

Geo-Ed

## Syllabus change, student learning and teacher experiences

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**Abstract:** The new Republic of Ireland Leaving Certificate geography programme (taken by 16- to 18-year-olds), which was first examined in 2006, marked a major change in approach from its predecessor. This paper presents the results of a study that explored the learning outcomes in light of the stated aspirations of the syllabus, teacher perceptions and of society's expressed concerns about the nature of education today. Research data were obtained via interviews with teachers and questionnaire surveys with participants. The results from this study indicate that the new programme appears to have some impact on learning outcomes, both positive and negative.

**Key words:** student learning, syllabus change, teacher perceptions.

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In the Republic of Ireland, secondary education is a unitary system; most schools follow the national curriculum. Virtually all students in lower secondary school study geography, with 92% completing the Junior Certificate (JC) course in 2008 (State Examinations Commission (2010)). Of these students, 49% also take geography to Leaving Certificate (LC) level, completing the programme at 18 years old (State Examinations Commission (2010)).

The national curriculum has not been subject to frequent change. The current LC syllabus was implemented in 2004, replacing a curriculum in use since 1971. The stability between 1971 and 2004 proved helpful for teachers and students as it provided a degree of confidence about requirements. However, a number of major concerns had risen over time, focusing on the content-based nature of the syllabus and an assessment-based curriculum. As there was a long content list, programmes were generally limited to those aspects that featured regularly in the examination paper. Textbooks and other resources concentrated on these and as a result,

students could successfully complete the course without developing a general understanding of geography. The programme was assessed by means of a single three-hour terminal examination that was composed of four questions for higher level students plus a world map question for ordinary level students.

The 2004 curriculum is a radical departure from this, with clear aims and objectives, a core programme and alternative pathways. The assessment is also different, with a terminal examination consisting of multiple-choice, short and long (essay) answers plus a geographical enquiry carried out and submitted prior to the final examination. We discuss differences between the two approaches in detail.

### Stage one: issues and methodology

We investigated the effects of the changes on the student experience of geography at LC level using the following questions:

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- 1 In what ways is the new curriculum different from the 1971 statement?
- 2 Does the new syllabus have any impact on learning outcomes?
- 3 What are the teachers' responses to the change?
- 4 Will the teacher expectations be realised?

The initial phases of the study involved an examination of course materials and the collection of data from teachers. The findings from this study helped us design an instrument to explore student learning changes. We examined and compared the documentation relating to both programmes. We also conducted semi-structured interviews with 26 teachers during the summer and early autumn of 2004. We employed a snowball technique to recruit participants. Interviews were recorded, transcribed and NuDist was used to analyse the responses. At the time of the interviews, teachers had received the syllabus document and some in-service training. Textbooks and other materials had also begun to appear. We assumed that teachers had a basic understanding of the curriculum, although the interviews revealed wide variation in knowledge.

#### *Identifying the perceived changes*

The earlier syllabus had been criticised for being limited in its guidance, outdated and containing a large amount of content; it was impossible for teachers to plan programmes to complete all requirements. The assessment had become predictable, focusing on a limited number of course sections. This outcome encouraged teachers to design programmes based on a selection of areas favoured in the exam. Candidates had to answer four questions, one based on an Ordnance Survey (OS) map, one on regional geography and two others selected from physical, social and economic geography. It was possible to avoid either one of the last two sections by completing a fieldwork project or developing skills in working with aerial photographs as these two topics were included as full questions in the examination. Teachers often stated that fieldwork was important for the developmental understanding of physical and human environments, but it was not mandatory. Many schools did not conduct fieldwork, and since the related exami-

nation question had a consistent format, some students memorised reports on projects they had not actually carried out.

