many studies on washback, teaching to the test and assessment designed to assess higher order thinking skills concern the same underlying issues as this project on examination predictability.

We identified three papers specifically using the term ‘predictability’. Murphy et al. (2012) outlined a range of research techniques that could be used to study the phenomenon. Ofqual (2008) conducted research on the predictability of GCSE and A-level examinations. It was concluded that formulaic wording of questions was beneficial in conveying what was required to candidates. Problematical predictability was more often derived from overly detailed specification of the syllabus content, leaving examiners little manoeuvre in question topics.

SEC (2012) reviewed all of the Irish Leaving Certificate examinations and concluded that choice in topics should be reviewed in some subjects, including economics, technology and English. Additionally, advance notice of content for aspects of the oral tests for the modern European languages needed to be reconsidered. The two pieces of empirical work conducted on predictability focused upon the content of the tests and syllabuses. These are clearly important artefacts to consider, but it also matters how they are used in the system. As such, the current research investigated the examination materials and how teachers and students view the examinations and their preparation for them in terms of predictability.

**References**


Murphy, R, Stobart, G, Baird, J & Winkley, J (2012) Investigating the predictability of GCSE examinations


State Examinations Commission (2012) Draft report of the SEC working group on predictability in the leaving certificate examination


Chapter 3: Exam materials

This chapter reports on a review of examination materials conducted by 14 external subject specialists, in which predictability was considered to differ on a subject-specific basis. Overall, economics, French and DCG were seen as being quite (not very) problematically predictable, but this was not the case in biology, English and geography.

Predictability of question format and layout was seen as helpful to students. This allows the assessment of subject knowledge rather than students’ ability to cope with surprises in the examination. All of the subjects were predictable in these beneficial ways.

There was concern that the assessments in biology, economics, French, geography and DCG may be encouraging superficial rote learning of facts or skills rather than higher order skills because of the focus upon this in questions and in the marking schemes. Critical approaches and evaluation were considered to be under-emphasised. In DCG, it was recognised that the skills required were considered to be higher order, but the way in which they were assessed could encourage rote learning and reproduction, which would undermine the desired requirement for deeper thinking.

In this chapter we do not repeat the research questions verbatim, as the issues raised are sometimes more specific. However, we indicate which research question each section refers to.

A more detailed working paper on this part of the project is available at:

http://oucea.education.ox.ac.uk/research/recent-research-projects/investigation-into-the-predictability-of-the-irish-leaving-certificate-examinations/

Reviewers

Fourteen subject specialists, with previous examination expertise with boards in England or Northern Ireland or higher education teacher educators participated in this research. Subject specialists’ experience is given in Appendix B.

Data collection

Subject experts independently conducted initial reviews of the Leaving Certificate materials and completed a structured report. Subsequently, they discussed findings in a workshop.
Examination materials

Six subjects were investigated; biology, English, economics, French, geography and DCG. Mathematics was excluded from the review due to the ongoing work on Project Maths.\(^9\) Materials reviewed included:

- An outline of the Secondary Leaving Certificate (Appendix A)
- A syllabus\(^10\)
- A teacher’s guide
- Appendix 5 on command words from the SEC publication *A Manual for Drafters, Setters & Assistant Setters* (Appendix C)
- Higher level examination papers from 2003 to 2012\(^11\)
- Higher level marking schemes from 2003 to 2012
- Students’ responses to the Higher level 2012 examination
  - five scripts at each of grades A, C, D and E, giving a total of 20
  - oral examination recordings for French
  - project work for DCG (from 2013)

Research question 2 – What kinds of learning are the examinations intended to promote?

Higher order thinking skills of application and understanding were included as aims of all syllabuses and evaluation was mentioned in a number of them, although the weightings to be given to these skills were not specified. Evaluating the alignment between the syllabuses, question papers and marking schemes was therefore problematical. Nonetheless, the reviewers considered that the marking schemes did not clearly credit higher order thinking skills to the extent that they considered appropriate, and they also judged that questions did not always target the desired kinds of learning.

Over the past two decades, assessment practices in many countries have generally become more transparent and have emphasised higher order thinking skills to a larger extent. Comments were made about the syllabus and examination materials being old-fashioned in terms of syllabus content (economics, French, DCG), skills assessed (biology, economics, geography, DCG), design of marking schemes (all subjects) and presentation of question paper resource materials (biology). Frequent changes can be disruptive to an education system, but in the extreme case of economics, the

---

\(^9\) [www.ncca.ie/projectmaths](https://www.ncca.ie/projectmaths)

\(^10\) [www.curriculumonline.ie/en/Post-Primary_Curriculum/Senior_Cycle_Curriculum/Leaving_Certificate_Established/](https://www.curriculumonline.ie/en/Post-Primary_Curriculum/Senior_Cycle_Curriculum/Leaving_Certificate_Established/)

syllabus had not been revised since 1969. We recommend that consideration is given to revising the syllabus and examination materials more frequently and trends in other assessments internationally should be reviewed as part of the process.

**Research question 3 – How predictable are examination questions in the Leaving Certificate in Ireland?**

**Ratings of predictability**

Table 4 gives the consensus ratings arrived at after each subject specialist had made their own ratings and then discussed them with other specialists at the workshop. The top three rows of the table (in bold) refer to the more substantive elements of the examination, and the others are the surface features. The intended difficulty of examinations should be very similar from year to year to maintain standards, but variations in questions will produce fluctuations that standard-setting processes must address. In most cases, the intended difficulty of the examinations was viewed as very or quite similar. Only in the case of English Paper 1 was there a view that the intended difficulty was sometimes quite different, which was due to the variation in text demands.

Reviewers agreed that the content (topics and examples that come up each year) should not be predictable. Here, the picture was divided, with reviewers rating the content of geography, DCG, French and English Paper 2 as quite similar in general, year on year.

Content predictability in French was thought to be due to the wide range of topics on the syllabus. The aural was considered to be more predictable than the written papers. However, in economics, biology and English Paper 1, the content was rated as quite different (Table 4). The skills required were rated as similar year on year for every subject. Ratings for similarity of the skills required were higher than those for the content similarity in each subject.

Reviewers considered that the question formats and question paper layout should be predictable so as to avoid assessing irrelevant demands. Ratings for the surface features of the examinations were mainly ‘very similar’ and we can conclude that these examinations are predictable year on year with regard to surface features. The notable exception was for resources in English and in this case variability was seen as a positive feature of the examinations. The reviewers valued the variability in texts, images and graphics in Paper 1 and some variety in the wording in set text questions in Paper 2.
Table 4 Reviewers’ agreed ratings of the examination materials

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intended difficulty</strong></td>
<td>4</td>
<td>4</td>
<td>2/3</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Content</strong></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Skills</strong></td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Command words</strong></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Question wording</strong></td>
<td>4</td>
<td>3/4</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Question type/format</strong></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Layout</strong></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Resources</strong></td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Key: 1=very different 2=quite different 3=quite similar 4=very similar

Transparency of marking schemes

A common finding to every subject investigated was that there was a perceived lack of transparency in the marking schemes. Compared with other examination systems, there were relatively large maximum marks available for question papers and therefore larger maximum marks allocated to individual questions. How individual marks were allocated and whether there was partial credit available was not always evident to the subject specialists. The large maximum marks enable marking to play a role in standard setting that is unusual in large-scale high-stakes examinations. Typically, in other examination systems, a separate standard-setting exercise is conducted after marking has been completed.12 The purpose of this exercise is to adjust the cut-scores required for each grade, to adjust for unavoidable changes in difficulty in examinations between years. The Leaving Certificate cut-scores are, however, the same year on year (Table A2, Appendix A). To achieve this, whilst maintaining standards, the marks allocated sometimes require adjustment before the marking scheme is finalised. Where examinations have proved to be more difficult than anticipated, more marks are awarded for a particular performance, to compensate for the fact that it was more difficult to demonstrate knowledge and skill in the examination that year. Conversely, where the examination has proved to be easier, fewer marks would be awarded. In this way, students are rewarded for their knowledge and skills and not for the ease of the particular year’s examination.

The result of this need for flexibility is that the number of marks allocated for the various parts of questions was not always apparent on the question paper, nor was the number of marks that would be gained for different responses always evident in the marking schemes. There is a clear reason for the first of these issues, as the marks for each question part may need to be adjusted during the standard-setting process, and therefore cannot always be decided in advance and printed on the question paper. However, the effect of this is that the amount of work candidates had to do, as well

---

12 Changes in the difficulty level of the examination are unavoidable unless expensive pre-testing is conducted. A disadvantage of pre-testing is that the security of the examination may be compromised.
as the level of response they had to make in response to questions, was not always clear from question papers or marking schemes. To some extent, teachers and students would have to rely on knowledge gleaned from students’ marked examination booklets in previous years’ examinations. Examples of credit-worthy responses were sometimes given, but overall the marking schemes were not sufficiently transparent to convey, on their own, the way in which marks were credited. Short answer questions were sometimes allocated a specific number of marks, but how exactly each mark point was scored was not always clear. The rationale for allocation of points was questioned at times by the subject specialists. For example, in the French 2011 Listening question paper (Section 4ii), the question was ‘What did she realise at the press conference?’ Three marks were allocated for responses of ‘she was the only woman astronaut in the room’, but only one mark was given for ‘she was the only woman astronaut’. The question paper did not indicate how many marks were available for the question; neither is it clear how students would know how specific they must be in their response to get the full marks available. Elsewhere in the examination, this level of precision was not required in the responses.

As Chapter 5 shows, teachers and students were content with the transparency of the marking schemes. Thus, the findings of the subject specialists’ review and the interviews with teachers and students were at odds. The explanation for this lies in the fact that the marking schemes are interpreted in schools through many years of teachers’ experience of the system. Stability in the examination syllabuses and materials means that there was a great deal of understanding within the education system. Nonetheless, it is recommended that consideration be given to improving the clarity of marking schemes.

**Research question 4 – Which aspects of this predictability are helpful and which engender unwanted approaches to learning?**

**Higher order skills versus recall**

The main theme that emerged from coding of answers to open-ended questions was the assessment of knowledge recall to the detriment of higher order skills (Table 5). In four of the subjects (biology, economics, French and geography), there was concern that recall of facts was being over-emphasised and that students may therefore be able to rote learn answers to some of the questions. This could interact with the similarities of exam papers year on year to allow question spotting and the preparation of stock answers.

Some ‘naming’ questions were allocated the same number of marks as ‘explain’ questions in geography, which the subject specialists considered inappropriate. In French, although it was considered that the reading passages were of a demanding standard, students did not always have to read entire passages to find the answers to certain questions and there was a concern about a focus upon receptive (even recognition) skills rather than productive skills.
Table 5 Number of spontaneous comments relating to assessment of knowledge rather than higher order thinking skills

<table>
<thead>
<tr>
<th>Subject</th>
<th>Biology</th>
<th>Economics</th>
<th>English</th>
<th>French*</th>
<th>Geography</th>
<th>Graphics</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17</td>
<td>26</td>
<td>5</td>
<td>25</td>
<td>24</td>
<td>4</td>
<td>101</td>
</tr>
</tbody>
</table>

* There were three subject specialists for French and two in the other subjects. A comparative figure for this subject would therefore be 17.

Command words also reflected lower order (e.g., *trouve*, *citez* etc.) rather than higher order skills (e.g., *analysez*, *comparez* etc.). The reviewers questioned how students would know that they should respond precisely in some circumstances (e.g., ‘more than three hours’ rather than ‘three hours’ in one case to attain full marks, when five marks could be gained elsewhere on the question paper with less precision). Further, in the comprehension sections of the examination, students were seldom asked to state things in their own words or explore the main points. Such techniques may have helped to assess higher order skills.

Syllabus, question paper and mark scheme alignment

In biology, English and geography there was considered to be good alignment between the syllabus and the question papers. The economics and French syllabuses were not very explicit about subject content, which would force teachers to rely to a greater extent upon the question papers to define the taught curriculum. Some economics topics appeared on the question papers even though they were not explicitly on the syllabus (e.g., the euro, current issues in the Irish context). Syllabus aims were not considered to be completely aligned with the question papers in economics, French and DCG. In economics, the reviewers felt that assessment of critical thought was not sufficiently evident, whereas in French they felt that there was not enough assessment of stylistic aspects of literary texts, real life contexts (which was considered to be difficult in an examination in any case), use of different registers, customs and traditions, sexual and racial equality or ethnic minority topics. In the absence of specified weightings for such aspects of language, it is difficult to determine whether this is out of line with the intentions of the syllabus writers, but the subject specialists considered them to be under-emphasised.

The DCG syllabus had a number of aims that the reviewers considered could not be evidenced clearly in the examination: communication, analysis, evaluation and creativity. This is an area of disagreement between the subject specialists, as the Irish subject specialists considered that these skills were assessed in the project work of this course. The external subject specialists did not believe them to be sufficiently evidenced in the project work because students were given the same design task (rather than creating their own) and did not have to analyse different approaches to design, communicate them in a form suitable for a client and evaluate the ways that they could have approached the design task.

Likely effects on the taught curriculum

One possible effect of problematically predictable examinations is that the taught curriculum may be narrowed, as teachers and students can topic-spot and avoid teaching and learning areas of the
subject. Two of the subject groups did not detect likely problems with this, but in four subjects this was considered to be a risk, for different reasons. In biology and geography, it was considered unlikely that the examination would lead to narrowing of the taught curriculum. However, in economics and English it was thought that there would be a large temptation to specialise. Certain topics came up frequently in economics. In English, a teacher could produce strategies that would save a lot of work in preparing for the examination (eg when studying the poetry of Plath, one could pick three Plath poems in advance that would be students’ ‘favourites’ in the examination, rather than study the wider range of her poetry as envisaged). In French, the degree of choice meant that students could avoid some topics altogether. The syllabus content was thought to be broad and demanding in DCG, but the examinations allowed a focus upon narrower aspects of the syllabus. For example, the syllabus states that students should demonstrate the ‘ability to evaluate technological activities, artefacts and systems critically and constructively’, but subject specialists did not consider that this was required to the extent that they expected in the examination and project. There were a number of such mismatches between the text of the syllabus and the assessments in the view of the subject specialists.

Additional subject-specific findings

Biology

The subject specialists were positive about the fact that practical questions always featured on the examination, and hoped that this would influence teaching, such that students would be required to do practical work in class. They also felt that some recall in biology is good preparation for future study for professions such as medicine. Overall, the consensus was that biology was neither predictable nor unpredictable. One subject specialist summarised the issues as follows:

In terms of the structure of the paper, the question types, the types of resource material, the level of difficulty and the skills assessed, I think students who have looked at papers from previous years will know exactly what to expect. However, crucially, in terms of the content covered by the exam paper, since each paper covers such a wide variety of topics, there is no discernible pattern to the questions and it would not be easy to predict what was likely to come up.

Command words were not always obvious in section C, where they were embedded in lengthy text. Here, it was considered that more transparency would be helpful to indicate to students what is expected of them.

