

# BECOMING A TEACHER

PRIMARY STUDENT TEACHERS  
AS LEARNERS AND TEACHERS OF  
HISTORY, GEOGRAPHY AND SCIENCE:  
AN ALL-IRELAND STUDY



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A report for the Standing Conference on Teacher Education  
North and South (SCoTENS)

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Cliona M. Murphy, Geraldine O'Connor, Anne Dolan and Karen Kerr  
**With contributions from:** Ivor Hickey, Janet Varley, Eileen O'Sullivan,  
Laura Walsh, Paddy Madden, Paula Kilfeather and Brian Tubbert

October 2009

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## Executive Summary

The Irish Association for Social, Scientific and Environmental Education (IASSEE) provides a forum for initial teacher educators to share their ideas in history, geography and science education. Amongst the aims of the association is the improvement of the teaching of history, geography and science education in initial teacher education (ITE). Therefore in 2002 IASSEE embarked on a longitudinal research project, which has resulted in this report. The project has been supported by funding from SCoTENS, St Patrick's College, Drumcondra and Mary Immaculate College, Limerick.

The main purpose of the research was to increase members' knowledge and understanding of their students with a view to improving teaching and learning in their respective ITE courses. The research was conducted in three phases over four years in the five ITE colleges (primary level) in the Republic of Ireland (RoI) and in the two ITE colleges (primary level) in Northern Ireland (NI). Phase 1 of the project focused on student teachers' prior experiences of, and attitudes towards history, geography and science and on the concepts of good teachers they brought with them to ITE. In phase 2 of the study, focus group interviews were conducted in each of the colleges. Phase 3 of the research gathered data on student teachers' experiences of ITE and on the concepts of good teachers they had developed over the course of the BEd programme. This report presents the main findings of the study.

Questionnaires were administered to Bachelor of Education (BEd) students in all of the colleges at the beginning of their first year and at the end of the final year of their degree courses. A total of 32 focus group interviews were also conducted with students at the mid-point of their courses. The data were gathered between September 2004 and May 2008.

### Student teachers' experiences of and attitudes to history, geography and science

- **Liking of subjects:** While there were some differences between the two cohorts, the majority of students from both RoI and NI colleges held positive attitudes towards history, geography and science at the entry and exit stages. There was evidence that their liking of the subjects increased during their ITE programmes.
- **Confidence to teach subjects:** While reported levels of confidence varied across the two cohorts, the majority of students who participated in the study indicated that they felt confident about teaching history, geography and science on entry to and on exit from ITE. During their ITE courses the students reported increased feelings of confidence in all three subjects.
- **Perceived importance of the subjects:** The majority of students maintained history, geography and science were important subjects for children to learn in primary schools. Higher levels of importance for the subjects were expressed at the exit stage. Based on their responses in both the entry and the exit questionnaires, it was apparent that the NI students felt science was more important when compared to RoI students. RoI students, on the other hand, maintained history and geography were more important than their counterparts in NI.

### Student teachers as learners of history, geography and science: Experiences, perceptions and attitudes

- Overall, the students reported many positive prior experiences as learners of history, geography and science. Positive experiences focused on interesting and enthusiastic teachers and active and participatory learning approaches. Experiments in science, fieldwork in geography and fieldtrips to historic sites in history were among the teaching and learning approaches most frequently mentioned as positive experiences.
- When the overall levels of positive and negative comments were considered across the

three subject areas, science emerged as the subject that drew the most positive and the most negative comments. Students' frequently reflected on their enjoyment of conducting experiments. Equally their responses revealed concerns relating to incidences of experiments 'going wrong'. Other concerns expressed regarding science related to the apparent requirement of memorising vast quantities of definitions and formulae.

- Geography emerged as the subject with the most positive only comments, many of which focused on the students enjoyment of fieldwork. In their negative experiences many students focused on the requirements to memorise physical features and textbook-based teaching.
- History attracted the most negative only comments with several students viewing history as a boring and irrelevant subject. Negative experiences of history were centred around the dominance of textbook-based teaching and the need to memorise content.
- Students from NI were more likely to use words relating to boredom and complexity about each of the subjects than their counterparts in the Republic, while students in the RoI frequently gave more negative comments regarding the use of text books, their experiences of reading and of memorisation of facts, than the NI cohort.

### **Student teachers' experiences of teaching geography, history and science during school placements**

- The vast majority of students gave positive comments in relation to history, geography and science and a considerably lower percentage of students gave negative comments regarding each of the three subjects on school placements.
- Students were most positive about the interaction between themselves as teachers and the children as learners. Many of the students commented on their pupils' engagement with particular topics and methodologies in each of the three subjects.
- Many of the students also gave positive comments regarding what was taught and how the subjects were taught. Issues regarding the use of resources in each of the three subjects were also frequently commented on in a positive manner.
- Students' negative experiences provided many examples of students reflecting critically on their own practice. Students commented on problems with children's behaviour and on difficulties finding or getting access to resources. Many expressed concern about the different and sometimes contradictory expectations of class teachers and college supervisors which could cause problems for the students.

### **Concepts of the Good Teacher**

#### **What is the good teacher like?**

- In both the entry and exit questionnaires students ascribed personal and interpersonal characteristics to the good teacher of history, geography and science, such as the need to be interesting, creative and imaginative.
- While students in the entry questionnaire identified a range of professional characteristics of the good teacher around knowledge, preparation and competency in teaching skills, this category was noticeably larger in the exit questionnaire. A significantly higher proportion of students in the exit cohort placed emphasis on the importance of professional competency, planning, using resources and being knowledgeable about subject matter in the three subject areas.
- In both questionnaires students saw it as important that teachers would be enthusiastic about and interested in each of the subjects.
- While risk taking was evident as an emerging concept in the entry data, it had a stronger presence in the exit data. The teacher as risk-taker was associated with creativity and innovation and with not being afraid to do fieldwork or conduct experiments.

### ***What does the good teacher do?***

The responses from the entry cohort indicated that the students were already positively disposed towards ideas such as active and participatory approaches to teaching and learning in history, geography and science.

- With regard to history, it was evident from the entry data that the students' apparent commitment to such interactive approaches was associated in many cases with a perception of history as problematic. This view was considerably less apparent amongst the responses from the exit cohort where greater emphasis was placed on historical investigation.
- A similar pattern was seen in relation to geography amongst the entry cohort, where the use of active and /or integrated approaches was presented by some as a way of making geography more interesting and enjoyable. This concern was not as apparent at the exit stage where there was a much greater emphasis on geographical investigation and enquiry-based learning.
- The entry cohort maintained that good teachers tried to ensure science was accessible to children by making it fun and enjoyable and by providing them with opportunities to conduct practical activities. Child-initiated, enquiry-based learning was more evident amongst the exit cohort's responses along with ideas associated with constructivist approaches to teaching
- There was little mention of ICT in either the entry or the exit concepts across all three subjects. Neither was there much explicit reference to the role of discussion in developing historical, geographical and scientific understanding.

## Chapter One

### INTRODUCTION

**1.1** The Irish Association for Social, Scientific and Environmental Education (IASSEE) was founded in 2000 to provide a forum for the sharing of ideas and practice for college lecturers in initial teacher education (ITE) in the areas of history education, geography education and science education. While the main focus of the association is on initial teacher education for primary teachers, there is an emerging interest and membership amongst teacher educators for second level. Originally, the association included lecturers in all of the colleges of education in the Republic of Ireland (RoI) but it quickly expanded to include lecturers in Northern Ireland (NI).

The aims of the association are:

- To improve the teaching of history, geography and science in initial teacher education through sharing practice
- To develop a research base for history, geography and science education in initial teacher education in Ireland
- To promote collaboration between initial teacher educators on an all-Ireland basis
- To provide a forum for debate and discussion on initial teacher education
- To promote the development of post graduate research in history, geography and science education
- To promote the development of good practice in the teaching of history, geography and science at primary level in Ireland.

In order to further its aims, IASSEE organises an annual conference at which members of IASSEE, teacher educators from outside of Ireland and international experts in the three areas present their research. The conference also provides the opportunity for post graduate researchers in history, geography and science education to present their research. Related areas such as citizenship education and development education are also featured.

In 2002 IASSEE embarked on a longitudinal research project which has resulted in this report. The research project has been supported by funding from SCoTENS, St. Patrick's College, Drumcondra and Mary Immaculate College, Limerick. The main purpose of the research was to increase members' knowledge and understanding of their students with a view to improving the courses on offer in ITE. Throughout the study, the original purpose remained paramount and preliminary findings informed change in the content of courses from an early stage in the process. The research was conducted in three phases between 2004 and 2007/8 with all Bachelor of Education (BEd) students in all of the colleges of education in Ireland. Phase 1 of the project focused on student teachers' prior experience of and attitudes toward history, geography and science and on the concepts of good teachers they brought with them to ITE. In phase 2 of the study, focus group interviews were conducted in each of the colleges. Phase 3 of the research gathered data on student teachers' experiences of ITE and on the concepts of good teachers they had developed over the course of the BEd programme. This report presents the main findings of the study.

The report is laid out in the following way:

The remainder of this chapter outlines the context of the study in terms of initial teacher education in Ireland and the broader context of curriculum change at primary level. Chapter 2 provides an overview of the relevant literature from which this study draws. Chapter 3 gives a more detailed account of the methodology of the research. Chapter 4 presents the findings in relation to the attitudes of the entry and exit cohorts towards the three subject areas. Chapter 5 presents the positive and negative experiences of the respondents in the three subject areas prior to their college entry. Chapter 6 examines their experiences in college and on teaching

practice. In chapter 7 the concepts of the good teacher of history, science and geography which the students had on entry and on exit are discussed. The concluding chapter, chapter 8, draws together the findings of the study and their implications for the teaching of history, geography and science education in initial teacher education programmes, along with recommendations for future action and further research.

### 1.2 Initial Teacher Education in Ireland: Provision for History, Geography and Science Education

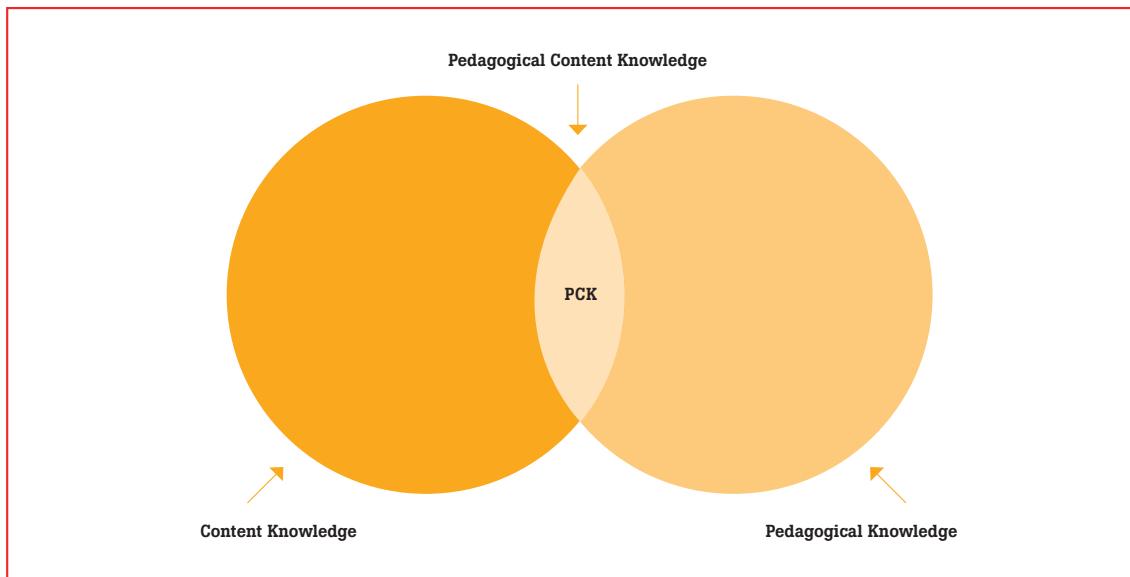
As Douglas Osler argues in his policy review of teacher education in Northern Ireland, initial teacher education must have the capacity to respond to curriculum change:

A healthy curriculum is constantly changing. The ability to adapt to and accommodate change must be built in as one of the capacities of teacher education as in other aspects of the national education system. (Osler, 2005, p16)

ITE must also have the capacity to respond to a range of other factors, such as changing needs within schools, emerging issues within society and within the education system, research and discourse on children's learning and initial teacher education itself and, not least, the needs and views of student teachers. The course provision outlined here represents what was experienced by the student teachers who took part in this study between 2004 and 2008. This provision is under constant review; in some cases, changes have been made since the beginning of the study and in others change is ongoing. The provision outlined below, therefore, is primarily to contextualise the study, rather than to give a full description of current provision within the colleges.

When the report *Preparing Teachers for the 21st Century: Report of the Working Group on Primary Preservice Education* was published in the Republic of Ireland in 2002, the provision for initial teacher education in the areas of history, geography and science education was acknowledged to be in need of development. Existing resources were deemed to be weak 'both in personnel and in time' (DES, 2002, p106). The report recommended that providers develop courses in these areas in response to the revised primary curriculum. Provision has grown significantly in the intervening years with the development of dedicated and integrated courses and an increase in personnel across the three areas. Provision varies across the colleges and in both jurisdictions, with each college developing its courses according to its own needs and resources. As is evident from the outlines provided below, there is considerable diversity in provision across the colleges in terms of hours, mode of delivery and the extent to which subject areas are integrated with each other and with other subject areas, and whether or not students also have access to the subject as an academic subject. What each college shares, however, is an approach to all three areas that is founded on the ideas of enquiry, a social constructivist approach to children's learning and a concern with the development of pedagogical content knowledge. The concept of **pedagogical content knowledge (PCK)** was developed by Lee Shulman (1986) and has had a significant impact on teacher education. It is premised on the idea that there is a particular domain of teacher knowledge at the intersection between subject knowledge and pedagogical knowledge, which he termed 'pedagogical content knowledge' (figure 1.1 below).

**Figure 1.1: Graphical representation of pedagogical content knowledge  
(adapted from Shulman, 1986)**



Shulman (1986) defined pedagogical content knowledge as:

The most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations – in a word, the most useful ways of representing and formulating the subject that make it comprehensible to others... Pedagogical content knowledge also includes an understanding of what makes the learning of specific topics easy or difficult: the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning of those most frequently taught topics and lessons  
(Shulman, 1986, p9)

As a concept it has proved hugely influential and useful in the development of methodology courses in teacher education. While Shulman's definition remains the most used, it has evolved as a concept and others have offered both critique and development (see, for example, Rowland, Huckstep and Thwaites, 2005; Ball, Hoover and Phelps, 2008).

Undergraduate initial teacher education in Ireland is characterised by two models of provision: a BEd programme that includes other academic subjects along with education and one that focuses solely on education. Table 1.1 summarises the provision across the seven colleges during the period of the study, four of which offer academic subjects in the areas of history, science and geography.

**Table 1.1 Subject provision for history, geography and science in BEd programmes**

<b>College</b>	<b>Academic Subjects</b>	<b>Education Subjects</b>
St. Mary's University College, Belfast	History Geography Science	Curriculum Studies (History) Curriculum Studies (Geography) Curriculum Studies (Science)
Stranmillis University College, Belfast	History Geography Science	The World Around Us (incorporating history, geography and science)
Church of Ireland College of Education, Rathmines, Dublin		Social, Environmental and Scientific Education (incorporating history, geography and science)
Coláiste Mhuire, Marino, Dublin		Social, Environmental and Scientific Education (incorporating history, geography and science)
Froebel College, Blackrock, Dublin		Social, Environmental and Scientific Education (incorporating history, geography and science)
Mary Immaculate College, Limerick	History Geography Science	Social, Environmental and Scientific Education
St. Patrick's College, Drumcondra, Dublin	History Geography Bioscience	History Education Geography Education Science Education

The following section provides a more detailed overview of provision in each of the colleges involved in the study and reflects practice in those colleges for the duration of the study (2004–2007/8) as well as any significant changes that have taken place since then. All of the information contained below was provided by the individual colleges involved in the study.

#### **St Mary's University College, Belfast (Northern Ireland)**

Curriculum studies provision for the subjects of history, geography and science in Primary Education is provided under the umbrella of 'The World Around Us'. Students receive lectures and workshops over a four-year period with a distinct progression in emphasis and approach. In earlier years the emphasis is on the subjects per se, but later the subjects are taught with an emphasis of thinking skills, creativity and how cross-curricular integrated teaching can be developed.