Few schools studied social geography despite a teaching objective that 'a student should have had the opportunity of developing positive attitudes to such matters as the interdependence of peoples and the need for social co-operation at all levels' (Department of Education 1988, p. 332). Teachers were encouraged to be aware that 'geography should be taught from motives . . . which go beyond the narrow and traditional objectives of imparting geographical knowledge and the training of students in the recall of facts' and were advised that they should use 'a methodology that includes many and varied techniques and skills' (Department of Education 1988, p. 332). However, teachers had no guidance on how to achieve these goals, and the assessment process did not encourage them to make the attempt.

The 2004 syllabus was very different from its predecessor. It had broad aims and specific objectives focussing on:

- Knowledge of physical, environmental, social, cultural and economic phenomena and processes, plus interactions and interrelationships between these processes
- Developing citizenship 'to understand the opportunities for, and challenges of, global interdependence' and 'to assist students to become well-informed and responsible citizens'
- Facilitating lifelong learning 'to provide students . . . with an interesting and enjoyable experience and imbue them in a life-long love of their natural and cultural environment'
- Developing ' . . . skills which will help them make informed judgments about issues at local, national and international levels, including: maps, figures, statistics, photographs, pictures, textual sources, presentation and communication; investigative, social and evaluation skills; and the use of information and communication technologies'

There was a compulsory core curriculum plus options that allowed teachers to select aspects of geography of interest and relevance both to their students and themselves.

All students had to take one of two elective modules. In order to allow for differentiation by ability, the option modules were available only to Higher Level (more able) students. At this level, emphasis is on the need for integration of various aspects and on the importance of skills and active learning. The assessment format ensured that all candidates completed the core modules, including a geographical enquiry. These are assessed using multiple-choice or one-word answer questions and by a report submitted before the final examination. There were no longer questions dealing either exclusively with OS maps or with aerial photographs.

Detailed assistance was provided in 'Guidelines for Teachers' (Department of Education and Science 2004) that included guidance on assessment, teaching the syllabus (including an exemplar programme structure), sample lesson plans and a resource list. 'Guidelines' emphasised the need to teach for understanding, noting that 'knowledge does not always imply understanding. In particular, knowledge acquired for the short-term goal of performing well in examinations does not transfer to life situations' (Department of Education and Science 2004, p. 64).

#### *Understanding and developing learning*

In our study, we selected male and female teachers. We interviewed teachers from a range of schools, including mixed and single-sex schools, day and boarding schools and schools with varying student catchments. The mean length of teacher service was 17 years, with a range of four to 29 years.

While the respondents had some reservations about the changed programme, all of them welcomed the change overall. The reasons for these positive attitudes are practical. One teacher stated, 'I think it's actually going to be good because we know exactly where we're going' (T003), and 'also, it's going to be shorter' (T006). Others considered that change itself was important, saying, 'I'm glad it's come in, the old course is stale' (T008). Other responses reported increased satisfaction with the new course. For example, 'part of my passion for geography is because it's such a general thing, it's an integrator, if you like, across a whole spectrum' (T004). Another

noted, 'I'm looking forward to it because it's a change and I need to change for myself to keep myself active. It gives me scope to use a lot more case studies' (T010). One final area of positive feedback was that it would no longer be possible to select such a small part of the syllabus for study 'then you have areas where you focus on. I like that idea that you do everything, you don't just pick and choose, you cover so much more' (T021).

A major concern was that the course could lack depth, for example, 'we are going to know a little about a lot of countries, places, but not enough about anything in particular' (T002) and 'it could be a bit bitty and you know you have to cover things and master things . . . quickly. Less seems to be done in depth as well to master it' (T018). Some reservations appeared to be pragmatic. For example, 'I had it down to a fine art, looking at certain elements of the course to the exclusion of others. It now means that I have to tap into other areas' (T007). Some also felt that the course might be too challenging for students, while others considered that it might not provide sufficient challenges – in this, there was no consensus.