The biologists noted that the examination paper resources were old-fashioned, with sketchy diagrams and no colour or photographs (for example, see Figure 5), which contrasts with the comments on the resources for the geography examination. Whilst this is not directly related to predictability, it is in keeping with views that the examinations have not changed over time. Not only might modernising the resources add to the quality of the assessment, the backwash upon teaching and learning might be positive. Furthermore, perceptions of predictability can be damaging for the credibility of an examination, even if they are not based in fact.

Thus, perception-management is worthwhile in itself. The processes referred to in the content of the examination papers were seen to be cutting edge, so it is unfortunate that the resources detracted
from this. This, together with the emphasis upon rewarding factual recall, made the examination materials look dated in their approach.

**Figure 5 Excerpt from the 2010 biology question paper**

The diagram shows a virus attached to a host cell.

![Diagram of virus attached to host cell](image)

(a) (i) What is part A made of? .................................................................

(ii) What is part B made of? .................................................................

**Economics**

The economics specialists came to a consensus that overall economics is quite (not very) predictable across the ten years. The surface features of the examination were predictable, but the content varied, at least in part. For example, elasticity was a common topic, but the ways in which it was assessed were considered to be unpredictable. The subject specialists liked the broad range of material covered in the exam and the fact that teachers would be likely to teach some topics very thoroughly as they would definitely come up. They also felt that the layout, formats and wording were beneficially predictable. The demand to learn about major economists was thought to be good, as it would open up the possibility of doing independent research and gaining a deeper understanding of the subject. More extended writing would have helped to assess issues such as the application of economics ideas to different problems.

**English**

No consensus was reached on the level of problematic predictability of the English examinations.

Comments were made about the nature of the skills required being predictable and that certain themes or ‘characters’ would come up repeatedly in the literature examination. However, the nature of the skills required in English meant that one of the subject experts felt there would always be a degree of unpredictability. The thematic approach to question papers was also considered beneficial in reducing the level of predictability.

The subject specialists did not think it was a problem that some of the skills are predictable, but saw it as positive because students should develop these skills in preparation. They liked the reassuring pattern to the exams that would prevent students from becoming fazed by the layout etc. The papers required candidates to develop skills in preparation for the assessment. There was a good focus on poetry: poets studied in class as well as unseen poems came up every year. They were also
impressed by the comparative section in Paper 2, whilst feeling it was hard to select the right texts and questions for this year on year and much of it was directed towards character or theme.

Although the marking scheme indicated that students were given credit for the following features of their writing, the subject specialists judged that the application of this process was unclear from the evidence they scrutinised: clarity of purpose (30%), coherence of delivery (30%), efficiency of language use (30%) and accuracy of mechanics (10%).

French

The French specialists came to a consensus that the examinations were quite (not very) problematically predictable. Students’ responses showed evidence of pre-learnt idiomatic phrases without a clear understanding of their meaning. Students could at least partially succeed in the examination by being able to recognise a smattering of phrases without necessarily understanding the majority of the text. More open-ended questions would have helped to assess higher order skills and productive abilities.

Cultural awareness, in terms of the requirement for comparisons of Irish and French lifestyles, was thought to be a positive feature of the examinations. Additionally, the requirement for personal engagement on topics that students could relate to (such as their personal opinions, own lives, self-reflection etc.) was seen as positive. However, more engaging stimulus material was thought to be needed. Due to what they regarded as an undue emphasis upon lower level skills, subject specialists considered that there was not a great deal of distinction in performances between the students who scored highly and others. Also, the logic of awarding marks was not always evident, as previously discussed.

In the written production section, question 2 essentially included the same question between 2003 and 2012 (‘Qu’est-ce que vous notez à ce sujet dans votre journal intime?’). The writing required of students would have differed, due to the different subject matters, but candidates and teachers will naturally anticipate that this question will come up in the examination. This shows the complexity of the issue of predictability. An identical question, if targeted at sufficiently different subject matter, can be helpful predictability. If the response required is too predictably similar each year, then this could be problematically predictable. In this case, the question required different enough responses from students year on year, but the use of an identical question annually could give the broader public and the media the wrong impression.

The range of vocabulary used in the aural examination was thought to be a positive feature of the examination. The content of the speech was not always authentic (eg a radio broadcast), but this was considered difficult to do for an examination. Questions in the aural tended to be factual. Students were asked questions and answered in English, which, while appropriately keeping the focus of the task on the intended receptive skills, made the task less demanding.

Students appeared to be well prepared for the oral examination and there was a standard approach to most of the questioning; a first question of ‘Quel âge avez vous?’ was common. Searching questions were uncommon in the oral examinations, with follow-up questions for explanations not heard in any of the work scrutinised. There was no discussion of cultural or literary topics in the examples heard and superficial short topics were included. For example, when a student was asked about differences between the US and Ireland, she responded that the weather was fine in the US,
but it rained in Ireland. As such, the subject specialists concluded that the oral examination did not involve challenging questions, was a little formulaic and there seemed to be a set pattern relating to tenses in the questioning that students may well have expected.

**Geography**

The geography specialists came to a consensus that, overall, geography is *neither problematically predictable nor unpredictable* across the ten years. The elective questions appeared to be less predictable, but cultural identity and biomes came up frequently. ‘Soils’ was a topic that students might be able to avoid.

Resource materials in geography were described as ‘stunning’, but it was considered that there was more scope to extend the questions based upon them. The teaching materials were thought to be a great resource for teachers, supporting lesson plans in blocks of content with helpful examples.

**Design & communication graphics**

The DCG specialists came to a consensus that, overall, DCG is *quite (not very) problematically predictable*. The subject specialists approved of the fact that the exam required students to learn about the skills of construction, precision, spatial thinking, abstract thinking, technical terms and the application of techniques.

Similar questions requiring similar processes were noted in the question papers across years. For example, questions A-1 and A-3 in the 2010 and 2011 question papers, respectively, required students to carry out very similar procedures and the marking schemes also indicate this.

Although the skills tested were considered to be higher order skills of numerical and graphical thinking, the specialists noted that these could be rote learned. There was concern that the syllabus could foster drilling of students and that the terminal component of the examination did not allow students the opportunity to be creative, solve problems and engage with the analysis of materials etc. that would be required of them in a vocational setting. The skills required in the terminal component examination were thought to focus upon those of technical drawing, rather than more broadly DCG. Although going back to the first principles of technical drawing had some advantages, there was a worry that the skills being taught for this examination would not be suitable for the modern workplace in which computers are used to do much of the calculations and drawing.

Use of computer-aided design (CAD) in student assignments was evident. Projects were thematic annually, rather than allowing students to choose particular design projects creatively and take risks in so doing. Students appeared to be handling the CAD well, which was considered impressive. There appeared to have been good teaching in support of the projects and the use of CAD had its challenges. However, it was noted that use of CAD was process-based, rather than CAD being seen as a tool with which to explore and present different design options, for example to a client. The presentation of projects was very clear, but it was at times apparent that students were cutting and pasting information from the internet rather than making the points relevant to the task. There was a lack of depth to some of the work with lower marks and it appeared simplistic. For example, where measurements were produced by the CAD drawings, they were sometimes unrealistic. Even the high-scoring projects did not compare and contrast design options. Many students presented the options for the reader to compare, but this was not supported by their own analyses. Reflection was
evident in the work, and credited in the marking scheme, but it was a personal reflection (e.g., enjoyment) rather than reflection on the design process and decisions. In 2013, students were designing a lectern. They did not consider issues surrounding the different materials that could be used and their advantages and drawbacks. Neither did they consider anthropometric or ergonomic features of the design. Where materials were mentioned (e.g., plastic or metal), there was no consideration given regarding different types and their appropriateness for the object. Although CAD was used to show cross-sections etc., there was no discussion of the design sub-systems, i.e., how the components fit together, how they move and why.

**Irish subject specialist commentaries**

Detailed commentaries were given by the Irish subject specialists in response to a draft report. These comments were given due consideration before the report was finalised. The data were reconsidered and the external subject specialists were consulted on some points. Of the six subjects, strongest disagreement with the reviewers was found for DCG. The Irish subject specialists indicated that the main focus of the syllabus was intended to be graphics (technical drawing and the use of CAD), whereas the subject specialists involved in the research had read the design and communication aspects of the syllabus to be under-emphasised. It is therefore questionable whether the intended curriculum incorporated, for example, the communication of design decisions relating to different materials. As such, there was a difference of opinion over the intended curriculum (or construct underlying the assessment). So, for the subject specialists who took part in this research, the curriculum being assessed was narrow compared with the syllabus intentions. For the Irish subject specialists, there was good curriculum alignment between the syllabus and assessment.

Syllabus and question papers cannot convey all of these intentions on their own. Certainly, as the syllabus stands, the approach taken by the subject specialists involved in this research can be seen as legitimate. However, if the Irish subject specialists, teachers and students have a shared understanding of the intended curriculum and are content with it, then this alternative view of the subject might not lead to changes for the Leaving Certificate. Although the DCG syllabus was revised relatively recently, in light of these opposing views it would be advisable to investigate whether there is anything that can be gleaned from approaches to examining related subjects elsewhere that could beneficially incorporate more design and communication aspects into what is essentially a graphics syllabus.

**Research question 5 – Design phenomena associated with predictability**

Returning to our initial outline of features associated with examination predictability (Table 2, page 16), test conditions, question and performance formats and the availability of examination support materials (e.g., past papers, marking schemes and students’ marked booklets) contribute to predictability in positive ways.

In part due to the use of fixed cut-scores for grades, marking schemes were not very transparent. As discussed in the Overview section, maintaining fairness in grading standards from year to year in the
context of fixed grade boundaries imposes consequent constraints on the distribution of marks that should arise in any subject in a given year. Given that an appropriate distribution of marks must result from the process, it is not entirely possible to specify the marking in advance. The marking scheme must, at times, be altered to produce an appropriate mark distribution. This is a fundamental issue for the system in moving away from problematical predictability associated with the accreditation of points for factual information. Adjusting the marking distribution by altering the marking scheme is more manageable if the changes relate to factual issues. More subtle judgements regarding higher order skills would be more difficult to revise in a reliable manner at a time when the examination system is under a great deal of time pressure and the expectations for marking reliability are high. Without the constraint of fixed cut-scores, it may be more straightforward to achieve a better balance between the assessment of knowledge and higher order thinking skills.

In terms of syllabus design, there were large differences between subjects. In part, this might relate to the length of time since the syllabus was last revised. The economics syllabus had not been revised since 1969 and it was therefore very under-specified. This meant that the examination had to play a major role in signifying the curriculum. Introducing many surprises in the examination would be very unfair to students under this circumstance, even if changes were a good signal to future years’ students about what they should study. None of the syllabuses struck the subject specialists as especially modern, in large part due to their under-emphasis of higher order thinking skills. Over the past few decades, there has been an international trend in syllabus design towards assessing more higher order thinking skills in public examinations, being transparent about this intention in the syllabus and reflecting this in a break-down of syllabus aims and objectives, even weighting those in a clearly laid out section of the syllabus.

A more frequent syllabus revision programme would ensure that the Leaving Certificate could incorporate advances in assessment and curriculum design, including avoiding a situation in which the examinations become the main signal of the intended curriculum content.

**Research question 6 - Subject-specific phenomena are associated with predictability**

Half of the subjects were not seen as problematically predictable overall, but we include subject-specific comments from the subject specialists in all six subjects in Table 6. It can be seen that the issues relate to what is being assessed rather than surface features of the design of the syllabuses, question papers and marking schemes. We can also see that how the issues manifested themselves varied by subject. Many positive features of the subjects were noted in this report. Nevertheless, the comments in Table 6 raise issues for consideration that may improve the assessments.
<table>
<thead>
<tr>
<th>Subject</th>
<th>Predictable overall?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>No</td>
<td>A greater focus upon development of scientific thinking, reasoning and creativity, rather than recipes for scientific methods, would improve the assessments.</td>
</tr>
<tr>
<td>Economics</td>
<td>Yes</td>
<td>Positive focus upon theory and evidence of real-world application, but more encouragement of critical engagement would be beneficial.</td>
</tr>
<tr>
<td>English</td>
<td>No</td>
<td>Deeper engagement with the purposes of the source text and language specific to genres and texts would be beneficial. Uniform learning outcomes lead to a lack of focus and a lack of variety of responses, with too many being personal responses.</td>
</tr>
<tr>
<td>French</td>
<td>Yes</td>
<td>More emphasis upon understanding and extended writing in students’ own words would be beneficial.</td>
</tr>
<tr>
<td>Geography</td>
<td>No</td>
<td>Some topics came up frequently and this could be addressed.</td>
</tr>
<tr>
<td>Graphics</td>
<td>Yes</td>
<td>More focus upon graphics and communication and less upon technical drawing would be beneficial. Varying the questions more would reduce predictability.</td>
</tr>
</tbody>
</table>

### Limitations of the examinations material research

This part of the research programme is limited in a number of ways. Not all subjects were investigated and there were a small number of reviewers. Subject specialists were familiar with a range of examination types, but were most familiar with English A-level and GCSE examinations and this could have affected their judgements. Students at A-level have chosen to specialise in the subject areas concerned, and generally consist of a sector of the age cohort with aspirations and expectations to study those subjects or related ones at university. The Leaving Certificate programme, on the other hand, is more broadly based and is intended to meet the needs of the entire age cohort. Students typically study about seven subjects, including ones that they may not have a particular interest in or aptitude for. The structure of the Irish Leaving Certificate was introduced at the workshop and there were discussions throughout the day regarding the differences between the systems and the fact that examination standards were not the focus of the research.

Additionally, although independent research has strengths of judgements not being coloured by the prevailing views, it could be limited by lack of understanding of the context. To mitigate the latter limitation, subject specialists who understand the Irish Leaving Certificate very well were asked to comment on a draft of this report. Examination and assessment managers from SEC, subject officers from NCCA and subject inspectors from the DES were asked for their comments. It is noted that Irish specialists did not always share the views of the external specialists, and in some cases there was a significant divergence of views, as discussed above in relation to DCG in particular.
Chapter 4: Candidate questionnaire

Questionnaires were completed by 1,002 candidates who sat the Higher Leaving Certificate examinations in 2013. The questionnaires included items on students’ backgrounds, views on predictability, learning strategies and support for their learning. While the questionnaire was targeted at a representative sample of candidates, higher performing candidates were somewhat over-represented among those who responded. Some of the questionnaire items focused upon particular subjects: English, biology and geography. The design of the survey allowed us to produce evidence of associations, but our findings cannot be interpreted in causal terms.

When students’ views on predictability were analysed alongside examination results, they were not related to examination performance. In English, those students who considered that they did not need to understand the topics to do well did worse in the examination. Less easy to explain was the finding that students of English who thought that the examination did not test the right kind of learning did better on average. This was not due to English overly assessing memory, as students who thought that remembering was more important than understanding did worse in English. Further, students of English agreed strongly with learning strategy items relating to understanding rather than memorisation. However, students of English reported using elaboration strategies (meaning-seeking) less frequently than for the other two subjects. This was a surprising finding and could indicate that more could be done to draw connections between learning in English with other subjects and students’ experiences.

