



Network for Irish Educational Standards

Paper 1

**Evidence of Grade Inflation 1994 - 2004 in
the Institute of Technology Sector in
Ireland.**

Martin O'Grady and Brendan Guilfoyle

March 2007

www.stopgradeinflation.ie

ABSTRACT

Grade Inflation occurs when there is an upward trend in grades over a period of time in the absence of a matching improvement in learning or achievement. In simple terms grade inflation means that there is a trend of better grades being awarded more leniently and with less justification. It follows that educational standards are in decline.

This paper explores the period 1994-2004 in the Institute of Technology (IOT) sector and focuses on the grades awarded in Certificate, Diploma and Degree qualifications. We establish that there has been a significant grade increase, particularly in the top grades, in each of these qualifications. For example, we find that there has been a 38% increase in the award of Distinctions in National Certificates and a 42% increase in National Diplomas, while for Degrees there has been a 52% increase in the award of the First Class honours grade over the period.

While such grade increases do not, in themselves, mean that educational standards are declining, we provide strong evidence that this is exactly what is happening. We do this by investigating in detail other possible explanations for these increases and conclude that none can explain the increase in higher awards.

Indeed, one of the most startling findings is that, in this era of ever higher awards at completion, the CAO points required for entrance to the IOT sector have been in steep decline. Thus, weaker and weaker students have been entering the sector, only to receive ever improving grades. Moreover, we uncover significant points' increases in the CAO system which suggests that there is also grade inflation at Leaving Certificate level.

We further analyse the data to see if there is any correlation between the higher grades being awarded and the CAO entry points of the students being admitted to different Institutes. We find that this is not the case: the differing proportions of higher grades are not a function of student ability.

Finally, we ask whether the variance in Institute grades is a function of differences among disciplines and conclude, by applying a one way analysis of variance to the data, that this is not the case.

The evidence emerging strongly supports the conclusion that there is serious grade inflation in all undergraduate level qualifications throughout the Institute of Technology sector.

Table of Contents

ABSTRACT		1
Table of Contents		2
1. Introduction		4
1.1	Background	4
1.2	Methodology	8
	1.2.1 Data Collection	8
	1.2.2 Examination of Trends	9
	1.2.3 Testing for evidence of grade inflation	10
	1.2.4 Attempt to Identify Sources of Grade Increase/Inflation	10
1.3	Summary of Findings	11
2. Findings on Grade Increase		13
2.1	Grade Increase in National Certificates	13
	2.1.1 Overall grade pattern 1994-2004	13
	2.1.2 Trends in award of Distinctions at Certificate level	13
	2.1.3 Trends in award of Merit 1 at Certificate level	15
2.2	Grade Increase in National Diplomas	17
	2.2.1 Overall grade pattern 1994-2004	17
	2.2.2 Trends in award of Distinctions at Diploma level	17
	2.2.3 Trends in award of Merit 1 at Diploma level	19
2.3	Grade Increase in Bachelor's Degrees	20
	2.3.1 Overall grade pattern 1994-2004	20
	2.3.2 Trends in first and upper second awards at Bachelor's level	21
2.4	Summary of temporal trends in grading	24
3. Is grade increase really grade inflation?		26
3.1	Are the improved grades a function of increase in student ability over time?	26
	3.1.1 Changes in CAO entry points over time for Certificates/Diplomas	26
	3.1.2 Are minimum course entry points a fair measure of overall student ability?	28
	3.1.3 Change in CAO points for Ab-Initio Degrees	30
3.2	Comparing Institutes, do entry points predict grade patterns at Certificate and Diploma levels?	31
	3.2.1 Variation among Institutes in proportion of upper grades awarded	31
	3.2.2 Comparison of Institutes using weighted median points	32
	3.2.3 Further validation of minimum points as a measure of student ability	34
	3.2.4 Comparison by percentage of grades awarded in Certificates of high and low points' Institutes 2002-2004	35
	3.2.5 Comparison by percentage of grades awarded in Diplomas of high and low points' Institutes 2002-2004	36
	3.2.6 Summary of findings on variance across Institutes in grades awarded and in CAO entry points for students	37
3.3	Have CAO points become harder to get?	37
3.4	Is the variance in institute grades a function of discipline/subject variance?	39
4 Discussion		41

4.1	Grade increase or grade inflation	41
4.2	Explaining learning	42
	4.2.1 Changes in levels of ability	42
	4.2.2 Changes in levels of motivation	42
	4.2.3 Improvement in educational inputs	45
	5 Conclusions	47
5.1	The existence of grade inflation	47
5.2	Why is grade inflation taking place?	47
5.3	The need to stop grade inflation	47
	Bibliography	48

1. Introduction

1.1 Background

Grade Inflation occurs when there is an upward trend over a period of time in grades awarded to successive cohorts of students taking a given examination or set of examinations in the absence of a matching improvement in learning or achievement. In simple terms, grade inflation means that there is a trend of better grades being awarded more leniently and with less justification. It follows that educational standards are in decline.

As pointed out by Hu (2005), it is important to distinguish between grade increase and grade inflation. Grade increase can be a justifiable where there is evidence of improved learning ability and motivation among students or more successful educational inputs. Grade inflation implies the lack of any underlying justification and is essentially fraudulent in effect, if not always in intent. The ethics of grade inflation are discussed extensively by Manhire (2004).

Justifiable grade increase and grade inflation are not always easily distinguishable, not least because they can quite happily coexist. In certain circumstances student learning may be improving while grades rise at an even higher rate due to inflation. On the other hand grades may be holding constant or even declining while grade inflation serves to obscure a more serious downward trend in student achievement. In practice, attention tends to be drawn to the possibility of grade inflation when there is an upward temporal trend in grades without obvious explanation. The twin tasks, then, for educationalists are to, firstly, identify the trends that prevail in examination grading and, secondly, to adduce evidence as to whether those trends are educationally valid.

The phenomenon of grade inflation has received a considerable amount of coverage in the press both in the UK and in the US. It has been analysed, debated and explored by a variety of academics, especially in the US where there is a very strong current of opinion backed by empirical research that grade inflation is a major problem throughout the second and third level sectors there. (Kamber and Biggs, 2002; Mansfield, 2002; Rosovsky and Hartley, 2002; Hu, 2005; Johnson, 2003; Leef, 2003; Manhire, 2004).

Grade inflation is arguably the most insidious phenomenon to have crept into education in the modern era. In the words of Brian Manhire, Professor of Electrical Engineering at Ohio State University:

...surely grade inflation is unethical in the sense of what is good and bad, and is contrary to traditional ethical tenets concerning moral duty and obligation (Manhire, 2004 p.12).

Rosovsky and Hartley (2002) draw attention to the dangerous dynamic whereby grade inflation feeds on itself. They state:

Once it starts, grade inflation and inflated letters [of recommendation] are subject to self sustaining pressures stemming from the desire not to disadvantage some students or colleagues without cause. This self sustaining character eventually weakens the very meaning of evaluation: compression at the top before long will create a system of grades in which A's predominate and in which letters consist primarily of praise. Meaningful distinctions will have disappeared (p21).

The notion that A's will predominate is by no means fanciful in the US educational system. They already do predominate to a significant extent. Data collected by Professor Stuart Rojstaczer, cited by Bartlett (2003), indicates that in recent years 70% of students entering private Universities and 53% entering public Universities had A averages from high school. Johnson (2003) cites figures for a number of well known American Universities demonstrating how ubiquitous the A-grade has become in the US third level sector. At Duke University by 1997 the steady climb in the award of A's had exceeded 45% for undergraduates. At Dartmouth, in the fall of 1999, the proportion had reached 44%, while at Harvard in the 1996-97 academic year, 46% of undergraduates obtained an A or A minus. By 2000, the Harvard figure for A's reached the 50% mark. (Bartlett, 2003).

In the UK, much of the debate about grade inflation has focused on the A-Levels examination in which for more than two decades grades have been constantly rising. Influential figures such as Ruth Lea, Head of Policy at the Institute of Directors, Chris Woodward, former Chief Inspector of Schools in England (BBC News, 2001) and David Thomas, Chief Executive of the Careers Research Advisory Centre (Hencke, 2004) have suggested that grade inflation is behind the trend. Grade compression at the top in A-levels – so many students get all A grades – has become a serious obstacle for some Universities in selecting from among the pool of applicants using the A-level criterion. Both Oxford and Cambridge Universities have begun to employ their own aptitude tests to identify the more suitable students (Ward, 2004).

Fears also abound about grade inflation in the UK third level sector. Fifty eight percent of University graduates are obtaining a first or upper second in their Degree as compared with only 25% in the early nineties (Garner, 2003). In a survey of employers conducted by the Association of Graduate Recruiters, six out of ten firms said that the ongoing expansion of University places in the UK was having an adverse effect on the quality of graduates (BBC News, 2004). The implication is that standards are being lowered to accommodate the weaker students that must be admitted onto Degree courses so as to fill the constantly expanding places. The UK government has been pursuing a target of getting half of all 18-30 year olds into University by 2010. Another survey of employers carried out for a Channel 4 "30 Minutes" programme in May 2004, entitled "Dumbed Down

Degrees,” found that 70% of employers believed that Degrees have declined as a measure of ability over the previous ten years. A number of academic contributors to the programme, including Bob Brecher, a reader in philosophy from Brighton University and Richard Sykes, rector of Imperial College, London concurred with the suggestion of grade inflation (Channel 4 News, 2004).

In Ireland, though academics have been slow to speak out on the matter, there has been a trend in recent years of journalists suggesting grade inflation in the Leaving Certificate examination (Walsh, 2006; Holt, 2006; Flynn, 2006). Little attention has as yet been focused on the possibility of grade inflation in the third level sector. One prominent figure, Garrett Fitzgerald, Chancellor of the National University of Ireland and former Taoiseach, though he has not asserted that grade inflation is underway, has warned against the dangers of the problem taking root in third level education in Ireland (Fitzgerald, 2006).

A 2004 report commissioned by the Higher Education Training Awards Council revealed evidence of significant grade increase in National Certificates, National Diplomas and Bachelor’s Degrees in the Institute of Technology sector between 1998 and 2002 (Walsh, 2004). Walsh’s figures were analysed in the context of trends in CAO points by O’Grady et al (2004) to make the case that the grade increases identified between 1998 and 2002 were in fact due to grade inflation

In summary, then, there has been a considerable amount of concern and debate about grade inflation in the US and the UK. This has been prompted by the rapid but unexplained rise in grades that has occurred in recent decades at both second and third level in both countries. Grade inflation has become the subject of media discussion in Ireland with respect to second level but hardly at all in the case of third level qualifications. Apart from Walsh (2004) and O’Grady et al (2004) there does not appear to be any previous research conducted on the matter in Ireland.

As for adducing hard evidence that grade increase is indeed a function of grade inflation, even in the United States where the bulk of the analysis has been carried out, there is a tendency to automatically equate grade increase with grade inflation. It is perfectly understandable that academics come to that conclusion when faced with a broad pattern of rising grades among successive student cohorts and when they see no evidence at all of increasing talent, motivation or learning. Indeed, it is arguable that the onus should be on educationalists and examiners to prove that grade increase is not a consequence of grade inflation. After all, it is a standard expectation that those who propose measures of human variables demonstrate that the measures do what they are supposed to do. This is the expectation that measures for any purpose be reliable and valid. The problem here is that the world of education has

always been remarkable complacent in this respect and there is a long tradition of taking it on trust that examinations do what they are supposed to do, including maintain standards from year to year.

Given the degree of complacency and trust that surrounds the assessment process in education, there is no pressure on examiners to show that their metrics are valid. In consequence, the onus falls unfairly on those who suspect the existence of grade inflation to demonstrate that it exists and to show that grade increases are not warranted. The present research was undertaken in light of this reality.

This paper on grade inflation in the Institute of Technology sector in Ireland and its sister paper on grade inflation in the University sector (O'Grady and Guilfoyle, 2007) goes beyond the descriptive. It adduces firm evidence that, not only is there a very strong trend of grade increase in third level qualifications, but that the only meaningful explanation is indeed grade inflation.

1.2 Methodology

1.2.1 Data Collection

Data on all National Certificate, National Diploma and Bachelor Degree graduates in each of the eleven years 1994-2004 were obtained for each of the following institutions:

Athlone Institute of Technology
Blanchardstown Institute of Technology
Carlow Institute of Technology
Cork Institute of Technology
Crawford Institute¹
Dundalk Institute of Technology
Dun Laoghaire Institute of Technology
Galway and Mayo Institute of Technology
Institute of Technology Tralee
Institute of Technology Tallaght
Letterkenny Institute of Technology
Limerick Institute of Technology
Sligo Institute of Technology
Waterford Institute of Technology

The Dublin Institute of Technology was not included in the study. It was felt that due to its unique history and large size it would not be wise to aggregate its figures with those of the other Institutes. It was deemed to merit an entirely separate analysis.