#### *Development of global and local citizenship*

Many of the interviewees considered that the new course increased the focus on these aspects of geography. For example, one teacher stated that 'they have to know what's going on currently, be it political, or human, the catastrophes that are going on, the earthquakes whatever, bring it right up to date' (T001), while another noted, 'it gives the students a broader base, things like culture, identity, ecology, things like that' (T011).

Generally, the changes were viewed positively. For example, it was noted that 'it's the kind of stuff that everybody should know' (T008). Another teacher considered that 'if we tackled it well, we could perhaps educate people in such a way that we could prevent difficulties relating to racism' (T007). Some also commented that the move away from the Eurocentric focus of the previous syllabus would be helpful in developing global citizenship and mutual understanding, for example, 'Asia didn't exist apart from development and how we can help them and the problems they have' (T016).

A small number of participants expressed reservations based on the diverse and changing nature of the course. For instance, 'I find a lot of the social geography very hard to keep up with because it's changing so frequently' (T010). Others had concerns regarding the level of student comprehension of complex concepts and issues, suggesting that weak understanding may lead to 'waffle' in assessments. A final group considered that some suggested topics might lead to difficulties, 'I thought the Northern Ireland issue too close to home to get a good, unbiased discussion going' (T020).

A final concern was that the new programme did not address a perceived deficiency of the old programme – a requirement for students to learn about Ireland in any depth.

I think definitely if the children are in Ireland . . . you start at local level. If a child has some understanding of . . . space around them at local level . . . you've some chance of extending it into the broader world. (T007)

### *Skills*

Positive comments on the development of skills were relatively limited, focusing on continuation from the prior (JC) course and the need for more varied use of media for students who are 'so used to visual stimuli (that) we were falling behind' (T002). However, some concern was expressed about changing from a content focus to a skills focus. For example, 'what kind of skills, and do you have time for the skills?' (T017) and 'if we're going to go down that road . . . there's going to be a lot of time involved in looking all that up' (stimulus materials) (T003).

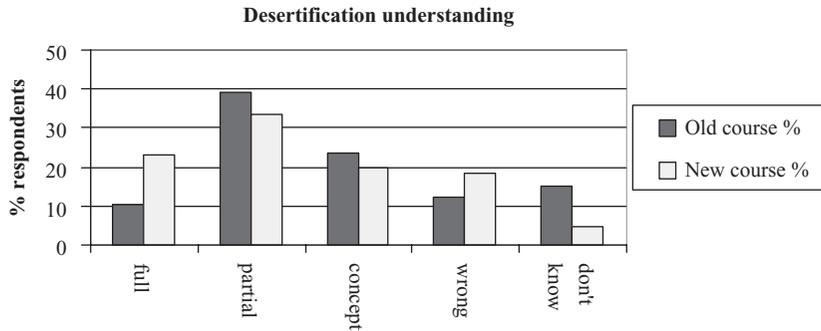
The skill area that excited most comment was map work, specifically in relation to OS maps. Two interviewees considered that the integration of OS maps into the whole programme was a positive move. 'I do think that maps will be brought in more, linked in to the physical questions more than they have been and I think that's a good idea' (T023). However, most of the comments about OS work were concerns about the change from the previous approach. Some of the respondents considered this focus important because map work is a fundamental aspect of geography.

'Maybe leave the OS as a question on its own, to have skills, I think that's something that's lacking in a lot of subjects' (T012). One respondent with concerns about the possible loss of map skills commented that 'we are losing the skills, but on the other hand if we concentrate on the skills without knowledge then it's no good either' (T020). Although the term 'knowledge' is used, the respondent's definition of knowledge corresponded more closely to an understanding of relevant content rather than just facts. Others felt that the concentration on map work supported by the full examination question was helpful for weaker students – 'a lot to be gained from continuity and particularly if you are . . . trying to practice their map drawing skills, their map reading skills' (T018).