In Years 1 and 2, the three subjects are developed in parallel within a single module with a common assessment. The aim is to promote the knowledge and skills of the individual subjects within the framework of the 'Big Ideas' that link the three subjects. These are: interdependence; movement and energy; change over time and place.

In Year 3 science splits from history and geography. The latter two are combined under the title of Local and Global Dimensions in Education. Science is taught in conjunction with art and music in a course that focuses on creativity and subject integration as these subjects are seen as central to cultural development in society.

In the final year, Year 4, there is no provision for history or geography. Science is taught as a series of interactive workshops in which the theme is to link science with literacy. The module is co-taught by staff from both science and literacy. Various genres are explored from poetry to factual writing through which teachers can help children to learn about science and to express their knowledge to others.

#### **Stranmillis University College, Belfast (Northern Ireland)**

In Stranmillis University College all Primary BEd students are introduced to aspects of teaching geography, history and science in Years 1 and 2 of the degree within Curriculum Studies classes. Each of the subjects has approximately 8 hours per subject in Year 1 and the same in Year 2. In geography and history students are taught in groups of around 30; because of its practical nature, science classes are around 20 in size. In each subject the content of what is to be taught, based on the Northern Ireland Primary Curriculum, is explored, and classroom resources and teaching approaches which might be used are demonstrated and discussed. The smaller group sizes facilitate a practical and participatory approach. In Years 3 and 4 of the degree students are allowed some scope in choosing optional modules. In Year 3 a Curriculum Studies 'The World Around Us' module in one of the subjects may be chosen in which additional aspects of the teaching of the subject are explored at greater depth. Similarly, in Year 4 modules such as 'Local Studies' and 'The Use of Stories in Teaching Science and Maths' are offered. The revised Northern Ireland Primary Curriculum stresses 'Connected Learning', and while the three subjects within the learning area 'The World Around Us' are dealt with by different lecturers within their subject areas, cross-curricular/ integrated approaches are stressed throughout.

In addition Stranmillis BEd students have until 2009 opted on entry to the College to take a specialist academic subject. Part of the time within many of these specialist modules is given over to the subject application aspects of those subjects, giving the staff and students the opportunity to look in more detail at the teaching of the subjects in the primary school.

A revision of the BEd degree at Stranmillis is currently underway; the new structure being advanced sees the complete removal of the subject specialist aspects that are currently part of the degree. From September 2009 students will not have any subject specialist classes, even in subject applications. Years 1 and 2 will see a slight increase in Curriculum Studies hours for all students, and the subject/area of learning options provided in Years 3 and 4 for all students will also see a slight increase.

COLÁISTE MUIRE MARINO, CHURCH OF IRELAND COLLEGE OF EDUCATION, AND FROEBEL COLLEGE OF EDUCATION ARE ASSOCIATE COLLEGES OF TRINITY COLLEGE, DUBLIN AND HAVE AN AGREED COMMON COURSE IN ALL SUBJECT AREAS OF THE BED., PROGRAMME ALTHOUGH THERE IS FLEXIBILITY IN DELIVERY OF THE COURSES AT COLLEGE LEVEL.

#### **Church of Ireland College of Education, Rathmines, Dublin (Republic of Ireland)**

Student teachers in the Church of Ireland College of Education attend courses in the teaching of history, science and geography each year over the course of their three year BEd programme. The total time allocated to lectures over this period in the three subject areas is 105 hours. All subjects receive equal lecture time. Additional to the 105 hours are some fieldtrips as well as an elective offered to Third Year students entitled 'Heritage and Local Studies'.

In their First Year, students have a 42 hour course which is shared equally between history, geography and science education. The course introduces the essential elements of teaching geography, history and science at primary school level and examines the defining features of the Irish primary curriculum in each subject area. The course focuses on teaching methodologies and content for the class groupings (1st / 2nd class and 3rd / 4th class) which First Year students have on teaching practice. Examples are also taken of topics and associated pedagogy for more senior and junior classes. Students experience practical workshops as well as lectures and field trips during their First Year.

In Second Year students undertake a 42 hour course which encompasses all three subject areas of Social Environmental and Scientific Education (SESE). There is a focus on teaching classes at middle and senior level of primary school. Students take a module on project work and integrated learning and explore integration and project work across history, geography and science. During Second Year there is a particular emphasis on an integrated approach to local studies and all students research an aspect of local studies for their home locality.

In the final year (Third Year) a course of 21 hours is undertaken, 7 hours in each of the three subject areas of SESE. In addition, there are some further workshops and fieldtrips. During the Third Year there is an emphasis on early childhood education and on teaching history, geography and science to junior class levels. Students also develop further their understanding of methods of assessment in geography, history and science across all class levels. Students examine methods of preparing short term plans for particular age groups through case studies. They also explore how to prepare long term plans in the form of yearly schemes for each SESE subject area.

In addition to SESE courses, the students in Church of Ireland College have an opportunity to take a 'Heritage and Local Studies' elective. The elective has a particular focus on local studies and heritage and within this there is a focus on history and geography. Students undertake a research project in an area of interest from the course.

#### **Coláiste Mhuire, Marino, Dublin (Republic of Ireland)**

History, geography and science are delivered as an integrated unit (SESE) in Coláiste Mhuire Marino. The aim of the course is to equip students with the knowledge, skills and attitudes necessary to teach these subject areas to pupils at primary level as well as inspiring and enthusing students to develop their own personal interest in the area.

Time allocation for the courses for students is as follows: 42 hours in First Year, 42 hours in Second Year and 21 hours in Third Year. The SESE curriculum from Junior Infants to Second Class is the focus for First Year students, while Second and Third Years focus mainly on teaching SESE to middle and senior primary classes. The lectures are delivered in seminar style in classes of approximately 35 students. A hands-on, active learning enquiry approach is adopted, whereby the students are involved in experimentation, engaging with artefacts and making use of the outdoor environment.

The course is divided evenly between science, geography and history and there is a particular emphasis placed on developing the skills, concepts and attitudes appropriate to each area, i.e. those of the historian, the geographer and the scientist. This is reflected in the assessment of the different subjects. The central methodologies behind the primary school curriculum (1999) - active learning, collaborative learning, problem solving, use of the environment, talk and discussion and skills development through content - are at the core of all of the SESE seminars.

Furthermore, the students at Coláiste Mhuire have a choice between two SESE electives – 'Gatherers and Growers', which adopts a hands-on approach to the teaching of SESE and allows students to avail of various SESE fieldtrips, and 'Exploring Ireland's Heritage', which is supported by the Irish National Teachers' Organisation (INTO) Heritage Scheme.

#### **Froebel College of Education, Blackrock, Co. Dublin (Republic of Ireland)**

History, geography and science education are taught as an integrated SESE course in Froebel College. The total time allocation for the areas over the three years of the BEd programme is 105 hours. Seminar/lectures are organised in groups of 25 to 30 to facilitate active learning, fieldwork and participation. Over the first two years of the programme students receive two hours per week of SESE. In the first year one hour per week is dedicated to science with an emphasis on the physical sciences, on students' own knowledge and on teaching primary

school children. The second hour is focused on the SESE curriculum and on SESE in infants and junior classes in particular, and is integrated across history, geography and science. Some sessions are discrete to each area and others are integrated across the three areas. Again there is a focus on teacher knowledge and on methodology and child learning.

In the Second Year the emphasis is on middle and senior classes. Again, there is a focus on students' own knowledge and delivery in the classroom and on project work, local studies and fieldwork. In the Third Year of the programme, SESE is reduced to one hour per week with an emphasis on assessment, differentiation and integration. In the second half of the third year infant classes are revisited in terms of curriculum content, skills, methodologies and approaches to support third year students on their final teaching practice.

In the second year of their BEd programme, students are offered a 21 hour elective in Primary Science. A further elective is offered in their final year, which has a strong SESE component. 'The Classroom Without Walls' elective requires students to develop and implement a programme of outdoor learning opportunities with a class and teacher.

#### **Mary Immaculate College, Limerick (Republic of Ireland)**

The pedagogy of SESE, comprising geography, history and science, is addressed with the BEd (undergraduate) cohort over a four-semester period, spanning their first two years of the programme. In total there are 12 hours timetabled for science, 12 hours for geography and 12 hours for history during the students' first two years in college. In relation to preparation for teaching practice, students receive approximately one hour of lecture time in the three areas combined prior to each teaching practice placement. All areas of SESE are also included (over three lectures) in a module on Early Childhood Education which is offered to Second Years. Lectures take place in groups of up to 70 students and workshops in smaller groups are not available for these cohorts.

In the final semester of the undergraduate programme, all students have an opportunity to specialise in a pedagogical course of their choice. A number of pedagogical options are offered within SESE including Local and Global Studies, Development Education and Science Education. Group size ranges from 10 to 30 students. The time allocated is 4 hours per week over the final semester, amounting to a 48 hour module. The model of presentation is workshop-based, with a key emphasis on student interaction and participation in activity-based learning activities.

#### **St. Patrick's College, Drumcondra, Dublin (Republic of Ireland)**

In St. Patrick's College, science, history and geography education are taught in the second year of the B.Ed programme. There is an introduction to the teaching of SESE in the context of Early Years' Education in the first year of the programme. Elective courses are offered in Third Year B.Ed to provide opportunities for student teachers to specialise.

The science education course is given in the form of 20 two-hour weekly workshops with groups ranging from 30 to 35. The curriculum science workshops are active and participative. Students are provided with the opportunity to become familiar with a range of methodologies in the teaching of science with particular emphasis on science as a skill-based process and on developing an active-learning environment. The course examines children's scientific understanding and common alternative conceptions in the context of their cognitive development. It also aims to develop the students' conceptual and pedagogical knowledge in science.

The 2004–2007 cohort who participated in the survey had a 20 hour course in history education delivered as 10 one hour plenary sessions and 5 double seminars. The structure of the course changed in 2008, as outlined below. History education introduces students to current thinking and research on children's emerging historical understanding. There is an

emphasis on historical enquiry through collaborative and participative evidence-based activities and on promoting critical thinking through history. The use of the local area as a site of learning is a strong underlying theme and students participate in outdoors enquiry-based activities.

Geography education has a similar structure to history education. It is founded on the principle of engaging students in methods of geography that are least familiar to the students, but central to the Primary School Curriculum. Therefore it is premised on an enquiry-based approach to developing geographical knowledge, skills and understanding. It focuses on the child's locality as a primary source of learning, with students in the cohort using the local area as a basis for developing children's geographical understanding. The course also uses wider issues and places, including creative ways to teach about other places in the world.

Since 2008 history and geography education courses have been shortened to five lectures and five double seminars. The five hours taken from each course in Second Year have been replaced by an integrated 10 hour seminar-based course in Third Year, which focuses on local and global citizenship and integrates history with geography, citizenship, development and human rights education and other curricular areas.

A number of elective courses in science, history and geography are generally offered to the students in the final year of their BEd Programme, none of which were offered to the cohort who participated in the research. 'Active Learning in History and Geography' is an integrated elective course which is usually taken by 25 students over 40 hours. It is seminar-based. The emphasis in this course is on fieldwork and environment-based learning in history and geography. It covers related themes such as museum education and the use of active methodologies in the classroom.

The 'Nature of Science' elective provides the opportunity for students to learn about different characteristics of the nature of science (NoS) including the history of ideas in science and the impact these ideas have had, and continue to have, on society today. The elective is delivered utilising a range of innovative enquiry-based methodologies and provides students with opportunities to learn about what science is, how it works, how scientists work as a social group, and how society influences and is influenced by science.

### **1.3 History, Geography and Science in the Primary Curriculum in Ireland The Primary Curriculum in the Republic of Ireland**

Since the early 1970s the Irish primary curriculum has been characterised by its stated adherence to the principles of child centred education. The introduction of the 'new curriculum' in 1971 marked a conscious break with an educational system that was epitomised by traditional pedagogical practices, by a curriculum defined by its cultural nationalism and by relations that have been characterised as authoritarian (Coolahan, 1981, p38; Ferriter, 2004, p588). Influenced by Piagetian constructivism, the 1971 Primary Curriculum emphasised the centrality of the child to the learning process and endorsed the ideas of discovery learning, environment-based learning and curriculum integration, representing a 'radical shift of ideological position and methodological approach' (Gash, 1985, p85). History, geography, civics and science became part of a subject grouping called Social and Environmental Education. The 1971 curriculum was, among other things, an exercise in devolved responsibility for curriculum planning. If the child's environment was to become a site for learning, curricula had to be planned at local level (Waldron, 2005, p261).

Despite its initial promise, research into the implementation of the 1971 curriculum indicated that its implementation was weak, particularly in relation to Social and Environmental Education, where textbook-based teaching remained the dominant mode and there was little integration of the local area into children's educational experiences (NCCA, 1990; INTO, 1992). In the 1990s a major review of the primary curriculum was undertaken which became

the basis for subsequent reform. The revised curriculum which emerged from that process of review, the Primary Curriculum (1999), remained committed to the principles of child centred education. While there were some changes in emphasis, such as a deeper engagement with social constructivism, those changes have been rightly described as evolutionary, rather than revolutionary (INTO, 1996). History, geography and science became part of Social, Environmental and Scientific Education, with a renewed commitment to investigative approaches, use of the child's locality and a view of the child as an active constructor of knowledge within a social context. All three areas are characterised by a commitment to enquiry-based learning, to children's engagement with the construction of historical, geographical and scientific knowledge, and to the development of scientific, historical and geographical skills and concepts. The idea of the child working as an historian, a scientist and a geographer has its roots in the Brunerian idea that the 'schoolboy learning physics is a physicist, and it is easier for him to learn physics behaving like a physicist than doing something else' (Bruner, 1977, p14); as well as in Dewey's conception of reflective thought (Dewey, 1910, pp5, 6).

Two key structural changes were introduced in the revised Primary Curriculum and are worth noting. Prior to the 1999 curriculum science was not named separately as a subject, though it was included as part of Social and Environmental Education. Research into the teaching of science in the 1980s and 1990s indicated that while 87% of teachers surveyed had a nature table in their classrooms, less than half of them included science in their programme and less than a third involved children in experiments (INTO, 1992, p9). Moreover teachers of middle and senior classes 'placed little emphasis' on the teaching of science and lacked the confidence necessary to do so (NCCA, 1990, pp53–54). The introduction of primary science as a distinct component of the Primary Curriculum was a direct response to findings such as these. A second development was the decision to introduce history, geography and science at junior level, beginning in the Junior Infant classroom. This was a significant innovation across all three subject areas.

While the implementation of the revised curriculum in history and geography has not been reviewed to date, science has been the subject of a range of reports whose findings inform this study. In 2008 the National Council for Curriculum and Assessment (NCCA) reviewed the implementation of the science curriculum. 90% of the teachers surveyed were positive about the curriculum itself in terms of the support it gave for planning and its accessibility (p62). While whole class teaching was the most frequently used approach, at least 80% of respondents frequently or sometimes used other organisational settings such as groupwork, working in pairs and individual work. Use of groupwork and pair work was most likely to occur in classes where the teacher had less than five years' experience and was least likely to occur where the teacher had more than fifteen years' experience (p68).

Over half of the teachers (53%) reported using the hands-on approaches regularly, while 44% indicated that they used them sometimes. Talk and discussion was the dominant approach with the highest percentage of teachers claiming to use it frequently (85%), while just 40% indicated that they often began with the children's ideas (NCCA, 2008, p77). In a review of science in primary schools carried out on behalf of the NCCA, Varley, Murphy and Veale (2008) found that while hands-on science was happening in classrooms, it was limited in some cases and more teacher directed than pupil led. They also found little evidence that children were linking science in school to everyday life, even though one of the key aims of the science curriculum is to help children recognise the contribution of science and technology to society (Varley, Murphy and Veale, 2008 pp144, 145).