Biology students who were surprised by the examination questions and who studied broadly did better in the examinations. Memorisation strategies were used frequently in biology and had a significant relationship with examination success. Views of predictability were not related to examination success in geography, but one of the memorisation strategy items was related to doing better in the geography examination. Students appeared to be well supported in their preparation for the Leaving Certificate, with over 90% of them having seen past papers and the majority of students of English and geography having been prepared with model answers. Model answers were not so prevalent in biology. Use of grinds schools was less prevalent than anticipated, at around 15% of students.

In all three subjects, less than half of the students thought that the examinations tested the right kinds of learning, despite the finding that they considered that they needed to understand the subject broadly to do well. Memorisation and control strategies were used frequently, but elaboration strategies were not used to a large extent in any subject. A more detailed working paper on this part of the project which describes the construction of the instrument and scales, as well as additional analyses, is available at:

http://oucea.education.ox.ac.uk/research/recent-research-projects/investigation-into-the-predictability-of-the-irish-leaving-certificate-examinations/
Method

Excluding the schools involved in the fieldwork described in the following chapter, a stratified random sample of 100 schools was selected to take part in this questionnaire study of students’ views on predictability. Paper versions of the questionnaire were sent to the schools and an online version was also available to students. Irish versions of the questionnaire were available in paper and online. A prize draw in which students could win one of five iPads was notified to students on a poster in the examination hall.

The total number of school-based Leaving Certificate candidates in 2012 was 48,720, but students can sit subjects at either Higher or Ordinary levels (Department of Education and Skills, 2013). Excluding doubles and those who had not sat the Leaving Certificate (n=16), the sample for analysis was 1,002 questionnaires from 98 schools. Thus, we had a response sample of 3% of those who sat the English examination in 2013 (Table 7). Not all respondents were sitting the Leaving Certificate at the Higher level in each subject, so the sample size reduces for each subject. Also, students could complete the questionnaire without giving permission for their examination results to be accessed for the research. Thus, analyses involving examination results (as in Table 7) have a smaller sample, although it is still sizeable for the statistical techniques employed.13

The questionnaire (Appendix D) was composed of questions relating to

- background information about the students and their parents
- use of subject-specific learning strategies
- which subjects participants were sitting for the Leaving Certificate
- their experience of the exam predictability
- learning strategies
- questions relating to learning support for the exam, such as use of grinds schools and family support.

Questionnaires were distributed in June, with a closing date of 1 July. To be specific, some of the questions focused upon students’ reactions to three subjects: English, biology and geography. As these turned out to be the subjects that the external subject specialist reviewers subsequently thought were unpredictable in the examinations material research (Chapter 3), this was a less than ideal selection. A range in which at least some had been considered predictable by the subject specialist reviewers would have been better for the research design.

Examination results were provided by the SEC in grade levels and transformed to score points for subsequent analyses, following the CAO scheme (see Table A3, Appendix A). Analyses of participants’ examination scores in English, biology and geography indicated that the sample had a wide spread of abilities, but higher performing students were represented more frequently than in

13 Sample sizes vary in the tables presented in this chapter, depending upon the numbers who responded to the question, who sat the Higher examination, and whose examination results were available.
the general population of Leaving Certificate students and results must be interpreted in that context (see Table 7).

**Table 7 Cumulative percentages at each grade – questionnaire sample compared with population (Pop)**

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th></th>
<th>Biology</th>
<th></th>
<th></th>
<th>Geography</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sample</td>
<td>Pop</td>
<td>Sample</td>
<td>Pop</td>
<td>Sample</td>
<td>Pop</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>14.4</td>
<td>9.7</td>
<td>22.3</td>
<td>14.4</td>
<td>15.4</td>
<td>8.7</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>43.6</td>
<td>36.4</td>
<td>55.5</td>
<td>41.7</td>
<td>51.6</td>
<td>38.1</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>81.9</td>
<td>76.1</td>
<td>77.8</td>
<td>69.6</td>
<td>85.6</td>
<td>75.3</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>99.1</td>
<td>98.3</td>
<td>94.3</td>
<td>91.7</td>
<td>99.1</td>
<td>97.2</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>99.9</td>
<td>99.9</td>
<td>99.2</td>
<td>98.2</td>
<td>100</td>
<td>99.8</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>99.9</td>
<td>100</td>
<td>100</td>
<td>99.7</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>NG</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>624</td>
<td>33,279</td>
<td>449</td>
<td>23,436</td>
<td>312</td>
<td>19,762</td>
<td></td>
</tr>
</tbody>
</table>

**Research question 3 – How predictable are examination questions in the Leaving Certificate in Ireland?**

Students were asked to report on a Likert scale (ie strongly agree, disagree, agree, strongly agree) their agreement with different statements regarding the exam. Table 8 presents a summary of responses. The categories 'agree' and 'strongly agree' have been combined into a single category, ie 'agree'. The percentage of the combined 'agree' category is reported together with the total number of valid responses. More than two thirds of the students reported they predicted the exam questions well in English; the figures were 49% in geography and 31% in biology. In other words, there are subject differences in students’ reported beliefs about predictability. Interestingly, a total of 72% of the students reported they believe they will be able to use what they have learned for their exam in the future in biology, while only 36% believe the same about English. Students seemed to be more positive about aspects of the biology exam, compared to the other subjects. This is confirmed by the finding that only 32% of students who believe it is possible to do well on the exam even if you do not fully understand the topic and 88% who agree with the statement *To do well in this exam, I need a broad understanding of the subject, across many topics.* This is the highest reported agreement among the three subjects, indicating that the biology exam is not predictable, examines a broad kind of understanding and is valued for the knowledge being useful for the future. This is in keeping with the subject experts’ views of the biology examination reported in the examination materials research (Chapter 3). Students generally considered that they needed to have a broad understanding to do well in the Leaving Certificate examinations, needed to think and adapt what they knew and could not leave out a lot of topics and still do well. A factor analysis showed that these items could be grouped into three categories, relating to predictability, narrowing the curriculum and valuable learning. We organise findings by these categories in the rest of this chapter.
Table 8 Views on predictability by subject area – percentage who agree (%) and total valid responses (n)

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Biology</th>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>a) I felt I knew what the examiners wanted this year</td>
<td>63%</td>
<td>760</td>
<td>47%</td>
</tr>
<tr>
<td>b) To do well in this exam, remembering is more important than understanding</td>
<td>47%</td>
<td>760</td>
<td>55%</td>
</tr>
<tr>
<td>c) The exam tests the right kind of learning</td>
<td>34%</td>
<td>760</td>
<td>45%</td>
</tr>
<tr>
<td>d) To do well in this exam I need to think and adapt what I know</td>
<td>82%</td>
<td>759</td>
<td>72%</td>
</tr>
<tr>
<td>e) I was surprised by the questions on the exam this year</td>
<td>32%</td>
<td>761</td>
<td>73%</td>
</tr>
<tr>
<td>f) To do well in this exam, I need a broad understanding of the subject, across many topics</td>
<td>69%</td>
<td>760</td>
<td>88%</td>
</tr>
<tr>
<td>g) I left a lot of topics out of my revision and still think I will do well</td>
<td>38%</td>
<td>762</td>
<td>29%</td>
</tr>
<tr>
<td>h) I think I will be able to use what I learned for this exam in the future</td>
<td>36%</td>
<td>761</td>
<td>72%</td>
</tr>
<tr>
<td>i) I predicted the exam questions well</td>
<td>69%</td>
<td>760</td>
<td>31%</td>
</tr>
<tr>
<td>j) I can do well in this exam even if I do not fully understand the topics</td>
<td>37%</td>
<td>760</td>
<td>32%</td>
</tr>
</tbody>
</table>

Relationships with exam results

Table 9 reports average exam scores\textsuperscript{14} for the views on predictability items for two combined categories, ‘agree’ (ie ‘agree’ and ‘strongly agree’) and ‘disagree’ (ie ‘strongly disagree’ and ‘disagree’). The scale of score points ranges from 0 to 100. None of the items was significantly associated with differences in examination results in geography. In English and biology, some of the items appeared to discriminate between the higher and lower performing students.

**Predictability**

Feeling that examination questions could be predicted was not a big discriminator of students’ scores. In biology, those who felt that they knew what the examiners wanted this year did significantly better in the examination than those who did not. This factor is not necessarily a negative feature of predictability, as being able to predict the examination requirements could be positive or negative.

**Narrowing of the curriculum**

Those who felt they had to study broadly did significantly better in the examinations in English and biology, but there was no significant impact of these views in geography. This factor represents negative predictability.

---

\textsuperscript{14} We refer to examination points as scores in this report.
Valuable learning

Items related to the extent to which the examinations tested valuable learning generally had the expected relationship with examination scores, but they were not significant for any of the subjects investigated. This factor is a positive feature of the examinations.

Research question 7 – What kinds of examination preparation strategies do students use?

Learning strategies

A factor analysis for the learning strategies items indicated that they were grouped according to the theoretical constructs postulated by Marsh et al. (2006): memorisation, elaboration and control strategies. Table 10 presents students’ responses on their learning strategies for the exam. Students reported the frequency with which they applied different learning strategies on a Likert scale (ie 'almost never', 'now and then', 'often', and 'always'). The categories 'often' and 'always' were combined into a single category 'often'. The percentage of the combined 'often' category and the total number of valid responses are reported.

We see that memorisation strategies were considered more important in biology and geography than in English, which is consistent with what would be expected for these subjects. More surprisingly, elaboration and control strategies were also more often agreed with for biology and geography.

Strategies most important in English appear to be those relating to identifying what is important and to understanding (items m, d and b).

Memorisation effects

Table 11 presents average exam scores for the memorisation strategies items for two combined categories, 'now and then' (ie 'almost never' and 'now and then') and 'often' (ie 'often' and 'always'). Frequent use of memorisation strategies appears to help students in biology and geography exams, but results cannot be interpreted in causal terms and memorisation strategies are related to lower scores in English, although the effects were not significant.
<table>
<thead>
<tr>
<th>Predictability scale</th>
<th>English</th>
<th>Biology</th>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) I predicted the exam questions well</td>
<td>M 69.07</td>
<td>70.44</td>
<td>69.71</td>
</tr>
<tr>
<td></td>
<td>n 182</td>
<td>427</td>
<td>297</td>
</tr>
<tr>
<td>a) I felt I knew what the examiners wanted this year</td>
<td>M 70.3</td>
<td>69.82</td>
<td>67.21</td>
</tr>
<tr>
<td></td>
<td>n 218</td>
<td>393</td>
<td>229</td>
</tr>
<tr>
<td>e) I was surprised by the questions on the exam this year</td>
<td>M 70.89</td>
<td>68.02</td>
<td>69.96</td>
</tr>
<tr>
<td></td>
<td>n 419</td>
<td>192</td>
<td>113</td>
</tr>
<tr>
<td>j) I can do well in this exam even if I do not fully understand the topics</td>
<td>M 70.76</td>
<td>68.82</td>
<td>69.76</td>
</tr>
<tr>
<td></td>
<td>n 376</td>
<td>234</td>
<td>291</td>
</tr>
<tr>
<td>Narrowing of the curriculum scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) I left a lot of topics out of my revision and still think I will do well</td>
<td>M 71.52</td>
<td>67.73</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>n 364</td>
<td>247</td>
<td>309</td>
</tr>
<tr>
<td>11f) I chose not to study some topics as I thought they would not come up</td>
<td>M 71.72</td>
<td>67.96</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>n 329</td>
<td>285</td>
<td>297</td>
</tr>
<tr>
<td>Valuable learning scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) I think I will be able to use what I learned for this exam in the future</td>
<td>M 68.82</td>
<td>72.12</td>
<td>65.49</td>
</tr>
<tr>
<td></td>
<td>n 391</td>
<td>219</td>
<td>122</td>
</tr>
<tr>
<td>d) To do well in this exam I need to think and adapt what I know</td>
<td>M 68.56</td>
<td>70.32</td>
<td>70.33</td>
</tr>
<tr>
<td></td>
<td>n 108</td>
<td>501</td>
<td>120</td>
</tr>
<tr>
<td>c) The exam tests the right kind of learning</td>
<td>M 69.64</td>
<td>70.66</td>
<td>68.03</td>
</tr>
<tr>
<td></td>
<td>n 399</td>
<td>212</td>
<td>238</td>
</tr>
<tr>
<td>f) To do well in this exam, I need a broad understanding of the subject, across many topics</td>
<td>M 69.29</td>
<td>70.31</td>
<td>66.46</td>
</tr>
<tr>
<td></td>
<td>n 190</td>
<td>420</td>
<td>48</td>
</tr>
<tr>
<td>b) To do well in this exam, remembering is more important than understanding</td>
<td>M 71.13</td>
<td>68.78</td>
<td>71.53</td>
</tr>
<tr>
<td></td>
<td>n 319</td>
<td>291</td>
<td>190</td>
</tr>
</tbody>
</table>

Note: * indicates statistically significant differences in mean scores between the ‘Disagree’ and ‘Agree’ combined groups at a 95% confidence interval using the Bonferroni correction for multiple comparison tests. The categories ‘Agree’ and ‘Disagree’ for question 11f) represent the combined categories ‘Often’ and ‘Now and then’, respectively.
Table 10 Learning strategies: Percentages of 'often' (%) and total valid responses (n)

<table>
<thead>
<tr>
<th>Learning strategies</th>
<th>English</th>
<th>Biology</th>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td><strong>Memorisation strategy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k) I tried to memorise as much of the revision material as possible</td>
<td>63%</td>
<td>762</td>
<td>83%</td>
</tr>
<tr>
<td>e) I tried to learn my notes by heart</td>
<td>48%</td>
<td>763</td>
<td>68%</td>
</tr>
<tr>
<td>a) I tried to memorise all the material that I was taught</td>
<td>49%</td>
<td>763</td>
<td>77%</td>
</tr>
<tr>
<td>m) I tried to memorise what I thought was important</td>
<td>85%</td>
<td>762</td>
<td>94%</td>
</tr>
<tr>
<td><strong>Elaboration strategy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) I figured out how the information might be useful in the real world</td>
<td>21%</td>
<td>763</td>
<td>54%</td>
</tr>
<tr>
<td>c) I tried to relate new information to knowledge from other subjects</td>
<td>30%</td>
<td>762</td>
<td>53%</td>
</tr>
<tr>
<td>h) I tried to understand the revision material better by relating it to what I already knew</td>
<td>56%</td>
<td>764</td>
<td>70%</td>
</tr>
<tr>
<td>n) I studied material that went beyond what is expected for the exam</td>
<td>18%</td>
<td>762</td>
<td>26%</td>
</tr>
<tr>
<td><strong>Control strategy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) I made sure that I remembered the most important points in the revision material</td>
<td>91%</td>
<td>764</td>
<td>92%</td>
</tr>
<tr>
<td>d) I checked if I understood what I had read</td>
<td>80%</td>
<td>763</td>
<td>87%</td>
</tr>
<tr>
<td>j) If I did not understand something, I looked for additional information to clarify it</td>
<td>62%</td>
<td>764</td>
<td>75%</td>
</tr>
<tr>
<td>l) I tried to figure out which ideas I had not really understood</td>
<td>51%</td>
<td>763</td>
<td>72%</td>
</tr>
<tr>
<td>b) I started by figuring out exactly what I needed to learn</td>
<td>79%</td>
<td>764</td>
<td>80%</td>
</tr>
</tbody>
</table>

Note: Item f was part of the narrowing the curriculum predictability scale (Table 9), but was included in the questionnaire in the section on preparation for the examinations, alongside these learning strategies.
## Table 11 Memorisation strategies and exam scores: Average scores (M) and sample size (n)

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Biology</th>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Now and then</td>
<td>Often</td>
<td>Now and then</td>
</tr>
<tr>
<td>a) I tried to memorise all the material that I was taught</td>
<td>M 71.11</td>
<td>68.80</td>
<td>62.08</td>
</tr>
<tr>
<td></td>
<td>n 316</td>
<td>296</td>
<td>106</td>
</tr>
<tr>
<td>e) I tried to learn my notes by heart</td>
<td>M 70.56</td>
<td>69.33</td>
<td>67.84</td>
</tr>
<tr>
<td></td>
<td>n 330</td>
<td>282</td>
<td>148</td>
</tr>
<tr>
<td>k) I tried to memorise as much of the revision material as possible</td>
<td>M 71.01</td>
<td>69.51</td>
<td>65.25</td>
</tr>
<tr>
<td></td>
<td>n 237</td>
<td>376</td>
<td>79</td>
</tr>
<tr>
<td>m) I tried to memorise what I thought was important</td>
<td>M 70.10</td>
<td>70.07</td>
<td>64.22</td>
</tr>
<tr>
<td></td>
<td>n 98</td>
<td>514</td>
<td>32</td>
</tr>
</tbody>
</table>

Note: * indicates statistically significant differences in mean scores between the ‘Now and then’ and ‘Often’ combined groups at a 95% confidence interval using the Bonferroni correction for multiple comparison tests.

