



Northern Ireland  
Assembly

## Research and Information Service Briefing Note

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# Teacher Training: Primary Science Content

## 1. Summary

Initial Teacher Education for the primary school phase is offered by 3 institutions in Northern Ireland: St Mary's University College, Stranmillis University College and the University of Ulster (Coleraine campus).

Prospective students can apply to study a Bachelor of Education (BEd), lasting four years, or a Post Graduate Certificate in Education (PGCE), which is completed in one year.

Primary BEd students in both St Mary's University College and Stranmillis University College receive tuition in the Areas of Learning which constitute the Northern Ireland Curriculum. The primary BEd at St Mary's University College includes a subject specialist option. This allows students entering the primary sector to study university level Science modules. The students who take this specialism are trained to promote Science in primary schools.

Whilst the designation of subject specialist has been removed from the BEd at Stranmillis University College, students can opt to take Science and Technology modules. These modules aim to develop students' knowledge and awareness of the

most effective methods for supporting pupil learning in primary Science and Technology.

None of the Initial Teacher Education colleges have a strategy to recruit Science Specialist to their courses, nor do they have plans to do so. There are 8 Science Specialists in the 2013/14 intake of students at St Marys University College. Stranmillis University College enrolled 5 students on the optional Science and Technology module during the same period.

Primary phase PGCE students do not specialise in a particular subject. However, PGCE students already hold a degree (or equivalent) before embarking on teacher training. Therefore they should have already gained specialist knowledge and skills in a particular field.

The Department of Education is currently finalising a draft strategy and implementation plan for the future direction of teacher professional development.

## 2. Initial Teacher Education Providers

Initial Teacher Education (ITE) is phase-related. This means that both the professional studies and the school experience (teaching practice) elements are directed at teaching in either primary or post-primary schools. ITE is provided in the following institutions:<sup>1</sup>

### 2.1. St Mary's University College: a College of Queen's University Belfast

- a four-year BEd (Hons) course directed at primary level teaching;
- a four-year BEd (Hons) courses directed at post-primary level teaching in Business Studies, Religious Studies, Technology and Design, Mathematics/Science; and
- a one-year course directed at primary level teaching in Irish Medium Education schools for university graduates leading to the award of a PGCE.

### 2.2. Stranmillis University College: a College of Queen's University Belfast

- a four year BEd (Hons) course directed at primary level teaching;
- a four-year BEd (Hons) courses directed at post-primary level teaching in Business Studies, Religious Studies, Technology and Design, Mathematics/Science; and
- a one-year course directed at primary level teaching for university graduates leading to the award of a Postgraduate Certificate in Education (PGCE). The subject specialism on offer is Early Years.

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<sup>1</sup> Department of Education Website

### 2.3. Queen's University Belfast

- a one-year course directed at post-primary level teaching for university graduates leading to the award of a PGCE. The subject specialisms on offer are English, Mathematics, Computing/IT, Science (Biology, Chemistry, Physics), Modern Languages, Religious Education, Social Sciences (Politics, Sociology), Irish Medium Education (in association with St Mary's University College).

### 2.4. The University of Ulster (Coleraine)

- a one-year course directed at primary level teaching for university graduates leading to the award of a PGCE;
- a one-year PGCE course directed at post-primary level teaching for university graduates holding relevant degrees. The subject specialisms on offer are: Art and Design, English with Drama and Media Studies, Geography, History, Home Economics, Irish Medium Education (in association with St Mary's University College), Music, Physical Education, Technology and Design.

## 3. Teaching Qualifications

The General Teaching Council for Northern Ireland (GTCNI) has a statutory duty to determine who should be a member of the teaching profession in Northern Ireland. The GTCNI approves qualifications and eligibility to teach in Northern Ireland. The most conventional pathway into teaching in Northern Ireland requires teachers to possess either of the following qualifications:<sup>2</sup>

- A recognised teaching degree awarded after finishing an approved teacher training course (usually lasting four years) at a university or college of education in the United Kingdom.
- A recognised degree or equivalent qualification plus a Postgraduate Certificate in Education (PGCE) awarded after finishing an approved one-year full-time course at a university or college of education the United Kingdom.

Additionally, prospective teachers must have a GCSE grade A–C or equivalent in English language, Mathematics, and (for primary teaching) Science.