### The Primary Curriculum in Northern Ireland

In Northern Ireland a Common Curriculum was introduced in 1990, one year after the National Curriculum in England and Wales. Previous to this, the teaching of geography, history and science was very much at the discretion of schools and individual teachers in terms of their

choice of content and teaching methods. A series of 'Primary Guidelines' (NICED, 1985-1989) had been produced and disseminated to schools in the late 1980s. These provided non-statutory guidance for the teaching of all of the primary subjects, and while they were generally well received in schools, they were soon overtaken by the introduction of the statutory Northern Ireland Curriculum. The curriculum was set out in a series of subject documents spanning Key Stages 1 to 3 (ages 4-14). Marriott (2001, p31) described it as being 'much the same disjointed and grossly overloaded primary curriculum (as) was imposed on teachers in England and Wales' with an 'incoherent baggage of traditional subjects, key stages, levels and so on.' While geography and history were among the 'Foundation Subjects', science and technology was given the status of a 'Core Subject' along with English and mathematics. For each subject, the statutory content was set out in Attainment Targets and Statements of Attainment.

A revision of the Northern Ireland Curriculum took place in 1996, reducing content and overlap in a process mirroring the Dearing Review in England and Wales (Dearing, 1993). In a move helpful to primary teachers, all of the content of the subjects at Key Stages 1 and 2 was placed in one ring binder. This second iteration of the Northern Ireland Curriculum was statutory for eleven years.

In March 2007 a revised Northern Ireland Curriculum was introduced. In this revision geography, history and science and technology were assigned to an Area of Learning called 'The World Around Us'. Science and technology as a subject area has seen a diminution in its status- from a core subject to one of three aspects in one of six Areas of Learning.

In one of its introductory sections, the new curriculum states: 'Children learn best when learning is connected', and it goes on to encourage relevant connections and integration between all of the areas of learning, using a cross-curricular approach. It states that: 'Although Areas of Learning are set out separately, teachers should integrate learning to enable children to make appropriate connections' (CCEA 2007, p16). Just prior to the introduction of the Revised Curriculum, Greenwood (2007) set out the results of a survey of the levels of cross-curricularity used by Northern Ireland primary teachers in the teaching of geography-based topics. He found that the vast majority were using cross-curricular approaches in their planning and teaching.

At Key Stages 1 and 2 in the revised curriculum (ages 6-11; a new Foundation Stage covers ages 4-5) the statutory requirements for 'The World Around Us' are grouped under four headings: Interdependence, Place, Movement and Energy, and Change Over Time. Under these headings, suggested content within the three subject areas is set out. Unlike the previous two versions of the curriculum, the 2007 curriculum clearly states that these are just suggestions from which teachers may select. The encouragement of teacher (and pupil) to choose topics for exploration is one of the major changes in this latest revision of the curriculum.

The curriculum is being rolled out in stages; between 2006 and 2009 teachers were trained by year group in preparation for the new curriculum, which became statutory for Year 1 and Year 5 classes in 2007-8. This process will end when Years 3, 4 and 7 engage formally in the statutory curriculum in 2009-10. Follow-up training and ongoing support for teachers are promised. In Key Stages 1 and 2 for each subject area Progression Frameworks for Thinking Skills and Personal Capabilities have usefully been set out, as have Suggested Learning Intentions within each of the four 'World Around Us' headings.

#### 1.4 Conclusion

Both the Primary Curriculum (1999) and the Northern Ireland Curriculum (2007) are premised on a view of children as co-constructors of knowledge in collaboration with their peers and with their teachers. Learning is seen as an active process of enquiry, reflection and dialogue. It is axiomatic that initial teacher education programmes should provide equivalent learning spaces for student teachers where their understanding of children's historical, scientific and

geographical thinking is developed. Indeed curriculum courses are generally premised on the idea that if student teachers are to understand the relationship between methodology and child learning ‘they need to experience the teaching strategy as a learner...they need to experience using it, unpacking it and reconstructing their practice through the experience’ (Loughran, 1997, p65). This should occur in conjunction with the development of student teachers’ understanding of the nature of history, science and geography and of the most effective and appropriate methodologies through which to develop children’s thinking, knowledge and skills in those areas. In a general sense, initial teacher education needs to develop teachers that are reflective, skilled and knowledgeable, and caring professionals who are committed to the value of education, are informed by their commitment to the wider values of social justice, equality and democratic education, and who work as agents of change, regeneration and growth within the system.

A first step in meeting those aims is to know our students. Indeed, the initial impetus for this study was the desire to find out more about the ideas, preconceptions and experiences that students brought with them to our courses. The ultimate aim of the research is to improve our practice as teacher educators. In publishing this report we are subscribing to a further aim i.e. to contribute to the development of the research base for initial teacher education in Ireland through sharing what we have learned with a wider community.

For ease of reading and to maintain consistency in the reporting of the findings of this study, the following percentage bands and their equivalent phrases will be used throughout the report. The phrases will be used instead of and alongside the relevant percentages (figure 1.2)

**Figure 1.2 Percentage bands and phrases used in the report (language key)**

Words and phrases	Percentage bands %
A few... A small number of... A handful... Some...	1 – 5
Several... Various... A noticeable number of ...	6 – 10
Many... A significant number of...	11 – 20
A substantial number of...	21 – 40
Almost half of... Just under half...	41 – 49
Half of... Just over half...	50 – 55
A majority of...	56 – 60
A substantial majority of...	61 – 69
The vast majority of ...	70 – 95
Almost all...	96 – 99

## Chapter Two

### LITERATURE REVIEW

#### 2.1 Introduction

The typical student teacher begins initial teacher education with a decade and a half of experience as a learner within the education system. Described by Lortie (1975) as 'an apprenticeship of observation' this experience can provide student teachers with a level of 'insider knowledge' of their future role, which is not typical of other professions, and a propensity to conceptualise their individual experiences as archetypal (Holt-Reynolds, 1992). This 'insider knowledge' generates a range of beliefs, preconceptions and dispositions that provide the subtext to their engagement with theory and practice during their teacher education programmes. Characterised as the 'secret garden' of teacher education (Wilson, 1990), these intuitive or lay theories about teaching and learning, the role and identity of the teacher and the nature of knowledge, have become the focus of a considerable number of studies in recent decades (see, for example, Calderhead and Robson, 1991; Kagan, 1992; Pajares, 1992; Holt-Reynolds 1992; Marland, 1998; Sugrue, 1996, 1997, 1998, 2004; Wilson, 1990; Joram and Gabriele, 1998; Younger, Brindley, Pedder and Hagger, 2004; Fajet, Bello, Leftwich, Mesler and Shaver, 2005; Waldron, Pike, Varley, Murphy, & Greenwood, 2007; Levin and He, 2008).

A range of studies has suggested that these beliefs can be remarkably stable, persisting into the early years of teaching despite the challenge of contrary ideas and evidence-based approaches to teaching and learning encountered in ITE (Doolittle, Dodds and Placek, 1993; Marland, 1998). Neither can teacher educators assume that students share their understanding of key concepts, which can also be influenced by pre-existing models and beliefs (Holt-Reynolds, 1992). Such evidence suggests that introducing student teachers to innovative pedagogical approaches may not be sufficient to counteract the appeal of students' lay theories when they are faced with the challenge and uncertainty of practice (Virta, 2002).

The view that initial teacher education is not very successful in countering the lay theories of student teachers has led to its characterisation in some cases as 'a relatively low impact enterprise' (Tann, 1993) with a consequent devaluing of its contribution to education (Zeichner, 1999; Nettle, 1998). Yet other and more recent research has revealed a more complex and differentiated picture than that suggested in studies such as Kagan's influential 1992 review of the literature (Grossman, 1992; Cole and Knowles, 1993; Nettle, 1998; Joram and Gabriele, 1998; Sugrue, 2004; Levin and He, 2008). Student teachers' beliefs are subject to both continuity and change and draw their influences from a combination of prior experiences, coursework in ITE and classroom experience. Evidence also suggests the influence of the wider historical and socio-cultural context on student teachers' beliefs and the situated nature of their identities (Chan 2003; Sugrue, 1997, 1998, 2004).

The idea that teacher education needs to challenge the pre-existing beliefs and lay theories of students through critical reflection is commonly held by teacher educators (Calderhead, 1988; Tann, 1993; Younger et al., 2004; Wubbels, 1992; Sugrue, 2004; Chan, 2003; Korthagen, 2004). Yet there is evidence that even where more professionally oriented beliefs are integrated into the emerging identities of student teachers, they may not survive the challenges presented by school experience. Fung (2002) found student teachers' conceptions of themselves as child-centred in approach were not borne out on school placement where their practice was more teacher-centred. Tillema (2000) suggested that the role of reflection in challenging students' implicitly held beliefs and in prompting the development of professionally oriented frameworks for teaching may be contingent on when it happens, and argued that reflection after school experience, when students can ground those reflections in their own practice, may be the most effective approach to belief change. Haritos (2004) on the other hand argued that such 'self-awareness and reflection' needs to precede any school experience and continue throughout the programme.

## 2.2 Student teachers and geography

Research into student teachers' beliefs about teaching and learning in geography, history and science reveals a complex interplay between experience, perception and subsequent practice. A number of studies in geography have focussed on students' images and prior experiences of geography, on the relationship between subject knowledge and teaching and on the influence of school settings on beliefs. McPartland (1996), for example, used an autobiographical approach to explore the relationship between teaching style and remembered teachers. Corney (1998 and 2000) concluded that student teachers began courses with strong preconceptions of geography and how it should be taught, and that these remain important throughout. The persistence of prior beliefs may be an advantage. Leat (1996) found that students who in initial interviews described themselves as concerned about how children learn, as opposed to focusing solely on how they, as teachers, would teach, usually emerged as more highly rated by university and school. In contrast, and echoing somewhat the work of Fung (2002) mentioned above, Ballantyne et al. (1993) found that both students and teachers on a pre-service geography teacher education course were favourable towards progressive teaching methods, but actually used them less than they thought they should. While it has been suggested that ITE is an important (if potential) catalyst in changing practice in schools in the area of locality-based learning (Halocha, 2004), the influence of school setting was highlighted by Barratt Hacking (1996), who found that novice teachers tended to 'fall in' with the teaching approaches and style prevalent in their schools despite their earlier stated convictions around the subject.

In a similar vein, Martin (2000) wondered whether the image of teaching formed by student teachers in their 'apprenticeship of observation' was that of 'geographer' or 'geography teacher'. In other words, were the dominant prior influences their experiences as 'geographers' and their perceptions of geography, or their image of teaching? Martin's 2000 study found the relationship between subject knowledge and pedagogical knowledge to be a complex one. She found that having expertise in geography as a discipline did not necessarily translate into the ability to teach geography well; indeed, she suggested that regardless of whether or not they have a background in the discipline of geography, all students are reduced to the state of 'novice' when teaching in primary schools (Martin 2000). Later work by Martin identified the limited range of sources from which student teachers drew their conceptions of geography, with students who had studied geography to 14 considering they had 'no geography', despite having both school and wider experiences of geography (Martin, 2008).

Martin identified the need for student teachers to explore images of teaching and learning as well as images of geography in order to develop a meta-language with which to reflect on their beliefs (Martin 2000). Along with challenging student teachers' images of geography and developing their PCK (Shulman, 1986), she proposed that student teachers should be given opportunities to explore the nature of geography, its societal role and its benefit to child development (Martin, 2004).

## 2.3 Student teachers and history

Research suggests that student teachers come to initial teacher education with strong views on the nature of history and its value as a discipline (Wilson and Wineburg, 1988), along with a sense of historical consciousness and beliefs about historical knowledge (Virta, 2001). The students in Virta's 2002 study were in a teacher education programme for specialist history teachers and were, by definition, strongly motivated to teach history. Virta found that their images of the good teacher of history on entry to ITE paid little attention to methods of teaching and prioritised teacher personality and subject expertise. When recollecting their own experiences, teacher-centred approaches were not problematised except in the case of poor teachers. When they encountered stressful situations on teaching practice, the students adopted a range of survival strategies, one of which was to revert to the methods they had experienced as learners of history (Virta 2002).

A longitudinal study by Guyver and Nichol (2004) similarly identified prior experiences as a dominant influence on student teachers' emerging identities as teachers of history. It would be simplistic, however, to see those experiences as working in deterministic or mechanistic ways. As noted earlier, students' experiences and teaching archetypes are situated within a wider historical and socio-cultural context. As that context changes, so too can the societal role of school history. How school history is taught is intimately connected to its perceived purpose, whether that be one of nation-building or of preparing citizens to live together in a diverse and pluralist society. A changing context for the teaching of history can result in a conscious break with past archetypes, as can changing perspectives on the oppression of children and children's rights (Sugrue, 2004).

As with geography, 'deep' subject knowledge has been identified as an issue. VanSledright argues that, for teachers, 'deep substantive knowledge of the subject matter of history must be coupled with equally deep procedural knowledge' (VanSledright, 2002, p14). As has been found elsewhere in relation to the teaching of other subjects, research in history education highlights the disconnection that can exist between the teacher's or student teacher's own understanding of historiography, and her / his ideas about teaching and classroom practice (VanSledright, 1996; Williamson McDiarmid, 1994). Thus history methods educators echo the concerns expressed in other areas that as well as giving student teachers opportunities to engage with their own preconceptions and understanding of history, a strong focus on pedagogical content knowledge (PCK) is essential. Others argue that student teachers might be more successful in integrating content and pedagogy if they were supported in developing a sense of purpose around history teaching (Adler, 2008; Barton and Levstik, 2004). Barton and Levstik, in particular, have argued that resisting the urge to conform to the prevailing values and practices in a school setting requires a conscious sense of purpose. Thus, they would argue, teacher education needs to focus on purpose and they suggest that student teachers should 'learn history to contribute to a participatory, pluralistic democracy' (Barton and Levstik, 2004, p259).

#### 2.4 Student teachers and science

Research in science education also suggests that student teachers' prior experiences influence conceptions of science and science teaching and that this, in turn, can influence practice (Parker and Spink, 1997; Gooday and Wilson, 1996; Tosun, 2000; Thomas and Pedersen, 2003; Skamp and Mueller, 2001a, b). Moreover student teachers' perceptions of the nature of science (NoS) on entry into teacher education have been characterised as 'naïve realist', and are associated with a view of teaching and learning that is based on the idea of 'discovery' rather than as 'a human process of inventing explanations that work' (Abell, Martini and George, 2001, p1096).

Research has indicated that the possession of knowledge regarding NoS does not automatically mean that teachers will be able to implement enquiry-based science learning (Akerson and Abd-El-Khalick, 2003; Hogan, 2000; Trumbull, Scarano and Bonney, 2006). Trumbull *et al* (2006) concluded that simply acquiring propositional (distal) knowledge about NoS may not be relevant and applicable to the classroom setting, and suggested that pre-service courses need to pay more attention to teachers' underlying philosophies of learning and teaching. Hogan (2000) defined distal views of NoS as pronounced knowledge held regarding NoS. A distal view of science is one that conceives science as a social and cultural activity, where norms of practice are shared and communicated. This is compared to proximal knowledge that incorporates personal understandings, beliefs and commitments that students possess about their individual scientific experiences, and the scientific knowledge they acquire or confront in their classrooms. Proximal views are more personal views that are formed through individual experiences. Spector and Strong's USA study (2001) revealed that the culture (and subsequent worldview) of the majority of the (elementary) student teachers in their study did not conform to the culture of science. They identified numerous 'clashes' between the 'culture' of these student teachers and the 'culture' of science. For example, with regard to the

ethical traditions in science, the culture of science views science as a way of knowing and understanding; it values peer review, makes work public and its ideas and products are open to criticism.

According to Spector and Strong, this is unlike the culture of the pre-service student teachers in their study. These students viewed science as a fixed body of knowledge and did not value peer review: only the review from their instructor mattered. They kept their work private between themselves and their teacher, and criticism of their ideas or products was found to be offensive and was something that was not permitted in a group or class (Spector and Strong, 2001, p13). This study found that the student teachers' classroom culture was different to the culture of science. It would appear therefore, that in order for pre-service teachers to develop contemporary conceptions and understandings of NoS, their classroom culture needs to be altered to be more in keeping with the 'culture' of science. The findings of Spector and Strong's study have implications for pre-service primary teacher education in terms of informing strategies that could potentially enhance pre-service primary teacher education in the development of enquiry-based learning, meaningful learning and the development of contemporary understandings of NoS.

