

# The Leaving Certificate Programme as Preparation for Higher Education: The Views of Undergraduates at the End of their First Year in University

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## **Centre for Assessment Research, Policy and Practice in Education (CARPE)**

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# Introduction

## The Leaving Certificate Programme: Brief Overview

The Leaving Certificate Programme (LCP) comprises the final 2-3 years of the post-primary education system in the Republic of Ireland. It is also frequently referred to as the *Senior Cycle* of post-primary education. There are three distinct ‘orientations’ within the LCP. The Leaving Cert Established (LCE) is the most commonly subscribed, with 71% of school leavers pursuing this option (State Examinations Commission, 2017). Its primary emphasis is on academic skills, with students taking a minimum of five (but typically seven) subjects, usually to include Irish, English and Mathematics. A further 24% pursue the Leaving Cert Vocational Programme (LCVP), which is similar to the LCE, but includes an additional vocational dimension through modules in *preparation for the world of work* and *enterprise education*. Entry to both universities and higher education institutions is dependent on a student’s final examination results in either the LCE or the LCVP. A third option, the Leaving Cert Applied (LCA), is specifically targeted towards those who do not intend to progress directly to higher education, or those whose needs and aptitudes are not catered for by the other Leaving Cert programmes. It focuses heavily on practical and vocational skills. LCA students typically proceed to apprenticeships, to further education or Post Leaving Certificate (PLC) courses, or directly to employment when they leave school.

## Public Perceptions and Previous Research

Despite the fact that the Irish education system, as a whole, tends to be held in high regard, and the fact that post-primary students in Ireland are performing significantly above average according to major international assessments of literacy, mathematics and science achievement (Clerkin, Perkins & Cunningham, 2016; Shiel, Kelleher, McKeown & Denner, 2016), the question of whether or not the LCP is “*fit for purpose*” has been subject to substantial debate over the years. The vast majority of these discussions have tended to focus on the LCE specifically – a reflection of its status as the longest established and most commonly subscribed of the three programmes.

Whether or not the LCP is indeed fit for purpose of course depends on what we believe its purpose to be. As performance in the Leaving Cert exams has historically played, and continues to play a central role in determining admission to most forms of third level education, discussions about the Leaving Cert have often focused exclusively on the examinations, rather than on the programme as a whole, and the presumed purpose of the LCP is often reduced to that of a mere selection process. Indeed, some of the earliest criticisms of the Leaving Cert centred on evidence of unreliability in the marking of the exams, calling into question their appropriateness as a selection mechanism (MacNamara & Madaus, 1969). Today, critics of the LCP continue to denounce the emphasis on “once-off” summative exams in many subjects, and the pressure on students to perform in this context, as opposed to on the basis of continuous assessment (see Donnelly, 2018a). Others

disagree, praising the system for its fairness, objectivity and transparency (see O'Brien, 2018).

Aside from narrow issues relating to third level selection, the LCP is additionally – and perhaps more importantly – intended to provide young people with a well-rounded education. Indeed, its overarching purpose is stated on the inside cover of all subject syllabuses as:

*“the preparation of students for the requirements of further education or training, for employment, and for their role as participative, enterprising citizens”*

These are broad and somewhat ill-defined goals and the extent to which the LCP succeeds in meeting them is unclear. In recent years especially, anecdotal evidence and media reports seem to suggest that it is struggling to do so. Critics frequently posit that the types of skills and attributes required by school-leavers have changed substantially since the LCP was first established. They argue that, whilst likes of creativity, critical thinking, communication, problem-solving skills, and positive self-esteem are more important than ever before (Donnelly, 2018b; McGuire, 2018), the LCP continues to encourage excessive rote learning and memorization at the expense of other skills (Banks, 2016; Byrne, 2018; Murray, 2017).

Memorization of facts – without necessarily understanding these facts – is aligned with the first level of *Bloom’s Taxonomy of Educational Objectives* (Bloom, Englehart, Furst, Hill & Krathwohl, 1956; Anderson et al., 2001, see Table 1). It is important to appreciate that Bloom did not specify whether these skills should be thought of as being strictly hierarchical in nature, nor did he make specific references to lower and higher order thinking. Consequently, educators differ in their interpretations as to what exactly constitutes ‘higher-order thinking’ (Scully, 2017). Broadly speaking, however, the term is used to refer to some combination of skills that include **understanding, applying, analysing, evaluating and creating various types of information**, as opposed to merely recalling factual information. As such, discussions regarding shortcomings of the LCP typically refer to its lack of emphasis on ‘higher-order skills’.

Table 1. *Anderson et al.’s (2001) Revision of Bloom’s Taxonomy*

| Level:     | Description   |
|------------|---|
| Remember   | Retrieving relevant knowledge from long-term memory   |
| Understand | Determining the meaning of instructional messages, including oral, written and graphic                                  |
| Apply      | Carrying out or using a procedure in a given situation  |
| Analyse    | Breaking material into its constituent parts, detecting how the parts relate to one another and to an overall structure |
| Evaluate   | Making judgements based on criteria and standards   |
| Create     | Putting elements together to form a novel whole   |

The perceived dominance of lower-order skills in the LCP is often attributed to the ‘washback effect’ – that is, it is thought to be driven by the, high-stakes, formulaic and predictable nature of the examinations themselves. A handful of research studies have specifically addressed these issues. In 2013, the State Examinations Commission (SEC) commissioned a broad and comprehensive study with the aim of establishing the extent to which there was evidence of ‘problematic predictability’ in the Leaving Cert exams, with a problematically predictable exam defined as:

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

- Baird, Hopfenbeck, Elwood, Caro & Ahmed (2015, p.14)

Baird et al’s (2015) study involved empirical work on examination materials over the course of eight years, a survey of just over 1,000 Leaving Cert candidates, interviews with 70 teachers and 13 group interviews with students. Due to the depth of the analyses involved, they focused on just six subjects: biology, economics, English, French, geography and design and communication graphics (DCG). Interestingly, the findings revealed that none of these exams could be regarded as problematically predictable – at least in terms of question content. That said, concerns were raised about the “old-fashioned” nature of many of the syllabi, the types of strategies employed by students in preparing for the exams (e.g. memorizing rather than meaning-making), and about the types of skills promoted by the exams themselves:

*“marking schemes did not clearly credit higher order thinking skills... questions did not always target the desired kinds of learning”*

A recent study by Burns, Devitt, McNamara, O’Hara and Brown (2018) seems to have reiterated these concerns. Their analysis of almost 15,000 verb commands occurring within written examinations, marking schemes, and chief examiners’ reports for 23 Leaving Cert subjects over the course of five years showed that, across all subjects, the frequencies of lower-order skills were between four and 14 times higher than those of higher-order skills. Of note, however, is that Burns et al. classified only *analyse*, *create* and *evaluate* as higher-order skills, which represents a slightly more conservative approach than that taken by some others (e.g. Fives & DiDonato-Barnes, 2013, Wiggins, 2015). That said, it is striking that in the case of five subjects; namely, biology, agricultural science, classical studies, chemistry, engineering and home economics, over 50% of the command verbs were categorised as instances of *remember* – universally understood to be a lower-order skill.

It should be noted that Burns et al. (2018)’s analysis focused solely on the written examinations, and that there are additional assessment components in a small number of

subjects, including history, geography, home economics, music and art. Some of these additional components seem to be oriented towards the assessment of higher-order skills (e.g. history students must submit a report on a research study on a special topic of their choice, home economics students must complete five assignments in practical areas such as application of nutritional principles and food preparation) and it is therefore possible that the proportion of higher-order skills promoted by some subjects is slightly under-represented by this analysis. Nonetheless, the findings provide compelling evidence to support the assertion that rote-learning and memorization remain dominant features of the LCP. In addition, their interviews with students revealed “*positive and confident expressions in relation to deploying higher order skills*” in contrast with the anxiety and stress that is often associated with rote learning (Burns et al., p.16).