For all Institutes, where awards were made by the Higher Education and Training Awards Council (previously by the National Council for Educational Awards) the figures were obtained from HETAC. Where awards were made under delegated authority arrangements by the Institutes themselves, the figures were obtained directly from each of the relevant Institutes.

In all cases graduates were classified within one of the following four discipline areas:

Business
Engineering
Humanities
Science and Technology.

¹ Crawford is part of the Cork Institute of Technology but was treated separately for the purposes of this study because figures on graduates obtained from HETAC reported on Crawford graduates separately.

For each institution, in each of the eleven years, within each of the four disciplines, and for each of the three levels of qualification, the following figures were obtained:

For Bachelor Degrees -

Number of graduates.

Number of First Class Honours.

Number of Second Class Honours Grade One (Upper Seconds).

Number of Second Class Honours Grade Two (Lower Seconds).

Number of Pass awards.

For National Certificates and National Diplomas separately -

Number of graduates

Number of Distinctions

Number of Merits (1994-1997)²

Number of Merits Grade 1 (1998-2004)

Number of Merits Grade 2 (1998-2004)

1.2.2 Examination of Trends

Absolute numbers were translated into percentages to allow for meaningful year to year comparisons. It should be noted that where aggregate figures are expressed as percentages the raw figures have been aggregated and the percentages then computed. This is because figures expressed in percent terms often cannot meaningfully be aggregated due to differences in the absolute numbers from which they are computed.

In the analysis that follows there is one exception to this rule. The combined years 1993-95 are compared with the combined years 2002-04 in terms of percentage of the higher grades awarded. This is done so as to obtain start and end figures for the period under study that are not so susceptible to random effects as might be the case if, for example, the figures for 2004 were compared with those for 1994.

In each of the two periods it is the percentages that are averaged over the three years. This is done because the objective is to get the average of the tendency to award higher or lower grades (as expressed through percentages) and not to find the exact proportion of any grade over the period examined. Also, it is legitimate to do this because the totals for adjacent years do not differ too widely.

Comparisons between the percentage of grades awarded in the 2002-2004 period and those for 1994-1996 act as the main basis on which evidence of

² *As evident in some of the tables below, a small number of undifferentiated Merit awards were reported in 1998 and 1999 after the introduction of the new classification system*

grade increase is identified. The percentages for each individual year are also graphed and tabulated below.

1.2.3 Testing for evidence of grade inflation.

The following hypotheses are tested in an effort to adduce evidence as to whether or not grade increase trends identified are due to grade inflation:

1. That an upward trend in grades throughout the IOT sector will be accompanied by a matching upward trend in the CAO points of students entering the sector, suggesting that an improvement in the educational ability of students may account for grade increase as opposed to grade inflation.
2. That variance in grades across different institutions will be accompanied by a matching variance in the CAO points of students entering those institutions, suggesting that better grades are associated with better educational ability as opposed to grade inflation.
3. That the overall CAO points' profile nationally has been in decline over the relevant period suggesting grade *deflation* at Leaving Certificate level. If this were found to be the case, any fall in the points on which students enter third level courses may not be indicative of weaker learning ability. Evidence in support of this hypothesis would to some extent counter negative evidence on hypothesis 1 above.

If the three hypotheses are not supported by the evidence, it becomes increasingly difficult to explain grade increase without grade inflation.

1.2.4 Attempt to Identify Sources of Grade Increase/Inflation

Apart from change over time as occurs with grade inflation, grading trends may also be a function of discipline/subject or a function of educational institution. An analysis of the data was conducted in an effort to disentangle the three. Specifically a series of analyses of variance were conducted to establish if institutional differences were in fact due to discipline variations.

1.3 Summary of Findings

In all three qualifications (Certificate, Diploma, Degree) there was a clear pattern of significant grade increase, especially in top grades, over the period 1994-2004.

Comparing the three later years (2002-04) with the three early years (1994-96), there was a 38% increase in the award of Distinctions in National Certificates and a 42% increase in National Diplomas. In Degrees there was a 52% increase in the award of the First Class Honour grade and a more modest increase of 6.1% in Upper Seconds.

Apart from the Distinction grade, which has retained its percentage band (70-100%), a revised grading system was introduced in 1998 for Certificates and Diplomas. It was only possible, therefore, to look at the trend in other grades over the period 1998-2004. There was a slight upward trend in the Merit 1 grade in both Certificates (+0.59%) and Diplomas (+2.6%) when the three years 2002-04 were compared with the three years 1998-2000.

The hypothesis that grade increases would be accompanied by students with higher CAO points was firmly rejected. Minimum points required to enter courses throughout the IOT sector declined markedly over the period. In 1992, when the current system for allocating CAO points was introduced, less than 1% of Certificate/Diploma courses throughout the sector could be accessed on less than 100 points. This figure had climbed to 18% by 2002. In 1992, 57% of Certificate/Diploma courses had minimum points set at 250 and above. By 2002, only 31% of courses had similar minimum entry points.

That minimum entry points acts as a good indicator of typical student points on courses was strongly supported by a comparison between minimum and median course points for the year 2002.

The hypothesis that variance in grades awarded across the different Institutes would be associated with variance in student CAO points was also rejected. The entry points' profiles, though varying from Institute to Institute, do not offer any reliable prediction of the variance in grades across the Institutes.

While there is variance in grade percentages across disciplines, this also fails to explain the variance in grade percentages among Institutes.

The hypothesis that the national profile of CAO points was in decline over the relevant period was firmly rejected. Leaving Certificate grades and CAO points have increased very significantly since the early nineties.

In the absence of alternative plausible explanations for the amount of grade increase in the IOT sector over the 1994-2004 period, grade inflation seems to be the only reasonable explanation.

2. Findings on Grade Increase

2.1 Grade Increase in National Certificates

2.1.1 Overall grade pattern 1994-2004

The distribution of grades in National Certificates for all 13 institutes combined is summarised in Table 1 below.

Table 1: Grade Percentages in National Certificates for all Institutes 1994-2004

<i>Year</i>	<i>Total Certificates</i>	<i>Distinction %</i>	<i>Merit %</i>	<i>Merit 1 %</i>	<i>Merit 2 %</i>	<i>Pass %</i>
1994	4554	13.72	32.39			53.89
1995	4657	13.14	32.83			54.03
1996	5027	13.51	33.24			53.25
1997	5424	13.24	33.30			53.47
1998	5593	12.44	2.56	17.45	27.34	40.21
1999	5684	16.05	.05	19.76	29.96	34.18
2000	6101	16.14		19.14	30.85	33.86
2001	6305	18.08		19.19	30.50	32.23
2002	6851	18.39		20.55	30.08	30.97
2003	6351	19.48		19.12	27.82	33.59
2004	5989	17.72		17.01	25.61	39.66

In 1998 the Merit grade (60-69%) was replaced by two new grades: Merit 1 (63-69%) and Merit 2 (55-62%). The percentage band covered by the grade of 'Pass,' therefore, narrowed from 40-59% to 40-54%.

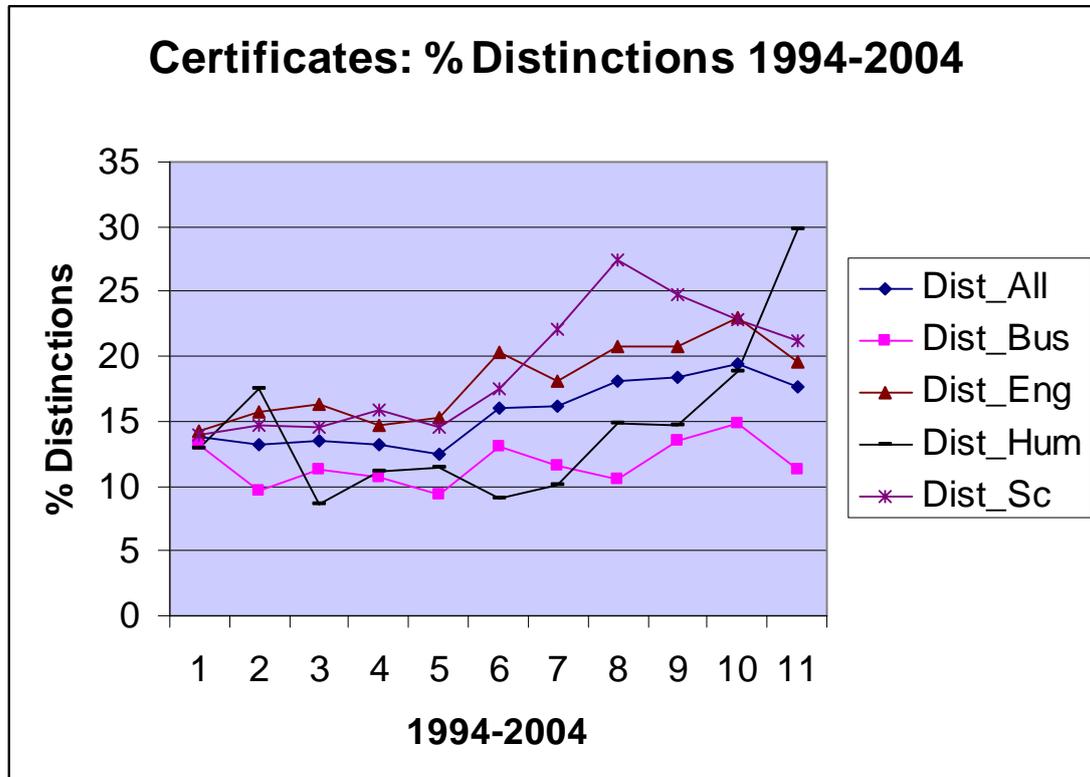
As evident in Table1 above, the immediate effect of the new grading system was to make the award of a Merit or Distinction grade the norm. It seems to be an inversion of the normal meaning of the concept 'meritorious' that the majority should be able to achieve such a status, in that generally it would be expected that in any competitive circumstance those who deserve that accolade would, by definition, be in a minority. This situation is now common in the award of grades in education as a whole. The original meaning of 'merit', 'honours' etc. has been lost with the majority of those sitting most Degrees in the University sector, for example, gaining one or another level of honour. It is, of course, the level that counts. For that reason it is crucial when tracking grade inflation to focus on the higher grades.

2.1.2 Trends in award of Distinctions at Certificate level

Due to the division of Merit into Merit 1 and 2 from 1998 and the lower threshold for Merit 2 being set at 55, the only grade which has retained its meaning over the period 1994-2004 in terms of percentage bands is the

Distinction. This has remained as the grade awarded for percentages at or above 70. The award of this the top grade, as illustrated in figure 1 below, has shown a considerable upward trend over the eleven year period.

Figure 1



In an effort to eliminate the effects of random changes from year to year and to quantify the rate of increase over the eleven year period, the average rate of the Distinction award – as a percent of total awards – was compared for the first three (1994-1996) and the last three years (2002-2004).

Table 2 below summarises the total rates, rates by discipline, rates by Institute and percentage change from the first to the second period. As explained in section 1.3.2 above, in each of the two comparison periods the percentages for each year are averaged across the three years. (Note: The figures for each of the individual years are computed by aggregating total graduates and total Distinctions across all Institutes).

The pattern is one of almost universal increase in the award of the Distinction grade over the period. Overall, an extra 5 out of every hundred graduates during the period 2002-04 obtained the highest grade in their National Certificate examinations when compared with the 1994-1996 period. The extent of the pattern varied greatly by discipline and Institute. An additional eight in every hundred Science and Technology graduates were awarded a Distinction whereas at the other end of the scale less than an extra two in every hundred Business graduates obtained the highest grade. All but one Institute registered an overall increase in the rate of

Distinctions awarded. The percentage increases ranged from 10% at Dun Laoghaire to almost 90% at Galway-Mayo.

Table 2: Percent Change in Distinctions at Certificate level 1994-96 to 2002-04

%Distinctions	1994-96	2002-04	% change
All Certificates	13.46	18.53	+37.7
Business	11.38	13.22	+16.2
Engineering	15.39	21.11	+37.11
Humanities	12.90	21.12	+63.72
Science and Technology	14.38	22.96	+59.67
Galway-Mayo	8.18	15.51	+89.6
Waterford	12.08	21.69	+79.6
Letterkenny	11.45	19.24	+68.0
Athlone	8.41	14.12	+67.9
Cork	13.87	21.12	+52.3
Carlow	14.51	22.05	+52.0
Tralee	13.62	19.41	+42.5
Dundalk	12.04	16.63	+38.1
Sligo	14.03	17.25	+23.0
Limerick	14.10	16.63	+17.9
Dun Laoghaire	21.67	23.82	+9.9
Tallaght	27.96	17.22	-38.4
Blanchardstown	No Certs.	21.65	

In addition to the pattern of increases, another striking feature of the contrast between the figures for the two periods was the greater level of homogeneity across the Institutes in the latter period. While the range across the Institutes in rate of Distinctions awarded is still considerable in the latter period (14.12%- 23.82%), it is not as wide as it was formerly (8.18% – 27.96%). This homogenisation is further evidenced in a smaller standard deviation for those rates in the 2002-2004 period (2.97 vs. 5.49). To maximise accuracy of comparison, the Blanchardstown figures for the 2002-04 period have not been included in this analysis since Blanchardstown did not open until 1999 and therefore no comparison figures exist for the 1994-96 period.