The question of subject knowledge in science has received considerable attention (see, for example Newton and Newton, 2001; Lederman and Gess-Newsome, 1992; Smith and Neale, 1989). Others have looked at the interplay between subject content knowledge and PCK (see, for example, Kaya, 2009, Käpylä, Heikkinen and Asunta, 2009; Halim and Meerah, 2002; Van Driel, De Jong and Verloop, 2002). Käpylä, Heikkinen and Asunta (2009) have examined the relationship between content knowledge and pedagogical knowledge in student teachers, some of whom were content experts. They found content knowledge to have a positive influence on PCK, enabling the student teacher to recognise children's misconceptions and to identify the most important subject matter to be learned. However it had no real effect on their knowledge of experiments and demonstrations suitable for teaching. As with Martin's conceptualisation of student teachers and geography (Martin, 2004), Käpylä *et al* noted that both content specialists and generalists were novices in teaching methods, suggesting that there are elements of PCK that need to be explicitly taught. Kaya (2009) also found a significant relationship between subject matter knowledge and PCK in preservice science teachers and argued for a closer integration between subject knowledge and PCK on college courses and a broader conception of PCK.

## 2.5 Concepts of the good teacher

The motivation to become a teacher in the first instance has been linked to the influence of inspirational teachers and positive personal experiences of education (Sugrue, 1997; Thornton *et al.*, 2002; Younger *et al.*, 2004) while Korthagen (2004), pointed to the past experiences of student teachers as sources of both positive and negative role models. The characteristics assigned to good teachers are wide-ranging. Fajet *et al.* (2005) categorised them as either affective or cognitive in orientation. Affective attributes would include the ability to care and an enthusiasm for teaching (Weinstein, 1989; 1990), while characteristics such as good organisational skills (Skamp, 1995) and subject knowledge (Witcher, Onwuegbuzie and Minor, 2001) are assigned to the cognitive domain. While student teachers do include a range of skills in their conceptions of good teachers, a tendency to emphasise the affective and interpersonal aspects of teaching rather than the pedagogical and cognitive has been noted (Fajet *et al.*, 2005; Mahlios and Maxson 1995). In the privileging of 'personality over skills', Sugrue (1996, 1998) suggested that the myth of the 'natural' teacher who is 'born to teach' challenges the need for teacher education in the first place.

In a recent study that looked at the personal practical theories (PPTs) of prospective teachers in Carolina, Levin and He (2008) used a content analysis of 472 self-reported PPTs from 94

student teachers to develop a model of categories of belief and to identify the sources of those beliefs. Levin and He found that 28% of the PPTs were attributed by the student teachers to their family background and their experiences as K-12 students, 35% to experiences and observations on teaching practice and 31% from coursework on teacher education programmes. Cumulatively then 66% of the PPTs were attributable to their experiences on their teacher education programme. Students' prior experiences, however, did have a considerable influence, particularly in relation to their beliefs about the teacher and the classroom ethos. 42% of the student teachers, for example, sourced their beliefs about the role of the teacher in their prior experiences. Almost half of the students sourced their PPTs in relation to general classroom environment (48%) and teacher /student relationships (45%) in their prior experiences while 52% of PPTs relating to respect were sourced in prior experiences (p65). Overall Levin and He claimed that their study supported the idea that teacher education (courses and teaching practice) influenced prospective teachers' beliefs in areas such as how to teach the curriculum, children's learning, the idea of continuing professional development, planning and organisation, teacher qualities and classroom management. They found a fairly even distribution between the relative influence of prior experiences and teacher education in other important aspects, such as those relating to the role of the teacher, student teacher relationship and other areas of classroom ethos. Levin and He asked why it is that teacher education seemed to have more influence over beliefs about what teachers do, in terms of instruction, and less influence on beliefs about who teachers are (p66).

While the studies above focused on images of the good teacher, Evans (1994) used his research with secondary school history teachers in Maine to develop models of history teachers. Evans saw the idea of purpose as the key to teacher type. He identified five broad models that combined pedagogical approaches and epistemological beliefs, and suggested that while most teachers have elements of a number of models, they also have a dominant tendency. The largest category identified by Evans was that of the Relativist/Reformer (45% of his sample). Committed to social justice and to the idea of human agency, such teachers emphasised the relationship between the past and the present, the role of history in helping people understand current issues and the relativism of historical knowledge. They saw it as important that their students understood the relevance of history. The second largest group was that of Scientific Historian (18%). Teachers who belonged to this category emphasised the role of evidence, the skills of historical enquiry and the understanding of historical processes. They were cautious about generalising, introduced their students to competing interpretations, and saw themselves as guides rather than as arbiters of truth. Evans' third category was that of the Storyteller (11%) who focused on interesting details about the past and sought to 'tell a good story' (p179). Such teachers saw cultural identity as the central purpose of studying history and took a teacher-centred and talk-dominated approach. The smallest category was that of Cosmic Philosopher (3%), whose members saw history as having patterns and grand theories and who were open to calling on forces such as destiny or God when explaining the past. The final group, which Evans identified as eclectic (22%), showed no dominant tendency but based their decisions on what interested students and on what worked.

Skamp and Mueller (2001) focused on student teachers' conceptions of the good teacher of science and examined whether those conceptions changed over time as a measure of the impact of teacher education. Their study supported the idea that students on entry to teacher education had pre-existing concepts of good primary science teaching in which ideas such as 'hands-on learning' and 'discovery learning' predominated. This was, in the main, contrary to their own experiences as learners of science prior to entering teacher education, which were characterised by Skamp and Mueller as 'transmission learning'. While there was some evidence of growth over time, Skamp and Mueller confess to 'a nagging inclination' to interpret their findings as suggesting that the student teachers entered initial teacher education with a conception of good teaching as based on 'discovery learning' and exited it with the same conception, despite exposure in some cases to the theory of constructivism (p345). While

the student teachers may have expanded their frameworks by adding characteristics, no real change occurred in the underlying theories of most of the students.

### 2.6 The experiences of learners in history, geography and science in Ireland

In a longitudinal study of experiences at second level in the Republic of Ireland, the views of first, second, third year and senior cycle students were elicited on a range of questions, some of which are relevant to the current study (Smyth, Dunne, McCoy and Darmody, 2004, 2006, 2007). In terms of the teaching and learning environment and the characteristics of the good teacher, the views of students remained consistent over time in relation to what was valued. Students identified the ability to explain well as the most important characteristic of a good teacher. Teachers' enjoyment of teaching and the ability to talk to and interact with students were also rated highly (Smyth, Dunne, McCoy and Darmody 2006, p.119). Teachers who did not explain and who had conflictual interactions with students (e.g. shouting at them) and whose teaching styles were uninteresting or too reliant on textbooks were rated negatively. Students had positive experiences of subjects they liked and were good at and where the teacher had an obvious liking for the subject; having fun, working in groups, having the opportunity to express their opinions and liking the teacher were also influential (Smyth, Dunne, McCoy and Darmody, 2006, 2007).

Students' dispositions towards a subject in their first year were often linked to the teacher. If the teacher did not explain well or 'just read from a book', or if the subject was deemed too difficult, it was rated less positively (Smyth, Dunne, McCoy and Darmody, 2004, pp221, 222). Science was perceived to be the most difficult subject but 80% saw it as interesting, while the comparable figure for history and geography was over 60%. Three quarters of the students found science to be useful, as compared with two thirds in the case of geography and 56% in the case of history (pp220-221). Students' dispositions towards subjects were looked at again when students were coming to the end of the Junior Cycle (15 / 16 yrs) and embarking on the Senior Cycle. Science was again rated as difficult, second only to mathematics, while history was also seen as among the most difficult subjects. Both history and science were also ranked amongst the most interesting. History and geography, on the other hand, were seen as among the least useful, while science was viewed as among the most useful subjects (Smyth, Dunne, McCoy and Darmody, 2007).

In a review of science in primary schools in the Republic of Ireland, children were found to be positively disposed towards 'hands-on science' and to have positive perceptions of teacher explanations and of outdoor work in science (Varley, Murphy and Veale, 2008a, p85). When reviewing the experiences of students in their first year of post-primary education, however, Varley *et al* found that they were less positive about their primary experience in retrospect (noting infrequent science lessons, lack of equipment and repetition) and more positive about their experiences at second level (Varley, Murphy and Veale, 2008b, p137). In Northern Ireland, Murphy and Beggs (2003) examined primary children's perceptions of school science through a survey of over a thousand children aged between 8 and 11 years, and found that there was a marked decline in the enjoyment of science amongst children in the most senior classes, with girls generally holding more positive attitudes. Certain topics were seen as difficult, particularly those that entailed the use of complex terminology. This decline in the popularity of science amongst older primary children could be connected to the pressure and repetitiveness of preparing for 'transfer tests' (Murphy and Beggs, 2002).

### 2.7 Summary

As can be seen from the above review, this study draws on literature across a range of areas, teacher education, subject-based research, research into children's experiences and concepts of the good teacher. To give a comprehensive review of all of those areas is outside the

scope of this report and choices were made according to the usefulness of the literature in contextualising the current study. Other literature will be drawn on in subsequent chapters where relevant to illuminate the findings.

#### About Anne

#### Female student at a college in Northern Ireland (Phase 1)

When Anne went to college she had A levels in science and geography. She took history to GCSE level when she was fifteen or sixteen. She decided to take science as an academic subject in college. Anne 'strongly agrees' that she likes science. She 'agrees' that she likes geography and history also, though history would be her least favourite of the three. She thinks all three are very important for primary aged children. Anne feels confident about teaching science, geography and history. She feels most confident about science, which she is studying in college, and least confident in history, which she hasn't studied since her GCSEs.

When Anne was in school she liked being taken out on fieldtrips in history to see examples of what they were studying. It made history more exciting and interesting, especially local history. She didn't like sitting in the class listening to the teacher reading exactly what was in the book. There wasn't much group involvement in this and '*the class had to sit silent while the teacher answered her own questions*'. Anne thinks it is important that a history teacher use fieldtrips and role plays '*connected to the child's own historical background*'. It would be familiar to them and you could '*work from there*'.

Anne liked the physical aspects of geography and she enjoyed doing them in detail. She also enjoyed doing photo and map work as they were practical and didn't involve a lot of rote learning. She found that '*the volume of essays and the amount of rote learning was huge in geography*'. They had to learn so much in a short space of time and she felt '*under constant pressure on aspects which [she] didn't like within the subject*'. Anne thinks that a good teacher of geography should make topics interesting and if possible link with other subjects. She believes that it is important for children '*to see things for themselves if they are to understand them*'. She feels this is '*very important for good learning*'.

Anne enjoyed doing practical work and experiments in science. It '*broke down the theory*'; experiments, in particular, '*made it more understandable*'. She found double or treble classes that focused only on theory to be boring and repetitive and didn't think that they resulted in much learning. Anne thinks that a primary science teacher needs to '*focus on structured play*' and that children will '*learn science better if they can do practical work to help them to understand*'.

### Chapter Three

## RESEARCH METHODS

### 3.1 Introduction

As described in chapter 1, one of the aims of IASSEE was to reflect on the practice of history, geography and science education in colleges of education. As part of that reflection a greater knowledge and understanding was needed of what student teachers brought with them to college in terms of experiences, perceptions and attitudes. Furthermore, greater understanding was needed of the views of students as they negotiated the demands of their ITE programme and as they neared the end of that process. Consequently, a three-phase longitudinal study was designed to collect a range of data from one cohort of ITE students in all colleges of education in Northern Ireland (NI) and the Republic of Ireland (RoI). This chapter presents the methodology used in that study of participants' experiences of and attitudes to geography, history and science on which this report is based.

### 3.2 Research Methodology

While designed as a large scale study, this research was premised upon the principles of action research within a community of practice (Lewin, 1946) in that it was conceived of as part of a wider inquiry into the practice of IASSEE members with a view to promoting critical reflection, evaluation and review of practice. This evaluation and review was intended to inform change and development in teacher education courses. The term 'action research' was first used by Lewin in his 1946 paper 'Action Research and Minority Problems', where he defined it as 'comparative research on the conditions and effects of various forms of social action, and research leading to social action', that uses 'a spiral of steps, each of which is composed of a circle of planning, action and fact-finding about the results of the action' (Lewin, 1946, pp202-203, 206; Alderman, 1993).

The research aimed to investigate the experiences of ITE participants before and during their teacher education courses, with a view to informing the review of courses in history, geography and science education (Bassey, 1998). A three-phase study was designed in order to provide data on the changing views of student teachers as they progressed through their ITE programmes. The central aim and purpose of the study was not around measuring the impact of ITE; rather it was around gaining increased understanding of the views and beliefs of student teachers at key points in their education – on entry, at mid-point and at the end of their programme. Impact, inevitably became one of the research questions in relation to the data collected by the exit questionnaire. The findings around impact, however, are suggestive only and are intended to indicate areas for further research.

### 3.3 Research questions and aims

The following research questions were devised:

- What were student teachers' prior experiences of history, geography and science?
- What are student teachers' attitudes to history, geography and science on entry to ITE?
- What are student teachers' models of good teachers of history, geography and science on entry to ITE?
- What are student teachers' experiences of teaching history, geography and science on school placements during ITE courses?
- What impact does ITE have on student teachers' attitudes to history, geography and science?
- What models of good teachers of history, geography and science do students hold on exit from ITE courses?

As outlined above, this research project was designed primarily to inform IASSEE members about the student teachers who were taking their courses. Because the association is an all-

Ireland association and because the participating students were drawn from two different educational systems, it was decided that the research findings, where appropriate, would indicate any interesting or significant differences in the responses of the two cohorts i.e. student teachers from the Republic of Ireland (RoI) and from Northern Ireland (NI). However the study is not intended to be a comparative study and any findings in this area would need further research.

### 3.4 The Sample

This study was designed as a non-random study. Because the questionnaires included an evaluative element at college level which is not part of this report, participating colleges were keen that the total population of students in the targeted year group would be surveyed rather than a random sample of students across the colleges or within each college. The target population for this study, therefore, was all undergraduate Bachelor of Education (BEd) students entering ITE courses for primary education on the island of Ireland in the autumn of 2004. It was decided by the research team that the optimal way of ensuring a good response rate for the surveys was through the direct administration of the entrance and exit questionnaires at lectures rather than through the postal system. Therefore, the sample was comprised of all first year students who attended the plenary sessions where the questionnaires were administered. As is evident from table 3.1, there was variation in the sample sizes for the entry and the exit questionnaires, and the number of students who were involved in each phase of this study is outlined in tables 3.1, 3.2 and 3.3. For the entry questionnaire there was a potential population of 1304 students and a total of 1114 usable replies was received, giving an 85% response rate. There was a potential population of 1265 students for the exit questionnaire and a total of 824 usable replies was received, giving a 65% response rate. The return rates in NI and the RoI are also given in these tables, showing that the return rates were broadly similar for each location.

**Table 3.1: The sample of students involved in the entry questionnaire**

Phase 1: Entry questionnaire	Enrolment	Questionnaires returned	Return rate (%)
College A	30	30	100
College B	108	106	98
College C	64	61	95
College D	419	384	92
College E	393	290	74
<b>RoI</b>	<b>1014</b>	<b>871</b>	<b>86</b>
College F	139	103	74
College G	151	140	93
<b>NI</b>	<b>290</b>	<b>243</b>	<b>84</b>
<b>All students</b>	<b>1304</b>	<b>1114</b>	<b>85</b>

**Table 3.2: The sample of students involved in the interviews**

<b>Phase 2: Interviews</b>	<b>Students interviewed</b>
College A	2
College B	4
College C	2
College D	9
College E	8
<b>RoI</b>	<b>25</b>
College F	4
College G	4
<b>NI</b>	<b>8</b>
<b>All students</b>	<b>33</b>

**Table 3.3: The sample of students involved in the exit questionnaire**

<b>Phase 3: Exit questionnaire</b>	<b>Enrolment</b>	<b>Questionnaires returned</b>	<b>Return rate (%)</b>
College A	29	25	86
College B	101	101	100
College C	58	58	100
College D	406	177	44
College E	387	290	75
<b>RoI</b>	<b>981</b>	<b>651</b>	<b>66</b>
College F	135	73	54
College G	149	100	67
<b>NI</b>	<b>284</b>	<b>173</b>	<b>61</b>
<b>All students</b>	<b>1265</b>	<b>824</b>	<b>65</b>

The drop in response rate from phase 1 to 3 is evident in the tables. Some drop in response rate was expected. First, there was some attrition in student numbers in the targeted year group across the colleges over the course of the ITE programmes. Second, the exit questionnaire was timed for administration after the final year school placement and before final year exams. Some fall off in attendance at lectures late in the academic year is not unusual. Third, in keeping with good ethical practice, students were under no obligation to fill in the questionnaire or to return it at the end of the session. One could argue that the exit survey responses could have a positive bias in that the sample was drawn from those students who were attending lectures. This is certainly a possibility and this is a limitation of the research recognised by the research team. However any bias that exists is a general one rather than specific to the subjects on which the questionnaires were based as they were not administered at history, geography or science education lectures. Nonetheless, as table 3.3 illustrates, the fall off in the response rate was not the same across the colleges. There was a proportionately higher fall off in colleges D and F. This is accepted by the research team as a limitation of the study which may have affected the validity of its findings. The limitations are discussed further below.