Perhaps the most holistic study of the LCP in recent years was undertaken by the Economic and Social Research Institute (ESRI). As part of a larger longitudinal study on post-primary students’ experiences, Smyth, Bank and Calvert (2011)’s investigation included a cohort of over 900 students across twelve schools, focusing on their experiences of teaching, learning and assessment in sixth year, and the various factors influencing their decision making and planning for the future. Unlike other studies which have focused predominantly on the examinations, Smyth et al.’s (2011) study provided a comprehensive look at the LCP as a whole from the perspective of students, using survey data and in-depth focus group interviews. Their findings revealed that although most students were broadly satisfied with the LCP, students taking the LCA reported higher levels of satisfaction. LCA students also reported that they engaged more frequently in group work and project work, whilst LCE and LCVP students’ experiences of teaching and learning were characterised heavily by teacher-led instruction, practising exam papers, and doing homework. Furthermore, many students, particularly those from more academically-oriented schools, reported narrowing their focus in sixth year, were extremely concerned with covering material that was required to do well on the exams, and expressed frustration at teachers who occasionally deviated from the curriculum in an attempt to provide broader educational experiences.

When asked what they believed to be the main benefits of their second level education, more than half of students in Smyth et al.’s study agreed that their schooling had been a lot of help to them in terms of making new friends and learning how to communicate well, and just over 40% believed it had helped a lot in terms of developing skills in reading and writing, learning how to acquire new skills and learning how to find things out. In contrast, less than 40% believed that their second-level education had prepared them well to think for themselves, helped them decide what they would like to do after school, or prepared them for work or adult life. Interestingly, however, despite these perceptions, it seemed that many students, particularly those from more academically-oriented schools, had narrowed their focus so much in sixth year, and had become so concerned with covering only material that was required to do well in the exams, that they showed little interest in broader learning experiences. Indeed, as one student commented:

*“Some teachers will give you life lessons, and you are like, I don’t want life lessons, I can’t write this down in the Leaving Cert. I want to learn about the Leaving Cert.”*

On the basis of their findings, Smyth et al. asserted that the learning experiences associated with the LCP in its current format

*“appear to be at odds with the kinds of flexibility and critical thinking skills needed for young people to flourish in a constantly changing world”*

and concluded that there was a clear need to reassess the LCP in order to equip students with the skills and competencies they would need in their future lives. In terms of what these future lives would likely entail, the intention to proceed directly to higher education seemed to dominate. Indeed, 73% of females and 57% of males indicated their intention to proceed to higher education after the Leaving Cert. These proportions were considerably higher among students from professional and farming backgrounds, and lower amongst those from unskilled and non-employed backgrounds, even after controlling for achievement and other factors. Furthermore, there was evidence that, in the majority of cases, these aspirations had been formed well before sixth year.

### Senior Cycle Reform

Policy-makers in the Republic of Ireland are keenly aware of the perceived shortcomings of the LCP. In 2003, the National Council for Curriculum and Assessment (NCCA) – a statutory body of the Department of Education and Skills (DES) with primary responsibility for advising the government on matters relating to curriculum and assessment procedures – released a consultative paper on developing Senior Cycle education. At the outset of the paper, they posed the question:

*“Is senior cycle education still about ‘getting the Leaving’, rather than about preparing to transition to adult and working life or to further training and study?”*

The authors acknowledged that questions such as this one *“are not new questions”*, and in the remainder of the paper, set out a vision of how Senior Cycle might be further developed and improved in an incremental manner over the coming years. Suggestions included broadening the range of assessment components employed (which, as discussed previously, has since come to be realised in a small number of subjects), changing the nature of the certification learners receive (*i.e.* moving away from a record of exam results towards a record of achievements beyond the exams), moving towards more practical and experiential styles of teaching and learning, building a more explicit focus on the development of generic, transferrable *“key skills”* such as interpersonal and technical skills, and considering the modularisation of curricula.

Over the past fifteen years, with the exception of the introduction of second assessment components, limited progress appears to have been made in terms of the implementation of these suggested changes. This may be due to obstacles such as the need to provide schools with the capacity to implement these changes, and difficulties linking the fulfilment



of more diverse requirements with certification and progression. In any case, the fact that recent studies such as those of Baird et al. (2015), Burns et al. (2018), and Smyth et al. (2011) continue to highlight the same shortcomings these proposed reforms were intended to address, it seems that there remains scope for improvement in the LCP.

### This Study

As outlined above, the LCP is a long-established and integral part of the Irish post-primary education system, that, in recent years especially, has been criticised for its reliance on terminal examinations as the sole method of assessment in the majority of subjects, and its perceived tendency to emphasize lower-order skills such as rote-learning at the expense of more dynamic skills such as critical thinking. Furthermore, academic research exploring both the examinations themselves, and the perspectives of various stakeholders (*e.g.* Baird et al., 2015; Burns et al., 2018; Smyth et al., 2011) has provided empirical support for some of these claims.

It could be argued that some of these criticisms of the LCP are vague in nature. Indeed, discussions regularly focus on whether the LCP is ‘fit for purpose’, without much explicit consideration of the purposes of the LCP. With this in mind, this study focused specifically on the extent to which the LCP prepares students for the intellectual and social demands of higher education. It is acknowledged that the overarching purposes of the LCP are broader than this, and that not all school-leavers progress to higher education. However, given that this is listed as one of the primary purposes of the LCP in current syllabus documents, and that the majority of students *do* proceed to higher education upon completion of their Leaving Cert, this was viewed as a suitable focus.

Furthermore, rather than focusing on the examinations themselves, or on the perceptions of second-level students, this study specifically sought the views of current first year undergraduate university students. Both ‘experiences of the LCP’ (*i.e.* fifth and sixth year and the examination) and the ‘demands of university’ were explored at a granular level, from the perspective of those whose experiences of both are fresh in their minds. To the best of our knowledge, this is the first study of the LCP that has focused specifically on this population.

## Methods

### Questionnaire Design

A literature search was conducted with the aim of identifying existing instruments designed to measure students' perceptions of the extent to which their secondary school experience had led them to achieve particular learning outcomes or prepared them for higher education. A number of relevant instruments were identified, including the *International Baccalaureate Learner Profile Questionnaire* (IBLQ, Walker, Lee & Bryant, 2016) the *Self-Directed Learning Readiness Scale* (Fisher, King & Tague, 2001) and the *College Student Experiences Questionnaire* (Pace & Kuh, 1998). Items from these instruments, learning outcomes identified in first year modules at DCU, and other potentially relevant concepts identified by the researchers were all used to inform the development of a questionnaire for this study.

The questionnaire opened with a series of questions designed to collect some basic background information. Specifically, respondents were asked to report their gender, the subjects they had studied for the Leaving Cert and the results they had obtained in each of these, and the course they were currently studying. Following this, they were presented with 48 statements representing a range of cognitive and socio-emotional activities (e.g. "analyse numerical data", "be confident in reaching decisions", "use social skills for teamwork") and asked to indicate how frequently they were required to engage in these activities as part of their First Year coursework. They were then presented with the same list of activities again, and asked to indicate – having reflected on their experiences of first year – how well they believed the LCP had prepared them for each. Finally, respondents were asked to indicate whether or not their attitude to the LCP had changed over the course of their first year in college, and given the opportunity to expand on this response to by means of an open-ended question. A copy of the questionnaire is provided in Appendix A.