### Learning support

Students received various kinds of support in preparation for the examinations. Table 12 reports the percentages of students who received support and the total number of valid responses.

As can be seen from the table, there are only minor differences between the subjects regarding how many students report that topics have been explained to them, as well as marking criteria. It is also worth noting that almost a third of the students used materials form the grinds website. The biggest difference found between subjects was in d) where only 31% of students reported that they have been given model answers in biology, while this figure was more than 80% in English and geography. Over 90% of students in all three subjects reported that they were given past papers, which seems to be a part of the teaching.

When it comes to support from family, a minority of students reported this. It is more common to have support and help from friends. Here again we find subject differences, and half of the biology students reported having had help from friends, with less in the two other subjects. Overall, when it comes to support, apps and grinds schools are the least used but, still, 8% of the students in English and biology reported attending a grinds school.
Table 12 What kinds of support for learning did students have? Percentages who agreed (%) and total valid responses (n)

<table>
<thead>
<tr>
<th>English</th>
<th>Biology</th>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>a) Which topics were likely to come up was explained to me</td>
<td>75%</td>
<td>748</td>
</tr>
<tr>
<td>b) Marking criteria were explained to me</td>
<td>81%</td>
<td>747</td>
</tr>
<tr>
<td>c) I used material from grinds websites</td>
<td>34%</td>
<td>750</td>
</tr>
<tr>
<td>d) Model answers were given to me</td>
<td>82%</td>
<td>747</td>
</tr>
<tr>
<td>e) I was given past papers</td>
<td>94%</td>
<td>748</td>
</tr>
<tr>
<td>f) I have textbooks to help with my study</td>
<td>82%</td>
<td>748</td>
</tr>
<tr>
<td>g) The exam format was explained to me</td>
<td>92%</td>
<td>747</td>
</tr>
<tr>
<td>h) I used revision guides</td>
<td>54%</td>
<td>747</td>
</tr>
<tr>
<td>i) I looked at past papers on the internet</td>
<td>66%</td>
<td>748</td>
</tr>
<tr>
<td>j) My parents helped me with my studies</td>
<td>23%</td>
<td>751</td>
</tr>
<tr>
<td>k) Friends helped me to prepare for the exams</td>
<td>39%</td>
<td>749</td>
</tr>
<tr>
<td>l) I used revision apps</td>
<td>13%</td>
<td>752</td>
</tr>
<tr>
<td>m) I took one-to-one or small-group grinds</td>
<td>14%</td>
<td>752</td>
</tr>
<tr>
<td>n) I attended a grinds school</td>
<td>8%</td>
<td>752</td>
</tr>
</tbody>
</table>

References


Chapter 5: Teacher and student interviews

This chapter details the fieldwork carried out with teachers and students in schools within the Republic of Ireland. The main goal of the fieldwork in schools was to explore issues about the predictability of the Leaving Certificate examinations and how this interacts with the learning process in and outside of the classroom by interviewing both teachers and students in a sample of different schools across Ireland. Questions were asked about teachers’ preparation and teaching strategies for the Leaving Certificate examinations, their views on how the examinations influence their subject, teachers’ and students’ views on the predictability of the examinations, and views on the effects of the examinations upon teaching and learning. In addition, we discussed some of the findings from the survey of the students to explore explanations for those findings.

No definitive answer on whether the Irish Leaving Certificate is predictable can be gleaned from these interviews because the issue is too complex. Of the 70 teacher interviews, only four teachers said that the examinations were predictable, but all teachers said that there were positive aspects of predictability for teaching and learning. Ultimately for teachers and students the notion of predictability was not one that they seemed to ‘own’; they saw it as an issue of interest to policy-makers and politicians, but not one of immediate importance to them in their everyday experiences of preparing for these examinations.

The experience of the Leaving Certificate is very different for teachers and for students. Teachers ultimately focus on the subject that they teach, and thus they experience the Leaving certificate within their subject. They work with students using past papers, past questions, mark schemes and course materials within their subjects and teach as best they can to prepare students well in their subject.

For students, however, the experience is of a number of subjects (six, seven or eight) being studied simultaneously. For them, an extensive range of demands was experienced. Narrowing of the curriculum was, then, reported in this context – it was a strategy for focusing upon the core content to meet the wide range of demands involved in studying many subjects together. A more detailed working paper on this part of the project is available at:

http://oucea.education.ox.ac.uk/research/recent-research-projects/investigation-into-the-predictability-of-the-irish-leaving-certificate-examinations/

Method

The interviews lasted 30 minutes for teachers and 40 minutes for students. All interviews were conducted in the school’s opening hours, while students were attending schools for their classes. Fieldwork was conducted in 17 schools and colleges, selected to represent different learner settings. A total of 83 interviews was conducted: 70 interviews with teachers and 13 small group interviews with students (Table 13). The field schools were divided between a team from Oxford and a team
from Queen’s, with a total of six researchers involved in the fieldwork. Fieldwork was carried out over six weeks between September and October 2013.

The teacher interview protocol was divided into two sections: the first asked general questions regarding predictability and what impact the Leaving Certificate would have on teaching and learning, while the second asked subject-specific questions related to predictability. The student interviews asked about the Leaving Certificate across all six subjects, with a focus on how students experienced preparing for their exam, the strategies used, support, and whether they believed the exams were predictable.

**Participants and procedures**

Interviews were conducted in autumn 2013 from 5 September to 9 October in 17 schools. The schools were randomly sampled from a list of 691 schools, after removing 18 schools that either (1) did not have students sitting Leaving Certificate exams in 2014 or (2) in which all students study all subjects through Irish (5.3% of schools; Murtagh, 2009). Originally, we randomly selected 12 schools with matched 12 replacement schools, to be approached should any of the initial 12 schools not be able to participate. From the original list of 12 schools, seven agreed to participate, while five refused due to reasons such as workload and participation in international test surveys.

Five schools from the replacement list were therefore included in the sample. In addition, we recruited another five schools, to supplement the number of teachers in DCG and economics. Very few schools offer all six subjects, so the research team had to specifically target schools that offered DCG and economics to have enough interviews in these subjects. In Table 13, schools 8, 9, 14, 15 and 16 are additional schools selected for interviews of economics and DCG teachers. Individual teachers and students were sampled within schools by the head teachers. It was requested that head teachers selected students for interviews using the following criteria: equal number of boys and girls in the mixed schools and preferably also both high and low achievers. Most importantly, all students would sit the Leaving Certificate in June 2014, and they were between 16 and 18 years old. A limitation of our study is that we have not been able to include schools that teach in Irish only because none of the researchers were Irish speakers.
Research question 3 – How predictable are examination questions in the Leaving Certificate in Ireland?

There was no definitive answer to this question. Four teachers said that the examinations were predictable, 14 said that they were not and 52 had mixed views. While many teachers intimated that there were elements of the examinations that they felt were predictable, they were keen to also point out that this was not the case across all aspects of the subjects they taught nor was it that any one subject was more predictable than others.

Where there was considered to be predictability, it was discussed in terms of particular content areas within subjects, particular topics across syllabuses and certain types of questions (details of these are discussed further below). However, these elements were considered to be counteracted by breadth of content in syllabuses, the structures of questions and improvements in question papers over time.

A general message across all six subjects was the relationship between predictability and how ‘new’ the syllabus was. Teachers of DCG and geography particularly considered that older Leaving Certificate syllabuses in these subjects had been more predictable (in terms of the nature and

---

**Table 13 Number of interviews by school and subject**

<table>
<thead>
<tr>
<th>School</th>
<th>Biology</th>
<th>Economics</th>
<th>English</th>
<th>French</th>
<th>Geography</th>
<th>DCG</th>
<th>Student Focus Groups</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>10</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>13</td>
<td>83</td>
</tr>
</tbody>
</table>
structure of questions) than newer ones. They also felt that the newer examinations and syllabuses were ‘far superior’ to the old versions, suggesting that the changes implemented now aimed to encourage students to think more and make connections between different aspects of the subject. Teachers across all six subjects were in agreement that the Ordinary Level within the Leaving Certificate in their subject was more predictable than the Higher Level.

For those teachers who felt there was some predictability, this was not wholly a bad thing; familiarity with examination questions, their demands and structures was ultimately helpful to teachers in guiding what is taught to students for focusing their learning:

...a certain amount of predictability I think is welcome. I think that students need it for loads of different reasons. I think that being able to predict the structure of an exam is really very important for students. [English Teacher 8]

Respondents considered that the topics on examination papers were more predictable than the questions asked within those topics. This may not be surprising given that such topics make up the syllabus and examiners select from these topics year on year, but there was a sense that some topics recurred more often than others. Even though some syllabuses had changed, a lot of the topics were still the same as those covered on the older syllabuses and patterns of questions related to particular topics could still be identified:

In DCG there are certain questions that come up some years and not other years...as a teacher of course we teach the whole syllabus, but we do focus a little bit more on what we feel is going to come up and so far on the DCG course it has been quite predictable in what is going to come up each year. [DCG Teacher 2]

Similar issues about common, year-on-year patterns were raised by English teachers, with particular reference to the poetry and short story sections of the examinations. With regard to the poetry sections, respondents suggested that students and teachers can easily look for patterns and trends on those poets likely to appear on the examination, to the extent that it is quite a strategic move on the part of students to do this. One respondent suggested that students are influenced by national debate on the matter and that, in May of each year, the prediction of what poet will come up becomes a national sport:

you have Paddy Power betting coming up to the month of May as to what’s coming up on the exam paper and you know students tend to take that then as gospel and if Paddy Power is giving 5 to 1 odds that Sylvia Plath is going to come up, they take it as gospel and they start dividing up the work and cutting corners. [English Teacher 5]

For those teachers who were more disinclined to agree that their subject was predictable, the breadth of the syllabus was considered the main reason that question content could not be guessed.

---

15 Of all six subjects considered, economics was the only syllabus that had not recently been reviewed. However with other subjects ‘recent’ was seen as 2006/7, which is still seven years ago.

16 The comparison between Ordinary Level and Higher Level was not a specific focus of the research as we were interested in Higher Level Leaving Certificate examinations only, but it was a recurring theme that emerged from teachers’ own views and their responses to the issues being discussed.
Completing the course was considered a huge task and one that teachers suggested dominated their time in the classroom:

It’s [geography] very broad and very hard to narrow down in terms of the topical questions or anything – you can’t because there’s so many statements of learning that have to be covered in the syllabus that just doesn’t allow for any shortcuts. And therefore then the exam itself obviously isn’t predictable. [Geography Teacher 6]

There was a clear indication that examination questions now were too ‘jumbled-up’, incorporating too many topics and different aspects of syllabus content within single questions for it to be possible to predict with any certainty what questions would appear in the examination:

we find there’s very little predictability in it...that puts a lot of pressure on students as the syllabus has to be covered completely. And that is a problem, because you can’t say what question 1 or question 2 is going to be on any one paper...what can happen is you can have part of the question on one topic and the second part of the same question on a completely different topic, so they’ve mixed up the questions pretty well. [DCG Teacher 10]

Generally, however, across the 70 participants there emerged a more mixed than definitive answer to the question of the predictability of examination questions. Predominately, teachers considered that parts of the examinations and the questions set were predictable, but that other aspects of the syllabus and the assessment of the subject were not predictable and that making sure they covered the course and prepared their students in the best way possible for these high-stakes examinations was part of their job:

I think there are two aspects to it [the Leaving Certificate] – one is the actual education and the value of the subject [economics]...but then also there’s the exam. And I think that’s the same for every subject – you’re exam training, but you’re also educating. Sometimes one can kind of hamper the other. But the whole time it’s a balancing act between the two...you’re not just drilling towards a predictable exam; you’re educating them and broadening their knowledge at the same time hopefully. [Economics Teacher 2]

Moreover, teachers did not discuss questions alone in relation to this issue, but continuously raised the interconnectedness between the questions, the syllabus, the examination papers and their associated mark schemes. This will be discussed in more detail below. An additional resource that teachers added to this collection of important examination artefacts was ‘the book’; those textbooks for every subject produced by private publishers that bring together the syllabus for the subject (presented across the chapters) and also past examination papers with associated mark schemes. Teachers indicated that they taught the chapters of these books as a way of getting through the course and used them in conjunction with past examination papers and mark schemes sourced from the SEC and DES websites:

I think no matter how well you cover it...the child has to know the biology from one end of the book to the other. I think the questions they ask, the topics they ask are the same every year. However, the way the questions are asked; they ask questions on
Research question 4 – Which aspects of this predictability are helpful and which engender unwanted approaches to learning?

Respondents mentioned many aspects of predictability that were seen as helpful. Teachers considered that seeing what questions had been asked in previous years on examination papers and making sure students were prepared for what was to come was ‘doing their job’. There was sense from respondents that core areas of the syllabuses appear on examination papers again and again, but this was deemed appropriate due to the importance of those topics. Question format and layout predictability were also viewed positively.