### **3.5 Instrument Development and Piloting**

The research was carried out in three phases, as outlined in table 3.4. As detailed below phase 1 consisted of the completion of a questionnaire, referred to here as the 'entry questionnaire'. Focus group interviews were conducted in phase 2 and are referred to throughout as the 'interviews'. Finally, in phase 3 a further questionnaire, referred to here as the 'exit

'questionnaire' was administered. Details of all of the research instruments can be found in appendices 1, 2 and 3.

**Table 3.4: The Research Tools**

Phase	Dates	Research tools
1	September 2004 (all colleges)	Short and long response questionnaire, including: • Background information • Experiences of subjects at school • Attitudes to subjects • Models of good teachers
2	May 2005 (RoI colleges)	Focus group interviews, including: • Experiences of subjects at school and in college, including teaching practice • Attitudes to subjects • Models of good teachers
	May 2006 (NI colleges)	
3	May 2007 (RoI colleges)	Short and long response questionnaire, including: • Background information • Experiences of subjects on school placement • Attitudes to subjects • Models of good teachers
	May 2008 (NI colleges)	

#### **Phase 1: Entry Questionnaire**

The phase 1 questionnaire was developed over a two year period, following established practices (Czaja and Blair, 1996; Tourangeau and Rasinski, 1988; Munn and Drever, 1999). An initial questionnaire was designed which included a large variety of questions relating to participants' experiences of history, geography and science in several aspects of their lives. Small-scale piloting revealed this questionnaire was too large and that the range of question types would be onerous for participants. Further extensive piloting with participants in the NI and RoI indicated that open-ended responses were a more appropriate means of obtaining these data (Varley, 2004). The questionnaire was redesigned to contain four pages of mainly open-ended questions. The questions were designed to ensure clarity for participants (Oppenheim, 1992; de Vaus, 1991; Sapsford, 1999; Robson, 2005). The final version of the questionnaire contained a small number of Likert scaled questions on attitudes to the subjects, combined with a range of closed and open ended questions focusing on participants' background, their experiences of geography, history and science, and their thoughts on 'good teachers'. This final version, therefore, included a combination of closed, open-ended and semantic differential scale response items as shown in appendix 1.

A revised version was subjected to two further rounds of piloting with second and third year BEd participants, including post-questionnaire interviews to resolve remaining ambiguities. The questionnaire was distributed to first year BEd students in all seven participating institutions in NI and the RoI in autumn 2004. As indicated earlier, the administration and collection took place during lecture time, when the whole year group was likely to be present. All questionnaires were distributed within a two-week period very early in the first term of the BEd degree courses, before participants had encountered any college courses in curriculum geography, history or science.

#### **Phase 2: Focus group interviews**

The phase 1 survey produced both quantitative and qualitative data relating to student teachers' attitudes, experiences and beliefs. To illustrate and test patterns emerging from the questionnaires in phase 1, focus group interviews were conducted in each of the participating

colleges. These interviews were typical of focus group interviews in that the interviews were held in groups and not all of the participants in the study were interviewed; instead a small convenience sample was interviewed in each college (Merton, Fiske and Kendall, 1946; Fontana and Frey, 2005; Kamberelis and Dimitriadis, 2005). Described as 'collecting talk' by Powney and Watts (1987), the interviews with the participants were designed to collect their ideas about their experiences and attitudes to history, geography and science at the mid-point of their BEd course and to invite their comments on the data collected in phase 1. The timing of the interviews meant participants could reflect on both their school and college experiences, including their experiences on teaching practice.

A schedule of questions was devised, as outlined in appendix 2, to build on questions asked in the entry questionnaire in phase 1. The nature of the questions was straightforward to give the participants time to describe their experiences and attitudes at length (Robson, 2005, p274). The questions were piloted with eight participants in one of the larger colleges. The questionnaire schedule was found to be suitable and was subsequently used for the focus group interviews in all of the participating colleges.

As discussed above, the choice of interviews as a research method had a number of advantages, most notably the triangulation of the data collected in the large-scale survey. While the initial rationale for the phase two interviews was to expand the data in phases 1 and 3, once all data were collected it was found the phase 2 qualitative data also validated some findings from the quantitative data in both phase 1 and 3.

### **Phase 3: Exit questionnaire**

The process of developing the phase 3 questionnaire was more straightforward than that of the phase 1 questionnaire in certain aspects. The success of the phase 1 questionnaire in terms of completion rates indicated that a similar length and style of questionnaire would be appropriate. The questions were considered carefully and the questionnaire was piloted on two occasions in one of the larger colleges. On each occasion the member of the research team piloting the questionnaire interviewed participants about the questionnaire. After the first pilot of this questionnaire it was evident some questions needed rewording; the final pilot indicated that the questionnaire was suitable to work with.

### **3.6 Ethical considerations**

This study preceded requirements in the colleges for ethical review; however ethical considerations were carefully followed. In relation to the questionnaires, the purposes of the study were outlined to the participants. The students were then asked if they would like to take part in the study and were informed that this was their own choice. In this way the students expressed their consent in taking part. A general invitation to take part in the focus group interviews was issued to all students by college tutors. After students had volunteered to take part, a number of provisions with regard to ethics were made. First, the purpose of the interview was made clear to the participants in that the purpose of the research was outlined and the interview schedule was shown to all participants. Second, consent was checked in a number of ways: for example, participants were again asked if they were happy to take part. Finally, it was also made clear to participants that they could withdraw at any time and that they only needed to answer the questions they wanted to answer. The participants were also given the option to stop the interview at any time. The interviewer, the second author of this report, made it clear to the participants that the questions aimed to find out their experiences and ideas. She also attempted, in the limited time available, to develop rapport with the participants. The study, reflective of studies initiated at the time, did not include written consent and included only the verbal consent of those taking part.

### 3.7 Data analysis

The data from the three phases resulted in substantial amounts of quantitative and qualitative data. Each of these sets of data was analysed as outlined below.

#### Quantitative data from phase 1 and phase 2

The quantitative data from the entry and exit questionnaires were input into the Statistical Package for Social Scientists (SPSS) Version 11.0 for further analysis. Using the variables of subject and location, the levels of knowledge achieved by the respondents in the three subject areas were examined, as well as their attitudes towards the subjects and the level of confidence they attributed to themselves in relation to teaching the subjects in primary classrooms.<sup>1</sup>

#### Qualitative data

Qualitative data were obtained from items on both questionnaires and from the focus group interviews. The responses to the open ended questions on the initial and exit questionnaires were entered into a Microsoft Excel database and subjected to a grounded analysis using the constant comparative method to identify codes (Glaser & Strauss, 1967). All counts were based on the number of students expressing an idea rather than on the number of utterances, as a student could make more than one comment on the same idea. A set of categories that provided a 'reasonable' reconstruction of the data collected was developed. As recommended by Lincoln and Guba (1985), rules for inclusion were devised as 'propositional statements'. These propositional statements communicated the meaning that was embodied in the data collected under each category name. The rules for inclusion started to divulge what was emerging from the data and provided a vital stepping-stone in reaching the conclusions. Category names were ascribed to the units of meaning and the data were then grouped into categories with related content. Four raters (the research assistant and an expert in history, geography and science education) rated a 25% sample of the initial and exit questionnaires to establish inter-rater reliability. The relevant categories and sub-categories are outlined in chapters 5, 6 and 7.

#### Interview data

Rather than subjecting the interview data to a grounded analysis, appropriate students' comments were used to exemplify patterns evident in the survey data, to illuminate quantitative data and to triangulate the phase 1 data.

The rationale for the collection of a wide range of quantitative and qualitative data was to ensure triangulation on the data i.e. to use different but complimentary data on the same topic (Morse, 1991, p122). This ensured that the quantitative data (large sample, range of data, not in-depth) and the qualitative data in phase 2 (small sample, detailed and in-depth data) complimented each other, with the disadvantages of one being offset by the advantages of the other (Creswell and Plano Clark, 2007, p62).

### 3.8 Limitations of the study

This was a large-scale study involving most BEd students in Ireland in the 2004–2007/8 cohort. It also used a number of instruments to collect a range of data, enabling triangulation of the data, as outlined above. Overall, the range of techniques and sample size contributed to the validity of the study. This is supported by the emergence of similar patterns in students' responses across the data sets and across the different phases of the study. For example, change in student teachers' attitudes to the three subject areas over the course of their ITE was tested by a question in the phase 3 survey which elicited students' own perceptions of any increase in terms of liking, confidence or belief in the importance of the subjects over the course of ITE. The

<sup>1</sup> The quantitative findings from phase 1 of the study have been published and can be found in Waldron, F., Pike, S., Varley, J., Murphy, C. & Greenwood, R. (2007) 'Student Teachers' prior experiences of history, geography and science: Initial findings of an all-Ireland survey', *Irish Educational Studies*, 16:2, 177–194. This publication contains the findings of a range of statistical tests that were carried out on the entry data which are not being included as part of this report.

findings for this question were consistent with the overall findings in relation to attitudes and with the interview data collected in phase 2.

However there were a number of limitations to the study. First, the students involved in the entry and exit questionnaires were two different samples sizes as outlined above, although drawn from the same target population. The tracking of individual students through the process, matching their entry and exit questionnaires and their interview data, was considered as an option at the start of the project. This was decided against for the following reasons: tracking individual students would have affected the confidentiality of replies and would have become very onerous for the available resources and personnel involved in the study. However it should be noted that all of the students in the exit questionnaire also took part in the entry questionnaire.

As with any research there was an element of bias in the study, and it is subject to the same limitations as practitioner research in general (Borko, Whitcome & Byrnes, 2008). The research team held its own views on the nature of ITE and the subjects. This was especially so in relation to the use of the constant comparative method, as categories could be sought to suit the wishes of the authors. The sharing and discussion of category decisions during the data analysis stages at regular research meetings overcame this problem.

### 3.9 Summary

Overall, the study drew on the principles of action research to inform tutors and lecturers in ITE in history, geography and science about their practice. The study used a number of methodologies, including interviews and questionnaires, which produced a range of quantitative and qualitative data. Despite limitations, due in part to the size and nature of the sample, the vast majority of students from all the colleges of education were involved at some point in contributing towards the data collected. As will be outlined in the following chapters, the findings of the research identify a range of issues pertinent to the development of ITE in primary history, geography and science. All of these issues would benefit from further research which may confirm, elaborate or challenge the findings of this study.

## Chapter 4

### STUDENT TEACHERS' ATTITUDES TOWARDS HISTORY, GEOGRAPHY AND SCIENCE

*My mum's a Geography teacher as well. I was dragged along on to everywhere in Ireland that might be interesting so it did rub off. But Geography in school was just horrible but likeable at the same time, you kind of got used to looking at maps eventually, you kind of had to enjoy it.*

RoI, interview

#### 4.1 Introduction

As outlined in chapter 2, one of the issues in teacher education is the impact of student teachers' prior experiences and beliefs on their subsequent classroom practice. With this in mind the project aimed to find out their previous experiences as learners of science, history and geography and their attitudes to the three subjects on entry, during and on exit from ITE.

This chapter will present the findings from the quantitative data collected in the entry and the exit questionnaires. Some of the data from the focus groups interviews in phase 2 will be used to contextualise and elaborate on key findings. In the entry questionnaire (phase 1 as outlined in appendix 1) student teachers' attitudes towards history, geography and science were investigated in terms of:

- How much they liked the subject;
- How confident they felt about teaching the subject;
- How important they thought each subject was for primary children to learn.

As part of the exit questionnaire (appendix 3) and during the focus group interviews (appendix 2), in addition to the questions outlined above, the students were also asked:

- Whether they felt more / less confident now about teaching the subjects than they did at the start of the course;
- Whether they liked the subjects more / less now than they did at the start of the course.

Student teachers' attitudes were investigated using seven-point Likert scale items (from strongly agree to strongly disagree) and semi-structured interview questions. This chapter presents and discusses the main findings from the questionnaires for all three aspects (liking, confidence and importance), as well as information on the knowledge base of the sample with respect to their history, geography and science qualifications on entry into ITE.

Findings relating to students' attitudes are presented with respect to location (i.e. NI and RoI) and phase (i.e. entry to, during or at the point of exit from the course).

The broad findings from both the questionnaires and interviews were that:

- *Liking of subjects:* The majority of students expressed positive attitudes towards history, geography and science in the entry and exit questionnaires and reported that their liking of the subjects had increased during their ITE courses. The responses from the RoI students tended to be more positive than responses from the NI students in both the entry and exit questionnaires.
- *Confidence to teach subjects:* The majority of students from both cohorts expressed confidence to teach history, geography and science in the entry and exit questionnaires. Students reported increased feelings of confidence during their ITE courses. RoI students were more positive about their confidence in all three subjects on entrance and exit, compared with NI students (entrance and exit).

- *Perceived importance of the subjects:* The majority of students from RoI and NI felt that history, geography and science were important subjects for children to learn in primary schools. Higher levels of importance for the subjects were expressed in the exit questionnaire. In both questionnaires NI students reported higher levels of importance for science when compared with RoI students, while the converse was true in the case of history and geography.

#### 4.2 Student teachers' knowledge bases in history, geography and science

The entry questionnaire included questions on the highest levels of qualification achieved by the students in history, geography and science, and on whether or not they were pursuing any of the subjects as academic subjects at college.<sup>2</sup> The question of subject content knowledge for teaching is a complex one (Shulman, 1987; Ball, Thames and Phelps, 2008; Martin, 2008) and cannot be reduced to whether or not a student has academic experiences or qualifications in the subject. Nonetheless, in the context of student teachers on entry into ITE, it is one measure, if a somewhat crude one, of their subject knowledge. However, as the quote below suggests, having a qualification in a subject area at post-16 level does not mean that your level of subject knowledge provides an appropriate or a sufficient basis for teaching the subject at primary level:

*The kids do pass you out... especially with the junior classes. I was teaching Italy for geography and it sounds stupid, and I'm going to sound bad, but I didn't know the Vatican was a country...I asked the kids to go home and get facts about Italy and they came in the next day and I was kind of left not knowing what to [do]. Because I knew everything, I did Italy for my Leaving Cert, I knew everything about it – well, I thought I did.*

RoI, interview

The data indicated that, although there was variation across the subjects and between the two jurisdictions in terms of their participation in state examinations, student teachers who participated in the study were entering ITE with a reasonably high knowledge base in each of the subject areas. Science, in particular, showed evidence of a relatively high knowledge base, with 72% of respondents recording a qualification in at least one science or science-related subject at aged 17 / 18.<sup>3</sup> When science-related subjects were removed, the proportion of students with such qualifications remained high, at 64%. For geography, the proportion was lower, with half (49%) of the respondents indicating that they had studied the subject to this level, while history had the lowest proportion, with 22% of respondents stating that they had such a qualification.

As table 4.1 indicates, when location was used as a variable, some interesting differences emerged, presenting a more complex picture. The percentage of respondents with no qualifications in history (46%) and geography (43%) in NI was significantly higher than in the RoI (4% and 3% respectively). One in four of the NI cohort completed their history and geography education at GCSE level (age 15 / 16) while almost 30% and 33% respectively of the NI cohort had a qualification for history and geography at post-16 level.

<sup>2</sup> While data have been collected in relation to choice of academic subjects, this has not been used as a variable in this report.

<sup>3</sup> For students from RoI, the post-16 level of qualification refers to the Leaving Certificate Examination, while for NI students it refers to A level and AS level. The mid-level qualifications are Junior Certificate Examination (RoI) and GCSE (NI) at age 15 / 16 approximately. A small number of students had qualifications at tertiary level. These have been included in the post-16 category. Apart from pure science subjects, there is a range of science-related subjects available in both jurisdictions that give students access to varying levels of knowledge in science. It was decided to include these subjects in the questionnaire as forming part of the students' knowledge base in science. These subjects include agricultural science and home economics.