2.1.3 Trends in award of Merit 1 at Certificate level

Analysis of the pattern of change in other grades, as explained above, must be limited to shorter periods due to the new grade bands introduced in 1998.

The important grade to explore is the Merit 1 band, in that the lower current grades of Merit 2 and Pass must inevitably show the inverse of

aggregate changes in the upper grades. The undifferentiated Merit grade disappeared after 1997 rendering it obsolete for analysis purposes. Data on the Merit 1 grade was available for the years 1998 to 2004, allowing for a separate grouping of earlier and later years so as to avoid the effects of year to year variation. The three initial years of the period (1998-2000) were combined and compared with the three latter years (2001-2004). Table 3 below summarises the results.

Table 3: Percent Change in Merit 1 at Certificate level 1998-2000 to 2002-2004

% Merit 1	1998-2000	2002-2004	%change
All Certificates	18.78	18.89	+0.59
Business	18.77	19.87	+5.86
Engineering	17.28	17.50	+1.27
Humanities	25.06	21.96	-12.37
Science/Technology	18.36	17.64	-3.92
Galway-Mayo	17.29	20.23	+17.00
Waterford	16.07	16.86	+4.92
Letterkenny	17.48	17.89	+2.35
Athlone	17.58	17.07	-2.92
Cork	23.50	23.99	+2.09
Carlow	15.99	15.96	-0.19
Tralee	18.73	18.63	-0.53
Dundalk	16.65	17.69	+6.25
Sligo	21.94	19.07	-13.08
Limerick	18.17	18.37	+1.10
Dun Laoghaire	35.50	28.68	-19.21
Tallaght	19.56	16.03	-18.05
Blanchardstown	No Certs.	16.23	

With a few exceptions, changes in the proportion of Merit1 grades awarded were generally negligible. Such change as did occur, involved moves in both directions, with upward trends in some Institutes and disciplines being cancelled out by downward trends in other Institutes and disciplines. The shorter time frame for this analysis may, of course, have masked a more definite longer term trend in Merit 1 awards.

The fact that there was no evidence of a downward trend in the award of the Merit 1 grade, offsetting the increase in the Distinction grade, indicates that the upward trend is operating from the bottom, with those moving up to the top grade being replaced at Merit 1 by individuals moving up from the Merit 2 grade and so on.

As with Distinctions, the various shifts in the proportion of Merit 1 grades awarded across the Institutes resulted in greater homogeneity in the latter period. The standard deviation of the percentage of Merit 1 awards across the Institutes was 3.69 for 2002-2004 as compared with 5.42 for 1998-2001.

2.2 Grade Increase in National Diplomas

2.2.1 Overall grade pattern 1994-2004

The distribution of grades in National Diplomas for all 12 institutions combined is summarised in Table 4 below.

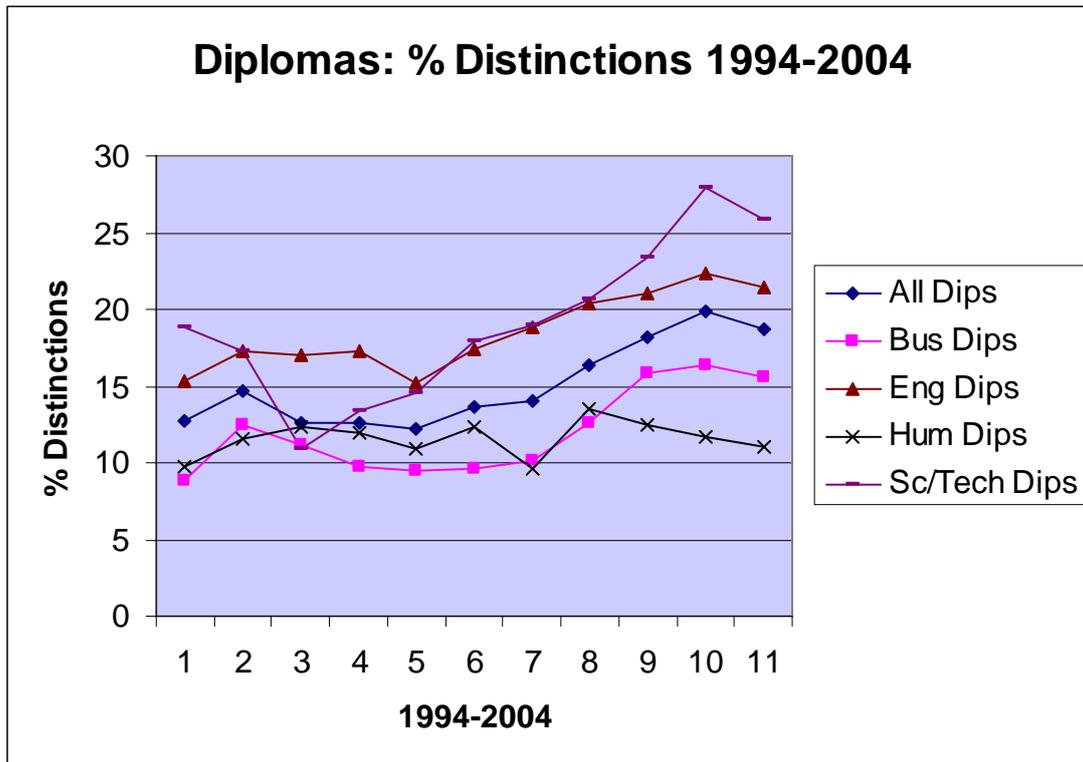
Table 4: Grade Percentages in National Diplomas for Combined Institutes 1994-2004

Year	Diplomas Total	Distinction %	Merit %	Merit 1 %	Merit 2 %	Pass %
1994	3116	12.77	43.23			44.00
1995	3595	14.74	41.14			44.12
1996	4317	12.58	39.61			47.81
1997	4412	12.58	41.64			45.78
1998	4516	12.18	3.28	24.71	34.46	25.38
1999	4616	13.67	.09	23.79	37.72	24.74
2000	5034	14.00		23.56	38.54	23.90
2001	5283	16.41		24.72	35.83	23.04
2002	6370	18.18		26.39	33.23	22.20
2003	7086	19.84		26.19	32.39	21.58
2004	7657	18.68		21.33	30.48	29.52

2.2.2 Trends in award of Distinctions at Diploma level

The same grading system applied to National Diplomas as to National Certificates over the period examined. As evidenced in Figure 2 below, there was a considerable upward trend in the award of the top grade in National Diplomas between 1994 and 2004.

Figure 2



As with Certificates, the first three years were compared with the last three years of the period.

Table 5 below summarises the changes in the award of Distinctions between the combined years of 1994-96 and 2002-04.

The almost universal upward trend in the award of the Distinction grade across disciplines and Institutes is even more marked in Diplomas than in Certificates. The only exception is in the case of Tallaght where there was a very large decline in the rate of Distinctions awarded. This was however against an extraordinarily high baseline, with the 2002-04 rate being much more in line with other Institutes than the 1994-96 figure which was more than double that of the next Institute in the rank order.

The average overall rate of increase between the two time periods of over 41.5% was hugely exceeded in some Institutes. In Letterkenny the increase was nearly four times the average while Galway-Mayo exceeded the average by a factor of 2.

Looking at which Institutes showed more and less pronounced increases in the award of Distinctions, a large Degree of comparability is in evidence between Diplomas and Certificates, especially at the upper end. The same

three Institutes (Galway-Mayo, Waterford and Letterkenny) occupy the top three ranks in both lists, albeit in different orders.

Table 5: Percentage Change in Distinctions at Diploma level 94-96 to 02-04

% Distinction	1994-96	2002-04	% change
All Diplomas	13.36	18.90	+41.5
Business	10.85	15.94	+46.9
Engineering	16.53	21.60	+30.7
Humanities	11.21	11.74	+4.7
Science/Technology	15.66	25.68	+64.0
Letterkenny	8.46	21.96	+159.6
Galway-Mayo	8.52	16.83	+97.5
Waterford	10.41	18.41	+76.8
Dundalk	14.33	24.18	+68.7
Limerick	8.94	12.90	+44.3
Athlone	9.95	13.87	+39.4
Tralee	16.16	22.51	+39.3
Dun Laoghaire	14.43	19.69	+36.5
Cork	17.74	23.54	+32.7
Sligo	14.60	17.65	+20.9
Carlow	16.83	18.47	+9.7
Tallaght*	40.41	15.66	-61.2
Blanchardstown	No Dips.	26.96	
Crawford	No Dips.	No Dips.	

* No Diplomas in 1994

2.2.3 Trends in award of Merit 1 at Diploma level

Table 6 below summarises the pattern of change in the award of the next highest grade – Merit 1. As in the case of Certificates, the Merit 1 grade was only introduced for Diplomas in 1999. The comparison is therefore between the awards in 1998-2000 and those in the period 2001-2004.

Considering National Diplomas in aggregate, there was only a minor upward shift (2.6%) in the rate of Merit 1 awards. A somewhat stronger upward trend existed with respect to Business Diplomas, which was partially balanced out by smaller downward trends in the other three discipline areas. Seven of the 12 Institutes, for which the analysis could be conducted, registered decreases, in the main modest, though the rate at Dun Laoghaire fell by a quarter. Its 1998-2000 rate was exceptionally high, however, by comparison with all other Institutes.

Table 6: Percentage Change in Merit 1 at Diploma level 1994-96 to 2002-04

% Merit 1	1998-2000	2002-2004	% change
All Diplomas	24.02	24.64	+2.6
Business	23.53	26.69	+13.4
Engineering	22.25	20.74	-6.8
Humanities	30.04	29.85	-0.6
Science/Technology	22.37	21.38	-4.4
Galway-Mayo	16.72	28.22	+68.8
Letterkenny	17.82	21.23	+19.1
Waterford	24.63	25.26	+2.6
Sligo	24.81	25.31	+2.0
Cork	28.30	28.82	+1.8
Carlow	22.96	22.15	-3.5
Limerick	25.18	23.37	-7.2
Tallaght	27.51	24.77	-10.0
Athlone	23.20	20.73	-10.6
Dundalk	22.35	19.55	-12.5
Tralee	23.60	20.09	-14.9
Dun Laoghaire	38.78	29.43	-24.1
Blanchardstown	No Dips.	24.87	
Crawford	39.01	No Dips.	

The most pronounced change of all was that of an increase of over two thirds by Galway-Mayo. The same three Institutes (Letterkenny, Galway-Mayo and Waterford) as occupied the top three ranks in terms of increase in the award of Distinctions, again occupied the top three slots with respect to increases in the award of Merit 1 grades.

Again the pattern was in evidence of homogenisation across the Institutes with regard to the proportion of grades awarded. The standard deviation for the rate of Merits 1 across the Institutes was 3.56 for 2002-2004. It was 5.06 for 1998-2000.

2.3 Grade Increase in Bachelor's Degrees

2.3.1 Overall grade pattern 1994-2004

The distribution of grades in Bachelor's Degrees for all 12 institutions combined is summarised in Table 7 below.

Table 7: Grade Percentages in Bachelor Degrees for combined Institutes 1994-2004

Year	Honours Degrees Total	First Class %	2.1 %	2.2 %	Pass %
1994	838	8.23	25.89	39.62	26.25
1995	1065	9.20	29.30	37.84	23.66
1996	1380	12.32	33.26	35.72	18.70
1997	1682	9.69	31.03	39.54	19.74
1998	2049	10.20	28.65	39.78	21.38
1999	2523	11.38	27.27	40.31	21.05
2000	2950	11.36	29.49	39.46	19.69
2001	3534	12.28	27.25	38.71	21.76
2002	4006	13.31	31.63	37.77	17.30
2003	4951	17.27	32.70	31.43	18.60
2004	5858	14.63	29.50	33.39	22.48

2.3.2 Trends in first and upper second awards at Bachelor’s level

The grade bands for Bachelor’s Degrees have remained constant over the eleven year period studied. The rates of change between 1994-96 and 2002-04 in the award of the two higher grades, First Class and Upper Second, are summarised separately in figures 3 and 4 below.