### Participant Recruitment

The study was formally approved by Dublin City University (DCU) Research Ethics Committee in April 2018. In May 2018, an electronic copy of the survey was created using *e-survey creator* software, and a link to this survey (including a section introducing the researchers, outlining the aims of the study and the intended uses of the findings) was circulated to all first year students in DCU via the Students' Union President. The link remained live for approximately two months, and two reminder emails were circulated during this time. Alerts about the survey were also issued on DCU Social Media and by faculty members. In addition, hard copies of the questionnaire were created and distributed to an individual class of students. All students who participated in the study self-selected to do so, and no incentive was offered for participation.

## Findings & Discussion

### Respondent Profile

A total of 304 students responded to the questionnaire, with the vast majority (88%) completing it online. Respondents were predominantly female (77.6%) and studying courses in the area of education (42.1%). The majority (64.1%) had achieved between 400 and 499 points in their Leaving Certificate, and just under 20% indicated that they had completed the Leaving Certificate Vocational Programme (LCVP).

Table 2. Respondent Characteristics

| Characteristic               | <i>n</i> | %    | Characteristic         | <i>n</i> | %    |
|------------------------------|----------|------|------------------------|----------|------|
| Gender                       |          |      | No. LC Points Achieved |          |      |
| Female                       | 228      | 77.6 | <200                   | 1        | 0.3  |
| Male                         | 66       | 22.4 | 300-349                | 11       | 3.6  |
|                              |          |      | 350-399                | 31       | 10.2 |
|                              |          |      | 400-449                | 90       | 29.6 |
|                              |          |      | 450-499                | 105      | 34.5 |
|                              |          |      | 500-549                | 51       | 16.8 |
|                              |          |      | 550-599                | 13       | 4.3  |
|                              |          |      | 600-625                | 2        | 0.7  |
| Area of Study                |          |      | LCVP completed         |          |      |
| Business                     | 29       | 9.5  | yes                    | 60       | 19.7 |
| Education                    | 128      | 42.1 | no                     | 241      | 79.3 |
| Engineering & Computing      | 18       | 5.9  |                        |          |      |
| Humanities & Social Sciences | 69       | 22.7 |                        |          |      |
| Science & Health             | 59       | 19.4 |                        |          |      |

### The Leaving Certificate as Preparation for First Year

Students' responses to questions pertaining to their experiences of the LCP and of their first year in university are shown in Table 3.<sup>1</sup> To aid interpretation, the statements have been listed in descending order according to the differences between the two sets of responses observed, and have been roughly grouped into three categories according to the magnitude of these differences.<sup>2</sup> Those shaded in green represent activities that, according to students, were frequently required of them in university, but for which they felt the LCP did not prepare them well. Those shaded in purple, on the other hand, represent activities for which students felt the LCP had prepared them well, but that were not frequently required in university.

<sup>1</sup> For simplicity, percentages have been rounded to whole numbers and the table has been abridged. In the survey, participants provided their responses using two five-point Likert scales (ranging from *Never* to *Very Frequently* and *Strongly Disagree* to *Strongly Agree* respectively). A complete version of the table, showing the full range of disaggregated responses and percentages to one decimal place, is provided in Appendix B.

<sup>2</sup> Differences with a magnitude of >20 have been highlighted to facilitate broad interpretations of these data. This cut-off point is arbitrary and should not be used to over-interpret small numerical differences either side of it.

Table 3. Students' Responses Pertaining to their Experiences of the LCP and of First Year

| Frequently/<br>Very<br>Frequently | <-This was required of me in First Year<br><br>The LCP prepared me well for this -> | Agree/<br>Strongly<br>Agree | Difference |
|-----------------------------------|---|-----------------------------|------------|
| %                                 |   | %                           |            |
| 73                                | use technology to improve my learning   | 24                          | 49         |
| 88                                | think independently   | 39                          | 49         |
| 73                                | identify sources of information   | 28                          | 45         |
| 77                                | be open minded  | 33                          | 44         |
| 79                                | perform well across different types of assessments                                  | 40                          | 40         |
| 62                                | interrogate/critically evaluate information or ideas                                | 25                          | 37         |
| 59                                | compare information from different sources  | 27                          | 32         |
| 73                                | use social skills for teamwork  | 43                          | 30         |
| 58                                | explore ideas from a number of different perspectives                               | 30                          | 28         |
| 86                                | think logically   | 58                          | 27         |
| 67                                | use evidence to inform opinions   | 40                          | 27         |
| 45                                | critically review evidence  | 19                          | 26         |
| 48                                | use a range of research strategies to investigate a problem                         | 23                          | 25         |
| 66                                | be intellectually curious   | 41                          | 25         |
| 89                                | take responsibility for my learning   | 65                          | 24         |
| 70                                | present information or ideas I learned in my own words                              | 45                          | 24         |
| 42                                | learn with a global context in mind   | 18                          | 24         |
| 64                                | be flexible and responsive to change  | 40                          | 24         |
| 55                                | consider myself as a lifelong learner   | 32                          | 24         |
| 62                                | build on the ideas of others to form my own opinion                                 | 39                          | 23         |
| 60                                | be confident in reaching decisions  | 38                          | 22         |
| 61                                | reflect on my learning  | 42                          | 19         |
| 62                                | think critically to solve problems  | 46                          | 16         |
| 30                                | critically examine my cultural values and beliefs                                   | 18                          | 12         |

Table 3 Continued...

| <b>Frequently/<br/>Very<br/>Frequently</b> | <b>&lt;-This was required of me in First Year<br/><br/>The LCP prepared me well for this -&gt;</b> | <b>Agree/<br/>Strongly<br/>Agree</b> | <i>Difference</i> |
|--|--|--------------------------------------|-------------------|
| ∞  |  | ∞                                    |                   |
| 84   | manage my time   | 72                                   | 12                |
| 36   | take on a leadership role  | 28                                   | 9                 |
| 84   | be self-disciplined  | 75                                   | 8                 |
| 91   | be well organised  | 83                                   | 8                 |
| 48   | empathise with the feelings and needs of others  | 42                                   | 6                 |
| 55   | be methodical  | 50                                   | 6                 |
| 77   | challenge myself to do better  | 72                                   | 5                 |
| 47   | deal with uncertainty  | 45                                   | 2                 |
| 76   | cope with the pressure of heavy workload requirements  | 75                                   | 0                 |
| 48   | evaluate and use others' feedback on my learning   | 48                                   | 0                 |
| 52   | apply previously learned skills in new situations  | 52                                   | 0                 |
| 53   | examine what I think I know  | 53                                   | -1                |
| 64   | communicate effectively in oral English  | 66                                   | -2                |
| 18   | assess the work or performance of my peers   | 25                                   | -7                |
| 51   | apply previously learned knowledge in new situations   | 58                                   | -7                |
| 72   | persist when learning was difficult  | 83                                   | -11               |
| 52   | manage my emotions when learning was difficult   | 64                                   | -12               |
| 50   | assess my own work or performance  | 63                                   | -13               |
| 72   | communicate effectively in written English   | 88                                   | -16               |
| 29   | analyse textual or visual data e.g. interviews/photographs   | 48                                   | -19               |
| 43   | be aware of my academic strengths and weaknesses   | 74                                   | -31               |
| 49   | memorize large amounts of information  | 87                                   | -38               |
| 21   | analyse numerical data   | 60                                   | -39               |
| 29   | communicate effectively in a second language   | 70                                   | -41               |

When asked to indicate whether or not their attitudes to the LCP had changed over the course of their first year in college, most (65%) students said that their attitudes *had* changed (see Figure 1). **Of these, 84% indicated that, as a result of their experiences in first year in DCU, they now believed the LCP was not a good preparation for Third Level Education.**<sup>3</sup>