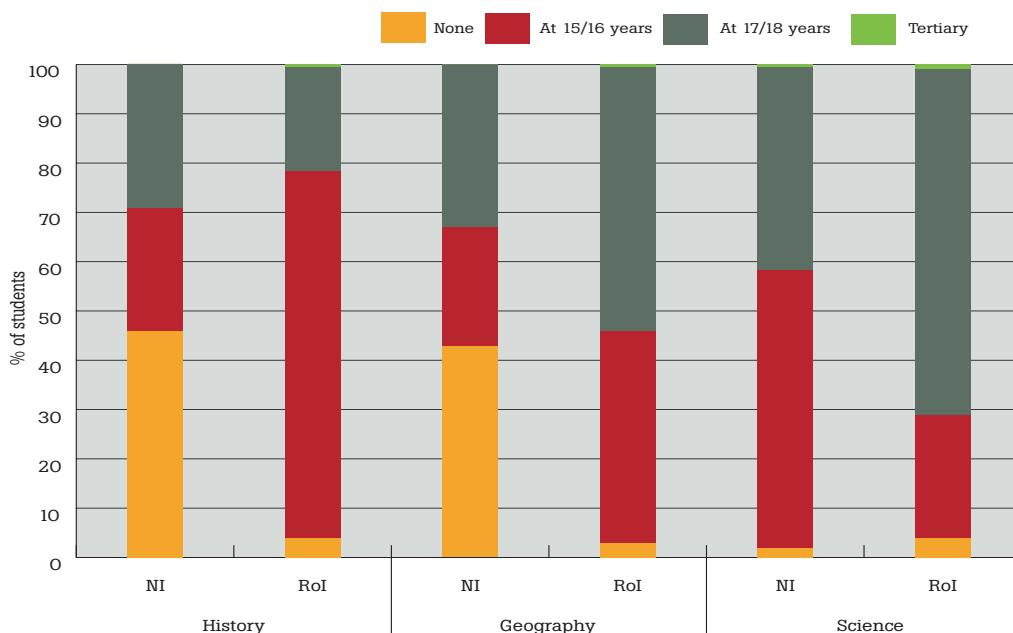
**Table 4.1: Student teachers' highest levels of qualifications (%) in history, geography and science (source: entry questionnaire)**

	Location	None	Age 15 / 16	Age 17 / 18	Tertiary
<b>History</b>	NI	46	25	30	0
	RoI	4	75	21	0.5
<b>Geography</b>	NI	43	24	33	0
	RoI	3	43	54	0.5
<b>Science</b>	NI	2	57	41	0.5
	RoI	4	25	71	1
<b>Example</b>		KS3	GCCE Junior Certificate	GCE A level Leaving Certificate	Degree, e.g. nursing degree

In the RoI over half of the students participating had a qualification in geography at post-16 level and over 43% had a qualification at 15 / 16 years. For history the majority of students participating (75%) had a history qualification at the level of 15 / 16 years while only 21% went on to achieve a qualification at 17 / 18 years. With respect to science, over half of the NI student teacher cohort terminated their science education at the mid-level of 15 / 16 years, with most of these students taking double science at GCSE. In contrast, the percentage of students from the RoI cohort with a qualification at 17 / 18 years or more was high at 71%, compared to NI students at 41%. Few students in either jurisdiction entered ITE with no background in science. As was indicated above, for students from Northern Ireland, this is in marked contrast to the situation for the other two subjects. For the RoI cohort history had the lowest percentage of students with a post-16 qualification (21%).

Variations between the two cohorts with regard to levels of qualification are largely explained by the differences that exist between the two education systems. Whereas the system in the RoI provides for a broad range of subjects to be taken to Leaving Certificate level, the system in NI provides for a greater level of specialisation. The relative distribution of qualifications between the two cohorts is clearly illustrated in graph 4.1.

**Graph 4.1: Student teachers' qualifications in history, geography and science (source: entry questionnaire)**



#### 4.3 Student teachers' attitudes towards history, geography and science

As outlined in chapter three, students participating in the entry and the exit questionnaires were asked to express their attitudes towards history, geography and science by completing Likert-scale questions, as outlined in appendices 1 and 3. Student teachers' responses were grouped as indicated in table 4.2. Students circling 1 were considered to 'strongly agree' with the statement and those circling 7 were considered to 'strongly disagree' with the statement. Students' responses were also grouped by taking the cumulative total of those circling those 1, 2, or 3 and those students were considered to 'agree' with the statement.

**Table 4.2: Definitions of agreement with statements on the questionnaire and in this report**

##### On questionnaires

As outlined in appendices 1 and 3, students were asked about their opinions on the following statements:

- I like history
- I like geography
- I like science
- I think history is an important subject for Primary children
- I think geography is an important subject for Primary children
- I think science is an important subject for Primary children
- I feel confident to teach primary history
- I feel confident to teach primary geography
- I feel confident to teach primary science

##### And were given the instruction:

For each statement circle a number that corresponds with how you feel

1 = you strongly AGREE with the statement

7 = you strongly DISAGREE with the statement

Within this report the following definitions are used:

1	2	3	4	5	6	7
'Strongly agree'						
'Agree'		'Disagree'				

The information from the students' ranking of statements is used below in charts of an average rank, referred to as 'scores' below. Although this creates means from ranked data, it is informative in showing the patterns that emerged in relation to student teachers' attitudes to the subjects. While data from both the entry and the exit groups are included in graphs and tables in relation to liking, confidence and importance, no direct comparison between the groups is intended. In other words, the graphs do not imply change at the individual level over time, nor are they meant to imply change in the same group over time. Nonetheless, inferences can be drawn from the data in relation to change. These inferences are supported by students' own perceptions of changes in their dispositions over time.

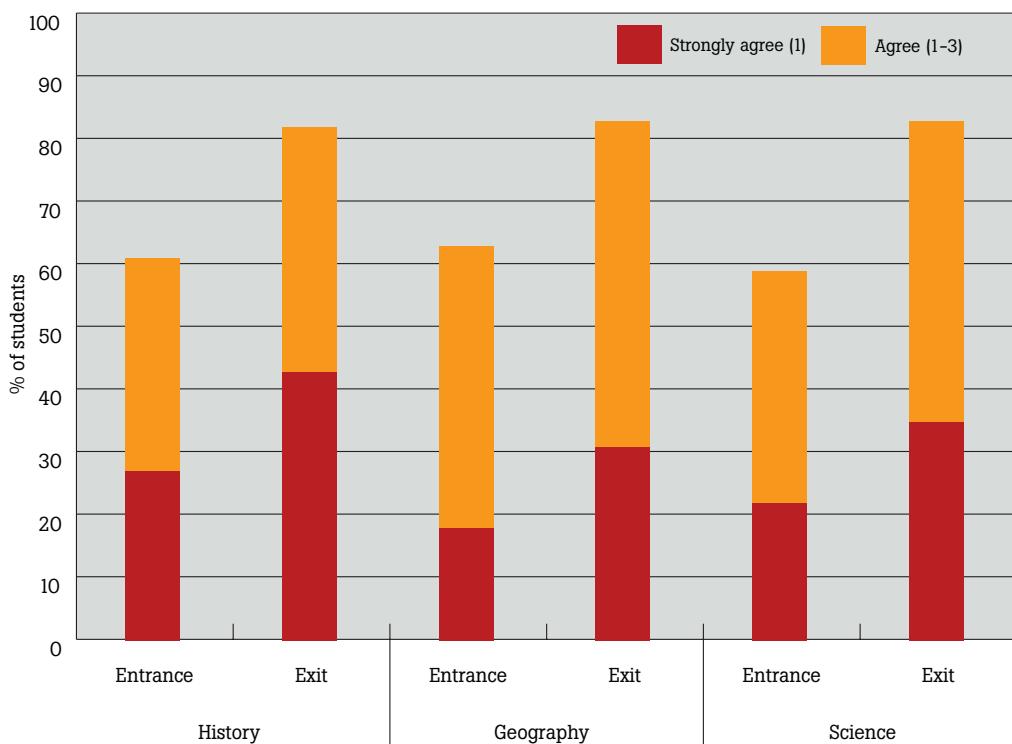
#### 4.4 Students teachers' levels of subject liking

In general, the entry and exit groups of participating students exhibited positive attitudes towards the three subjects, with the majority 'agreeing' with the statement 'I like history / geography / science'. For the entry group, there was little variation between the subjects, with geography (63%) gaining the highest level of agreement, followed by history (61%) and science (59%). Likewise, a majority of students in the exit questionnaire also selected positive scores.

Geography and science fared best with 83% of students agreeing that they liked them, while history was only slightly lower at 82%. For students who expressed strong agreement, however (score=1) the pattern was somewhat different, with history attracting the strongest support amongst the entry and exit cohorts (27% / 43%) followed by science (22% / 35%) and geography (18% / 31%).

While the majority of students within both the entry and exit groups indicated positive attitudes towards the subjects, it is evident that the exit cohort was more positive about all three subjects compared with the responses of the entrance cohort. This is illustrated in graph 4.2. Student teachers completing the exit survey were less likely to dislike the subjects. However, some did, with science, history and geography attracting negative scores (score= 5, 6, 7) of 8%, 7% and 6% respectively.

**Graph 4.2: Student teachers' liking of history, geography and science (source: entry and exit questionnaires)**



Participating students in the RoI were more positive than their counterparts in NI for all three subjects on the entrance and exit questionnaires. This tendency is also evident in the qualitative data and will be discussed in chapter 5. History, in particular, evoked a different pattern of responses from the RoI and NI cohorts. The entry questionnaire showed evidence of polarisation in the responses of the NI students with regard to their liking of history with 26% of students strongly agreeing (score=1) and 14% strongly disagreeing (score=7) with the statement. The equivalent percentages for RoI students were 27% and 6% respectively. This polarisation was not evident, however, in the responses of the NI students to the equivalent question in the exit questionnaire. In fact, less than 1% of the exit cohort overall expressed strong disagreement with the statement 'I like history' (NI=0.6%, RoI=0.9%). In the case of those expressing strong agreement with the statement, 47% of the RoI cohort as opposed to 29% of the NI cohort gave history the most positive score (score=7).

**Table 4.3: Mean 'score' for student teachers' liking of history, geography and science, by phase and location (source: entry and exit questionnaires)**

		NI	RoI
		'Score' (SD*)	
History	Entry	3.55 (2.15)	3.05 (1.88)
	Exit	2.72 (1.55)	2.08 (1.33)
Geography	Entry	3.37 (1.74)	3.03 (1.59)
	Exit	2.48 (1.42)	2.31 (1.22)
Science	Entry	3.52 (1.61)	3.18 (1.74)
	Exit	2.49 (1.50)	2.29 (1.36)

\*Standard deviation

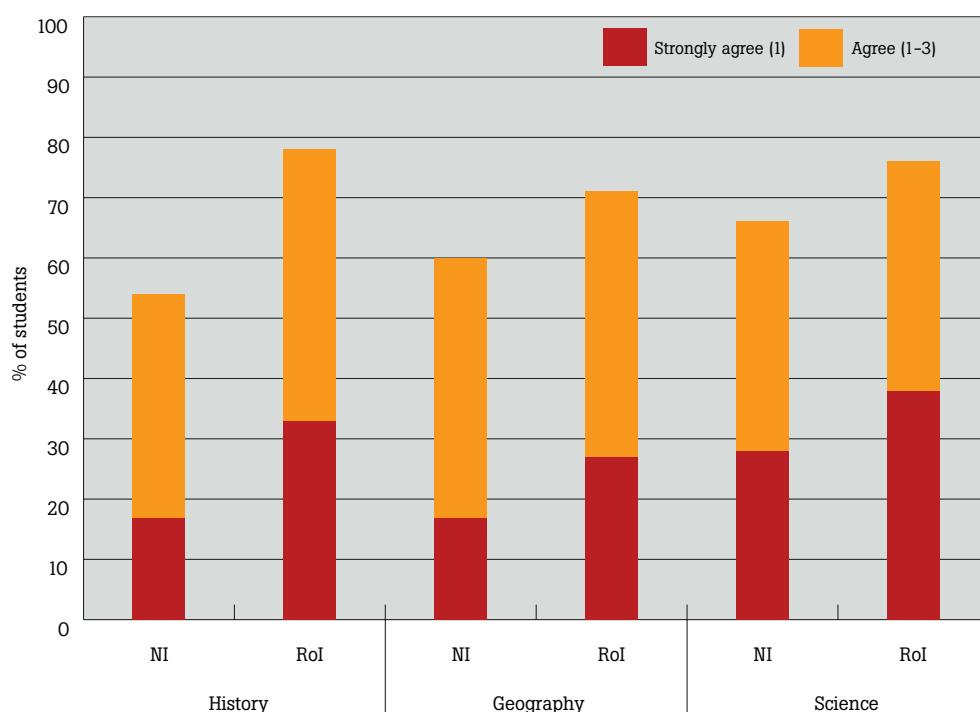
As table 4.3 illustrates, the data does suggest that the attitudes of both cohorts tended to become more positive as they progressed through ITE. One student maintained that positive experiences on school placement could have an impact on students' liking of the subject:

*Maybe (I've changed my mind about) geography more so because of teaching experiences in first year and second year. Last year the topic was 'children around the world' and the children were so fascinated by learning about children the same age as themselves, what their culture was like and their home background. They loved it.*

NI, interview

In addition, the apparent shift in attitudes suggested by graph 4.2 is supported by the data collected on students' own perceptions of attitudinal change. On the exit questionnaire the students were also asked whether they now liked the subjects more than they had at the start of their courses. Overall, the majority of students selected 'agree' responses. The 'strongly agree' response was highest for science (36%), followed by history (30%) and geography (25%). Again there was some variation by location, as outlined in graph 4.3.

**Graph 4.3: Student teachers' recorded perceived change in their liking of history, geography and science compared to start of course (source: exit questionnaires)**



#### 4.5 Student teachers' levels of confidence to teach history, geography and science in the primary school

Student teachers were asked to indicate their current levels of confidence with regard to teaching history, geography and science in the entrance and exit questionnaires by ranking their level of agreement with the statement 'I feel confident to teach history / geography / science'. In general, student teachers in the entry cohort and exit cohorts expressed confidence in their capacity to teach all three subjects, with the majority of students in both cohorts claiming some degree of confidence. On entry, student teachers felt most confident about teaching geography (65%), followed by history (62%) and then science (56%). However, as with subject liking, when the students who expressed the most agreement (score=1) were considered, history emerged as the subject with the highest percentage of responses (20%). Geography had the next highest (18%) and science had the lowest percentage of responses (14%).