Figure 3

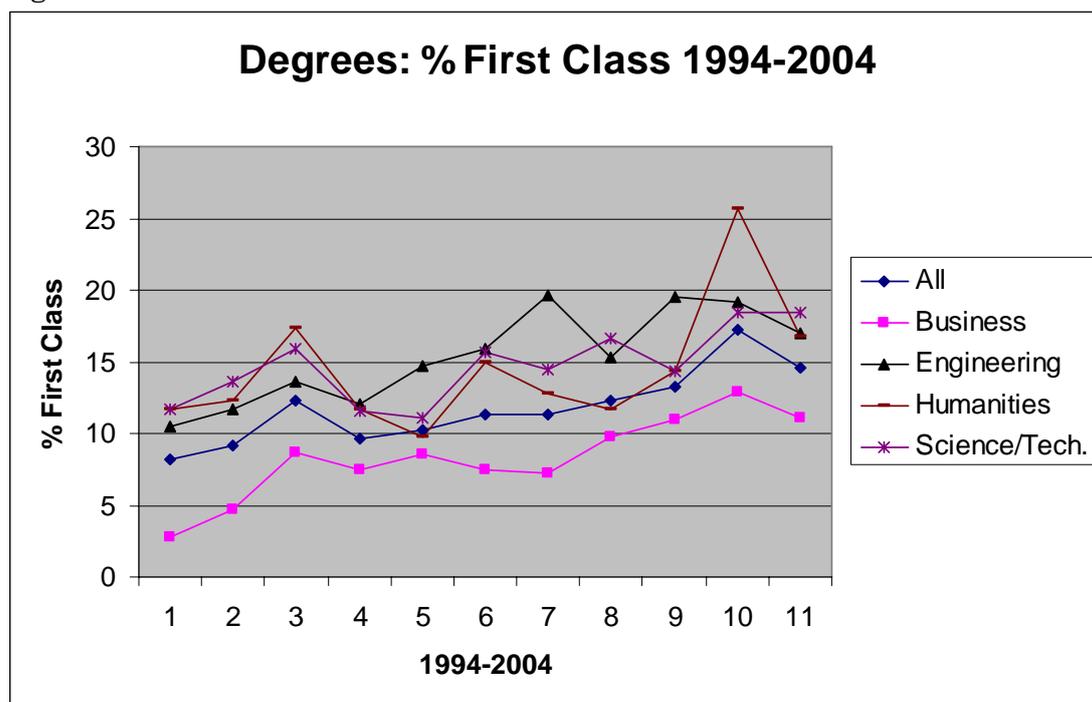
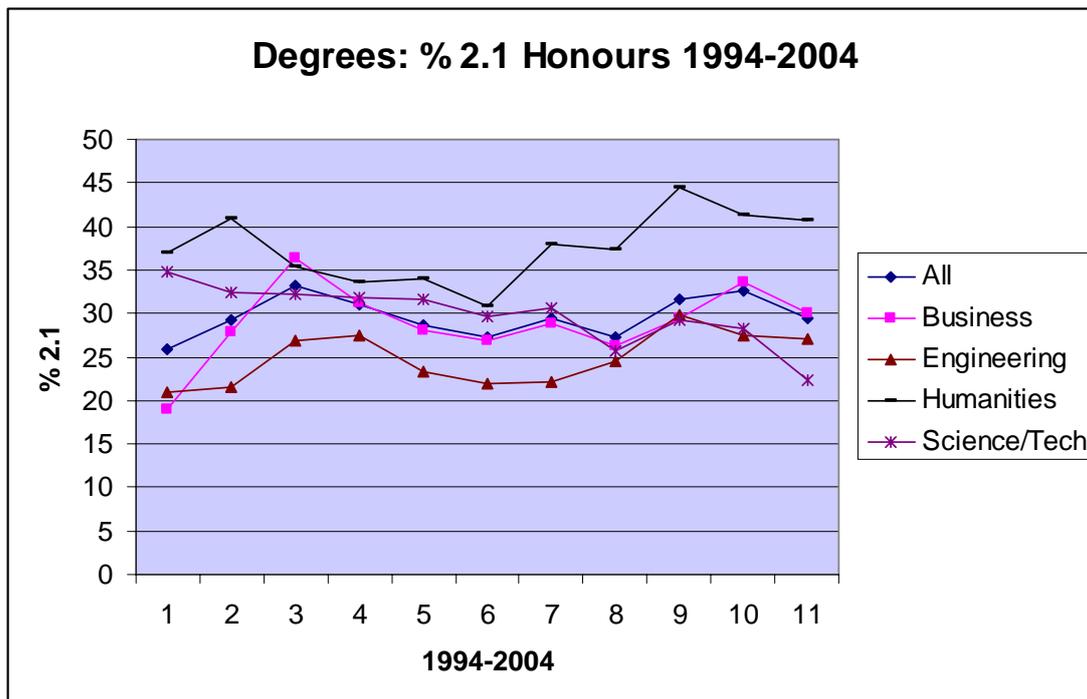


Figure 4



A marked upward trend is clearly evident in the award of First Class grades. The pattern with respect to Upper Seconds is less clear. If there is any consistent pattern, it is a minor one in either direction.

As with Certificates and Diplomas, the first three years of the period were compared with the last three years in an effort to quantify the extent of the trends identified.

Tables 8 and 9 below summarises the figures for Firsts and Upper Seconds respectively.

The award of First Class Honours in Bachelors Degrees followed the upward trend, described above, for Distinctions in Certificates and Diplomas. Between the two periods, the chances of obtaining a First Class Honours Degree increased by over a half with the odds more than doubling with respect to Business Degrees. While the upward trend in Firsts is evident across all four disciplines and all but three of the 12 Institutes that could be compared over the time frame, the variability from one Institute to another is enormous.

The largest increase, that of close to a four fold leap, registered by Tallaght must, however, be treated with some caution, since the first period is represented by the 2006 figures alone. Tallaght had no previous Degree graduates. As against that, the total number of Bachelor's Degree graduates in 2006 was 93, a sufficiently large number to avoid major

random variations in performance. The figures for 2002-04 must certainly be regarded as representative of the Tallaght Institute in that they are based on a total in excess of 1000 Degree graduates. Galway-Mayo, based on full figures for the period involved, showed a near three fold increase in First Class awards and Sligo in excess of a two fold increase. At the other extreme, Letterkenny evidenced a drop of 19.5% and Dun Laoghaire of 16.8%.

The overall trend in 2.1 awards between the two time periods was also upwards but to a much more modest extent and with Science and Technology showing a decrease of nearly a fifth. Comparing the various Institutes, six showed increases ranging from 3.5% to over 60%. Those increases were largely offset by decreases of close to comparable proportions in the other six.

The trend towards greater homogeneity in grade proportions across the Institutes, described above for Certificates and Diplomas, was also in evidence for Degrees. The standard deviations for First Class and 2.1 percentages were 4.7 and 7.0 respectively for the period 2002-2004 as compared with 6.5 and 10.6 for 1994-1996.

Table 8: Percentage Change in Firsts at Degree level 1994-96 to 2002-04

	% First Class 1994-96	% First Class 2002-04	% change
All Bachelor's Degrees	9.92	15.07	+51.9
Business	5.36	11.66	+117.5
Engineering	11.90	18.53	+55.7
Humanities	13.77	18.92	+37.4
Science/Technology	13.76	17.05	+23.9
Tallaght*	6.45	24.39	+278.1
GMIT	5.17	14.86	+187.4
Sligo	6.36	14.03	+120.6
Tralee	6.44	11.92	+85.1
Carlow	8.97	16.27	+81.4
Waterford	11.20	18.39	+64.2
Cork	11.44	14.29	+24.9
Dundalk	8.22	9.23	+12.3
Athlone	8.82	9.47	+7.4
Crawford	25.91	22.57	-12.9
Dun Laoghaire	21.43	17.83	-16.8
Limerick	14.98	12.06	-19.5
Letterkenny	No Degrees	11.72	
Blanchardstown	No Degrees	29.83	

*No Degrees in 1994 or 1995

Table 9: Percentage Change in 2.1 at Degree level 1994-96 to 2002-04

	% 2.1 1994-96	% 2.1 2002-04	% change
All Bachelor's Degrees	29.48	31.28	+6.1
Business	27.79	31.07	+11.8
Engineering	23.12	28.17	+21.8
Humanities	37.73	42.06	+11.5
Science/Technology	33.08	26.63	-19.5
GMIT	22.82	36.64	+60.6
Carlow	22.17	31.20	+40.7
Crawford	34.84	48.70	+39.8
Cork	26.86	32.00	+19.1
Waterford	26.40	31.18	+18.1
Sligo	33.76	34.93	+3.5
Tralee	24.78	24.67	-0.4
Dun Laoghaire	43.95	37.55	-14.6
Limerick	40.01	31.44	-21.4
Athlone	34.81	25.08	-28.0
Tallaght*	56.99	34.65	-39.2
Dundalk	44.72	22.30	-50.1
Letterkenny	No Degrees	26.82	
Blanchardstown	No Degrees	25.30	

*No Degrees in 1994 or 1995

2.4 Summary of temporal trends in grading

Across the Institutes of Technology a number of clear patterns are in evidence with respect to all three levels of qualification examined. The rate of top grade awards, Distinctions and First Class Honours, has increased very substantially over the eleven year period. The increase is in the order of 40% for Distinctions in both Certificates and Diplomas and in the order of 50% for First Classes in Degrees. The relative size of the increases varies considerably from one qualification level to the next and across the four disciplines, but in every instance there is an increase.

There is no offsetting decrease in the next grade level, though there is no very substantial increase either. The 2.1 award at Degree level shows an overall increase of around 6% while the increases in Merit 1 at Certificate and Diploma levels are approximately 0.55% and 2.5% respectively.

The rate and direction of change in grade patterns varies widely from Institute to Institute as indeed does the proportion of each grade awarded, though there is clear evidence of a trend towards homogenisation with

respect to the latter. Four Institutes, Galway-Mayo, Waterford, Tralee and Cork, stand out as showing substantial increases in the top grade across all three qualifications. Even within those four Institutes there remains a high level of variance, with GMIT showing in the region of three times the rate of top grade growth as compared with Cork, though in each case from a much lower baseline. Other Institutes showed substantial increases in the top grade in two out of the three qualification levels. Those were Carlow (Degree and Certificate), Letterkenny and Dundalk (Diploma and Certificate). Tallaght, discussed above, and Sligo showed large increases in First Class Honours at Degree level but not in Distinctions at Certificate and Diploma level.

3 Is grade increase really grade inflation?

3.1 Are the improved grades a function of increase in student ability over time?

3.1.1 Changes in CAO entry points over time for Certificates/Diplomas

The most obvious non-grade inflation explanation for an improving pattern of grades is change over time in the cohorts admitted to those courses, specifically improvements in the ability and motivation of students recruited into the Institutes of Technology. This should be evident in a pattern of higher CAO entry points among those entry cohorts that subsequently furnished the 2002-2004 graduates as compared with those furnishing the graduates for the earlier comparison period of 1994-1996. The improvement in CAO entry points should be especially marked in those Institutes showing the greatest level of upper grade increases.

As an initial test of the hypothesis that improvements in the academic ability of the entry cohorts accounts for improvements in graduation grades, the percentage of Certificate and Diploma courses for each of the years 1991 to 2002 across the 14 Institutes, with minimum entry points within each of five bands was computed. Those figures are listed in Table 10 below. For the purposes of this table a small number of courses in some Institutes were not included because their minimum point figures were calculated in irregular ways, taking into account, for example, points awarded for work portfolios in addition to Leaving Certificate grades. It was not possible to eliminate the grades from such courses from the overall analysis of results carried out. However, the number of such courses is so small as to have very little impact on the overall figures. Figures from Dun Laoghaire and Crawford have not been used in any of the analyses of points reported below because of the high proportion of these courses that have irregular points scoring systems.

The Nursing Diploma courses, first admitted through the CAO in 2001, were not included in table 10 above because they could have no bearing on the Certificate graduation pattern. Table 11 below shows the 2001 and 2002 figures when the nursing courses are included.