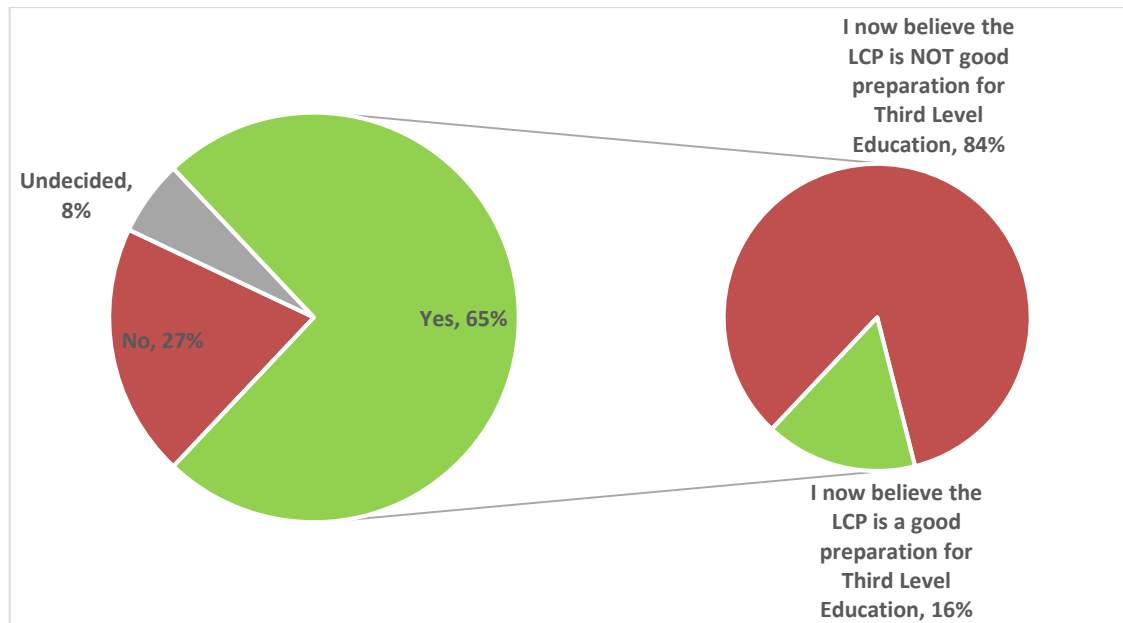


Figure 1. Students' responses regarding whether or not their attitudes to the LCP had changed over the course of their first year in college.

Overall, these quantitative data reveal a number of discrepancies between the LCP and higher education, and provide considerable evidence to suggest that these first year students feel unprepared for the challenges of university.<sup>4</sup> Students' responses to the open-ended questions provided further insights into the nature of the transition between the LCP and higher education. A thematic analysis of these open-ended responses revealed that students tended to discuss the LCP as preparation for university in terms of four broad themes, providing a useful framework for considering the findings of this study as a whole.

<sup>3</sup> The characteristics of the sub-sample who indicated that they now *did* regard the LCP as a good preparation for third level education were compared to that of the overall sample. A chi-square analysis revealed there was a slightly higher percentage of students studying Education in this sub-sample than in the overall sample (76% vs 42%,  $\chi^2 = 11.3$ ,  $p < .05$ ).

<sup>4</sup> Some additional analyses were conducted to investigate whether students who had completed the LCVP answered questions different to those who had not, and whether responses regarding activities in first year differed according to general area of study. Although these revealed some interesting differences (*e.g.*, those who sat the LCVP were slightly more inclined to agree that the LCP had prepared them to use technology to improve their learning, and students studying both Education and Engineering/Computing were more inclined to agree that their courses required them to engage in self- and peer-assessment), these differences should be interpreted with caution in light of the relatively modest sample size. Additional data would be required for further and more meaningful comparisons.

(i) Sophistication of Cognitive Processes

One message emerging from this research is that **there still seems to be a disconnect between the types of cognitive processes involved in the LCP, and those required in first year university**. For example, as Table 3 shows, although a majority of students (62%) reported that their chosen course had required them to interrogate/critically evaluate information or ideas, only 25% agreed that the LCP had prepared them well to do so. On the other hand, almost all students (87%) agreed that the LCP had prepared them well to memorize large amounts of information – a skill that just under half of students (49%) used in first year.

Students' open-ended responses reinforced this message. Almost unanimously, the LCP was criticised for focusing exclusively on knowledge recall. Numerous students used terms such as 'memorizing', 'rote learning', and 'regurgitation', all of which are reflective of the lowest level of Bloom's Taxonomy. Many admitted that they had little understanding of the material they were learning, or that they were not required to apply it in novel situations:

*"One year later, I recall that the amoeba has pseudopodia with which it captures and eats its food. I have yet to apply this knowledge in life"*

Several students went on to contrast the recall-intensive nature of the LCP with their experiences in university, wherein they had clearly been required to engage in more sophisticated cognitive processes:

*"It's no longer a case of memorizing, but a case of **understanding**"*

*"A lot of the Leaving Cert is fact based... in college... my learning has been very **conceptual**"*

*"Third level requires you to **apply** yourself much more in terms of thinking and explaining your opinions and answers."*

*"In a course where critical thinking... is imperative, I found it challenging and overwhelming at first to **evaluate** and **analyse** situations, scenarios, visual and textual data..."*

*"**Reflection** is a huge part of learning ... in college."*

Some students isolated one or two subjects which they felt stood out from the rest of the LCP in terms of the level of cognitive sophistication required:

*"History was useful... you are expected to analyse it and focus on the important bits, which is very similar to what is expected of you in college"*

*“Perhaps some essay writing skills from English or critical thinking from maths...”*

It should be noted that a very small number of students highlighted similarities in the types of learning required for the LCP and in university:

*“I was surprised... at the level of rote learning required in college, which was quite similar to the Leaving Cert”*

For the most part, however, it is clear that these students perceived a stark contrast between the type of learning in which they engaged during the LCP, and that in which they engaged during their first year at university, with the former characterised heavily by recall skills, and the latter involving a wider range of more sophisticated cognitive processes. This is in line with previous findings such as those of Baird et al. (2015) and Burns et al. (2018), and is concerning given the increasing importance placed on critical thinking skills in 21<sup>st</sup> century society (Liu, Frankel & Roohr, 2014).

#### (ii) Degree of Learner Autonomy

In addition to the transition from lower- to higher-order thinking, it is clear that the students surveyed perceived a ‘step up’ in terms of the degree of *learner autonomy* expected of them in university, compared to the LCP. As Henri, Morrell and Scott (2018) outlined, there is some debate as to what exactly constitutes learner autonomy, but the term usually encompasses concepts such as self-regulation, confidence in ability to achieve (*i.e.*, self-efficacy), independent attempts to expand one’s knowledge base beyond prescribed material, and ownership of learning outcomes (*i.e.*, an internal locus of control).