The question relating to confidence was repeated in the exit questionnaire. Again, a general sense of confidence was evident in relation to all three subjects, with the majority of students agreeing with the statement (geography 80%, history 79% and science 74%). However it should be noted that for each of the three subjects, history, geography and science, there were students who did not agree with the statement of confidence. A minority of students (13%) indicated some lack of confidence regarding the teaching of science, while the corresponding percentages for history and geography were 10% and 8% respectively. For some students, confidence level was associated with how knowledgeable they perceived themselves to be in the subject, while for others their methodology courses had greatly increased their feelings of confidence:

*In History I read up a lot before I teach it because I am not that confident in dates and things like that and so that would be my least confident out of the three.*

RoI, interview

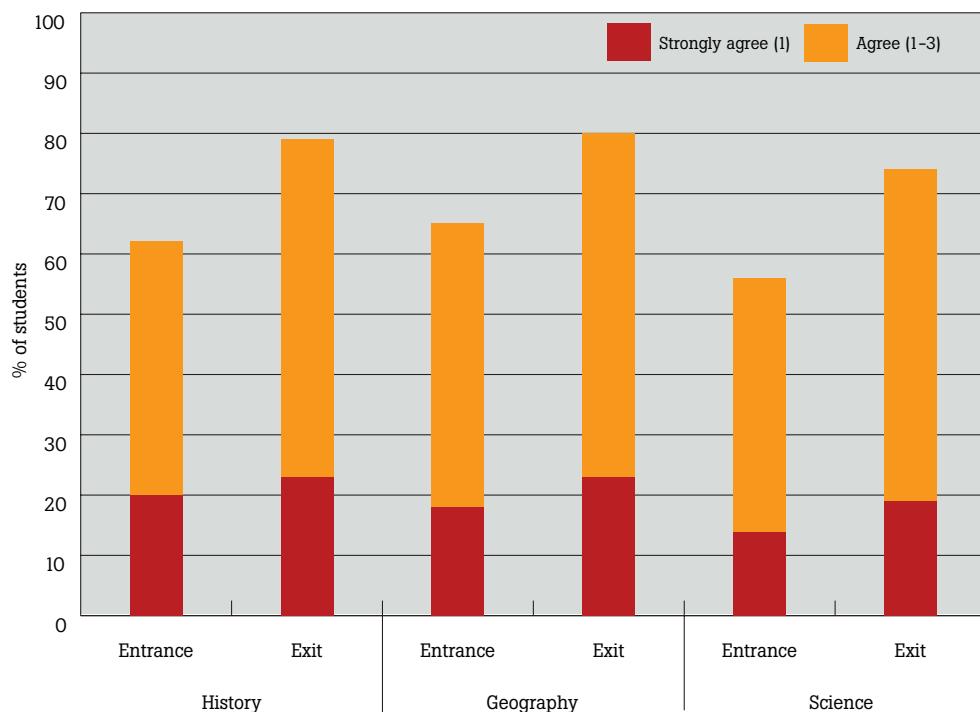
*I think it's my own knowledge, definitely... If you are good at teaching you can employ your strategies and have fantastic classroom management and you could teach anything... but it's knowing my own confidence and knowledge.*

NI, interview

*Well it's (the course) definitely influenced how we begin our lessons and the type of like work we do, the methodology, group work and pair work.... we've learned lots of new ideas...about how to put it across to children easier, so I'm not so terrified in going into the class.*

RoI, interview

**Graph 4.4: Student teachers' recorded confidence to teach history, geography and science (source: entry and exit questionnaire)**



Confidence to teach all three subjects was generally high in NI and RoI, and the majority of students in both jurisdictions expressed some level of confidence at the entry and exit stages. In the entrance questionnaire, while there was little difference with regard to science, NI students recorded noticeably lower levels of confidence in relation to geography and history than their RoI counterparts (table 4.4). Similarly, in the exit questionnaire, NI students were less positive about geography and history in terms of confidence, but the difference was less pronounced for both subjects.

**Table 4.4: Mean 'scores' for levels of student teachers' confidence to teach history, geography and science by phase and location (source: entry and exit questionnaires)**

		NI 'Score' (SD*)	RoI
History	Entry	3.55 (1.86)	3.01 (1.64)
	Exit	2.99 (1.56)	2.42 (1.24)
Geography	Entry	3.43 (1.74)	2.94 (1.55)
	Exit	2.77 (1.45)	2.47 (1.17)
Science	Entry	3.42 (1.48)	3.39 (1.71)
	Exit	2.82 (1.41)	2.73 (1.41)

\*Standard deviation

In the exit questionnaire the students were also asked if they thought that their levels of confidence in relation to the teaching of history, geography and science had changed over the course of their ITE programme. Overall the majority of students selected positive answers (students circling 1-3), with the highest scores for science (89%), followed by history (87%), then geography (85%). The influence of the ITE courses on their levels of confidence and

comfort around teaching was voiced by several of the participants in the focus group interviews. As these students suggest, increased familiarity with and expertise in using a range of methodological approaches has a positive effect on attitudes and on practice:

*I noticed a big, huge difference from the way I taught it from last March to this March because what we had learned about the different methods of teaching. We learned so many, just even things to get them interested at the start of the lesson. It keeps them interested throughout it. I found it much easier to teach and the ideas came through much more easily in Second Year than in First Year.*

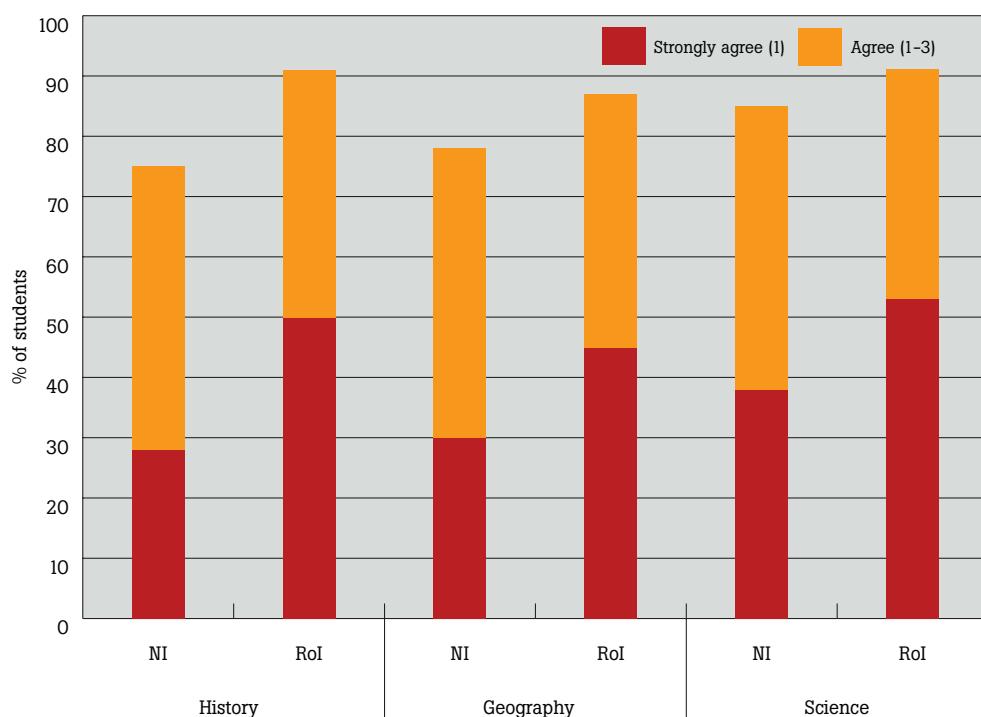
RoI, interview

*I think you're always going to have your preference like you were saying, but it's just you're more in your comfort zone now in teaching the others as well whereas probably at the beginning you were probably dreading teaching any of the subjects you didn't like as much. Like right now we've got so many different methodologies in teaching it's just we're more comfortable and more confident.*

RoI, interview

As graph 4.5 indicates there was some variation in relation to levels of confidence by location.

**Graph 4.5: Student teachers' perceptions of change in their confidence to teach history, geography and science, compared to the start of the course, by location  
(source: exit questionnaires)**

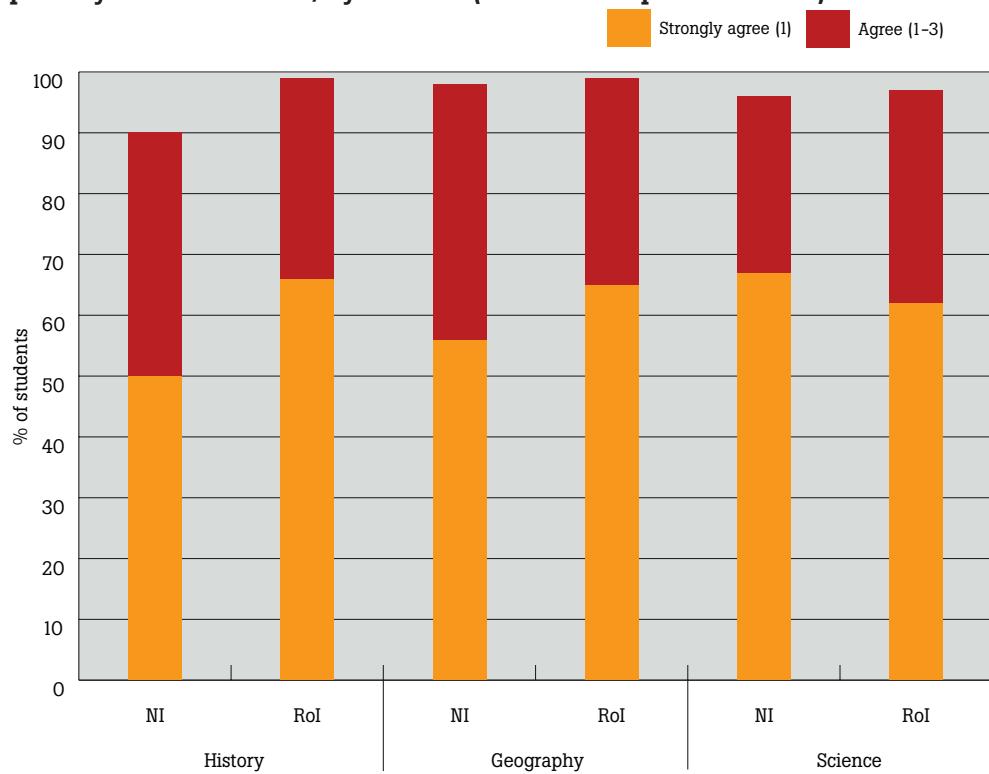


#### 4.6 Student teachers' views on the importance of history, geography and science for primary aged children

In the entry and exit questionnaires, students were also asked how important they thought history, geography and science were for primary-aged children to learn. Both the entry and exit cohorts were very positive about the importance of all three subjects. When the positive cumulative 'scores' were considered (score = 1-3), for the entry group, the numbers of participating students who circled 1, 2 or 3 were very high (geography, 95%; history 91%;

science 91%). Moreover more than one in two students strongly agreed with the statement in each of the subject areas. The figures for the exit group were even higher, with 99% of students strongly agreeing that geography was an important subject for primary aged children. The figures for science and history were almost as high at 97%. Graph 4.6 breaks these percentages down by location.

**Graph 4.6: Student teachers' views of the importance of history, geography and science for primary children on exit, by location (source: exit questionnaires)**



There were some locational differences in views regarding the importance of the subjects. The entrance and exit cohorts in NI were more positive about the importance of science (table 4.5) than their RoI counterparts, while participating students in the RoI were more positive about history and geography in the entrance and exit questionnaires, as outlined in table 4.5.

**Table 4.5: Mean 'score' for the student teachers' views of the importance of history, geography and science for primary children, by phase (source: entry and exit questionnaires)**

		NI 'Score' (SD*)	RoI
History	Entry	2.12 (1.36)	1.79 (1.08)
	Exit	1.87 (1.10)	1.44 (0.73)
Geography	Entry	1.84 (0.98)	1.71 (0.99)
	Exit	1.61 (0.84)	1.44 (0.69)
Science	Entry	1.63 (0.96)	1.96 (1.24)
	Exit	1.48 (0.87)	1.55 (0.85)

\*Standard deviation

#### 4.7 Discussion and conclusion

These findings suggest that student teachers developed more positive attitudes towards history, geography and science during their ITE courses. In terms of liking, the findings from both questionnaires also suggest that participating cohorts in the RoI liked all three subjects more than their NI counterparts. Research suggests that students are more likely to opt for subjects they like when making choices at school (Adey and Biddulph, 2001; Bewick and Southern, 1997; Weeden, 2007). It is arguable that the differences found between the NI and RoI entry cohorts in relation to their liking of the subjects were already flagged to some extent by choices made at second level which resulted in the relatively high numbers of NI students who indicated that they had no post-primary experience of history and geography. This lack of experience was noted as an issue during interview:

*The higher qualifications the more you understand. It's vital we get the knowledge from somewhere...I'm not confident if I don't know about it.*

NI, interview

It appears also that the student teachers became more positive about the subjects as they progressed through their ITE programmes. This general increase in subject liking could be influenced by a number of factors during their ITE programmes including coursework and, as was noted earlier, positive experiences on school placement.

The findings presented in this chapter also show that exit cohorts were more confident about teaching all three subjects than the entry cohorts. Participating student teachers rated their personal change in confidence as very high and over 80% gave positive responses for all three subjects. Students in the RoI were more positive about their levels of confidence in geography and history in both the entrance and exit questionnaires. However, these differences were less pronounced for both subjects in the exit questionnaire. As with liking, this suggests the positive impact of ITE courses on student teachers' confidence in their capacities to teach history, geography and science in primary schools. Whilst this is very encouraging and implies that colleges of education work effectively to increase student teachers' confidence in history, geography and science, this was not the case for all students, as indicated earlier. This issue is discussed further in chapter 6 in relation to the student teachers' experiences on school placements.

The survey also indicates that both the entry and exit cohorts were positive about the importance of all three subjects for primary school children. Students in NI were more positive about the importance of science, while students in the RoI were more positive about the importance of history and geography. It may be that one result of taking courses in history, geography and science education is that student teachers' views of their relative importance as subjects at primary level increases.

In summary, while there were differences between the NI and RoI cohorts, student teachers in the exit cohort were more positive about all three subjects in terms of liking them, their confidence levels with regard to teaching them and in terms of how they viewed the importance of the subjects for children than students who participated in the entry phase. Taken together with students' own perceptions that they had grown more positive with regard to liking and confidence levels across all three subjects during the course of ITE, the evidence suggests that the experiences they encountered on their ITE programmes appear to have had a positive effect on their responses to the subjects for the majority of students. As found elsewhere, however, the relationships between student teachers' attitudes to and experiences of history, geography and science are complex (Shallcross et al., 2002). These relationships will be explored further in chapters 5, 6, and 7.

## Chapter 5

### STUDENT TEACHERS AS LEARNERS OF HISTORY, GEOGRAPHY AND SCIENCE: EXPERIENCES, PERCEPTIONS AND ATTITUDES

#### 5.1 Introduction

The research evidence outlined in chapter two indicates that student teachers' perceptions, attitudes and prior experiences of learning can exert a strong and lasting influence on their future practice as teachers which can be relatively undisturbed by their experiences in initial teacher education. Knowing and understanding the nature of that prior experience has been identified as an essential first step in developing initial teacher education programmes that are responsive to student teachers as learners, and that promote the critical reflection on experience which is necessary to avoid the kind of reproductive influence identified in the literature. If initial teacher education courses are to have a progressive and lasting influence on classroom practice, these prior experiences have to become an explicit focus for critique and discussion at all stages of the process.

As outlined in chapter three, the entry questionnaire asked students to write about their positive and negative experiences as learners of history, geography and science. When analysed, the students' responses fell into three main categories i.e. teacher characteristics, teaching and learning and subject perception. It was not the intention of this question to assess whether or not students were more positive or more negative in their views of a particular subject on entry to initial teacher education. This has been examined in the quantitative data. Nonetheless, this question offers some insight into this and statistics comparing the numbers of students making positive and negative comments are given below. Any comparison must acknowledge that a student may have a single positive experience in the context of an overall persistent negative experience of the subject. The converse also holds true. This is illustrated in table 5.1 below. With this caveat in mind, however, the overall balance of negative and positive comments does give some indication of overall experience. More importantly, this question allows for an exploration of the nature of those positive and negative experiences and an identification of the key issues that arise.

**Table 5.1: Positive and negative experiences of science and history**

Positive	Negative
<p><i>Doing all the different experiments in the lab and having to discuss why we thought the certain results happened, etc. Going on nature walks!</i>  <i>Science, RoI. Student teacher A</i></p>	<p><i>Having to stand up in front of my class as a first year student in secondary student and explain how a cell worked! I hadn't a clue and began crying.</i>  <i>Science, RoI. Student teacher A</i></p>
<p><i>Primary: Doing a Victorian project and presenting it in a creative style for history.  Secondary: practical project on Carrickfergus Castle.  History, NI. Student teacher B</i></p>	<p><i>Found history I was learning to be irrelevant to my life at both levels.</i>  <i>History, NI. Student teacher B</i></p>

This chapter outlines and discusses the findings in each of the three subject areas and then examines the common threads of experience across the subject areas. Given that the sample includes students from two locations i.e. Northern Ireland (NI) and the Republic of Ireland (RoI), any significant differences in their reported experiences will be noted. With a couple of exceptions identified in the text, all percentages given are based on three populations: the total

sample of students surveyed ( $n=1114$ ), respondents from the RoI ( $n=871$ ) and from NI ( $n=243$ ). As indicated in chapter three, in order to avoid a proliferation of statistics, while ensuring a common understanding of number-related terms, the language key identified on page 26 will be used throughout alongside or instead of percentages.