### **Stage two: student-based surveys**

We designed a questionnaire to obtain data on the effects of changes on student outcomes with a sample based on student availability. Level 1 and level 2 students at the National University of Ireland, Maynooth were available. Although these students are not an entirely representative sample of LC geography candidates, there is no reason to suppose that their experience of the two programmes was atypical. We completed the survey in October 2006 when level 1 students would have followed the new programme and those in level 2 the older one.

The questions established students' experiences of geography along with profile data and information on programmes of study within the university. Other questions either were designed by teachers or arose from the syllabus. These related to sustainability-/environment-/citizenship-related issues, global events and map interpretation. The questions about map interpretation examined the teacher-predicted decline in OS map skills. The questions reflect the work of Boardman (1983), and Gillmor and Waddington (1993). In the Gillmor and Waddington study, teachers were asked to rate the difficulty of a wide range of skills involved in using and interpreting the OS maps. Findings showed that teachers considered the use of compass directions and understanding contours were straightforward skills to learn but that the interpretation of cross-sections and



**Figure 1** Understanding of desertification.

estimation of height between contour lines were more difficult. Boardman's earlier work showed that students who were less experienced and/or took a less challenging geography course were less likely to be able to identify heights between contour lines than those actually on contour lines.

We coded and analysed the questionnaires using SPSS. A classification system was used to code the answers – with answers being classified using a four-fold system ranging from correct (a dictionary-standard definition) to wrong. We used a cross-tabulation procedure to compare the two cohorts, and a chi-square test was used to assess the strength of differences between the two groups.

#### *Outcomes of student survey*

The questionnaire was completed by 523 students. The entire first-year cohort studied geography, while the second-year group included both geography students and people studying other subjects. A total of 406 six students had taken LC geography, and 370 stated the year in which they completed the programme. Of these students, 281 (75.9%) took the old course, while 89 (24.1%) had completed the new programme.

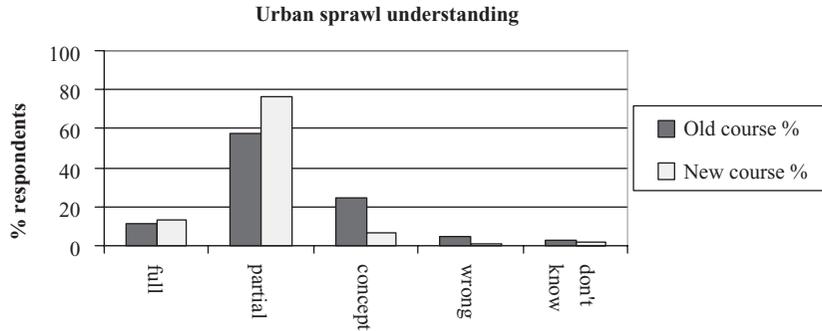
The two multiple-choice questions were in the environment-/sustainability-/citizenship-related area. They related to the issues of greenhouse effect and fishing as a resource and they indicate some difference between the two cohorts. These differences were small, with the old course students having a slightly higher level of knowledge about the former (74% correct – old course, compared with 70.8% – new course) and the new course of the latter

(66.9% old and 68.5% new). Thus, for these questions, there was no support for the hypothesis that the new programme allowed students to develop a greater understanding of these global issues.

Two open questions revealed evidence that the changed curriculum influenced learning outcomes for participants. When the respondents were asked to define desertification, clear differences in understanding between the two groups were revealed. A higher proportion of new course respondents showed more understanding of the concept (23% compared with 10% of old course people) (see Fig. 1).

Further, while only 4% of the new course cohort indicated that they could not answer the question, 41 people (15%) of the old course group gave this response (Fig. 2). The difference is statistically significant ( $P = 0.002$ ) and provides support for the suggestion that the emphasis in the new syllabus objectives on environmental and sustainability aspects of citizenship has an increased effect on student's understandings of these issues.