In terms of self-regulation, it is evident that some students perceived the LCP as being reasonably *good* preparation. Indeed, the majority agreed that their schooling had prepared them to be **self-disciplined (75%)** and to **take responsibility for their learning (65%)**. Some re-iterated these ideas in the open-ended responses:

*“The LCP involves a lot of... independent learning”*

*“I think that the LCP definitely helped me to become more self-motivated”*

Others, however, seemed to struggle with these issues:

*“A strict regime to a state of learning where it doesn’t matter to anyone if you attend or not”*

*“The coursework in college is not clearly defined and we have had little preparation for the exams”*

*“Many struggle in third level without people pushing them to work hard and stay on top of coursework”*



In terms of the arguably ‘deeper’ dimensions of learner autonomy, it is clear that many students felt rather ill-equipped. Specifically, only a minority indicated that they felt well prepared to **identify sources of information (28%)**, to **use evidence to inform opinions**, to **think independently (39%)**, and to be **confident in reaching decisions (38%)** – skills that, according to the majority, were frequently required in university. This pattern was also evident in the open-ended responses. Indeed, the LCP was repeatedly described as a highly structured, prescribed and supported learning environment, with students indicating that they were “*told what to do*”, “*spoon-fed information*” and that they generally relied heavily on their teachers for direction in terms of what and how to learn. Consequently, they viewed navigating independent research and forming evidence-based opinions as key challenges:

*“You suddenly have to be able to think for yourself and come up with your own ideas, which is tough...”*

*“The LCP doesn’t prepare students to test themselves to do further research, they are given books to learn and don’t question anything... then we come to college and are expected to find extra readings and pick out relevant information to support our points and opinions when we aren’t even sure what our opinions are”*

*“We never got the chance to express ourselves in the LCP... then we come to college and are expected to challenge what we already know when we are still figuring out what we know”*

This, in turn, seemed to contribute to a lack of confidence and ownership for some. As one student explained:

*“I have doubted myself many times when writing an assignment wondering if my opinion was valid enough to state an argument because the Leaving Cert exam does not require academic writing or personal thoughts to be conveyed.”*

It could of course be argued that an increase in learner autonomy in the transition from second- to third-level education is a natural progression, given the increasing age and maturity of the learners involved, and that third-level students *should* differ from school pupils in this way (Scott, Furnell, Murphy & Goulder, 2015). That said, the fact that these students used terms such as “*a massive jump*” ... “*dropped in at the deep end*” ... “*a sharp reality*” raises the question as to whether there is some scope to ease the transition somewhat. One practical step towards achieving this could be to attempt to provide students with the tools to start developing greater learner autonomy as part of the LCP. This might involve, for example, placing a greater emphasis on key research skills, exposing them to a wider range of literature, and teaching them how to cite others to lend support to their views. Indeed, many lamented a lack of these activities during the LCP:

*“you are not prepared on how to cite and reference”*

*“you were never shown how to use literature and referencing to back up what you’re saying”*

Interestingly, one student held the view that universities, rather than the LCP should play a greater role in bridging the gap, by scaffolding students more gradually into the autonomous learning environment of third level:

*“I feel that in third level the lecturers don’t give you enough guidance. So, for me, the problem isn’t to do with that the Leaving sets you up for, but what third level should be doing to follow on from that and not leaving students in the dark”*

These issues are certainly not unique to the Irish education system. Indeed, as Lowe and Cook (2003, p.3) highlighted, although the U.K.’s A-Levels have been criticised for a lack of emphasis on independent learning, there is also a lingering assumption about the “dominance of content” evident in many higher education syllabi that discourages lecturers from emphasizing and developing self-directed enquiry.

The data here also serve to raise some interesting questions about self-regulation and the extent to which not only the LCP, but university education, is adequately equipping learners with skills related to life-long learning. Only half of the sample said that assessing their own work/performance was something they were frequently required to do in college. Indeed, the percentage of students agreeing that the LCP had prepared them to do this was actually higher (63% v 50%). The data also indicate that just one out of every two respondents (48%) indicated that they had been well prepared/required to evaluate and use others’ feedback on their learning. The findings with respect to peer-assessment are even more stark. Just 25% agreed that the LCP prepared them well to assess the work/performance of their peers and 18% said they were required to do this frequently in First Year. The fact that peer-and-self-assessment did not figure prominently in the classes of almost 600 teachers in Lysaght and O’Leary’s (2017) study of assessment practices in primary classrooms shows that this is an issue that needs addressing at all three levels of the system.

Returning to the focus of this study, it is clear that the students surveyed perceived the LCP to be inadequate preparation for the autonomous learning environment of first year in DCU. Whether or not this issue can be addressed solely through second-level curriculum reform is unclear, yet, similar to the previous theme, it represents a cause for concern, given the documented risks of disengagement and dropout amongst students who find the transition exceptionally challenging (Lowe & Cook, 2003).

### (iii) Structure and Form of Assessment

It is clear from these students’ responses that the LCP was also viewed as a relatively poor preparation for higher education in terms of the structure and form of assessments used in each context. Many students criticised the heavy emphasis on final summative exams in the LCP, not just due to their poor alignment with the diverse assessment formats they subsequently encountered in university, but also because they regarded this as an unsuitable type of assessment in and of itself. Some cited negative consequences for the nature of teaching and learning:

*“The majority of young people only had one thing on their mind which was the Leaving Cert exam. Therefore, they were unable to understand the useful skills that they were learning”*

*“For the Leaving, the teachers teach to the test as much as possible”*

Others raised concerns over fairness and validity:

*“I don’t think the Leaving Cert is fair as some test better than others but that doesn’t necessarily mean they are smarter”*

*“The Leaving Cert is just summative and only portrays how you perform on a certain day”*

The emphasis on the once-off exam was also cited as a source of extreme stress and anxiety for some students:

*“I lost count of the many nights I spend sobbing and eating my feelings”*

Many of the above comments reiterate criticisms commonly aired in the media (e.g. Donnelly, 2018a), although it should be noted that a small number of students voiced slightly differing opinions. One pointed out that university also involves end-of-year summative assessments, and that the LCP was good preparation for these. Another questioned whether continuous assessment would be a suitable replacement for the current model:

*“Continuous assessment is the new buzzword to replace the Leaving Cert, but if continuous assessment is going to be implemented, surely students would constantly be worked up over the different smaller assessments that crop up throughout the year?”*

Aside from these issues relating to the “once-off” nature of the Leaving Cert exams, there is an additional issue to take into account; namely, the *type* of assessments in question. Indeed, although 79% of students indicated that they had been required to **perform well across different types of assessments** in their first year at university, a modest 40% agreed that the LCP had prepared them well to do so. As a result, many felt ill prepared to deal with the varied types of assessment they experienced in their first year in college:

*“The LCP doesn’t prepare students WHATSOEVER for coursework such as continuous assessment or assignments that require you to present”*

*“Second level students have zero experience of assignments... they also have no experience of team work and group work”*

*“Working in groups and presentations were more of a challenge in college... as well as evaluating my own work”*

As these responses show, the issue of assessment format is heavily linked with another important consideration in considering whether or not the LCP is fit for purpose – namely, the development of key skills. Identified as a priority area in proposed senior cycle reform

(NCCA, 2003), key skills include a range of generic transferrable skills such as interpersonal skills, communication skills, and technological skills. Although students themselves did not talk explicitly about “key skills”, the fact that they found tasks such as working in groups and making presentations to be especially challenging suggests that some of these school-leavers have a relatively low level of competence with respect to the underlying skills required for these tasks. Some figures from Table 3 support this assertion: less than half (43%) of students indicated that their schooling had prepared them to **use social skills for teamwork**, and less than a quarter (24%) said they felt well prepared to **use technology to improve their learning**.