Table 10: Minimum points for Certificate/Diploma courses 1991-2002

Min Points	% of all courses					
	1991	1992*	1993	1994	1995	1996
<100	0.60	0.58	1.13	7.03	8.59	10.58
100-199	3.60	8.67	16.38	22.16	30.30	37.50
200-299	65.30	66.47	62.15	46.49	37.88	33.63
300-399	26.90	20.23	17.51	21.08	20.20	15.87
400+	3.00	4.05	2.82	3.24	3.03	2.40
<250	26.30%	43.30%	49.10%	56.22%	61.60%	68.27%
All Qualified Applicants	0%	0%	0%	5.90%	8.10%	10.60%

	1997	1998	1999	2000	2001	2002
<100	8.71	13.71	20.15	22.75	15.40	18.00
100-199	28.22	20.16	25.69	24.70	33.20	32.30
200-299	39.83	44.35	33.99	33.33	32.05	33.90
300-399	20.33	18.95	17.99	16.86	17.76	14.10
400+	2.90	2.82	2.37	2.35	1.54	1.60
<250	57.50%	59.90%	66.80%	66.01%	67.18%	69.00%
All Qualified Applicants	8.70%	13.70%	20.20%	22.40%	13.90%	12.90%

*A1,A2 etc introduced and only one LC sitting taken into account

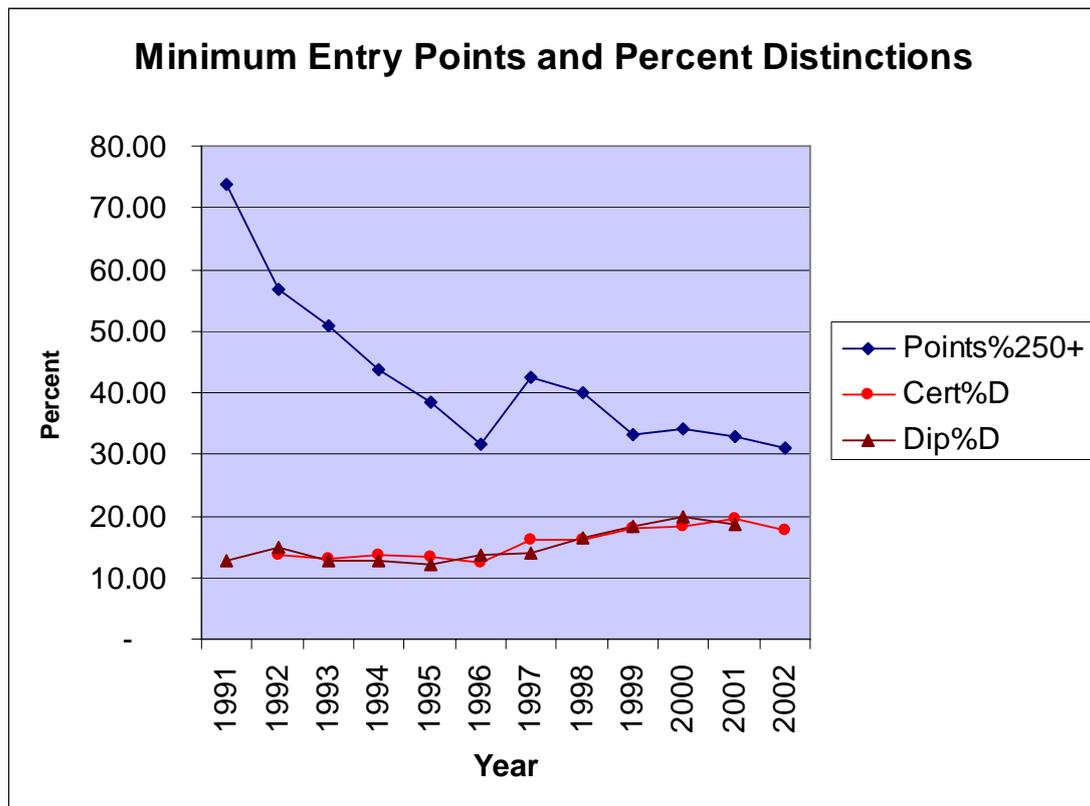
Table 11: Certificate/Diploma courses including Diploma in Nursing for 2001 and 2002

Minimum Points	Percentage of all courses	
	2001	2002
<100	14.81	16.73
100-199	32.22	30.80
200-299	31.11	33.46
300-399	20.30	17.10
400+	1.48	1.90
<250	64.81	65.78
AQA	13.33	12.17

It is clear from table 11 that entry points have declined very significantly throughout the period of this analysis. Between 1992 and 2002 the proportion of Certificate and Diploma courses, to which entry could be

gained at less than 250 points, increased from 43.3% to 69% (66% if Nursing Diplomas are included.) Figure 5 below illustrates the conflicting pattern of increasing proportions of top grades over a time period when entry points were in heavy decline. The scale of the conflict is underemphasised visually in the graph. It should be noted that the relative increase in the proportion of Distinctions awarded is not far from the relative decrease in courses requiring 250 or more points for entry. While many less well prepared and academically weaker students were being admitted into courses in the IOT system, they were at the same time graduating with much better results.

Figure 5



Note: The years refer to the years students entered their courses. The %D graphs (two lowest lines) refer to the % of those same cohorts that, two years later for Certificates and three years later for Diplomas, obtained Distinctions. Thus, for example, the final dots on the points graphs refers to the points for 2002 but the final dot on the Cert%D is for 2004 – when the 2002 entry group graduated with Certificates. There is no Diploma dot matching the 2002 points because 2005 figures were not available for this study.

3.1.2 Are minimum course entry points a fair measure of overall student ability?

It is technically possible that more courses with lower minimum points may not have resulted in a proportionately larger cohort of weaker students entering courses. There are two reasons for this. Firstly, minimum entry points are exactly that and many students will, of course, enter on much higher points. Secondly, the impact of each course on the

overall pattern is dependent on the number of students admitted on to it. Because the Central Applications Office(CAO) published the median points for each course in 2002 it was possible to check the extent to which minimum points tend to predict the typical points on which students enter the course. A significant correlation between minimum and median points in any one year across the courses in the IOT system would strongly demonstrate that the general academic ability of students on courses, as evidenced through the Leaving Certificate, rises and falls in line with minimum point figures.

The correlation between minimum and median points for all Certificate and Diploma courses (n=258) in 2002 yielded a coefficient of $r = .788$ ($p < .001$), by any standards a very strong correlation indeed. It means that 62.1% of the variance in median points may be predicted from the pattern of minimum points. This indicates that minimum points act as a quite good proxy for median or typical points. Students admitted to lower points courses are, on average, an academically weaker group.

As for the problem that courses vary in terms of the number of students admitted and the points for larger intake courses will have a proportionately greater effect on the quality of the student body as a whole, this proves to be a more important issue. The range of intake cohorts for the 258 courses in 2002 was from 1-240. Over 20% of courses took in less than 12 students, while at the other end of the scale 8.8% admitted in excess of 100. For 2002, the correlation between the numbers of students admitted on courses and the minimum points is positive and significant ($r = .191$, $p < .002$, $n = 243$). This means that there is, indeed, a trend whereby courses with larger intakes tend to have higher minimum points. If this holds true for other years it means that decline in points in figure 5 above overestimates the real impact on the academic ability of the student population as a whole. The question is to what extent is this so? The answer lies in the size of the correlation coefficient. While statistically significant or greater than would occur by pure chance, the tendency for lower minimum points to be associated with courses taking in fewer students is not very strong. A correlation of .191 means that only 0.036% of the variance in the number of students admitted on courses can be predicted from the minimum points' pattern.

The conclusion must be that, while the proportion of courses below any given cut-off entry point, say 250, underestimates somewhat the average academic ability of the overall student population, it does not do so to such an extent as to negate the value of minimum points as an indicator of change in student quality.

It is clear then, at very least, that there is no evidence of an improvement in the academic quality of students entering Certificate and Diploma courses over the period, which might account for the increase in higher grades awarded over the period. On the contrary, the evidence points

entirely towards a significant decline in average student quality, which might have been expected to have led to a trend of fewer high level grades.

3.1.3 Change in CAO points for Ab-Initio Degrees

In so far as Bachelor Degrees are concerned over the period 1994-2004, a significant proportion – particularly in the later years – were admitted directly onto ab-initio Degree courses through the CAO system. The remaining Degree graduates were initially admitted to Certificate or Diploma courses and accessed Degree courses via the ‘ladder system.’ Those entrants have been dealt with in the analysis of Certificate and Diploma courses above.

The pattern of points for those admitted onto ab-initio Degree courses in the years 1991 to 2000 is summarised in table 12 below. Given that such Degree courses are generally four years long and that the period of grade analysis in this study is 1994-2004, why are the 1990 CAO figures not included? This was because the present CAO points system dates back only to 1991. It would be very difficult to compare points used in 1990 with the subsequent years.

Table 12: Ab Initio Degree Course Minimum Points 1991-2000

Min Points	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
	N=13	N=16	N=14	N=14	N=17	N=17	N=21	N=25	N=31	N=36
	%	%	%	%	%	%	%	%	%	%
<400	84.6	93.8	92.9	92.9	88.2	94.1	90.5	92.0	96.8	97.2
<350	61.5	56.3	64.3	57.1	52.9	47.1	47.6	76.0	80.6	83.3
<300	15.4	12.5	14.3	21.4	17.6	17.6	14.2	8.0	16.1	25.0

One immediately discernible feature of the table is that in any year only a small minority of Degree courses in the IOT system require points in excess of 400. By comparison over that period, only a minority of University Degree courses could be accessed at less than 400 points. For example, in the period 1992-93, 52.3% of courses across the seven Universities had minimum points of 400 and above. For the combined years of 1998-2001, this had jumped to 70.6% (O’Grady and Guilfoyle, 2007). In the Institutes of Technology, the proportion of Degree courses requiring 400 or more points shrunk to very marginal proportions towards the end of the period – less than 3% in 2000. Another trend that stands out is a marked rise after 1997 in the proportion of Degrees allowing entry at less than 350 points.

An analysis within the NUI constituent Universities (UCD, UCC, NUI Galway, NUI Maynooth) found that only 3% of graduates with under 405 points and only 7% of those between 405 and 450 points obtained a First Class Honours Degree (NUI, 2004). By comparison, the minimum points

profile outlined in the above table offers little to explain the rise in Firsts in the Institutes of Technology over the period under study.

Over the period 1991-2000, there were some upward and downward shifts in minimum points. In so far as any overall trend exists, it is in the direction of falling minimum points in the later years. As with Certificates and Diplomas, the evidence of student ability at entry to *ab initio* Degree courses offers nothing to explain the rising trend in higher grades. It clearly is not the case that the high rate of Firsts awarded at Degree level in more recent years is a product of a cohort of exceptional students coming straight onto Degree courses. If that were the case, points would be markedly rising and not dropping for such courses. As discussed above, the falling points for entry to National Certificate and National Diploma courses – the alternative route to Degree courses - offers no clue either as to why grades in Degrees should be in sharp ascent.

3.2 Comparing Institutes, do entry points predict grade patterns at Certificate and Diploma levels?

3.2.1 Variation among Institutes in proportion of upper grades awarded

There are very large differences in the proportion of upper grades awarded in different Institutes of Technology. Table 13 summarises the ranges across the Institutes for each of the three qualifications examined based on averaged percentages in each Institute for the years 2002-2004, the three most recent years in the period studied.

Table 13: Range across Institutes in % of highest grades awarded in the combined years of 2002-04

Qualification	Lowest% (2002-04)	Highest% (2002-04)
Certificate	14.1 (Distinctions)	23.8 (Distinctions)
Diploma	12.9 (Distinctions)	27.0 (Distinctions)
Degree	9.2 (1st Class)	29.9 (1 st Class)

Is this explicable in terms of differences in the ability of students attracted to the different Institutes or is it down to factors operating within Institutes? This is an important question, in that a finding of variance among Institutes in the proportion of higher grades awarded, independent of the academic quality of students admitted, would add further weight to the suggestion at the heart of the ‘grade inflation’ proposition: that grades and actual student performance over time have failed to maintain a constant relationship. After all, if at any given time it is possible for an academically weaker intake cohort in one Institute to emerge with equal

or superior grades to those obtained by a stronger cohort in another, it suggests that there may be a similar across the board temporal trend.

3.2.2 Comparison of Institutes using weighted median points

An initial test of the hypothesis that the differing proportions of higher grades are not a function of student ability was conducted using the 2002 median points (the only year of the 11 examined in this study for which median course points were published by the CAO) for Certificates and Diplomas and taking into account the varying numbers entering onto individual courses.

The method employed involved the following steps:

1. For each Institute, the median points for each Certificate and Diploma (not including Nursing) course was multiplied by the number of places on the course in each case resulting in a weighted median point score for each course.
2. The figures obtained at step 1 for each course were summed and the result divided by the combined number of course places in the Institute, which resulted in what may be called a weighted (for student numbers) mean of the course medians. This figure acts as an overall general indicator of the typical points of students entering each Institute in 2002.
3. The four Institutes (Crawford and Dun Laoghaire being eliminated because of the high proportion of uniquely computed points) with the highest weighted mean of the course medians (WMCM) – indicative of higher points' profiles among students were identified. They were:

Cork (WMCM = 375)
Waterford (WMCM = 342)
Galway-Mayo (WMCM = 336)
Limerick (WMCM= 335)

4. The four Institutes with the lowest mean of the weighted course medians (MWCM) – indicative of lower points' profiles were identified. They were:

Letterkenny (MWCM = 274)
Carlow (MWCM = 274)
Dundalk (MWCM = 277)
Tralee (MWCM = 278)

5. The proportion of combined Distinction and Merit 1 Certificate awards in 2004 (Certificate graduation year for 2002 entrants) in each of the eight Institutes was computed and a comparison made between the higher and the lower entrance points' groups. It was not possible to carry out a comparison with Diploma awards because 2005 figures were not available at the time of the study.

It is noteworthy that the four Institutes of Technology with the higher points' profiles are the four largest Institutes of Technology, all with populous urban catchment areas. On the other hand the four lower points' profile Institutes are smaller and are all located in less populous provincial towns.