Teachers suggested that a pattern emerging over recent years was to scaffold the question on papers, such that the beginning sections of questions were less difficult than those following. This, they argued, targeted higher order skills. Updating of syllabuses was, they said, reducing the prospect of question spotting:

"It’s predictable in the sense that, yes, we know the type of questions that are going to be asked, we know the exact format with two comprehensions and the number of essays and so on that are going to be asked – we know that, that doesn’t change. But as regards the content, it is becoming less and less predictable. We can do topics with them, but they’re coming up with more and more abstract topics for the essays." [French Teacher 7]

Teachers said that they felt it more and more their duty to try to eradicate unwanted approaches to learning adopted by students, such as rote learning, preparing model answers to questions and learning chapters from ‘the book’. They also felt a responsibility to ensure that students were aware of the synoptic nature of more and more of the questions appearing on the examinations.

Elements of predictability also enabled teachers to prioritise their teaching of the syllabus in what they felt were two very time-pressured years for students. Respondents suggested that there was a case for some predictability for students as it made them feel comfortable going into the examination knowing that very few surprises would ensue. Consequently, teachers would train students to write in particular styles and provide them specifically with the skills to answer certain question types.

Teachers reflected on aspects of predictability that they thought engendered unwanted approaches to learning. One of the main issues raised was the size and breadth of the syllabuses in the six subjects studied. There was agreement across the range of teachers that the syllabuses in the majority of the subjects were very broad and that this in itself forces a narrowing of what is taught within the timeframe. This practice then engenders in teachers a tendency to review past papers and to seek out patterns of types and focus of questions to enable them to see not only what has been asked in previous years but also what had not been asked on examination papers. It is in these...
ways that teachers, who are under pressure to get all the curriculum covered within what in reality is 18 months of teaching time, start to place an increased emphasis on both topics that are common across years of examinations as well as those that may not have been around for a while. The use of ‘the book’ also forces an element of teaching to the examination, with teachers and students alike, working through these books to make sure they are responding in ways suggested by them and which have been successful for other students in the past.

**Research question 5 – What are the syllabus and assessment design phenomena associated with predictability?**

The syllabus of each subject (except the economics syllabus, which is a brief outline) was seen as the guide to what needed to be taught; this was used closely in teaching and in planning lessons throughout the fifth and sixth years of study:

> I do feel it’s necessary to have parameters, that the syllabus is necessary, it’s there, it has to be…it’s good to have a guided syllabus because it standardises the whole thing. [Biology Teacher 12]

> the syllabus was changed, and you know everybody knows now what’s expected, and what’s expected of you as a teacher, and what’s expected of you as a student, and the syllabus is crystal clear…and that’s perfect. [DCG Teacher 2]

Many teachers suggested that the breadth of content covered, as well as the range and variety of the knowledge and skills included, offered a good grounding in the subject as well as offering different areas of interest and focus for different children. Moreover, since the syllabus was broad in scope, teachers felt that they were not restricted to teaching narrow topics and content, and that they could adapt this both to modern-day examples and also to more advanced aspects of their subjects:

> And the syllabus doesn’t restrict you in that sense. It is open to allowing you to talk about any kind of current affairs, any topics that come up in Ireland or around the world or whatever…so it doesn’t limit us. [French Teacher 9]

Respondents recognised attempts by the SEC and examiners to keep syllabuses up to date, relevant and interesting. The use of real examples meant that even if the stem of the question, in terms of demand words, showed some degree of predictability, the content or example used to frame the questions did not. This meant that students were required to maintain an awareness of current political, economic and social affairs in order to consider and frame their responses to the majority of questions.

Respondents did, however, suggest that coverage could be narrowed in particular ways, forcing teachers to focus more specifically on those categories of content, knowledge and skills that are considered within ‘the book’. They also noted that teaching is geared towards what tends to be on the examination, as opposed to embracing the breadth of the syllabus and working outside the confines of what is presented year-on year in the examinations:
It probably has to be narrowed and restricted because we can’t keep thinking outside the box, because there’s so many boxes we could think outside of. [Biology Teacher 7]

For some subjects, syllabuses had not changed in quite a considerable time. For example, the economics syllabus had not been changed since 1969 (although change was mooted in 2006). In this situation, examinations determined what should be taught:

The problem is the syllabus hasn’t changed, the written syllabus hasn’t changed, but in fact the…opposite has happened – the exam is determining the syllabus. If you look at some of the questions from earlier years they’re completely different to what’s being asked in recent years. [Economics Teacher 3]

Teachers argued that examiners had been introducing up-to-date aspects of the subject within examination questions even though the syllabus had not changed. Indeed, teachers indicated that, for some subjects, there were clear curricular and teaching messages being channelled through the examination papers because of the time lag in syllabus development and change.

Across a range of subjects (especially French and economics) teachers felt a definite gap between the syllabus as published, the intentions of the examinations, their focus and demands (especially within particular questions) and the objectives of the subject as laid out by the DES. Teachers argued that the goals of the subject as set out in official documents and national subject criteria were not reflected in examination papers and questions; the operationalising of the subjects through exam papers and the curriculum messages within the examinations were more ‘real’ for teachers and their students and therefore needed to be heeded:

There’s a big gap between the syllabus and the objectives in the Department of Education and the papers that they produce. Do you see what I mean?…they [the DES] say they want them to have this broad perspective and function in the world and yet there’s an awful lot of demand on the student to do writing, writing, writing, writing, without anything more than a sentence-long stimulus or a picture to get you thinking. [French Teacher]

Thus, how the subject is described within the specified objectives from the DES is very different to the subject that teachers and students experience in the school or examining context.

In the main, teachers across all subjects reported that they used the official mark schemes that are sent out to schools (and downloaded from websites) in their teaching. Teachers said that they provided clarity about the requirements of the exam, highlighted the importance of wording in questions, and helped students draft credit-worthy responses and to understand accepted definitions of particular key concepts:

At the end of the day as far as I’m concerned my job is to get the very best… A) to do the best I can for myself, and B) to help my student to get the very best they can. And if I don’t know exactly where points are going and my marks are going – how can I channel them then to know exactly what to do? [Geography Teacher 3]
Many teachers reflected that they not only used the mark schemes with students, but encouraged students to use the mark schemes too in their own study and homework. This was happening more often now with mark schemes available so easily from websites and with study aids:

*I would show [students] the State Exams’ website marking schemes and we would mark it in class ourselves and see what the students got marks for...I think it’s good for kids to see that and they can do it at home themselves, go on to examinations.ie...the State Exams’ website is very user-friendly and students can use it.* [Biology Teacher 13]

Teachers generally felt that the mark schemes were transparent and showed how rigidly marks were applied. If this was an aspect of predictability, then teachers saw this as fairness. They felt that using these alongside the other examination artefacts actually provides a structure for student feedback and gets ‘rid of the ‘myth’ that student responses to questions have to be perfect.

Respondents tended to agree that it was easier to discern aspects of predictability with mark schemes of questions with smaller mark tariffs. When questions had large mark tariffs (50 marks, 70 marks, 80 marks etc.) then teachers were less certain what marks were being awarded for and this had less of a sense of being predictable. With large mark tariff questions, teachers suggested that more detail would help in determining what type of responses were rewarded; on reviewing students’ scripts along with mark schemes, some teachers suggested that some examiners liked particular responses more than others, and that the published mark schemes for the larger tariff questions were more vague in terms of what was required than for smaller mark questions:

*I find them [the mark schemes] good...sometimes they might say ‘name something, give an example’ and in some questions it’s a very specific one-word answer, one-line definition or whatever...but then in certain sections they might say just that vagueness of ‘named example’ – and then that’s up to you to determine what that is...from the teaching point you hope that you’re on the right track of what the answer is, and you would presume you were. There are a few of those that are a little bit vague but generally, particularly in biology, it’s gone very specific.* [Biology Teacher 12]

In fact, some respondents suggested that the published mark scheme and the way in which some questions were finally marked did not always match. In this respect, teachers felt there was little support from the SEC or DES for interpreting mark schemes more generally as it was not always clear what was being rewarded. Teachers recalled instances of a lack of differentiation between students who had given what they felt to be important answers and those giving peripheral answers. They also felt that students’ own individual styles of expression were not being rewarded, leading teachers to feel that they have to ‘teach’ the right and acceptable sort of expression to students so that they do not miss out on marks. In other words, teaching takes place to the marking scheme and not just the test.
Research question 6 – What subject-specific phenomena are associated with predictability?

Within the complex discussions about their own particular subjects and the issue of predictability, teachers of biology, geography and economics constantly addressed the content-driven nature of the syllabus and how this content was then examined through question papers and mark schemes:

*The higher level biology is a very, very difficult course...it’s full going ahead. There’s no time to do anything that isn’t on the curriculum, but as well as that it requires a huge amount of work from the student...we study seven subjects and the student knows a little about a lot of subjects...there is a huge amount to learn and honestly there is no chapter...in that ‘biology book’ that you could safely leave out.* [Biology Teacher 13]

While teachers of DCG, English and French also raised content issues in relation to these three subjects, they tended to be more engaged with the skills-driven nature of their subjects in terms of principles and concepts (DCG), writing styles and written expression (English and French) and also vocabulary (French):

*Knowing how to do a question over and over and over again has very little positives in DCG. It’s all about, “do you understand the principles?”* [DCG Teacher 5]

Teachers of DCG and geography agreed that they welcomed the project and fieldwork elements in the new versions of the syllabus respectively. However, they were slightly concerned that, although each school could plan and carry out with students their own work in order to meet the demands of these project elements, the tasks and the format of these projects were becoming quite similar year on year, so that they and their students know the types of task that would be the focus of the project. They felt that this was leading to projects becoming formulaic and predictable.

French and economics teachers considered the difficulties they encountered around their need to teach their language vocabulary and economic concepts within the contexts of current affairs. They suggested that being able to move ‘off the syllabus’ to include up-to-date events and scenarios, as well as using authentic materials and resources for students, was a creative and interesting way to teach. They felt that this made their subjects less predictable and also relevant to students in their everyday lives. However, they also felt pressurised then to consider a wide range of vocabulary, events and current affairs in their teaching. Moreover, they found modelling good responses for students difficult, as questions regarding current affairs appear within examinations but teachers are not always sure what they will be or how they will be asked:

*We don’t know what level of language is going to be in it, other than it can go from quite do-able to quite challenging depending on the year...we can give them the language skills to react to anything, to give their opinion, to give a reaction to whatever, but if they don’t have the vocabulary necessary for the topic, the picture, the image that appears in front of them, you know they’re stumped straight away.* [French Teacher 5]

While they recognised that this uncertainty was fundamental to providing unpredictable examination papers and examinations, and keeping students ‘on their toes’, they were also
concerned that students are faced with some difficult contexts in which to apply their learning of concepts and their range of vocabulary, as they found that the difficulty of the questions varied from year to year.

Teachers did feel that they wanted to instil in their students a love and enjoyment of their subjects and felt that by the end of a two-year course of study students should be well equipped in the fundamentals of the subject and higher order skills needed for third-level education. Respondents generally felt that these goals are met within the Leaving Certificate cycle but that working towards a high-stakes examination tended to restrict the nature of subjects, presenting restricted and curtailed versions of subjects rather than how they should be enjoyed and understood. In this respect, teachers felt that the Leaving Certificate was no different to other examinations systems that they were aware of and that the way in which examinations demand particular ways of learning and present the subject compartmentalised into components across papers is greatly influential in how the subject is seen and understood by students:

25% of their result for the oral, so their 12-minute performance is a quarter of their result. Another 20% goes for their listening skills and the remaining 55% is divided between the reading comprehensions and the three written tasks which they have to do. Do I think it’s fair? Yes, especially the student who’s going to go on to a university study course. They need to have all of these skills. From a language perspective do I think there’s enough emphasis on being able to speak the language? Most certainly not, most certainly not. [French Teacher 2]

Again, teachers were mixed in their responses as to whether they thought students developed a broad understanding of the subjects. For many teachers, the narrow window (effectively 18 months given the timing of final examinations in June of the sixth year) did not allow students to get a broad understanding of their subjects, only a foundation in the fundamentals as there is ‘no time for anything that isn’t in the curriculum’:

We study seven subjects [unlike the English system] and the student knows a little about a lot of subjects... [Biology Teacher 13]

Teachers also suggested that ‘the book’ gave a very narrow representation of the subject in terms of the compartmentalising of knowledge, skills and content into chapters, with varying degrees of importance given their year-on-year presentation in the examinations. However, within the confines of timing and breadth of syllabus to cover, respondents did feel that the subjects as presented within the Leaving Certificate courses were enjoyable and challenging and relevant to modern-day life in Ireland. Many of the questions and tasks within the examinations did allow students to apply theoretical concepts to a 2013 context. Thus, for many teachers, the nature of the subject was not static but continuously changing, although these changes seemed more pronounced through the nature of examination questions than through syllabus development and updating. However, for those teachers of subjects that do not have a coursework element (biology, French, English and economics) there was concern that a two- or three-hour examination at the end of two years to assess all the learning that students have tends to skew the subject and make the subject and the examinations more predictable than they perhaps have to be. Teachers suggested that such a model of examining does not reveal whether students really know their subjects as such a system forces
the regurgitation of facts, which teachers then feel they have a duty to teach so that their students can pass the examination.

Teachers did agree that they taught towards the format, structure and style of examination questions and shared their understanding of the messages given within mark schemes of what responses are required and what is of value. They indicated that how they end up teaching can seem like spoon-feeding students but they are conscious that ‘students want points, parents want points’. Many teachers showed us their own analysis of the types of questions that come up year on year and they felt they were fulfilling their duty as teachers by sharing these analyses with students.

Several teachers who we interviewed were markers for examinations in their subjects. These teachers indicated that this gave them an important insight into how questions and examination papers were marked and where emphases were placed by examiners. All these teachers then use this insight in their teaching. Teachers, to varying degrees, share these insights with students and steer students towards particular questions and topics that may appear so that these examinations are not a ‘total blank slate for them going in’. Discussions with teachers did, however, highlight their desire for students to leave school/college with a deep understanding of subjects and their relevance to life and further and higher education, but as one teacher indicated ‘at the end of the day, it’s the exam, it’s the paper, it’s the points’:

...absolutely we’re very exam focused in Ireland. The points system is all reigning, all supreme...students are more obsessed with the points system than the teachers are.
[English Teacher 6]

Thus, the emphasis on using those strategies identified above and what teachers called the ‘reality check’ of high-stakes examinations and the significant consequences attached to the examination for students means teachers are forced, to varying degrees, to teach to the exam:

I’ve seen students here over the years who are absolutely like sponges and want everything...every piece of information they can get from you towards their grade in the exam...the exam is the holy grail, it’s the be all, it’s the end all – it’s really up to the teacher to bring in everything else along the way to show all the shades of life, all the shades of humanity, and try and give them something else to take away as well...but at the end of the day their focus is on the exam. [English Teacher 3]

However, respondents indicated that, within these confines and constraints, it was the teacher’s role to show light and shade – to illuminate the subject as much as possible for students and to help students develop the ability to form their own views, be autonomous learners and to instil in them a love of the subject that will stay with them at third level and beyond:

What we’re trying to do in English is trying to create creative individual people who can find their own voice in a world where their voice can get drowned out pretty quickly...so it probably depends on the teacher’s approach too. But when I’m teaching to the exam I’m still teaching to your individual opinion, because that’s what’s rewarded in the exam. [English Teacher 8]
Research question 2 – What kinds of learning are the examinations intended to promote?