One way in which these issues might be addressed is through the introduction of a broader range of assessment tasks in Senior Cycle education. Assessments such as oral or visual presentations, group work projects and portfolio compilations have the potential not only to assess students’ content knowledge, but can also provide opportunities for them to develop skills in creativity, communication and digital literacy. Moreover, in line with metacognitive theories of learning (e.g. Flavell, 1979), and the concept of “high road transfer” (Perkins, 1992), additional benefits can be derived from engaging with a wide range of assessment formats if students are encouraged to reflect upon the skills they are developing, and to think about how these skills may be transferred to contexts beyond school. Regrettably, many of the comments from students surveyed for this study suggest that today’s school-leavers view much of the material they learnt in school as “*irrelevant*”, with little sense of having acquired valuable skills throughout their engagement with this material:

*“most of the information I learned off and stressed about is useless to me now”*

*“none of my school subjects even closely relate to what I study now, so clearly it was all a massive waste of time”*

*“Irish essays on refugees or mathematical theories are absolutely no use to me now”*

#### (iv) Benefits of the LCP

As just discussed, the LCP on the whole was viewed as a relatively poor preparation for higher education by the first-year students surveyed in this study, due to its tendency to promote rote-learning as opposed to more sophisticated cognitive processes, its structured and prescribed nature, and its emphasis on final written examinations which arguably detracts from the development of certain transferrable skills. That said, it is important to note that there are some areas for which these students felt the LCP had prepared them well. Many of these skills are somewhat practical in nature, and relate to workload, time management and organization, whilst others relate to competencies such as persistence, determination, or, as it is often referred to in the literature – “grit” (e.g. Duckworth, Peterson, Matthews & Kelly, 2007).

Specifically, over three quarters of the students agreed that the Leaving Cert prepared them to **be well organised**, to **cope with the pressure of heavy workload requirements**, and to **persist when learning was difficult**. Most also tended to agree that the LCP had helped

them to **be aware of their academic strengths and weaknesses**. Again, students expanded on these ideas in their open-ended responses. The following represent two of the most positive comments in relation to the LCP and how it prepared students for challenges beyond school:

*“It made me realise that I had to put a lot of work in to get something out, and this is something that is really important to me now”*

*“It is so much easier for us all to complain when we have to do something that isn’t that enjoyable, but the Leaving Cert teaches students valuable skills, their strengths and weaknesses in relation to both those skills... their academic capabilities and also a good work ethic”*

Although such comments were few and far between, with most students focusing on the shortcomings of the LCP, it is evident that there are certain aspects of the LCP that are valued, and this should not be overlooked.

## Concluding Comments

The consensus among the undergraduate respondents involved in this research was that the LCP they experienced was an inadequate preparation for the demands of their first year university programmes. Specifically, they indicated that the LCP had involved a great deal of rote learning and memorization – in stark contrast to their first year coursework, which had frequently challenged them to evaluate various sources of information and evaluate this information independently. Students also criticised the reliance on terminal, written exams in the LCP, which they felt had rendered them ill-equipped to engage with the more diverse forms of assessment encountered in college. Given that the LCP has been frequently and publically criticised for these shortcomings in the media, and that previous research (*e.g.* Baird et al., 2015, Burns et al., 2018, Smyth et al., 2011) has uncovered similar issues, these findings are not especially surprising. However, they are noteworthy as they represent the voice of current undergraduate students, and suggest that, despite some efforts to combat some of the “age-old” criticisms levelled at the LCP, they remain pertinent.

Limitations of the study are acknowledged, such as the fact that the sample was comprised solely of DCU students, all of whom self-selected to participate. These students are likely to be more homogeneous than the general population of undergraduate students in Ireland, and it would of course be desirable to collect additional data from students in other universities and higher education institutions to increase confidence in the generalizability of the findings. Moreover, although both male and female students exhibiting a range of achievement levels at Leaving Cert level, and from all faculties across DCU were represented, the overall sample size ( $n = 304$ ) was a little too small to facilitate robust analyses of differences amongst these subgroups to investigate additional interesting questions. Finally, as the study focused solely on higher education, the findings do not

provide information about school-leavers who progress to alternative settings, or about those who sat the LCA. Indeed, on this note, it is of interest that the LCA students in Smyth et al.'s (2011) study were more positive than their LCE and LCVP counterparts about the extent to which they believed school had prepared them for work and adult life.

Moving from post-primary school to university is undoubtedly a key transition in young peoples' lives. As Gibney, Moore, Murphy and O'Sullivan (2011) pointed out, first year undergraduates are not only becoming familiar with their discipline areas, they also face various social and practical challenges associated with "becoming a university student", and those who do not navigate these successfully may become disengaged or drop out. Of course, it would be unfair and inaccurate to view the LCP as the sole factor influencing students' success at university. That said, the final years of post-primary education certainly represent a significant opportunity during which school-leavers may be prepared for a smooth transition to higher education and alternative pursuits; moreover, this is explicitly identified as one of the central goals of the LCP. Research investigating other school-leaving programmes in terms of the extent to which they prepare students for higher education has returned mixed results, with the A-Levels receiving criticisms (*e.g.* Lowe & Cook, 2003), and the International Baccalaureate receiving positive evaluations (*e.g.* Conley, McGaughy, Davis-Molin, Farka & Fukuda, 2014). **Regrettably, the findings of this research suggest that the majority of undergraduate students, upon reflecting on their first year at college, do not regard the LCP as having been a good preparation for higher education.**

It is hoped that these findings will contribute to ongoing discussions and policy surrounding proposed Senior Cycle Reform. The views of these students clearly indicate that the intention to encourage "*self-directed learning and independent thought... a spirit of inquiry, critical thinking, problem-solving, self-reliance, initiative and enterprise*" as set out in each of the current Leaving Cert syllabus documents is not yet being fully realised. Indeed, they make a compelling case for (i) a greater emphasis on the development of higher-order skills and learner autonomy, and (ii) the introduction of a wider range of assessment formats into the LCP.

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## Appendices

### Appendix A – Questionnaire



### **The Leaving Certificate Programme as a Preparation for Third Level Education**

#### **The Views of Undergraduates at the End of their First Year at DCU**

The Leaving Certificate Examination (LCE) plays a crucial role in the process of how people are selected for Third Level education. However, the extent to which the Leaving Certificate Programme (LCP) as a whole (i.e. 5<sup>th</sup> and 6<sup>th</sup> year + the examination) provides students with a good preparation for their Third Level education is unclear. This research seeks to shed some light on this issue.

For those who sat the LCE in 2017, their experiences of 5<sup>th</sup> and 6<sup>th</sup> Year and preparing for and taking the LCE are still fresh in their minds. They also have a good understanding of what is being required of them in college. Hence, the focus and timing of this research.

As a DCU first year student you are in a great position to offer important insights that can be used to evaluate the LCP and its relevance to First Year in College. You can contribute valuable data that will be used to enhance our understanding of the LCP and efforts to improve it. The data may also offer an insight into how first year experiences at DCU align with the LCP.

Given the potential significance of this research, it is vitally important that your responses are accurate and honest. Information from the survey will be used to write policy documents, reports and research papers for publication. Individual respondents will not be identified in any way.

Please note: Your completion of this questionnaire confirms that you understand the purpose of this study and that you freely consent to participate in it.

**Please do not fold or crease this document**

Le gach dea-ghuí,

Michael O'Leary & Darina Scully

Centre for Assessment Research, Policy and Practice in Education (CARPE)

May 2018

Blacken circles like this: 

1. Gender      Female        
                   Male       

2. Please indicate the level and grade category for of each of your Leaving Certificate Exam Subjects

| Subject                | Level                 |                       |                       | Grade Category        |                       |                       |                       |                       |                       |                       |                       |
|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                        | Higher                | Ordinary              | Foundation            | 1                     | 2                     | 3                     | 4                     | 5                     | 6                     | 7                     | 8                     |
| Accounting             | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Agricultural Science   | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Agricultural Econ.     | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Applied Mathematics    | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Art                    | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Biology                | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Business               | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Chemistry              | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Construction Studies   | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Economics              | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Engineering            | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| English                | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| French                 | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Geography              | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| German                 | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| History                | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Home Economics         | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Irish                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Italian                | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Mathematics            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Music                  | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Physics                | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Physics and Chemistry  | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Politics and Society   | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Religious Education    | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Spanish                | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Technology             | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other (Please specify) | <input type="radio"/> | <input type="radio"/> |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**Blacken circles like this: ⑥**

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**2b. Did you complete the Leaving Certificate Vocational Programme (LCVP)?**

yes

no

**3. How many Leaving Certificate Points did you achieve based on your best six subjects?**

600-625

550-599

500--549

450-499

400-449

350-399

300-349

250-299

200-249

<200

**4. What course are you studying in DCU? (Please state the full title)**

PTO

5. Below are statements describing requirements related to academic work at DCU. Please read the statements carefully and decide how frequently you experienced these requirements during your First Year coursework.