Table 14 lists the combined Distinction and Merit 1 percentages at Certificate level for each of the two groups of Institutes

Table 14: Percentages of upper grades in Certificates in 2004 at 'high' and 'low' point Institutes

	% Distinction (2004)	% Merit 1 (2004)	Combined % (Distinction + Merit 1) (2004)
High Points Institutes (2002)			
Cork	19.06	20.81	39.86
Waterford	21.04	19.78	40.81
GMIT	15.07	18.09	33.16
Limerick	15.51	14.58	30.09
Mean of 4 Institutes	17.67	18.32	35.98
Low Points Institutes (2002)			
Letterkenny	22.85	16.85	39.70
Carlow	20.67	14.25	34.92
Dundalk	16.28	16.80	33.08
Tralee	20.99	16.05	37.04
Mean of 4 Institutes	20.20	15.99	36.19

The hypothesis that across Institutes grades awarded can *not* be explained through the varying academic quality of their respective student intakes is strongly supported in this instance. The average median points on which students entered their courses, weighted for numbers in each course, differed considerably between the two groups of Institutes. For the higher points' group the mean was 347, while for the lower points' group it was 276. Given the nature of distributions around median scores, it is entirely reasonable to assume that the four higher point Institutes admitted a significantly larger proportion of more academically capable students, yet produced fewer Certificate graduates with Distinctions and fewer with

higher grades overall. It is very difficult to escape the conclusion that the larger and the smaller Institutes have been applying different standards, with the larger ones demanding significantly better academic performance before awarding top grades.

3.2.3 Further validation of minimum points as a measure of student ability

To check for the possibility of some unknown temporal artefact rendering unrepresentative the 2002 intake and its subsequent performance in Certificate examinations, a longer time frame needed to be examined.

Unfortunately median points were not available for any year other than 2002 in the 1994-2004 period over which results were collated. Evidence given above indicates that minimum points act as a reasonably accurate predictor of overall point profiles. The 2002 figures were again employed to check how accurate it is to use the proportion of courses within an Institute allowing entry on lower points to differentiate Institutes with overall lower and higher points' profiles among their student intake. The check was to establish to what extent the proportion of courses (excluding Nursing) in that year allowing entry at less than 150 points distinguished the higher and lower point groups, as defined above, using median points weighted for course numbers. Table 15 illustrates the contrast between the two groups of Institutes.

Table 15 Proportion of courses with minimum points below 150 for Institutes with highest and lowest weighted median entry points in 2002

	% <150 (2002)
High Points Institutes (as per 2002 weighted medians)	
Cork	None
Waterford	None
GMIT	38.2
Limerick	None
Low Points Institutes (as per 2002 weighted medians)	
Letterkenny	79.0
Carlow	60.0
Dundalk	64.0
Tralee	42.0

With Galway-Mayo standing out as something of an exception, the contrast could hardly be starker. Even Galway-Mayo has a considerably lower proportion of courses with entry below 150 than is typical of the four lower point Institutes. This strongly suggests that the proportion of low entry point courses serves as a sound means of predicting those Institutes with a lower overall points' profile among their student intakes.

3.2.4 Comparison by percentage of grades awarded in Certificates of high and low points' Institutes 2002-2004

Using minimum points as a predictor variable, a recent three year span was evaluated so as to obtain relatively current data over a period long enough to eliminate the influence of random, year to year variations. The proportion of low point courses was compiled from CAO lists (excluding Nursing) for the period 2000-2002. Institutes were rank ordered in terms of the proportion of their courses over the three years that had less than 150 points as the minimum entry requirement. To maximise the chance of identifying any trend between points' profiles and grade performance, the four with the highest proportion of courses with minimum points below 150 (Low points Institutes) and the four with the lowest proportion of courses below 150 (High points Institutes) were then compared on the proportion of Distinctions and Merits 1 awarded at Certificate level in each of the four corresponding (entry year + 2) graduation years. Table 16 below summarises the findings.

Table 16: Rate of Distinction and Merit 1 awards at Certificate level between 2002-2004 in the four Institutes with the fewest courses at minimum points below 150 and the four with the most courses at minimum points below 150 between 2000-2002.

	Courses – Mean % <150 (2000-2002)	Mean % Distinctions. (2002-2004)	Mean % Merit 1 (2002-2004)	Mean % (Distinctions + Merit 1)
HIGH POINTS				
Cork	0	21.12	23.99	45.11
Waterford	0	21.69	16.87	38.56
Blanchardstown	0	21.65	16.23	37.88
Limerick	0	16.63	18.04	34.67
Mean	0	20.27	18.79	39.06
LOW POINTS				
Letterkenny	57.0	19.23	17.90	37.13
Carlow	58.5	22.05	15.96	38.01
Dundalk	54.6	16.60	17.70	34.30
Athlone	80.3	14.12	17.07	31.19
Mean	62.6	18.00	17.16	35.16

A comparison of the percentage of upper grades awarded in the two groups of Institutes (39.16% versus 35.16%) does shows a weak pattern of better grades going together with higher minimum entry points. However, the difference between the two groups of Institutes in terms of their respective rates of higher grades is remarkably small as compared with the enormous contrast in their points' profiles. When Distinctions are looked at on their own, the gap between the higher and lower points' Institutes is even narrower.

Across the three years examined, the minimum entry points were below 150 in an average of 63% of courses in one set of four Institutes, while in another set no course over those years allowed entry at below 150 points. Despite this, only about 4 out of every 100 students extra got higher grades in their National Certificates in the higher points group with only just over 1 out of 100 extra getting a Distinction. Even this gap did not hold in a pairwise comparison of the members of the two groups. Cork exerted a disproportionate upwards effect on the average of higher points' Institutes, while Athlone exerted a similar downwards effect on the lower group. With those excluded, the gap in the rate of higher grades awarded between the two remaining groups of three Institutes closes to 1.62 with Letterkenny in the lower points' group having a higher proportion of upper grades than Limerick in the higher points' group. Carlow in the lower points' group had the highest proportion of Distinctions among all eight Institutes.

3.2.5 Comparison by percentage of grades awarded in Diplomas of high and low points' Institutes 2002-2004

Does the same pattern as identified above for Certificates hold for Diploma graduates? To throw light on this, the four Institutes with the highest and the lowest percentages of entry points below 150 (this time including Nursing) were identified for the period 1999-2001 and compared for their proportions of Distinctions and Merits 1 in Diplomas for the years 2002-04.

The comparison between them is summarised in Table 17 below.

Table 17: Rate of Distinction and Merit 1 awards at Diploma level between 2002-2004 in the four Institutes with the fewest courses (Certificates and Diplomas) at minimum points below 150 and the four with the most courses (Certificates and Diplomas) at minimum points below 150 between 1999-2001.

	Courses – Mean % <150 (1999-2001)	Mean % Distinctions. (2002-2004)	Mean % Merit 1 (2002-2004)	Mean % (Distinctions + Merit 1)
HIGH POINTS				
Blanchardstown	0	27.63	24.20	51.83
Cork	0	23.54	28.82	52.36
Waterford	0	18.41	25.26	43.67
Limerick	0	12.90	23.34	36.24
Mean	0	20.62	25.40	46.02
LOW POINTS				
Dundalk	50.00	24.18	19.54	43.72
Letterkenny	45.14	21.96	21.24	43.20
Carlow	51.40	18.40	22.21	40.61
Athlone	71.43	13.87	21.72	34.59
Mean	54.49	19.60	20.43	40.03

There is a slight gap in the proportion of Distinctions (20.62 versus 19.60) in favour of the higher points' Institutes. When the two higher grades are combined the gap opens up somewhat more, due to the higher points' Institutes awarding proportionately more Merit 1 grades. However, as with Certificates, the gaps are small and unreliable when individual Institutes in the two groups are compared. Limerick from the higher points' group has a lower proportion of Distinctions and Merits 1 than all but one of the low points' Institutes. Waterford from the high points' group is also slightly lower than Dundalk and only marginally higher than Letterkenny on the proportion of higher grades, despite the two latter Institutes being in the low points' group. Dundalk in the lower points' group is the second highest awarder of Distinctions overall.

Thus, for Diplomas it is also fair to say that CAO points do not act as a reliable predictor of which Institutes award more Distinctions and Merit 1 grades.

3.2.6 Summary of findings on variance across Institutes in grades awarded and in CAO entry points for students

As with the evidence on median points described above for 2002, it is clear that the proportion of courses accessible on low points does not to any reliable or useful extent predict grade outcomes across Institutes. With a few exceptions, Institutes having very disparate entry points' profiles among their students fail to demonstrate the expected differences in terms of the grades attained by their graduates in National Certificate and Diploma courses. Given the strong relationship found between median and minimum points, it has to be concluded that the points' profile of students entering different Institutes fails to predict the differences among Institutes in the proportion of their students that achieve higher grades in awards at graduation. The academic standards expected would appear to differ markedly from Institute to Institute. The evidence described above suggests that higher standards prevail in the larger Institutes of Technology.

3.3 Have CAO points become harder to get?

A potential explanation in theory for a temporal trend whereby students with lower CAO points' profiles are doing better in third level examinations is that over the period points have become harder to get and, as such, any given point level indicates a higher level of academic ability than previously. Such a trend, if it were to exist, would almost certainly have the effect of producing a decline in average CAO points as higher grades at Leaving Certificate became less easily attained.

The period over which the CAO has published relevant figures (1995-2005) was examined. Table 18 below categorises the distribution of CAO points over that period.

Table 18 Distribution of CAO points 1995-2005

Year	<100	100-199	200-299	300-399	400-499	500+
1995	19.9	19.2	19.7	21.9	15.5	3.8
1996	18.9	18.0	19.8	22.1	17.0	4.2
1997	18.2	18.6	19.4	22.1	17.1	4.6
1998	14.9	19.0	20.5	22.7	17.8	5.1
1999	13.0	17.8	20.5	23.9	19.0	5.7
2000	12.4	16.7	20.5	25.5	19.1	5.7
2001	11.8	16.1	20.4	25.4	19.7	6.7
2002	12.1	15.7	20.2	25.1	20.1	6.7
2003	11.3	15.1	20.3	25.6	20.4	7.3
2004	11.9	14.7	19.4	25.4	20.7	7.9
2005	11.7	14.9	19.1	25.4	20.9	8.0

A clear and consistent pattern of increase in CAO points is evident. The proportion of candidates getting 400+ points climbed annually from 19.3% in 1995 to 28.9% in 2005. At the other end off the scale there was a marked decline in the proportion of candidates obtaining less than 200 points. This proportion fell from over 39% in 1995 to 26.6% in 2005.

There are many possible factors that may contribute to the upward trajectory in CAO points but there is certainly no evidence to suggest that points have been showing any pattern of being harder to get. The evidence would appear to point in quite the opposite direction. O’Grady and Guilfoyle (2007) analysed the pattern of grades in individual Leaving Certificate subjects and reported very substantial and continuing grade increase up to the present and dating back to before the current grading system came into place in 1991. This is, almost certainly, a function of grade inflation at Leaving Certificate level rather than improved scholastic performance.

It is to be expected that educational attainment at second level, as measured through CAO points, should predict educational readiness, ability and motivation for third level courses. Consequently, CAO points should predict third level grades. The most extensive data on this issue comes from an unpublished study carried out within the NUI constituent colleges. It found a strong predictive relationship between CAO points and grades achieved in Bachelor’s Degrees (NUI, 2005). A previous study conducted across 27 higher education colleges by the Commission on the Points System, with albeit a relatively small sample of 449, found a strong relationship between CAO points and higher education performance (Commission on the Points System, 1998).

It is feasible that, within individual Institutes of Technology, CAO points may act as a reasonable predictor of grades awarded. However, it is clear from the data discussed above that student entry points' profiles fail to explain differences in grade profiles *between* Institutes. Considerable heterogeneity on the input side, as evidenced by differing points' profiles, is simply not matched by a similar heterogeneity on the output side in grade profiles. This fits with the grade inflation concept, where over time grades become less a function of academic ability and performance and more a product of extraneous variables.

3.4 Is the variance in Institute grades a function of discipline/subject variance?

Because there is a considerable variance in the higher grades awarded in different disciplines with higher rates of Firsts, Upper Seconds and Distinctions being awarded in some than others, it is possible that variations between Institutes is a function of different proportions of their graduates in the different discipline areas.

To check for this possibility the variance in the rate of top grade awards across Institutes within each discipline and qualification was examined. A separate one way analysis of variance was conducted for each of the three qualification levels, within each of the four disciplines. In all 12 tests, statistically significant variance across the Institutes was discovered. This means that when the effect of discipline is eliminated, Institutes still vary widely in terms of the proportion of top grades awarded in Degrees, Diplomas and Certificates.

The Degree of variation in grade awards within disciplines is easily appreciated through an examination of the ranges and standard deviations in the proportion of top grades over the years 1994-2004. Table 19 below summarises those figures. The means in this table are for that Institute the percentages of top grade awards each year summed over all years and divided by the number of years. To take an example, Certificates in Business at line 2 in Table 19, the Institute with the lowest average proportion of Distinctions in Business Certificates had an average or mean percentage of 8.38% of Business Certificate graduates obtaining Distinctions over the 11 years of this study. The Institute with the highest average in Business awarded a Distinction grade to 16.06% of Business Certificate graduates – also computed across the 11 years.