Many teachers from across the six subjects were confident that the Leaving Certificate assesses appropriate ways of learning and that the focus of an examination gives structure and purpose to the learning taking place in the senior cycle. Not only does the end-of-course examination give students something to aim towards, the nature of the courses and what is required to be learnt at this phase of education provides a good balance of a general education in the subjects as well as a focus on higher order skills, such as analysis, synthesis, evaluation, reflection and thinking alongside understanding and knowledge of a wide number of subjects.

Teachers of geography and DCG also suggested that the project work components within their subjects teach students new skills and greater independence of learning, as well as allowing for creativity and freedom for students in presenting their project work for examination:

*I think it [the DCG syllabus] works well overall. I do think it works well as a way to teach new skills…the project gives great independence to students; it allows them creativity, freedom…whereas the pure exam system really doesn’t for DCG…so that’s the great thing about the project.* [DCG Teacher 1]

Teachers of French, English and economics suggested that the nature of their subjects allowed students to learn not only for the examinations but also for life, for modern-day understandings of culture and social affairs. Teachers of biology were less inclined to think that the exam allowed freedom and relevance for students, and suggested that perhaps the long-awaited new syllabuses for the sciences would attend to modernising the subject for students.

Teachers were in agreement that students could not do extremely well if they relied solely on rote learning; students need to have opinions, be creative, and apply their knowledge rather than just know it to succeed at the most demanding questions and get the best results:

*The essay is only worth 25% – I think it should be worth way more than that, because that’s where they’re actually thinking, that’s where their talent or what they’ve learnt about themselves and their opinions can show…I think going forward into society we need people in the world who have an opinion on all kinds of different things, and are able to argue and back themselves up – not little sheep following the flock…So, even on a societal level I think getting students to think about everything – about the world and their opinions – is far more beneficial than learning about…Shakespeare…now don’t get me wrong…that is hugely important…but it depends what we’re trying to do…who was heroic there or…you know, and comment on that too.* [English Teacher 8]

Teachers were well aware, however, that the Leaving Certificate affected learning in more negative ways. They suggested that they are often in a battle against wider societal perceptions regarding the value of high examination grades, which is driven into students from outside school, such as in the home. This ‘battle’, they suggest, ends up with students only doing what is needed for the examination and brings out a ‘what can I leave out?’ culture amongst their students. Thus, the types of learning strategies that teachers suggest students then employ to cope with the pressures tended
to be narrower than what teachers would wish for them or what is desired by syllabus aims and objectives:

…it’s that old kind of Jesuit phrase, you know ‘Repetition is the key to success’ – that’s really what it seems to me – learn, learn everything, practising their diagrams, writing out stuff, learning their poetry, learning their quotes...the standard in the Shakespearean question and the poetry question is very high, because they’re learning everything there, you know. [English Teacher 3]

Teachers recognised that they were also complicit in supporting these types of learning practices as they saw merit in helping students to structure answers, wanting their students to be as familiar as they can with the style and demands of questions. However, they were clear that students cannot learn all of what is required by the Leaving Certificate by rote and that teachers make it a priority to use examination questions and past papers to foster the learning of application and opinion:

I try to get them to draw conclusions themselves as to the style of the question that would appear, and it’s important for them that they’re familiar with the style of question, that they’re not meeting a question that they’re not familiar with in terms of presentation and layout, which throughout the Leaving Cert is quite consistent...you need to state, explain and follow with an example. That’s something that is very, very central to the standard of answering, and it’s something the students struggle to a degree to adapt to because they’re of the opinion that they have to write reams and reams of essays. [Economics Teacher 7]

Students’ views

Research questions 3 and 4 – How predictable are questions and examination papers in the Leaving Certificate in Ireland? Which aspects of this predictability are helpful and which engender unwanted approaches to learning?

As with teachers, students suggested that there were elements of the examinations and examination questions that they felt were predictable, but that this very much depended on the subject and that some aspects of some subjects were more predictable than others. So, for example, of the subjects under consideration in this research, students thought that more practical subjects like DCG were less predictable, as were those subjects that demanded the learning of a large amount of content such as biology, geography and economics. French and English were seen as more predictable in relation to oral topics being learnt by rote for the former and the selection of poets and pre-prepared essays for the latter.

Students realised that certain aspects of subject content and syllabus topics were core and had to be examined, so it was not surprising that they came up every year. Having an element of predictability also helped with learning the broad variety of subjects that they had to study and with getting to grips with the range of subject knowledge they were expected to know. Furthermore, focusing on topics and associated questions gave students clear indications of key definitions and responses that
needed to be included in their answers in order to optimise marks; students were keen to make sure
they used words and phrases in their responses deemed acceptable by examiners in order to gain
(and not lose) marks. They rehearsed their answers by looking at the types of responses that had
been given good marks in the past. Students also indicated that certain formats of questions were
similar every year, even though the content of the question might vary. For example, the
comprehensions in French were outlined several times to show that, even though the range of
contexts given for these comprehensions might come from vast choice of contemporary issues, the
genres of writing required were well known and well rehearsed between students and their
teachers:

*I think that makes you more confident if you know what’s coming up in your exam; it
makes you feel like you’re not going in blind...so I think predictability...benefits you
sometimes. I think it’s good.* [Student Focus Group 14]

Students considered the courses they were studying to be very broad and as a consequence they
had to cover a large amount of material across a number of subjects in a relatively short space of
time. This issue of breadth of subject raised opposing attitudes to predictability from students. On
the one hand, some students suggested that courses were so broad that they could not predict the
entire examination with any comfortable degree of certainty; students still needed to cover the
whole course, to learn as much detail of the syllabus and core topics as they could because ‘nothing
was 100% foolproof that it’s not going to come up’. Students considered anyone trying to predict
what would come up in this way as taking too much of a risk with their chances of success.
Respondents suggested that they and their peers are very clear about the serious implications of the
Leaving Certificate results for their life chances, so it was not in students’ best interests to pick and
choose what to learn for the examination.

On the other hand, the breadth of subjects was forcing some students to engage with predicting
what types of questions and content might appear, mainly because time was of the essence.
Students across all the focus groups indicated very clearly that they felt there was just too much
content that they were expected to learn across the two-year cycle. Therefore, engaging in some
predicting of examination questions and topics was the reality of doing Leaving Certificate
examinations:

*But you need to have predictability because the courses are too big...to learn it all,
there’s no time...I’d like to live in a world where I didn’t have to predict my exams but
it’s what I’m going to have to do.* [Student Focus Group 13]

Respondents reported how their teachers discussed with them patterns of questions and topics
appearing or not appearing year on year and then making some predictions with students based on
these analyses. Yet students felt that identifying patterns or trends in syllabus content and the
spotting of possible examination questions was not as easy to do as it might have been in previous
years. Reasons given for this were related specifically to the changes in syllabuses, the changes in
the format and structure of questions, and the mixing up of content areas on questions with
multiple sections that assessed knowledge and skills from a cross-section of the syllabus. Students
were keen to point out that if the Leaving Certificate examination was predictable, it was not so in
any easy way that reduces the amount of work they have to do nor the amount of course material
they have to learn:
It’s predictable in the way that you know certain topics are emphasised more than others, but that doesn’t mean that it’s still not hard to learn. It’s still hard to retain all that information ‘cos there is so much information to retain...even though it’s predictable, there’s still so much you have to learn that it isn’t easy... [Student Focus Group 8]

Research question 7 – What kind of examination preparation strategies do students use? Which of these are influenced by the predictability of the examinations?

Students suggested that in order to deal with the large volumes of content and knowledge needing to be learnt for examinations, they were inclined to learn a range of different types of responses ‘off by heart’. These included essays, model answers, definitions and lists of key words. Examples were given of selected essays about particular poets and poems being learnt in advance in English, as well as six or seven essays being learnt in Irish to respond to set questions. Lists of key words and phrases in subjects like biology and chemistry were also given as examples of content that students make themselves familiar with as they see these being rewarded positively by examiners. Furthermore, in French, students learn topics by rote for letters, notes and diary entries. Such strategies were considered normal in order to be well prepared and also to gain marks:

*The exam papers are really helpful because you can see...what they've done...and what’s expected to come up...You get sample answers and you learn them...off by heart and reuse them, or you can take points if you’re confident enough to make your own essay out of it.* [Student Focus Group 12]

Students also indicated that they were very familiar with mark schemes, and that such familiarity was also a necessity to know exactly what was required for a good response. They indicated that detailed knowledge of mark schemes on the part of all students was only fair; everyone should know about them, what they looked like and what they entailed. This way every student in the country knows what marks are available and what questions are worth. It was highlighted that mark schemes were used in a number of ways. First, they were used not only to help students structure responses but also to help them understand how the question would be marked:

*We’ve kind of looked at marking schemes, because sometimes you know it’s marked in a certain way and you have to answer questions in that way. So for chemistry they have lists and you have to have something out of each list to answer the question.* [Student Focus Group 3]

*In terms of the marking scheme all of the questions are divided into different points, so when we’re learning material we learn it all so that it just appeals to the examiner who will just give you the points rather than any other sort of way.* [Student Focus Group 2]

Second, mark schemes were used to indicate how ‘valuable’ a question or section is in terms of marks and this tended then to indicate its ‘worth’, not only in regard to how much was needed to be written but also to dictate the amount of time a student spends learning this material or revising this aspect of the course:
In English there’ll be certain questions that you get 20 marks for...that sort of gives you an idea of how much you need to write then...for example you might write one page and a quarter for a 20-mark question, but if it was a 15-mark question you’d write about one page. So [the mark scheme] means you know how much emphasis you need to put on it or how much effort. [Student Focus Group 2]

You get the past exam papers, and see the marks. We know that, say, in French, reading comprehension is worth 30% overall...so we know what’s more important than other sections so you aim for the points [marks] there. [Student Focus Group 2]

Along with past papers and mark schemes, students discussed other examination strategies that they employed in order to maximise their success. They talked about their use of ‘the book’ in each subject and how they used the chapters within these books to guide their study as well as learning the summaries of chapters. This specifically helped in focusing on what content they felt they had to learn. They indicated that the books were also used in class to structure end-of-topic tests and revision of units of work. The size and price of these books came in for some criticism, as students reflected there was extra work needed in condensing their textbooks; at over 300 pages per book, this was no easy task.

Students also discussed getting extra support for their studies through the use of ‘grinds schools’ and extra tutors. The support of extra tuition enabled students to have a one-to-one focus with a teacher, something that did not happen that often at school with teachers rushing through topics to get the course covered as well as dealing with mixed-ability classrooms. Students suggested that in ‘grinds’ schools/courses, tutors would teach directly to the examination and that they emphasised exactly what had to be done to answer particular questions and supplied students with different perspectives as well as short-hand notes, revision materials and tips for getting extra marks:

I think they’re really good...teachers [in grinds schools] would teach to the exam more so than they do in school. So it’s way more exam focused...It’s also another opinion of a teacher and their outlook of the exam as well...different teachers teach different methods...a grinds teacher can teach you the method that you need. [Student Focus Group 10]

Research question 2 – What kinds of learning are the examinations intended to promote?

Respondents discussed at length how they thought, for the most part, examinations were more a test of recall than of understanding. They acknowledged that for some subjects, and for some units within subjects, understanding was necessary for the top grades. However, there was a sense that they could get through examinations in certain subjects without having to understand what they were writing about, at least not in a degree of depth that might be expected by examiners and their teachers:

I think that you don’t really have to understand it...you just try and remember certain topics [and] certain definitions. [Student Focus Group 14]
Thus, students felt what was being tested was their ability to remember rather than their learning and that this was not going to benefit them in the long run:

*There’s a difference between memorising and understanding something, and being able to regurgitate something on the day without really even understanding what you’re writing. And I think that’s the key to what the Leaving Cert is at the moment.*

[Student Focus Group 13]

Beyond practical components, students suggested that examinations were all about rote learning and ‘cramming’ material to be regurgitated on the day of the examination. There was acknowledgement that some of their teachers were trying to help them ‘learn for life’, to expand what was in the syllabus and apply the content being taught to wider debates and affairs, but students felt ultimately that their teachers were forced to teach in particular ways and they were then forced to learn in a rote fashion:

*I think it also greatly depends on your teacher…like there are teachers who will teach you for life, or there are teachers that will teach you for an exam. Like my [subject] teacher is fantastic, she’s just wonderful – she teaches us the whole little ‘Did you know?’ bit in the book she’d go into, because she thinks it’s important for us to know.*

[Student Focus Group 13]

Student 1: The learning is adapted to the way that the exams are I think…the teachers have to teach like that, because it’s the only way…it’s not the teachers’ fault like...

Student 2: They’d obviously love to give us a bit of craic or whatever, group discussion, but they can’t because we have to get the [CAO] points...

[Student Focus Group 2]

Students acknowledged that particular types of questions within some subjects were testing their ability to have and show an opinion. They understood that such questions were trying to assess their skills of interpretation, of analysis and evaluation, and in doing so were seeking to test their ‘intellectual ability and not just their memory’. Students were aware that to get good marks on those questions that attracted larger point tariffs, they also had to do well on these ‘opinion’ type questions:

*Whereas in Religion it’s all about your opinion, how you interpret something, and the more detail, the more critical analysis you can give in an essay, the higher you do. So you have to understand what you’re doing – you can’t have somebody teaching you just facts.* [Student Focus Group 13]

The issue of the number of subjects studied and examined came up frequently as a concern. Students suggested that the number of subjects, along with the CAO points system, were probably the two most influential reasons why they learnt material specifically for the examinations and adopted the ways of preparing for the examinations:

*It’s really the points system that’s the flaw with the Leaving Cert. Obviously the amount of subjects is ridiculous, but the points are what get people, and that’s why the Leaving*
Cert has become so much more pressurised. It’s because it’s not just an exam – it’s like your future. You know it’s the doorway to your future, so I think that needs to be addressed. [Student Focus Group 13]

Conclusions

From the data, it is clear that there is no definitive answer to whether the Irish Leaving Certificate is predictable or not; the notion is too complex and the mediation of the Leaving Certificate as a policy system within Irish schools is understood and carried out quite differently across the range of schools visited as well as the range of teachers and students we interviewed. Ultimately, for teachers and students the notion of ‘predictability’ was not one that they seemed to ‘own’; they saw it as an issue of interest to the policy-maker and the politician but not of immediate importance to them in their everyday experiences of preparing for these examinations. The experience of the Leaving Certificate is very different for teachers and for students. Teachers ultimately focus on the subject they teach, and thus they experience the Leaving Certificate within their subject. They work with students using past papers, past questions, mark schemes and course materials within their subjects and teach as best they can to prepare students well for the Leaving Certificate in their subject. In this respect, the boundaries of the Leaving Certificate for the teacher are very much aligned to what the subject demands and the extent of the syllabus in this subject.