Blacken circles like this: 

| In my First Year coursework at DCU I was required to:        | Never                 | Rarely                | Occasionally          | Frequently            | Very Frequently       |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| ● analyse numerical data                                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● analyse textual or visual data e.g. interviews/photographs | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● apply previously learned knowledge in new situations       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● apply previously learned skills in new situations          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● assess my own work or performance                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● assess the work or performance of my peers                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● be aware of my academic strengths and weaknesses           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● be confident in reaching decisions                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● be flexible and responsive to change                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● be intellectually curious                                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● be methodical  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● be open minded   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● be self-disciplined  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● be well organised  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● build on the ideas of others to form my own opinion        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● challenge myself to do better                              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● communicate effectively in oral English                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● communicate effectively in a second language               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● communicate effectively in written English                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● compare information from different sources                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● consider myself as a lifelong learner                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● cope with the pressure of heavy workload requirements      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● critically examine my cultural values and beliefs          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● critically review evidence                                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● deal with uncertainty                                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● empathise with the feelings and needs of others            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● evaluate and use others' feedback on my learning           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

5. Continued....

Blacken circles like this: 

| In my First Year coursework at DCU I was required to:         | Never                 | Rarely                | Occasionally          | Frequently            | Very Frequently       |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| ● examine what I think I know                                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● explore ideas from a number of different perspectives       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● identify sources of information                             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● interrogate/critically evaluate information or ideas        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● learn with a global context in mind                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● manage my emotions when learning was difficult              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● manage my time  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● memorize large amounts of information                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● perform well across different types of assessments          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● persist when learning was difficult                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● present information or ideas I learned in my own words      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● reflect on my learning                                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● take on a leadership role                                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● take responsibility for my learning                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● think critically to solve problems                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● think independently   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● think logically   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● use a range of research strategies to investigate a problem | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● use evidence to inform opinions                             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● use social skills for teamwork                              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ● use technology to improve my learning                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

PTO

6. Read the statements below and decide the extent to which you agree or disagree with them in terms of how well the Leaving Certificate Programme (i.e. 5th and 6th Year and the LC Examination) prepared you to meet the academic requirements at DCU during your First Year.

| Reflecting on my experiences of First Year in DCU, I now believe the Leaving Certificate Programme prepared me to: | Strongly Disagree     | Disagree              | Undecided             | Agree                 | Strongly Agree        |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| • use technology to improve my learning  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • use social skills for teamwork   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • use evidence to inform opinions  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • use a range of research strategies to investigate a problem  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • think logically  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • think independently  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • think critically to solve problems   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • take responsibility for my learning  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • take on a leadership role  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • reflect on my learning   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • present information or ideas I learned in my own words   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • persist when learning was difficult  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • perform well across different types of assessments   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • memorize large amounts of information  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • manage my time   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • manage my emotions when learning was difficult   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • learn with a global context in mind  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • interrogate/critically evaluate information or ideas   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • identify sources of information  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • explore ideas from a number of different perspectives  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • examine what I think I know  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • evaluate and use others' feedback on my learning   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • empathise with the feelings and needs of others  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • deal with uncertainty  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • critically review evidence   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • critically examine my cultural values and beliefs  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

6. Continued...

| <b>Reflecting on my experiences of First Year in DCU, I now believe the Leaving Certificate Programme prepared me to:</b> | <b>Strongly Disagree</b> | <b>Disagree</b>       | <b>Undecided</b>      | <b>Agree</b>          | <b>Strongly Agree</b> |
|---|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| • cope with the pressure of heavy workload requirements   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • consider myself as a lifelong learner   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • compare information from different sources  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • communicate effectively in written English  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • communicate effectively in a second language  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • communicate effectively in oral English   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • challenge myself to do better   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • build on the ideas of others to form my own opinion   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • be well organised   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • be self-disciplined   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • be open minded  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • be methodical   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • be intellectually curious   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • be flexible and responsive to change  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • be confident in reaching decisions  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • be aware of my academic strengths and weaknesses  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • assess the work or performance of my peers  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • assess my own work or performance   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • apply previously learned skills in new situations   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • apply previously learned knowledge in new situations  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • analyse textual or visual data e.g. interviews/photographs  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • analyse numerical data  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

PTO





## Appendix B – Raw Response Data

Table 3 Students' (disaggregated) Responses to Questions Pertaining to their Experiences of the LCP and of their First Year in University  
 [Note: highlighted cells show the modal response to each question]

| Never | Rarely | Occasionally | Frequently  | V Frequently | <-This was required of me in First Year                | Strongly Disagree | Disagree    | Undecided | Agree       | Strongly Agree |
|-------|--------|--------------|-------------|--------------|--|-------------------|-------------|-----------|-------------|----------------|
| %     | %      | %            | %           | %            | The LCP prepared me well for this ->                   | %                 | %           | %         | %           | %              |
| 0.0   | 0.7    | 10.0         | 34.7        | <b>54.6</b>  | take responsibility for my learning                    | 5.6               | 16.7        | 9.1       | <b>47.2</b> | 21.4           |
| 0.0   | 1.7    | 7.9          | 40.3        | <b>50.2</b>  | be well organised                                      | 1.7               | 7.5         | 7.9       | <b>50.6</b> | 32.4           |
| 0.4   | 1.8    | 9.6          | 40.4        | <b>47.8</b>  | think independently                                    | 19.8              | 27.8        | 13.1      | <b>29.0</b> | 10.3           |
| 0.0   | 2.9    | 13.6         | 32.0        | <b>51.5</b>  | manage my time   | 2.4               | 15.0        | 10.7      | <b>50.2</b> | 21.7           |
| 1.1   | 1.5    | 11.8         | 38.0        | <b>47.6</b>  | think logically  | 7.1               | 15.5        | 19.0      | <b>48.8</b> | 9.5            |
| 0.7   | 3.0    | 12.9         | <b>42.6</b> | 40.9         | be self-disciplined                                    | 1.7               | 11.3        | 12.1      | <b>46.3</b> | 28.8           |
| 0.4   | 1.5    | 19.1         | <b>40.1</b> | 39.0         | perform well across different types of assessments     | 21.5              | 25.1        | 13.9      | <b>29.1</b> | 10.4           |
| 1.3   | 3.3    | 19.9         | 29.8        | <b>45.7</b>  | cope with the pressure of heavy workload requirements  | 6.6               | 10.8        | 7.5       | <b>38.6</b> | 36.5           |
| 0.3   | 4.0    | 18.8         | <b>41.3</b> | 35.6         | challenge myself to do better                          | 5.8               | 6.7         | 15.4      | <b>49.6</b> | 22.5           |
| 0.7   | 6.3    | 19.9         | 33.8        | <b>39.3</b>  | use technology to improve my learning                  | 27.1              | <b>37.5</b> | 11.6      | 21.1        | 2.8            |
| 1.0   | 5.0    | 16.9         | <b>43.7</b> | 33.4         | be open minded   | 17.8              | <b>32.6</b> | 16.5      | 23.1        | 9.9            |
| 0.4   | 2.6    | 25.4         | <b>37.5</b> | 34.2         | persist when learning was difficult                    | 2.8               | 5.2         | 9.1       | <b>42.9</b> | 40.1           |
| 1.8   | 3.7    | 21.8         | <b>36.9</b> | 35.8         | use social skills for teamwork                         | 14.3              | 31.0        | 11.9      | <b>35.7</b> | 7.1            |
| 2.3   | 7.3    | 18.5         | 33.3        | <b>38.6</b>  | communicate effectively in written English             | 2.1               | 4.2         | 5.4       | <b>47.9</b> | 40.4           |
| 2.2   | 6.3    | 18.8         | <b>38.2</b> | 34.6         | identify sources of information                        | 22.3              | 36.3        | 13.9      | 21.9        | 5.6            |
| 1.8   | 4.8    | 23.9         | <b>39.7</b> | 29.8         | present information or ideas I learned in my own words | 17.1              | 21.9        | 15.5      | <b>31.5</b> | 13.9           |
| 2.2   | 6.6    | 23.9         | <b>35.7</b> | 31.6         | use evidence to inform opinions                        | 15.1              | 30.3        | 14.3      | <b>34.3</b> | 6.0            |
| 2.6   | 8.5    | 26.6         | 26.9        | <b>35.4</b>  | think critically to solve problems                     | 10.4              | 23.2        | 20.4      | <b>38.4</b> | 7.6            |
| 3.3   | 11.3   | 21.2         | 31.1        | <b>33.1</b>  | communicate effectively in oral English                | 5.4               | 18.3        | 10.4      | <b>41.9</b> | 24.1           |