When urban sprawl was examined across the two groups, it was found that there was a statistically significant difference in understandings of this concept ( $P = 0.002$ ), with the new group indicating a better understanding of the concept. A small percentage of both groups reported a full understanding (13.5% new and 11% old), but a considerably higher percentage of the new cohort showed a partial understanding (76.4% (new) compared with 57.1% (old)) (see Fig. 2). This, again, suggests that the change (from old to new) has had a positive influence on outcomes.

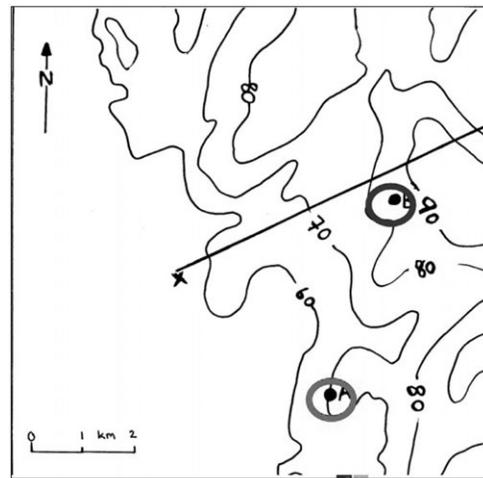


**Figure 2** Understanding of urban sprawl.

There were differences between the two cohorts on global events, but these were small. The older programme group generally indicated a higher level of knowledge about earthquakes and the most likely location to experience a tsunami. However, the question on Hurricane Katrina was answered correctly by 46.6% of the new course respondents compared with 31.0% of the old programme participants. It would be hard to support any suggestion that an emphasis in the new programme on students becoming 'well informed ... citizens' has been achieved on this evidence.

With map work, the analysis revealed that approximately 83% of both groups were able to identify the correct compass direction, and none of the participants indicated that they did not know the answer. The old course respondents were slightly better at identifying the correct orientation of the cross-section compared with those who had taken to new course (79% old/75% new). However, when the respondents were required to identify height between contours, there was a much greater difference between the two groups ( $P = 0.0005$ ), with 81% of the old course group correctly identifying the height compared with only 48% in the new course group (see Fig. 3).

These findings provide clear support for the teachers' contention that the decreased emphasis on OS map work has led to a decrease in the development of these skills for students. Since an understanding of maps is clearly a fundamental skill for geographers and indeed, arguably a life skill, we believe that this finding is a cause for concern.



**Figure 3** Identification of heights using contour lines. Height A (on contour—70 m) Height B (between contours—85 m).

## Conclusions

It would appear that the change in the programme has had effects on the learning outcomes for students. There is some indication that general knowledge and knowledge of events, particularly natural disasters, had increased. Further, students have gained more understanding in some areas of the environment, sustainability and global citizenship aspects as shown by the improved performance of the new course group in defining urban sprawl and desertification. Of course, it is also important to acknowledge that this change has been limited. Further investigations may reveal

other changes of a positive nature, but unfortunately, time and resources did not permit this.

However, the new programme does appear to have a detrimental effect on map skills as predicted by the teachers. While the new programme places considerable emphasis on the use of maps, the removal of a compulsory question has (as predicted by the teachers) led to some decrease in the required skills. It can not, of course, be argued that map skills are of more importance than all other skills aspects, but an adequate understanding and use of maps is clearly an important area of geographical education as are the life skills that they have the potential to provide. Further, these skills are quintessentially geographical in nature, and in a time when the inclusion of subjects in curricula may be questioned, it is important that these remain an obvious and well-developed part of geography. We therefore suggest that a review of the use of maps within the programme might be appropriate. It must, however, be acknowledged that any changes to the current programme might result in other aspects being assigned as less important, and therefore, difficult choices need to be made. In the words of one teacher/interviewee, 'I mean, you can never finish teaching geography' (T004).

This study has shown that curriculum changes do affect outcomes and that teachers are, to some extent, able to predict what these changes may be. Future work may involve further exploration of the impact of changes in

the stated requirements on outcomes, focusing on other curricula and/or other subjects.

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