For each discipline, the maximum number of years is 11 and for the course ("All" in Table 19) figures it is 44 because each of the disciplines may feature in any or all of the eleven years. For each discipline, only where means are based on a minimum of five years are they included in the ranges. Most Institutes over the period 1994-2004 did not award

Certificates, Diplomas and Degrees in all of the eleven years in each of the four discipline areas. For combined disciplines (“All” in Table 19) only if there are 20 contributing course groups are they included in the range. This is in an effort to avoid unrepresentative figures based on small numbers. The overall effect is to eliminate some outlying figures, especially on the high side.

Table 19: Figures for lowest and highest average yearly rate of top grade awards and standard deviations of average yearly rate of top grade awards across the Institutes of Technology between 1994 and 2004.

Courses	Range of Means and Ns	Std Dev.
<i>Certificates</i>		
All	14.16 (40) - 22.58 (40)	10.96
Business	8.38 (11) – 16.06 (11)	5.79
Engineering	14.67 (11) – 24.21 (11)	6.20
Humanities	6.70 (11) – 38.24 (07)	21.03
Science/Technology	12.89 (11) – 26.45 (11)	8.61
<i>Diplomas</i>		
All	11.44 (40) – 24.48 (36)	9.85
Business	7.61 (11) – 19.17 (11)	7.39
Engineering	11.70 (11) – 23.25 (10)	6.91
Humanities	5.71 (06) – 41.89 (06)	11.50
Science/Technology	9.98 (11) – 27.09 (11)	10.56
<i>Degrees</i>		
All	8.61 (21) – 27.78 (29)	10.32
Business	4.51 (11) – 21.98 (09)	7.14
Engineering	6.15 (11) – 32.33 (07)	11.15
Humanities	4.82 (05) – 22.10 (11)	10.87
Science/Technology	7.61 (11) – 24.11 (09)	10.45

The size of the ranges within every discipline illustrates the extent of variation in the award of top grades that cannot be attributed to variations across disciplines. It is notable that six of the twelve within-discipline standard deviations are greater than their respective overall combined discipline standard deviations. As already indicated, for each of the three qualification levels, each of the within-discipline one way analysis of variance of Institute top grade percentages were found to be significant.

There is, therefore, a major Institute effect on grades that is not a function of the discipline studied.

4. Discussion

4.1 Grade Increase or Grade Inflation

An analysis of the grades awarded in the Institutes of Technology in National Certificates, National Diplomas and Bachelor's Degrees over the period 1994-2004 furnishes compelling evidence of significant grade increase throughout the sector over that period.

Comparing the combined grade results for the three year period 2002-04 with those for the earlier three year period 1994-96, the rate of top grade awards increased by 38% in National Certificates, 42 % in National Diplomas and 52% in Degrees. While there is evidence of considerable variation in the rate of change across the various Institutes, all Institutes contributed to the overall pattern.

There is clear evidence of a significant decline over the period studied in the academic standard of students being admitted into the Institutes of Technology. This is evident from the fall in CAO minimum points required to access courses over the eleven years. Between 1992 and 2002 the proportion of Certificate and Diploma courses, to which entry could be gained at less than 250 points, increased from 43.3% to 66%. Between 1991 and 2000 the proportion of *Ab Initio* Degree courses, with minimum entry points below 350, increased from 62% to 83%. At the same time, CAO points overall were actually rising. In 1995, 41.2% of CAO applicants had points of 300 and upwards. The corresponding figure for 2002 was 52%.

The overall pattern was that during a period when higher points were being obtained by Leaving Certificate students and when there was a decline in points required for entry to courses in the Institutes of Technology, students were, nevertheless, emerging from those same Institutes with better grades.

To avoid a conclusion of grade inflation it would be necessary to have evidence that, over the eleven year period, all of the Institutes of Technology became significantly more successful in their respective missions to encourage learning. Given the major decline in CAO points among IOT entrants over that time, the challenge to the 'improved learning' theory of grade increase is indeed formidable. What could possibly explain such markedly improved learning among students who have been demonstrating poorer achievement at Leaving Certificate level? Such a ubiquitous transformation in educational success would not have occurred in the absence of additional confirmatory evidence over and above grade increase. The nature of the evidence to be expected and whether or not it exists is explored in the following sections.

4.2 Explaining Learning

In broad terms learning may be assumed to be impacted on by three proximate factors: level of ability, level of motivation and nature of educational input.

Is there any indication that between 1994 and 2004 any or all of those factors showed a constant positive shift?

4.2.1 Changes in Levels of Ability

Variations in ability, as measured by standardised IQ tests, account for a significant proportion of the variance in educational achievement (Jensen, 1980; Ree and Earles, 1991; American Psychological Association, 1995; Brody and Ehrlichman, 1998).

All of the evidence points towards a declining average level of ability among Institute of Technology entrants during the 1994-2004 period. The proportion of students completing the Leaving Certificate cycle has remained largely static since 1991 at 79-82% (Gorby, McCoy and Watson, 2005). The proportion going forward to third level education has increased dramatically from 25% of the school leaving age cohort in 1986, to 36% by 1992, 44% by 1998 and 54% in 2003 (HEA, 2005). Entrance points fell, which is exactly what one would expect in the circumstances. Although not measured directly in the Irish educational system, it is inevitable that the average ability of third level entrants declined as well. For that to have been avoided two unlikely developments would need to have occurred at the same time. Leaving Certificate success would have to show a diminished connection with general scholastic ability while third level colleges would have to have become much more successful at attracting the more capable students. The fact that access to third level education in Ireland is largely based on Leaving Certificate results renders this an unlikely proposition.

The impact of declining average ability will have been experienced more sharply in the Institutes of Technology since the more academically gifted students generally elect to attend Universities where possible. This is borne out by the fact that an equivalent decline in entrance points did not occur in the University sector over the same period (O'Grady and Guilfoyle, 2007).

4.2.2 Changes in level of motivation

Even with lower scholastic ability it is possible for students to outperform their more gifted predecessors through the dint of sheer effort. Is there

anything to suggest that IOT students between 1994 and 2004 became increasingly determined to learn and increasingly more single minded in their pursuit of higher grades?

While the reality of intrinsic motivation to learn is not to be denied, it is much more likely that significant change would result from extrinsic factors. The primary extrinsic motivation to obtain qualifications and better grades is to achieve educational and ultimately career advancement. Was there anything happening between the early years of the nineteen nineties and the early years of the twenty first century that might account for students growing more convinced that they needed better grades to get on in life with the effect that, with each passing year, students applied themselves more diligently? Again reality appears to point in the opposite direction.

The most obvious source of a greater need for higher grades is to compete with others in similar circumstances for access to limited course places and job opportunities. If the nineties and the early twenty first century had been a period of educational retrenchment and declining job opportunities, this might have been expected to greatly increase competition among students and enhance motivation to succeed. However, the period in question was one of enormous expansion in higher education. In the academic year 1990/91 there were 68,165 students studying at third level in Ireland. By 2000/01 that figure had increased by over three quarters to 119,991 (DES, 2007)³. It was also a period of unprecedented growth in wealth and employment in Ireland. Between 1988 and 2004 there was a 67% increase in the total number in jobs in the state (Sweeney, 2004). A historical problem of employment scarcity was replaced by the opposite problem of labour shortages. For the first time in its history Ireland achieved full employment. Students had less reason than ever to compete with each other. There were opportunities aplenty for all.

An inevitable corollary of full employment is the attraction of a large cohort of part-time workers including students into the active economy. For example, of the additional 214,700 jobs created between 1992 and 1997, 62,500 were due to part-time work, the vast majority of which were occupied by individuals who were not seeking full-time employment (ServiNews, 1997).

That students have become very significant participants in the part-time labour market is evident from a number of surveys. Morgan (2000) found that three quarters of post primary students (excluding transition year) in Dublin had part-time jobs. One tenth worked as many hours as they spent at school. Very little of the motivation to work related to economic

³ This data is based on DES figures for students studying at third level institutions aided by the Department. There are a small percentage of additional students in non-funded private institutions. There were approximately 3000 such students in 2000/01(HEA, 2007).

necessity with only 5% reporting that they contributed in any significant way to the family and most of the income generated being described as spent on entertainment, holidays, fashion, and alcohol.

Commenting on the survey results Dr Morgan states

The present results demonstrate how the country's economic success is having an adverse effect on the educational system, especially on those young people who will be most vulnerable in the event of an economic downturn (Morgan, 2000, p5).

A subsequent ESRI study revealed that, nationwide, the combining of school and part-time work was the norm, with over 60 per cent of Leaving Certificate students having a regular part-time job (McCoy and Smyth, 2004).

Clear evidence that significant involvement in part-time employment continues into third level education comes from an ESRI study which found that 43% of full-time third level students worked regularly with an additional 20% reporting as working occasionally while at college (Smyth and Darmody, 2005). Students attending Institutes of Technology were more likely to work and to work longer hours than their University counterparts. In the Institute of technology sector 66% of students reported having part-time jobs as compared with 56% of University students (personal communication from report author, June 1, 2005).

Prior to the 1990s the limited availability of jobs prevented the majority of full time students in Ireland from devoting much time and energy to work. It stands to reason that many students who devote a considerable amount of time to working may not have sufficient time and energy remaining to spend at study. This should in logic have exerted a downward pressure on the motivation to learn which has had to compete with the motives to earn and spend.

With respect to spending, there is a further related trend that derives from the income available to students through part time employment. Morgan (2000), as mentioned above, identified that secondary school students spent most of their income from part-time work on discretionary items such as holidays, fashion, entertainment and drink. The consumption of alcohol particularly among younger age groups has increased very substantially in Ireland since the early nineties (Morgan and Grube, 1997; ESPAD, 1995, 1999, 2003; Ramstedt & Hope, 2003).

Research at third level in Ireland has identified a direct association between students' drinking and experiencing difficulties in college such as failing exams (Canavan, 1999; O'Malley & Doran, 2001).

In summary, the evidence is that the period of this study did not correspond to one in which it is likely that students became increasingly more motivated to study and so devoted more of their energies to that end. On the contrary, the economic and social developments were such as to lead to an expectation of diminishing motivation and effort.

4.2.3 Improvements in educational inputs

The third proximate cause of improved learning identified above was the nature of educational input. If the quality of educational delivery showed a pattern of progressive improvement in the nineties and the early years of the twentieth century, then that should have led to improved educational performance. The improvement could be at any stage prior to graduation, at primary, secondary or third level, since earlier gains in learning would set students up more effectively to deal with the demands of subsequent courses.

Have such improvements occurred and have they been of the scale required to explain the level of grade increase experienced between 1994 and 2004 in the face of declining ability among successive entrance cohorts?

An immediate problem arises in identifying improvements in education – how to define what is in fact an improvement. Two obvious solutions occur. One is to identify specific educational methodologies or techniques introduced that have been shown through sound research to bring about genuine improvements in learning. The other is to find evidence of improvements over time on objective measures of educational attainment such as literacy and numeracy. This latter approach suffers from the interpretive disadvantage that if such improvements in outcomes are detected, it does not necessarily follow that they have been due to changes in educational inputs. It may be possible, however, if the improvements are widespread in society and unrelated to demographic or social class changes to fairly attribute the cause to educational inputs by a process of elimination.

In the search for improvements in educational inputs a logical approach is to focus on objective measures of educational attainment up to school leaving age or entrance to college and to seek out changes in educational methodologies in the Institutes of Technology that have proven causal links with learning.

There is a dearth of useful research from the period on objective measures of educational attainment prior to arriving in University that might offer insights into graduate performance between 1994 and 2004. There is, however, some subsequent informative research. In 2000 an objective assessment of educational achievement of 15-year olds in Ireland was conducted as part of the first cycle of the OECD Programme for

International Student Assessment (PISA). The study evaluated performance in Reading, Mathematics and Science. Crucially for present purposes, the second cycle of PISA was conducted in 2003. Comparing the performance of 15 year olds in Ireland three years apart, it was found that there was no change in Science or Mathematics but that there was a decline in reading standards particularly at the upper end of the performance scale (Cosgrove et al, 2004). As evident in Table 18 on page 38 above, grade increase has continued at Leaving Certificate level up to the present suggesting that earlier grade increases have also been a function of grade inflation rather than enhanced learning.

Further evidence that there is no trend of underlying improvement in learning accompanying grade increases comes from a representative nationwide study of reading standards among fifth class pupils in primary school in 2004. It found no change in the overall standard of reading since a previous similar survey conducted in 1998 (Eivers et al, 2005).

What of the possibility of productive changes in educational methodologies across the Institutes of Technology? To result in the ubiquity of the grade increases described above and to overcome the declining ability of entrants, such changes would have to be dramatic and universally applied. Nothing at all has been reported from the sector that in any way meets those criteria.