Table 3 Continued

|             |             |             |             |             |   |      |             |      |             |             |
|-------------|-------------|-------------|-------------|-------------|---|------|-------------|------|-------------|-------------|
| 1.0         | 8.6         | 24.3        | <b>43.2</b> | 22.9        | be intellectually curious                                   | 12.8 | 28.9        | 16.9 | <b>33.9</b> | 7.4         |
| 1.0         | 7.6         | 27.8        | <b>40.1</b> | 23.5        | be flexible and responsive to change                        | 13.2 | 28.1        | 18.6 | <b>32.6</b> | 7.4         |
| 3.0         | 9.3         | 26.0        | <b>33.5</b> | 28.3        | interrogate/critically evaluate information or ideas        | 23.0 | <b>37.7</b> | 14.3 | 20.2        | 4.8         |
| 0.7         | 10.9        | 26.7        | <b>37.3</b> | 24.4        | build on the ideas of others to form my own opinion         | 17.1 | 24.6        | 19.2 | <b>31.7</b> | 7.5         |
| 3.3         | 13.2        | 22.4        | <b>31.3</b> | 29.8        | reflect on my learning                                      | 18.7 | 24.7        | 14.7 | <b>33.1</b> | 8.8         |
| 2.6         | 11.2        | 27.1        | <b>33.0</b> | 26.1        | compare information from different sources                  | 21.3 | <b>38.3</b> | 13.3 | 23.8        | 3.3         |
| 4.0         | 8.5         | 29.4        | <b>35.3</b> | 22.7        | explore ideas from a number of different perspectives       | 19.1 | <b>37.8</b> | 12.7 | 24.3        | 6.0         |
| 5.3         | 9.2         | <b>30.0</b> | 27.7        | 27.7        | consider myself as a lifelong learner                       | 17.4 | <b>32.0</b> | 18.0 | 22.8        | 9.1         |
| 2.6         | 8.9         | 28.1        | <b>46.7</b> | 13.6        | be confident in reaching decisions                          | 8.7  | 31.0        | 22.3 | <b>32.2</b> | 5.8         |
| 3.0         | 10.7        | 31.0        | <b>36.0</b> | 19.3        | be methodical   | 10.7 | 17.8        | 21.9 | <b>40.5</b> | 9.1         |
| 2.2         | 10.3        | <b>34.8</b> | 33.7        | 19.0        | examine what I think I know                                 | 9.9  | 19.4        | 17.5 | <b>43.7</b> | 9.5         |
| 2.2         | 14.4        | <b>34.3</b> | 24.7        | 24.4        | memorize large amounts of information                       | 2.4  | 4.4         | 6.3  | 31.3        | <b>55.6</b> |
| 5.5         | 16.2        | 25.8        | 23.6        | <b>28.8</b> | manage my emotions when learning was difficult              | 10.7 | 16.3        | 9.1  | <b>38.5</b> | 25.4        |
| 2.6         | 11.9        | <b>34.4</b> | 34.1        | 16.9        | apply previously learned knowledge in new situations        | 8.7  | 19.8        | 13.2 | <b>47.9</b> | 10.3        |
| 3.3         | 11.0        | 34.0        | <b>36.0</b> | 15.7        | apply previously learned skills in new situations           | 8.3  | 22.9        | 16.7 | <b>43.3</b> | 8.8         |
| 1.8         | 11.3        | <b>39.8</b> | 31.4        | 15.7        | deal with uncertainty                                       | 13.9 | 24.7        | 16.3 | <b>31.9</b> | 13.1        |
| 32.7        | 14.8        | <b>33.6</b> | 27.3        | 20.7        | use a range of research strategies to investigate a problem | 28.3 | <b>36.7</b> | 12   | 18.3        | 4.8         |
| 5.9         | 16.2        | <b>29.8</b> | 27.2        | 21.0        | empathise with the feelings and needs of others             | 14.7 | 28.2        | 14.7 | <b>33.7</b> | 8.7         |
| 5.3         | 16.2        | <b>33.8</b> | 25.2        | 19.5        | critically review evidence                                  | 25.5 | <b>42.4</b> | 13.2 | 16.5        | 2.5         |
| 5.5         | 16.5        | 30.0        | <b>34.0</b> | 13.6        | evaluate and use others' feedback on my learning            | 12.7 | 24.7        | 14.7 | <b>39.4</b> | 8.4         |
| 9.0         | 16.6        | 24.3        | <b>32.6</b> | 17.6        | assess my own work or performance                           | 7.5  | 12.5        | 16.7 | <b>54.2</b> | 9.2         |
| 9.6         | 15.4        | <b>33.1</b> | 23.9        | 18          | learn with a global context in mind                         | 28.4 | <b>36.8</b> | 16.8 | 13.6        | 4.4         |
| 6.3         | 16.9        | <b>33.8</b> | 32.8        | 10.3        | be aware of my academic strengths and weaknesses            | 5.0  | 10.8        | 10.0 | <b>54.4</b> | 19.9        |
| 5.9         | 20.3        | <b>37.6</b> | 21.0        | 15.1        | take on a leadership role                                   | 25.6 | <b>32.0</b> | 14.8 | 20.0        | 7.6         |
| 15.3        | 23.3        | <b>32</b>   | 24.0        | 5.3         | analyse textual or visual data e.g. interviews/photographs  | 11.2 | 25.3        | 15.4 | <b>41.9</b> | 6.2         |
| 17.9        | <b>26.5</b> | 25.5        | 17.9        | 12.3        | critically examine my cultural values and beliefs           | 31.8 | <b>39.3</b> | 10.7 | 17.4        | 0.8         |
| <b>38.9</b> | 22.6        | 17.9        | 15.0        | 5.6         | analyse numerical data                                      | 7.4  | 17.7        | 15.2 | <b>48.6</b> | 11.1        |
| 20.1        | <b>33.6</b> | 28.5        | 12.4        | 5.4         | assess the work or performance of my peers                  | 17.4 | <b>37.6</b> | 20.2 | 19.4        | 5.4         |
| <b>57.9</b> | 6.0         | 7.6         | 14.9        | 13.6        | communicate effectively in a second language                | 7.5  | 11.3        | 11.7 | <b>49.2</b> | 20.4        |