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<sup>2</sup> Information provided by GTCNI

## 4. Initial Teacher Education: Primary Science

### 4.1. St Mary's University College

St Mary's University College offers a four-year BEd course. All BEd Primary degree students undertake Curriculum Studies Science courses in Years 1 and 2. This includes the study of:

- Science Concepts
- Thematic Planning
- Activity based Work
- Investigative Practice

During first year students receive at least 20hrs of Science specific tuition. Second year involves at least 8hrs of Science specific tuition which is dedicated to preparing students for their school experience (teaching practice). Year three is devoted to Special Educational Needs and the final year involves a Capstone project. Students can opt to take an interdisciplinary Art/Science course in Year four.<sup>3</sup>

#### 4.1.1. Science Specialists

The BEd primary degree allows students to elect a subject specialism. This enables students entering the primary sector to study university level Science modules. The students who specialise in Science are trained to promote Science in primary schools. These students receive additional tuition (5 hours per week) in Science education. The students engage in hands-on activities, which encourage the teaching of procedures associated with fair-testing and investigative work. They also participate in a Subject Methods element which involves planning Schemes of Work and exploring Thematic Units in detail. The Capstone project, undertaken in Year 4, provides an opportunity for students to complete a detailed Science based project.

St Mary's University College is allocated an annual quota of 95 students for the BEd primary degree. 18 of these places are restricted to Irish-medium students, leaving 77 places for English-medium students across 9 subject areas (Art & Design, English, Geography, History, Mathematics, Music, PE, RS and Science). St Mary's University College sets a target (which was met in 2013/14) to recruit 8 Science Specialists.

### 4.2. Stranmillis University College

Stranmillis University College also offers a four-year BEd course. Approximately five years ago the decision was made to remove the subject specialist option from the course. Much like St Mary's University College, primary students study all Areas of

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<sup>3</sup> Information provided by St Mary's University College Belfast.

Learning of the Foundation, Key Stage 1 and Key Stage 2 Northern Ireland Curriculum. They also study the theoretical principles which underpin teaching in primary school. All students receive 24 hours of Science tuition during both year 1 and year 2.

Whilst the designation of Subject Specialist has been removed from the BEd at Stranmillis University College students can adopt to take a Science and Technology Module in year 3 and year 4.

The module aims to develop students' knowledge and awareness of the most effective pedagogies for supporting pupil learning in primary Science and Technology. Students receive a combination of tuition in learning theory and participation in practical sessions. During workshops and seminars students explore the aims and objectives of the curriculum and examine how Science and Technology relates to and can support other areas of the curriculum. Students who take this module receive 48 hours of Science tuition both year 3 and year 4.

Students are also engaged in a STEM project, details of which can be found at:

<http://www.greenpower.co.uk/node/405>

During 2014, 5 first year students elected to take the Science and Technology module. There are approximately 100 students in this year group.<sup>4</sup>

### **4.3. The University of Ulster (Coleraine)**

The University of Ulster offers a one-year course directed at primary level teaching for university graduates leading to the award of a PGCE. There is no option to specialise in Science and specific course information with regard to Science tuition was unavailable at the time of writing.

## **5. Primary Science Specialist Student Recruitment**

There is no agreed strategy for Teacher Education in Northern Ireland. The University Colleges have acknowledged that this has had a significant impact with respect to planning.<sup>5</sup> The Department of Education is currently finalising a draft strategy and implementation plan for the future direction of teacher professional development.<sup>6</sup>

None of the ITE colleges have a strategy to recruit more Science Specialists to their courses; nor do they have imminent plans to do so. Subject Specialists at St Mary's University College self-select a specialist field before embarking on their course. The College states that The Academic Registry office uses a variety of methods to achieve

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<sup>4</sup> Information provided by Stranmillis University College

<sup>5</sup> Grant Thornton UK (2013) *Study of the Teacher Education Infrastructure in Northern Ireland*: report prepared for the Department for Employment and Learning

<sup>6</sup> Department of Education Website

the target number of Science Specialists (currently 8 per year group). This includes follow-up phone calls with potential students, and school visits.<sup>7</sup>

St Mary's University College also promotes an interest in STEM subjects in secondary schools to encourage students to pursue STEM careers, including teaching Science, through for example their sponsorship of the St Mary's University College STEM Award, organised through Sentinus.

Although students do not elect to become subject specialists at Stranmillis University College, students can self-select to enrol on the Science and Technology module. At the beginning of term, tutors from the various areas of learning address the new intake of students; students then decide which additional modules they would like to take.

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<sup>7</sup> Information provided by St Mary's University College