Indeed far from being in a position to employ revolutionary new educational approaches calculated to lead to large grade gains at the upper end of the scale, there is evidence that, in keeping with the pattern at third level in the US and the UK, Institutes of Technology are being forced to devote more effort to remedial interventions. These are focused at offsetting the deficiencies in literacy, numeracy, motivation and study skills increasingly identified among college entrants (McGuinness, 2004; Flanagan and Morgan, 2004).

5. Conclusions

5.1 The existence of grade inflation

The case for grade inflation as the causal factor behind the grade increases identified above in the Institute of Technology sector is a compelling one. There is nothing else to explain such markedly improved grades being obtained by weaker students. Very significant grade inflation in the same period has also been identified in the University sector (O'Grady and Guilfoyle, 2007).

5.2 Why is grade inflation taking place?

The causes of grade inflation in the context of Irish education are discussed by O'Grady and Quinn (2007a). They point to a convergence of sociological developments, competing institutional objectives within the educational sector and to deficiencies in the process through which educational awards are made as being at the root of the phenomenon. They argue that conflicting pressures on and within the educational system combined with inherent weaknesses in the quality assurance process governing the award of qualifications have led to a progressive disjunction between learning and grades.

5.3 The need to stop grade inflation

O'Grady and Quinn (2007b) explore the insidious impact of the grade inflation phenomenon. They argue that when the value of grades deteriorates with each passing year, both educators and students lose their motivation to strive for excellence. The return on educational investment declines. Leapfrog educational credentialism exerts an incremental toll on human and material resources. Employers are faced with an increasingly accredited but decreasingly educated workforce. Everyone suffers and no one gains.

Unfortunately grade inflation is a self sustaining process. As individual examiners drop their standards, the pressure is immediately felt by their colleagues to do likewise. This is especially so when the average quality of students is in decline and to maintain standards is to increase failure rates and decrease throughput. Similar knock on effects work across different institutions and even from country to country. As standards are lowered in one place, the pressure is felt elsewhere to follow suit so as to maintain equivalent grade profiles and throughput.

This destructive and ultimately unsustainable cycle will only cease when educational institutions accord top priority to the maintenance of educational standards in assessment and examinations.

Bibliography

American Psychological Association, 1995, Intelligence: Knowns and Unknowns, Report of a Task Force established by the Board of Scientific Affairs of the American Psychological Association, August 7, 1995, Washington D. C.: APA.

Bartlett, B. 2003, The Truth About Grade Inflation, Commentary, National Centre for Policy Analysis, February 13. Retrieved 22 February 2007, from <http://www.ncpa.org/edo/bb/2003/bb020303.html>

BBC News, 2001, “So Are A-levels Getting Easier?” 16 August 2001. Retrieved 22 February 2007. from <http://news.bbc.co.uk/2/hi/education/1495184.stm>

BBC News, 2004, “Too Many Graduates, Bosses say,” 20 January, 2004. Retrieved 22 February 2007, from <http://news.bbc.co.uk/2/hi/business/3412753.stm>

Brody, N., and Ehrlichman, H. 1998, Personality Psychology: The Science of Individuality, Upper Saddle River, N.J.: Prentice Hall.

Canavan, J. 1999, Student Life at NUI Galway: Report of Findings from a Survey of Students, Galway: National University of Ireland, Galway.

Channel 4 News, 2004, “Dumbed Down Degrees,” 13 May. Retrieved 22 February 2007 from http://www.channel4.com/news/2004/special_reports/30mins_Degrees.html

Coffield, F., Moseley, D., Hall, E., and Ecclestone, K. 2004, Learning styles and pedagogy in post-16 learning: A systematic and critical review, London: The Learning and Skills Research Centre.

Commission on the Points System, 1998, Consultative Process – Background Document, Dublin: Government Publications Office.

Cosgrove, J., Shiel, G., Sofroniou, N., Zastrutzki, S., and Shortt, F. 2004, Education for Life, The Achievements of 15-Year Olds in Ireland in the Second Cycle of PISA, Dublin: Educational Research Centre.

Eivers, E., Shiel, G., Perkins, R., and Cosgrove, J. 2005, Succeeding in Reading, Reading Standards in Irish Primary School, Dublin: Department of Education and Science.

ESPAD, 1995, Alcohol and Other Drug use Among Students in 26 European Countries, Stockholm: The Swedish Council for Information on Alcohol and Other Drugs, CAN. and the Pompidou Group at the Council of Europe.

DES, 2007, Department of Education and Science Website, Summary of Education Statistics – Ireland 1990/01-2000/01. Retrieved 1 March, 2007 from

<http://www.education.ie/servlet/blobervlet/Statistics90-01.pdf>

ESPAD, 1999, The European School Survey Project on Alcohol and Other Drug Use among Students in 30 European Countries, Stockholm: The Swedish Council for Information on Alcohol and Other drugs, CAN and the Pompidou Group at the Council of Europe.

ESPAD, 2003, Alcohol and Other Drug Use Among Students in 35 European Countries, European School Survey Project on Alcohol and Other Drugs, Stockholm: The Swedish Council for Information on Alcohol and Other drugs, CAN. and the Pompidou Group at the Council of Europe.

Fitzgerald, G. 2006, “We Must Beware of Third-Level Dumbing Down, Irish Times, Sept 26. Retrieved 22 February 2007, from <http://www.ireland.com/newspaper/opinion/2004/0214/3153537459OPGARRET.html>

Flanagan, R., and Morgan, M. 2004, Evaluation of Initiatives Targeting Retention in Universities: A Preliminary Report of Projects Funded by the Higher Education Authority, Dublin: HEA.

Flynn, S. 2006, “Exam 'Dumbing Down' Fears as More get Leaving Honours” Irish Times, Sept 26. Retrieved 22 February 2007, from <http://www.ireland.com/newspaper/front/2005/0812/762150443HMEXAM.html>

Garner, R. 2003, “Employers forced to turn to A-level Results as Grade Inflation Devalues University Degrees, The Independent On Line Edition, London, 9August, 2003. Retrieved 22 February 2007. from <http://education.independent.co.uk/news/article99659.ece>

Gorby, S., McCoy, S., and Watson, D. 2005, 2004 Annual School Leavers’ Survey of 2002/2003 Leavers, Dublin: ESRI.

HEA, 2005, A Review of Higher Education Participation in 2003, Dublin: Higher Education Authority.

HEA, 2007, Higher Education Authority Website, Trend Data 1965/66-2003/04. Retrieved 1 March 2007, from <http://www.heai.ie/index.cfm/page/sub/id/703>

Hencke, D. 2004, “A-level Results Spark Standards Row,” The Guardian, London, Monday August 16. Retrieved 22 February 2007, from <http://education.guardian.co.uk/alevels2004/story/0,,1283903,00.html>

Hu, S. 2005, Beyond Grade Inflation: Grading Problems in Higher Education, ASHE Higher Education Report, Vol. 30, 6, San Francisco: Jossey-Bass.

Holt, E. 2006, "Is Our Education System Putting out Yeats's Fire? Irish Times, Dublin, Aug 26. Retrieved 22 February 2007, from <http://www.ireland.com/newspaper/newsfeatures/2006/0826/1156401041037.html>

Jensen, A. 1980, Bias in Mental Testing, New York: Free Press.

Johnson, V.E. 2003, Grade Inflation: A Crisis in College Education, New York, Springer.

Kamber, R., and Biggs, M. 2002, Grade Conflation: a Question of Credibility, The Chronicle of Higher Education, 12 April, B14.

Leef, G.C. 2003, Degraded Currency: The Problem of Grade Inflation, Washington: The American Council of Trustees and Alumni.

McCoy, S., and Smyth, E. 2004. At Work in School, Part-time Employment among Second-Level Students, Dublin: The Liffey Press/ESRI.

Manhire, B. 2004, Grade Inflation, Ethics and Engineering Education, Proceedings of the 2004 American Society for Engineering Education Annual Conference and Exposition, Salt Lake City, Utah. Retrieved 22 February 2007, from http://www.ent.ohiou.edu/~manhire/grade/2004-22_Final.pdf

Mansfield, H.C. 2002, Acceptance Address: Harvard's Virtue, Academic Questions, Vol. 15, No 4 Fall, 15-20.

Mansfield, H.C. 2003, Our Coddled Students: How Harvard Compromised Its Virtue, The Chronicle of Higher Education, Chronicle Review, February 21. Retrieved 22 February 2007, from <http://chronicle.com/weekly/v49/i24/24b00701.htm>

McGuinness, C. 2004, Mathematical Competencies of Third Level Students: A Review, ITB Journal, 10, 5, 55-74. Retrieved 1 March, 2007, from <http://www.itb.ie/site/researchinnovation/itbjournal/ITB-Journal-December-2004.pdf>

Morgan, M. 2000, Part-Time Employment of Post-primary School Students: Report of a Survey with Particular Reference to Students in Disadvantaged Schools, Dublin, St Patrick's College.

Morgan, M., and Grube, J. 1997, Correlates of Change in Alcohol Consumption in Ireland: Implications for Understanding Influences and Enhancing Interventions, Substance Use and Misuse, Vol. 32, No 5.

NUI, 2005, Survey on Relationship between Leaving Certificate Points and University Primary Degree Performance in the NUI Constituent Universities UCC, UCD, NUIG and NUIM, Dublin: Unpublished paper by the National University of Ireland.

O'Grady, M., and Guilfoyle, B. 2007, Grade Inflation in Irish Universities (1994-2004), Paper 2, Network for Irish Educational Standards. Retrieved March, 2007, from www.stopgradeinflation.ie

O'Grady, M., Guilfoyle, B., Galvin, M., Quinn, S., and Cleary, J. 2004, Grade Inflation in HETAC Awards, Submission to the Your Educational System Review. Retrieved 22 February 2007, from [http://66.102.9.104/search?q=cache:yr2IbD8wFZ8J:www.youreducation.ie/pdf/Grade Inflation in HETAC Awards.pdf+grade+inflation+hetac+awards&hl=en&ct=clnk&cd=1&gl=ie](http://66.102.9.104/search?q=cache:yr2IbD8wFZ8J:www.youreducation.ie/pdf/Grade+Inflation+in+HETAC+Awards.pdf+grade+inflation+hetac+awards&hl=en&ct=clnk&cd=1&gl=ie)

O'Grady, M., and Quinn, S. 2007a, The Causes of Grade Inflation: An Exploration of Social and Institutional Pressures and Policy Choices, Paper 4, Network for Irish Educational Standards. Retrieved March, 2007, from www.stopgradeinflation.ie

O'Grady, M., and Quinn, S. 2007b, The Consequences of Grade Inflation, Paper 4, Network for Irish Educational Standards. Retrieved March, 2007, from www.stopgradeinflation.ie

O'Malley, S., and Doran, M. 2001. Preliminary findings from a study of reasons for non-progression among full time students, Galway: National University of Ireland, Galway.

Ramstedt, M., and Hope, A. 2003, The Irish Drinking Culture- Drinking and Drinking Related Harm, a European Comparison, Dublin, Department of Health and Children. Retrieved 22 February 2007, from http://www.healthpromotion.ie/uploaded_docs/Irish_Drinking_Culture.PDF

Ree, M.J., and Earles, J.A. 1991, Predicting Training Success: Not Much More Than g, Personnel Psychology, 44, 321-332.

Rosovsky, H., and Hartley, M. 2002, Evaluation and the Academy: Are We Doing the Right Thing? Cambridge Mass.: American Academy of Arts and Sciences, Retrieved 22 February, 2007, from http://www.amacad.org/publications/monographs/Evaluation_and_the_Academy.pdf

ServiNews, 1997, Ireland's Growing Service Economy, Part Time Jobs, Autumn/Winter Edition. Retrieved 22 February, 2007, from <http://www.ucd.ie/sirc/servinews.html>

Smyth, E., and Darmody, M. 2005, Who Works? Part-time Employment and Student Well-being in Higher Education, Seminar Paper May, Dublin: ESRI.

Sweeney, P. 2004, The Irish Experience of Economic Lift Off, Paper presented at 'The Workplace of the Future,' a colloquium celebrating Ireland's presidency of the European Union, Montreal, May. Retrieved 22 February, 2007, from http://www.ictu.ie/html/news/briefcase/celtic_tiger.pdf

Walsh, C. 2004, An Analysis of Degree, Diploma and Certificate Awards in Ireland 1998-2002, Dublin: Higher Education and Training Awards Council. Retrieved 22 February, 2007, from <http://www.hetac.ie/docs/Report%20-%20analysis%20of%20awards.pdf>

Walsh, J. 2006, "Dumbing Down Fear as Exam Points Soar; Figures Show Big Improvement in Leaving Certificate Results," Irish Independent, May 22. Retrieved 22 February, 2007, from http://www.unison.ie/irish_independent/stories.php3?ca=9&si=1618214&issue_id=14076

Ward, L. 2004, Oxford Revives Tests to Select Brightest Pupils, London: The Guardian, Tuesday March 23. Retrieved 22 February, 2007, from <http://education.guardian.co.uk/universityaccess/story/0,10670,1175936,00.html>