For students, however, the experience of the Leaving Certificate for them is of a number of subjects (six, seven or eight) to be taken all at the same time. Thus, their experience is across subjects, and in this respect the boundaries of the Leaving Certificate for the student are the extensive range of demands that each subject makes of them in order that they meet the same standard in each. It is the tensions between the ‘within subjects’ and the ‘across subjects’ that perhaps cause the narrowing of the curriculum to occur as well as teaching and learning to the test to flourish. It is in the interactions between teachers’ experiences and students’ experiences that we need to look in order to fully understand how predictability plays out within the Leaving Certificate examination system and if we wish to reduce the unwanted effects it can create.

Reference

Acknowledgements

The authors would like to thank the following people for their support in the process of this research. Any remaining errors are the responsibility of the authors.

- Aidan Farrell (Chief Executive, SEC)
- Our Advisory Group members:
  - Professor Richard Daugherty (Honorary Research Fellow, University of Oxford)
  - Dr Anne Looney (NCCA)
  - Hugh McManus (SEC)
  - Dr Michelle Meadows (Assessment and Qualifications Alliance)
  - Professor Roger Murphy (Honorary Research Fellow, University of Oxford)
  - Professor Paul Newton (Institute of Education, University of London)
  - Brid Úi Riordáin (SEC)
  - Professor Gordon Stobart (Honorary Research Fellow, University of Oxford; Emeritus Professor, Institute of Education, University of London)
- The local subject specialists at the SEC, NCCA and DES
- The head teachers, teachers and students who participated in the research
Appendix A: Post-primary education and the Irish Leaving Certificate

Post-primary education in Ireland consists of two cycles: a compulsory three-year Junior cycle culminating in the Junior Certificate examination, and a two-year non-compulsory Senior cycle. One transition year between the Junior and Senior cycles can be taken, and students have a choice between three Senior cycle programmes each leading to a state examination (see Figure A1).

Figure A1 Post-primary Education in Ireland

The majority of Irish students will take the traditional Irish Leaving Certificate Programme, in which they have course choices (usually six to eight courses are selected) from over 30 syllabuses and must study a minimum of five Leaving Certificate subjects, of which one must be Irish. Matriculation requirements for universities and other third-level institutions are such that almost all students also take English and mathematics, and the vast majority take a third language. Table A1 displays the 34 course choices currently listed on the NCCA website. Students also have the option of two other Senior programmes: the LCVP, where there is a concentration on technical subjects, and the LCA, which is a self-contained programme centred on the individual student’s needs in a cross-curricular (as opposed to subject-based) approach and is for students not catered to by the other two Senior programmes.

Most subjects offer paper examinations at two levels – Ordinary and Higher – with the exceptions of maths and Irish, which have the additional level of Foundation. Some subject examinations are additionally assessed with oral and aural examinations (Irish, French, German, Italian, Spanish, Russian and Japanese), practical examinations (engineering, construction studies, art and music), and the assessment of practical coursework (engineering, construction studies, agricultural economics, agricultural science, home economics).
Table A1 Irish National Council for Curriculum and Assessment Course List

<table>
<thead>
<tr>
<th>Subject</th>
<th>First year of examination of current syllabus</th>
<th>First year of examination of current syllabus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irish</td>
<td>2012</td>
<td>Physics</td>
</tr>
<tr>
<td>English</td>
<td>2001</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Mathematics</td>
<td>2013</td>
<td>Biology</td>
</tr>
<tr>
<td>Applied mathematics</td>
<td>1975</td>
<td>Physics and chemistry</td>
</tr>
<tr>
<td>French</td>
<td>1997</td>
<td>Agricultural science</td>
</tr>
<tr>
<td>German</td>
<td>1997</td>
<td>Home economics</td>
</tr>
<tr>
<td>Spanish</td>
<td>1997</td>
<td>Business</td>
</tr>
<tr>
<td>Italian</td>
<td>1997</td>
<td>Accounting</td>
</tr>
<tr>
<td>Russian</td>
<td>2003</td>
<td>Economics</td>
</tr>
<tr>
<td>Japanese</td>
<td>2004</td>
<td>Art</td>
</tr>
<tr>
<td>Arabic</td>
<td>2004</td>
<td>Music</td>
</tr>
<tr>
<td>Latin</td>
<td>&lt;1980</td>
<td>Religious education</td>
</tr>
<tr>
<td>Ancient Greek</td>
<td>&lt;1990</td>
<td>Construction studies</td>
</tr>
<tr>
<td>Classical studies</td>
<td>1985</td>
<td>Engineering</td>
</tr>
<tr>
<td>Hebrew studies</td>
<td>&lt;1990</td>
<td>DCG</td>
</tr>
<tr>
<td>History</td>
<td>2006</td>
<td>Technology</td>
</tr>
<tr>
<td>Geography</td>
<td>2006</td>
<td>Agricultural economics</td>
</tr>
</tbody>
</table>

Notes:
Candidates may not take any of the following subject combinations:
1. Physics and chemistry and either of the separate subjects, physics or chemistry.
2. Economics and agricultural economics.
3. Classical studies and Latin.
4. Classical studies and Ancient Greek

The syllabus (specification) for each subject, including the assessment specification, is drafted by the NCCA and approved by the ministry. The examinations on these syllabuses are then implemented by the SEC.

At each level, results are issued as grades. The grade boundaries (cut-scores) are fixed in advance and are the same for all subjects and levels. Table A2 shows this grading scale.

The universities and other higher education institutions collaborate to implement a common entry procedure administered by a company that they have established for this purpose, the CAO. Subject to meeting certain course-specific basic entry requirements, places on most courses are allocated solely on the basis of a composite score based on Leaving Certificate grades. For each level (Foundation, Ordinary or Higher) and grade (No grade through to A1) points are awarded to the applicant. Points may be accumulated on up to six examination results. Table A3 displays the grade-to-point conversion table and Table A4 displays an example of point accumulation for an Irish student. Most students will take the Irish Leaving Certificate examinations between the ages of 17 and 18 after having completed five to six years of post-primary education.
### Table A2 Grading scale for Senior examinations

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 or over</td>
<td>A1</td>
</tr>
<tr>
<td>85 but less than 90</td>
<td>A2</td>
</tr>
<tr>
<td>80 but less than 85</td>
<td>B1</td>
</tr>
<tr>
<td>75 but less than 80</td>
<td>B2</td>
</tr>
<tr>
<td>70 but less than 75</td>
<td>B3</td>
</tr>
<tr>
<td>65 but less than 70</td>
<td>C1</td>
</tr>
<tr>
<td>60 but less than 65</td>
<td>C2</td>
</tr>
<tr>
<td>55 but less than 60</td>
<td>C3</td>
</tr>
<tr>
<td>50 but less than 55</td>
<td>D1</td>
</tr>
<tr>
<td>45 but less than 50</td>
<td>D2</td>
</tr>
<tr>
<td>40 but less than 45</td>
<td>D3</td>
</tr>
<tr>
<td>25 but less than 40</td>
<td>E</td>
</tr>
<tr>
<td>10 but less than 25</td>
<td>F</td>
</tr>
<tr>
<td>Less than 10</td>
<td>None</td>
</tr>
</tbody>
</table>

Source: State Examinations Commission

### Table A3 Grade-to-point conversion table

<table>
<thead>
<tr>
<th>Leaving Cert Grade</th>
<th>Higher Paper</th>
<th>Lower Paper</th>
<th>Maths Foundation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>100</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>A2</td>
<td>90</td>
<td>50</td>
<td>15</td>
</tr>
<tr>
<td>B1</td>
<td>85</td>
<td>45</td>
<td>10</td>
</tr>
<tr>
<td>B2</td>
<td>80</td>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td>B3</td>
<td>75</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>70</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>65</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>C3</td>
<td>60</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>D1</td>
<td>55</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>D2</td>
<td>50</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>D3</td>
<td>45</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Source: Irish Central Applications Office
Table A4 Example of a student point calculation table

<table>
<thead>
<tr>
<th>Subject</th>
<th>Level</th>
<th>Grade</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irish</td>
<td>Higher</td>
<td>C2</td>
<td>65</td>
</tr>
<tr>
<td>English</td>
<td>Ordinary</td>
<td>A1</td>
<td>60</td>
</tr>
<tr>
<td>Maths</td>
<td>Higher</td>
<td>D2</td>
<td>50+25=75</td>
</tr>
<tr>
<td>French</td>
<td>Higher</td>
<td>B2</td>
<td>80</td>
</tr>
<tr>
<td>Biology</td>
<td>Higher</td>
<td>C1</td>
<td>70</td>
</tr>
<tr>
<td>Geography</td>
<td>Ordinary</td>
<td>A1</td>
<td>60</td>
</tr>
<tr>
<td>History</td>
<td>Higher</td>
<td>B3</td>
<td>75</td>
</tr>
</tbody>
</table>

Add the best six scores, shown in **bold** Points = 425

Source: Irish Central Applications Office

References


National Council for Curriculum and Assessment (NCCA) (n.d.) Post-Primary Education. [www.ncca.ie/en/Curriculum_and_Assessment/Post-Primary_Education/Senior_Cycle/Leaving_Certificate_Established/](http://www.ncca.ie/en/Curriculum_and_Assessment/Post-Primary_Education/Senior_Cycle/Leaving_Certificate_Established/)

Appendix B: Subject specialists

Roy Bowden
Roy Bowden is the Chair of Examiners in GCE Economics for the Assessment and Qualifications Alliance (AQA). He has 25 years of examining experience, with past positions at Edexcel and as Reviser, Principal Examiner, and subsequently Chief Examiner in Economics at AQA prior to his appointment as Chair in 2012.

Quintin Brewer
Quintin Brewer is a Chief Examiner in GCE Economics for Pearson Edexcel. He has 30 years of experience in examining and has previously been a Principal Examiner in Economics.

Dan Cowling
Dan Cowling is an experienced examiner in geography for Pearson Edexcel and has been examining since 1999. He is a Chartered Geographer, textbook author and an active member of the Geographical Association, and also Head of Sixth Form at Orleans Park School in Twickenham.

Jacqueline Gray
Jacqueline Gray is a Principal Examiner in Biology for the Council for the Curriculum, Examinations & Assessment (CCEA). She has been examining for over 10 years.

Steve Harrison
Steve Harrison is a Principal Examiner in GCSE and A-Level French for the AQA and has been examining for over 20 years.

Richard Hoyes
Richard Hoyes is a Chief Examiner in English Literature for Pearson Edexcel, and has been examining English Literature since the 1970s.

Mary Jay
Mary Jay is a Chief Examiner in English Language and Literature for Pearson Edexcel. She is also Team Leader for the English Language and Literature International Baccalaureate and mentor for new examiners, and has been examining since the mid-1970s. She has also been a tutor in sixth form colleges for English literature, English language, and English language and literature at A-level.

Malcolm Johnson
Malcolm Johnson is a Chief Examiner in French for Pearson Edexcel. He became Chief Examiner of GCE French for Edexcel in 1989 and has been examining since 1975.

Dr Jane McNicholl
Jane McNicholl is a Lecturer in Education at the University of Oxford, specialising in the teaching of science at the secondary level.

Robert Miller
Robert Miller is Chair of Examiners for the Pearson Edexcel suite of GCSE D&T subjects (graphic products, resistant materials, textiles technology, food technology, and electronic products) and, also for Pearson Edexcel, a Principal Moderator for GCE product design and Chief Examiner in applied engineering.

John Smith
John Smith is a Principal Examiner in A-Level Geography for the AQA. He is also Chief Examiner for the leisure studies vocational A-Level and Chair of Examiners for the Diploma in Travel and Tourism. He has over 30 years of prior experience in examining and moderating coursework at CSE, GCSE and A-level.

Stephen Turner
Stephen Turner is a Chief Examiner in Graphics for Pearson Edexcel. He has been examining for 25 years and has previously held positions at AQA and Oxford, Cambridge and RSA Examinations. He has taught design technology at all levels for 30 years and is presently Head of Technology at a comprehensive school in Lincolnshire.

Eileen Velarde
Eileen Velarde is the Chair of Examiners in French for the AQA. She has been examining for 35 years and was previously the Chair and Chief Examiner for the Northern Examinations and Assessment Board and for the Joint Matriculation Board.
Appendix C: Command words

The following is an excerpt from the SEC publication *A Manual for Drafters, Setters & Assistant Setters*.

### Appendix 5: Question Cues and Bloom’s Taxonomy (Cognitive Domain)

<table>
<thead>
<tr>
<th>Level</th>
<th>Learner Ability/Action</th>
<th>Typical Command Words</th>
<th>Typical Question Cues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge</strong> (recall and recognition)</td>
<td>Simple recall of previously learned material. Remembering * Mentioning * Recognizing * Recalling identification * Recall of information</td>
<td>List * Define * Label * Identify/Name * Name * Draw</td>
<td>* Which one? * * What is the best one? * * Who, what, when, where, how? *</td>
</tr>
<tr>
<td><strong>Comprehension</strong> (translating, interpreting, and summarizing)</td>
<td>Ability to make sense of the material. Rewrite in own words, recognize previously unseen examples of a concept, grasp meaning</td>
<td>Describe * Associate * Categorize * Summarize * Translate * Recall</td>
<td>* Demonstrate * Identify * Paraphrase * Report * Discuss * Interpret</td>
</tr>
<tr>
<td><strong>Application</strong> (to situations that are new to, or have a new slant for students)</td>
<td>Ability to use learned material in a new situation with a minimum amount of help or direction. Apply rules/principles to a problem, without being given the role/problem solving</td>
<td>Apply/Use * Demonstrate * Calculate/Compute * Illustrate * Solve</td>
<td>* Dramatize * Role-play * Select * Show</td>
</tr>
<tr>
<td><strong>Analysis</strong> (breaking down into parts, forms)</td>
<td>Break material into component parts so that its structure may be understood. Break complex concepts down to component parts and analyze how parts are related to each other; seeing patterns, recognizing hidden meanings</td>
<td>Analyze * Compare/Contrast * Separate * Order/Classify * Explain * Characterize</td>
<td>* Develop * Distinguish * Examine * Outline * Debate * Defend</td>
</tr>
<tr>
<td><strong>Synthesis</strong> (combining elements into a pattern not clearly there before)</td>
<td>Put parts together to form a whole new to the learner; generalize Rearrange component parts to form a new whole; may be in verbal form or a physical object</td>
<td>Combine * Modify * Rearrange * &quot;What if&quot; * Generalize * Compose * Construct</td>
<td>* Create * Design/Plant * Develop * Propose * Formulate * Make</td>
</tr>
<tr>
<td><strong>Evaluation</strong> (according to some set of criteria, and state why)</td>
<td>Ability to judge the value of material based on certain criteria. Evaluate, make judgments on the worth of a concept for a purpose; resolve controversies/differences of opinions ...; verify value of evidence; recognize subjectivity</td>
<td>Assess * Decide * Grade/Rank * Recommend * Explain * Judge</td>
<td>* Argue * Convince * Conclude * Justify * Support * Predict * Prove * Select/Choose</td>
</tr>
</tbody>
</table>

Appendix D: Questionnaire

This is the instrument created for the paper and pencil version of the predictability survey. The variable names and value codes used in the codebook have been placed alongside their corresponding questions using the designated colors: Variable Names and Value Codes.

SURVEY ON THE LEAVING CERTIFICATE EXAMINATION

The purpose of this survey is to gather information on the strategies students use to prepare for the examination. Your completed questionnaire will come directly to us at Oxford University and will not be seen by anyone in the State Examinations Commission (SEC) or the Department of Education and Skills. All information from this survey will be held strictly confidentially. No individual student or school will be identifiable in any report produced.

Please do not complete the survey until after you have finished all of your Leaving Certificate examinations.

There are no right or wrong answers. Your answers should be the ones that are right for you.

There is a prize draw for one of five Apple iPads, which you will be entered for if you give your examination number below and complete the questionnaire.

We would like to relate students’ views to their exam results. To do that, we need your permission to get your examination results from the SEC. If you agree to this, the SEC will not give us your name – only your results. Please note that you can complete the survey and be entered for the prize draw even if you do not give us permission to get your examination results.

EXNUMID
Please write your Examination Number here: ____________

PERMLINK (Value: 1=Tick, 0=No Tick)
I give my permission for the researchers to get my exam results after these results come out and to link my questionnaire responses to them. (Please tick) □

PERMPAD (Value: 1=Tick, 0=No Tick)
I give my permission for my exam number to be used to contact me with the help of my school if I win an iPad. (You must tick this box if you want to be entered in the draw.) □

Thank you for taking part in this survey. Please send your answers back in the prepaid envelope provided by 1st July 2013.

If you prefer to complete the survey online please go to http://oucea.education.ox.ac.uk/
SECTION A: ABOUT YOURSELF

Q1  1. When were you born?  
   *Please write numbers in the boxes.*  
   Day  Month  Year

Q2  2. Are you female or male?  
   *Please tick only one box.*  
   Female  Male

Q3  3. What do you plan to do next year as your main activity?  
   *Please tick only one box.*

   a) Go to university  
   Value: 1

   b) Study at an institute of technology  
   Value: 2

   c) Other further education (e.g. PLC course)  
   Value: 3

   d) Find a job  
   Value: 4

   e) Start my own business or work in the family business  
   Value: 5

   f) Take some time off to travel, for example, before I decide what to do  
   Value: 6

   g) Be a full-time mother/father  
   Value: 7

   h) I do not know  
   Value: 88

   98=Invalid,  
   99=Missing

Q4  4. What language do you speak at home most of the time?  
   *Please write your answer on the line.*  

   Language:_________________
## SECTION B: ABOUT YOUR FAMILY AND YOUR HOME

### 5 What is the highest level of education completed by your mother (or stepmother or female guardian) and father (or stepfather or male guardian)? Please tick only one box for each parent.

<table>
<thead>
<tr>
<th></th>
<th>Q5MO Mother</th>
<th>Q5FA Father</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>☐</td>
<td>☐</td>
<td>1</td>
</tr>
<tr>
<td>b)</td>
<td>☐</td>
<td>☐</td>
<td>2</td>
</tr>
<tr>
<td>c)</td>
<td>☐</td>
<td>☐</td>
<td>3</td>
</tr>
<tr>
<td>d)</td>
<td>☐</td>
<td>☐</td>
<td>4</td>
</tr>
<tr>
<td>e)</td>
<td>☐</td>
<td>☐</td>
<td>5</td>
</tr>
<tr>
<td>f)</td>
<td>☐</td>
<td>☐</td>
<td>6</td>
</tr>
<tr>
<td>g)</td>
<td>☐</td>
<td>☐</td>
<td>7</td>
</tr>
<tr>
<td>h)</td>
<td>☐</td>
<td>☐</td>
<td>8</td>
</tr>
<tr>
<td>i)</td>
<td>☐</td>
<td>☐</td>
<td>88</td>
</tr>
</tbody>
</table>

*98=Invalid, 99=Missing*

### 6 What kind of work does your mother (or stepmother or female guardian) and father (or stepfather or male guardian) do for their main jobs? If your mother or father is not working now, think about the last job she/he had. Please tick the box that matches best.

<table>
<thead>
<tr>
<th></th>
<th>Q6MO Mother</th>
<th>Q6FA Father</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>☐</td>
<td>☐</td>
<td>1</td>
</tr>
<tr>
<td>b)</td>
<td>☐</td>
<td>☐</td>
<td>2</td>
</tr>
<tr>
<td>c)</td>
<td>☐</td>
<td>☐</td>
<td>3</td>
</tr>
<tr>
<td>d)</td>
<td>☐</td>
<td>☐</td>
<td>4</td>
</tr>
<tr>
<td>e)</td>
<td>☐</td>
<td>☐</td>
<td>5</td>
</tr>
</tbody>
</table>
Q7A – Q7M  (Value: 1=Tick, 0=No Tick)
7 Which of the following are in your home?
   Please tick all that are in your home.
   
   Q7A  A TV
   Q7B  A car
   Q7C  A dishwasher
   Q7D  A room of your own
   Q7E  A quiet place to study
   Q7F  A computer or laptop you can use for school work
   Q7G  Internet access
   Q7H  An iPad or other tablet of your own
   Q7I  A smartphone (for example, iPhone, Blackberry, or Android) of your own
   Q7J  A mobile phone of your own
   Q7K  A PlayStation, X-box, or Wii
   Q7L  Classic literature (for example, W.B. Yeats, James Joyce, or Maria Edgeworth)
   Q7M  A dictionary

Q8  8 How many books are there in your home?
   Please tick only one box.

<table>
<thead>
<tr>
<th>Value</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 10 books</td>
<td>1</td>
</tr>
<tr>
<td>11 – 25 books</td>
<td>2</td>
</tr>
<tr>
<td>26 – 100 books</td>
<td>3</td>
</tr>
<tr>
<td>101 – 200 books</td>
<td>4</td>
</tr>
<tr>
<td>201 – 500 books</td>
<td>5</td>
</tr>
<tr>
<td>More than 500 books</td>
<td>6</td>
</tr>
</tbody>
</table>

9 In which country were you and your parents born?
   Please write your answers on the lines.

   Q9A You
   Q9B Mother
   Q9C Father
## SECTION C: LEAVING CERTIFICATE EXAMS YOU TOOK

Q10A – Q10F  
(Value: 2=Higher, 1=Ordinary, 0=Did not take)

10 Please indicate which of the following subjects you took, and at what level

*Please tick only one box for each subject*

<table>
<thead>
<tr>
<th>Q10A</th>
<th>English</th>
<th>Higher</th>
<th>Ordinary</th>
<th>Did not take</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q10B</td>
<td>Biology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10C</td>
<td>Geography</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10D</td>
<td>French</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10E</td>
<td>Economics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10F</td>
<td>Design &amp; communication graphics</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### SECTION D: HOW YOU PREPARED FOR THE EXAMS

The next questions are about English, biology and geography. Please answer only about the ones that you took.

**Q11ENGA – Q11GEON**
(Value: 1=almost never, 2=now and then, 3=often, 4=always, 7=Not Applicable)

11. When you prepared for the exams, how often did you do the following for each subject you took? *Please write a number in each box:*

<table>
<thead>
<tr>
<th></th>
<th>1 almost never</th>
<th>2 now and then</th>
<th>3 often</th>
<th>4 always</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>English</td>
<td>Biology</td>
<td>Geography</td>
<td></td>
</tr>
</tbody>
</table>

- a) I tried to memorise all the material that I was taught.

- b) I started by figuring out exactly what I needed to learn.

- c) I tried to relate new information to knowledge from other subjects.

- d) I checked if I understood what I had read.

- e) I tried to learn my notes by heart.

- f) I chose not to study some topics as I thought they would not come up.
<table>
<thead>
<tr>
<th></th>
<th>1 almost never</th>
<th>2 now and then</th>
<th>3 often</th>
<th>4 always</th>
<th>English</th>
<th>Biology</th>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>g)</td>
<td>I figured out how the information might be useful in the real world.</td>
<td></td>
<td></td>
<td></td>
<td>Q11ENGG</td>
<td>Q11BIOG</td>
<td>Q11GEOG</td>
</tr>
<tr>
<td>h)</td>
<td>I tried to understand the revision material better by relating it to what I already knew.</td>
<td></td>
<td></td>
<td></td>
<td>Q11ENGH</td>
<td>Q11BIOH</td>
<td>Q11GEOH</td>
</tr>
<tr>
<td>i)</td>
<td>I made sure that I remembered the most important points in the revision material.</td>
<td></td>
<td></td>
<td></td>
<td>Q11ENGI</td>
<td>Q11BIOI</td>
<td>Q11GEOI</td>
</tr>
<tr>
<td>j)</td>
<td>If I did not understand something, I looked for additional information to clarify it.</td>
<td></td>
<td></td>
<td></td>
<td>Q11ENGJ</td>
<td>Q11BIOJ</td>
<td>Q11GEOJ</td>
</tr>
<tr>
<td>k)</td>
<td>I tried to memorise as much of the revision material as possible.</td>
<td></td>
<td></td>
<td></td>
<td>Q11ENGK</td>
<td>Q11BIOK</td>
<td>Q11GEOK</td>
</tr>
<tr>
<td>l)</td>
<td>I tried to figure out which ideas I had not really understood.</td>
<td></td>
<td></td>
<td></td>
<td>Q11ENGL</td>
<td>Q11BIOL</td>
<td>Q11GEOL</td>
</tr>
<tr>
<td>m)</td>
<td>I tried to memorise what I thought was important.</td>
<td></td>
<td></td>
<td></td>
<td>Q11ENGM</td>
<td>Q11BIOM</td>
<td>Q11GEOM</td>
</tr>
<tr>
<td>n)</td>
<td>I studied material that went beyond what is expected for the exam.</td>
<td></td>
<td></td>
<td></td>
<td>Q11ENGN</td>
<td>Q11BION</td>
<td>Q11GEON</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) I left a lot of topics out of my revision and still think I will do well.</td>
<td>Q12ENGG</td>
<td>Q12BI0G</td>
<td>Q12GEOG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) I think I will be able to use what I learned for this exam in the future.</td>
<td>Q12ENGH</td>
<td>Q12BI0H</td>
<td>Q12GEOH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) I predicted the exam questions well.</td>
<td>Q12ENHI</td>
<td>Q12BI0H</td>
<td>Q12GEOH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j) I can do well in this exam even if I do not fully understand the topics.</td>
<td>Q12ENHJ</td>
<td>Q12BI0J</td>
<td>Q12GEOJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION E: YOUR EXPERIENCE OF THE EXAMS

**Q12ENGA – Q12GEOJ**  
(Value: 1=almost never, 2=now and then, 3=often, 4=always, 7=Not Applicable)

12. How much do you agree with the following statements for each exam you took?  
*Please write a number in each box.*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>strongly disagree</td>
<td>disagree</td>
<td>agree</td>
<td>strongly agree</td>
</tr>
<tr>
<td>English</td>
<td>Q12ENGA</td>
<td>Q12BIOA</td>
<td>Q12GEOA</td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td>Q12ENGB</td>
<td>Q12BIOB</td>
<td>Q12GEOB</td>
<td></td>
</tr>
<tr>
<td>Geography</td>
<td>Q12ENGC</td>
<td>Q12BIOC</td>
<td>Q12GEOC</td>
<td></td>
</tr>
</tbody>
</table>

a) I felt I knew what the examiners wanted this year.

b) To do well in this exam, remembering is more important than understanding.

c) The exam tests the right kind of learning.

d) To do well in this exam I need to think and adapt what I know.

e) I was surprised by the questions on the exam this year.

f) To do well in this exam, I need a broad understanding of the subject, across many topics.
## SECTION F: SCHOOL AND FAMILY SUPPORT

**Q13ENGA – Q13GEON**  
(Value: 1=almost never, 2=now and then, 3=often, 4=always, 7=Not Applicable)

### 13 What kinds of support for your learning did you have?  
*Please tick every box that applies to you in each subject you have taken.*

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Biology</th>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Which topics were likely to come up was explained to me.</td>
<td>Q13ENGA</td>
<td>Q13BIOA</td>
<td>Q13EOA</td>
</tr>
<tr>
<td>b) Marking criteria were explained to me.</td>
<td>Q13ENGB</td>
<td>Q13BIOB</td>
<td>Q13EOB</td>
</tr>
<tr>
<td>c) I used material from grinds websites.</td>
<td>Q13ENGC</td>
<td>Q13BIOC</td>
<td>Q13EOC</td>
</tr>
<tr>
<td>d) Model answers were given to me.</td>
<td>Q13ENGD</td>
<td>Q13BIOD</td>
<td>Q13EOD</td>
</tr>
<tr>
<td>e) I was given past papers.</td>
<td>Q13ENGE</td>
<td>Q13BIOE</td>
<td>Q13EDE</td>
</tr>
<tr>
<td>f) I have textbooks to help with my study.</td>
<td>Q13ENGF</td>
<td>Q13BIOF</td>
<td>Q13EOF</td>
</tr>
<tr>
<td>g) The exam format was explained to me.</td>
<td>Q13ENGG</td>
<td>Q13BIOG</td>
<td>Q13EOG</td>
</tr>
<tr>
<td></td>
<td>Q13ENGH</td>
<td>Q13BIOH</td>
<td>Q13GEOH</td>
</tr>
<tr>
<td>---</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>h)</td>
<td>I used revision guides.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Q13ENGI</th>
<th>Q13BIOI</th>
<th>Q13GEOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>I looked at past papers on the internet.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Q13ENGJ</th>
<th>Q13BIOJ</th>
<th>Q13GEOJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>j)</td>
<td>My parents helped me with my studies.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Q13ENGK</th>
<th>Q13BIOK</th>
<th>Q13GEOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>k)</td>
<td>Friends helped me to prepare for the exams.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Q13ENGL</th>
<th>Q13BIOL</th>
<th>Q13GEOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>l)</td>
<td>I used revision apps.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Q13ENGM</th>
<th>Q13BIOM</th>
<th>Q13GEOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>m)</td>
<td>I took one-to-one or small-group grinds.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Q13ENGN</th>
<th>Q13BION</th>
<th>Q13GEON</th>
</tr>
</thead>
<tbody>
<tr>
<td>n)</td>
<td>I attended a grinds school.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Q14**

If you have any other comments please write them here:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Thank you for your participation. Please send your answers back in the prepaid envelope provided by **1st July 2013**.