## 5.2 Experiences of history

*Wonderful history teacher for Junior Cert - made history fun, exciting, by using as many primary sources as possible, e.g. pieces of Berlin Wall, trips to galleries, museums and Italy! Primary school history was enjoyable, lots of creative project work and art assignments, e.g. making a Stone Age village from lollipop sticks!*

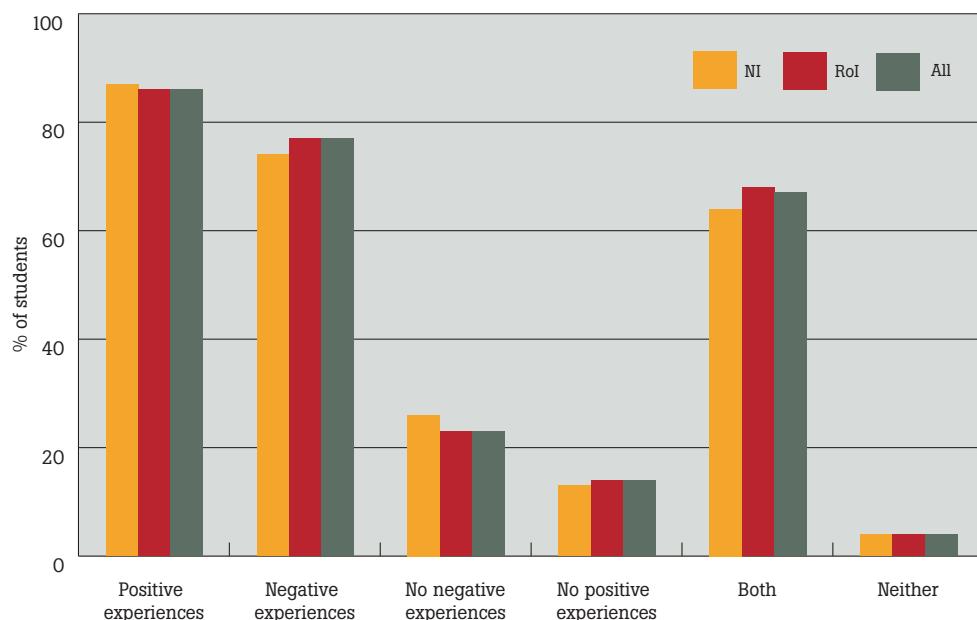
RoI, entry questionnaire

*An unenthusiastic teacher in secondary school, who did little more than simply read from the book. We did no practical work went on no trips etc.*

RoI, entry questionnaire

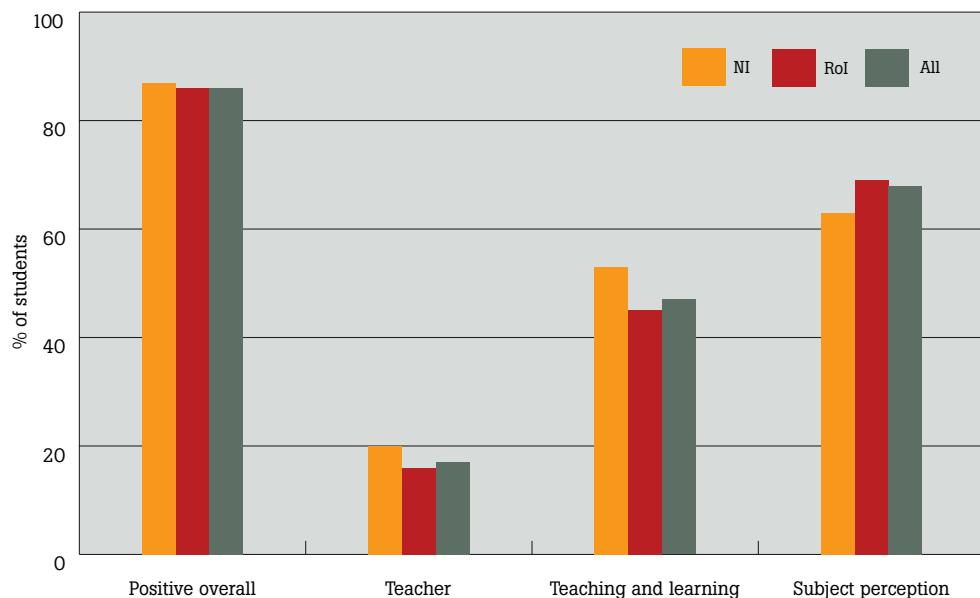
In terms of their overall response to history, 86% of the students surveyed recorded at least one positive experience as learners of history while 77% of them recorded at least one negative experience. A substantial majority of them, therefore, recorded both positive and negative experiences of history (67%). Almost one in five of the respondents indicated that they had positive experiences only while more than one in ten indicated that they had negative experiences only. As graph 5.1 indicates, there was little difference between the two cohorts of students on these global measures, though the students from NI emerged as marginally more positive and marginally less negative overall than their counterparts in the RoI. While the differences were small, they are interesting in the context of the findings from the quantitative measure of subject liking discussed in chapter four which indicates some polarity in the views of students from NI in relation to history. As will be discussed below, the breakdown of positive and negative comments between categories suggest possible contexts for this.

**Graph 5.1: Positive and negative experiences of history (source: entry questionnaire)**

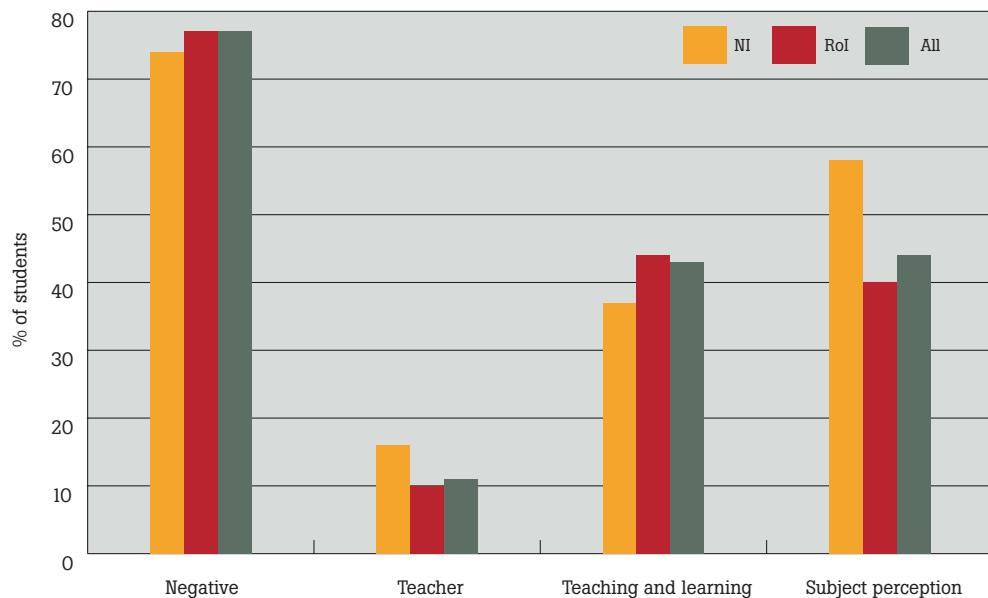


When students' positive experiences of history were analysed, they fell into three main categories (see chapter three for a discussion on coding): teacher characteristics, teaching and learning (environment and methodologies used) and subject perception. As can be seen from graph 5.2 below, subject perception was the largest category in positive history experiences, followed by teaching and learning, with teacher characteristics as the smallest category. Graph 5.2 also indicates that, while the differences were small, a greater proportion of students from NI made at least one positive comment relating to their teachers and to the teaching and learning environment they experienced, while proportionally fewer made positive comments about the subject itself.

**Graph 5.2: Positive experiences of history (source: entry questionnaire)**



However, a greater proportion of students from NI also made at least one negative comment about their teachers of history as well as about the subject itself (graph 5.3). The proportion of NI students commenting negatively on the subject of history provides the most obvious difference between the two groups in what are generally similar profiles of positive and negative experiences and will be discussed below.

**Graph 5.3: Negative experiences of history (source: entry questionnaire)****Teacher characteristics:**

For many respondents, the personal and professional characteristics of their teachers determined, to a significant extent, the nature of their experiences as learners of history. Overall, more students made positive comments about their teachers than negative ones (17% and 11% respectively). As illustrated in graphs 5.2 and 5.3, there were differences here between the two cohorts of students with a higher proportion of students from NI making both positive and negative comments (20% positive and 16% negative). A small number of students ( $n=22$ ) had both positive and negative comments. The most frequently mentioned positive teacher qualities were interest and enthusiasm and students noted that these had a positive influence on their learning. Teachers who were encouraging also were viewed positively. As one student noted:

*I was encouraged by many of my teachers and their enthusiasm for the subject encouraged me.*

NI, entry questionnaire

Positive professional qualities such as the ability to explain well, a good knowledge of the subject, good preparation for teaching and an ability to engage the class were cited by some as characteristics of their teachers. When teachers were prepared, it made a difference.

*An excellent teacher with a hilarious sense of humour and who explained topics in a clear and concise easy to understand way. Teacher that told class about their own experiences and trips to historic places, brought history to life - gave extra information which wasn't in the text book, which made subject more interesting.*

RoI, entry questionnaire

While lack of interest in or enthusiasm for history was the most frequently mentioned negative characteristic of teachers, students also cited lack of professional competency in key teaching skills. Poor teachers were seen by some to have been 'poor at explaining' while bad teaching was seen to reduce student interest in history and to make the subject more difficult.

*Having a teacher in junior school who complicated the subject - it didn't make any sense.*

NI, entry questionnaire

A few students cited poor classroom management and overly critical or authoritarian teachers as having had a negative impact on their motivation, learning and engagement with history.

*A cross teacher sometimes made it hard to want to learn.*

NI, entry questionnaire

A small number of respondents stated that a lack of teacher objectivity or a lack of openness to student perspectives was a negative teaching quality of their history teachers, as was bias towards a particular historical perspective.

*Teacher was right, you were wrong (in secondary school).*

RoI, entry questionnaire

*Our teacher was very nationalistic and forced his own view on students.*

*He got mad if we said NI. We had to say Island of Ireland.*

RoI, entry questionnaire

### Teaching and learning

Almost half of the total students surveyed commented positively on the teaching and learning environments they had experienced in relation to history (47%) while 43% made at least one negative comment relating to teaching and learning. As indicated above, there were some differences between the two cohorts which mainly focused on the methods of teaching they encountered. This will be discussed below. Students typically noted that teachers had made history classes ‘fun’ or ‘alive’ by the approaches which they took. In general students appreciated interactive learning environments that were well resourced, where students were engaged in project work, group activities and where efforts were made to ‘cover subject areas of interest to the pupils’.

*In primary school we did really interesting colourful projects ... In secondary school we would have great class discussions on the history we were studying ... great atmosphere in the classroom.*

RoI, entry questionnaire

A wider school environment where history was ‘well promoted in school’ and where extra-curricular events were organised was noted by a few students as providing a positive environment for learning history.

*We entered a competition in P5 and we made it to the finals. We were studying the Vikings and had made a video - it was fun.*

NI, entry questionnaire

Almost 45% of students made positive references to specific teaching methodologies experienced in history classrooms, with a proportionally greater number of students from NI commenting positively in this area (53% NI, 43% RoI). Active learning and participatory activities were commonly listed as positive. Respondents referred most frequently to ‘trips’ and visits to historical sites, buildings or museums.

*I enjoyed history in primary school and remember in P5 going to the ruins of a friary where I lived - this was very exciting and encouraging. I learned a lot and really enjoyed the experience.*

NI, entry questionnaire

Project work, watching videos and story telling as a teaching approach also received approval, particularly at primary school level. Students were also positive about their experience of history integrating with other subject areas such as drama and art, predominantly at primary school:

*In Primary my teacher was really enthusiastic when reading the stories of 'Salmon of Knowledge', Cú Chulainn, Clann Uisnigh. I can really remember these stories because of the way they were told in comparison to the heavy load of dates, eras, wars and battles you learn in secondary history.*

RoI, entry questionnaire

*Building a motte and bailey-very hands on.*

RoI, entry questionnaire

There were some locational differences in the frequency with which different methodologies were mentioned which may suggest differences in the experiences of students. These are summarised in Table 5.2, which indicates the percentage of students in each jurisdiction who commented positively on the most frequently mentioned approaches.

**Table 5.2: Positive comments on methodologies in history (source: entry questionnaire)**

<b>Methodologies</b>	<b>% of respondents</b>		
	<b>NI (n=243)</b>	<b>RoI (n=871)</b>	<b>All (n=1114)</b>
Fieldtrips	31	13	17
Projects	6	14	12
Drama and Art	9	7	7
Watching videos	8	3	4
Story	<1	3	2

As can be seen from table 5.2, students in the RoI cited their positive experiences of project work and story more frequently than their counterparts in NI, while students in NI made more frequent reference to going on historical trips, integrated approaches (drama and art) and the use of videos while learning history at school. Although hardly any specific references were made to the examination of historical evidence, students' frequent references to field trips and positive comments around research projects may imply this.

*Liked doing the special topic for Leaving Cert. It meant you could be a real historian and research a topic you were interested in.*

RoI, entry questionnaire

As noted above, almost half of all respondents (43%) made negative comments about the teaching and learning environments they had experienced. Typically, they noted the lack of 'fun' and a poor variety of class activities created by their teachers. Lack of opportunities for active learning and group work and poor resources were noted as having a negative impact on learning. Some respondents commented on what teachers had not done.

*Almost everything was read from a book and then questions answered on it; no experience of 'active learning' and as a result the subject became tedious and boring.*

RoI, entry questionnaire

A total of 44% of respondents commented negatively about the history methods they had experienced. Generally, students complained about the high degree of memorising information that occurred, the excessive reading from text books, the predominance of taking notes and essay writing as well as the lack of hands on work which they had experienced. Typically

students with negative experiences referred to the passivity of the classroom environment. In many cases, too much reading in class, either by the students or by the teacher, was seen as a negative approach, particularly when there was no opportunity to engage in any analysis or discussion of what was read. Several noted that the history they had learned was taught 'straight from the textbook' without discussion, interpretation or reflection.

*[In] secondary school and in most of my primary classes, we just read straight from the book. This caused a dislike of the history amongst the pupils and as a result, out of 100 students, nobody in my year wanted to keep on history for Leaving Cert.*

RoI, entry questionnaire

*[We] only sat and read, there was no discussion or activity involved.*

NI, entry questionnaire

There were locational differences in the frequency with which particular approaches were mentioned as negative experiences. Students in the RoI made more negative comments about the use of text books, the experience of reading and of memorisation than students from NI, while having 'no discussion' and too much writing and answering questions were referred to more frequently by students from NI. Some students reflected on the experiences that they had not had, such as field trips or project work. They commented on the dearth of resources and the absence of discussion and critical reflection. The lack of opportunities to work with primary sources was identified by some.

*No projects, no homework, not a lot of teaching on the subject.*

NI, entry questionnaire

*Teacher taught from textbook only and didn't add own opinions or ideas or indeed ask any of the students for their ideas.*

RoI, entry questionnaire

*Not enough practical work - such as examining primary sources, field trips etc.*

RoI, entry questionnaire

### 5.3 Perceptions of history

Students' accounts of their positive and negative experiences were revealing in relation to their perceptions of the nature of history and their attitudes towards it. Many students referred to specific topics and the content of the history programmes they had experienced in school. A majority of students (68%) had positive perceptions of history while almost half of the students (44%) conveyed negative perceptions of the subject. A small number of students had both positive and negative comments to make about the nature of history. While more students made positive comments than negative ones overall, there were substantial differences between the two cohorts in relation to perceptions of history, with a higher proportion of students from NI making at least one negative comment about the subject (58% as opposed to 40%) and proportionately fewer making positive comments (63% as opposed to 69%). Typically, history was seen by those with a positive view as 'interesting' or 'enjoyable'.

Students predominantly described history as 'learning about' some aspect of the past for example, 'learning about the world wars' or about people or events and frequently named particular topics as providing positive learning experiences:

*Learning about other countries' histories, the battles won and lost and the important people, learning about different countries and voyagers, people who invented important things.*

RoI, entry questionnaire

*Loved A Level Course -the Tudors - lots of sex, blood and gore. Not just dates... about real things and real people.*  
NI, entry questionnaire

Irish history was most frequently mentioned, with reference to particular events, such as the 1798 Rebellion, as well as Irish myths, legends and stories. Some students noted their experiences of learning local history and several made references to visits to local monuments and sites as well as to learning about local individuals. Not surprisingly perhaps, the most frequently mentioned areas of history indicated were congruent with the different curricula in the two jurisdictions, with Irish history more commonly mentioned by students in the RoI, while the study of wars and particular eras such as the Victorian era were more commonly noted by students from NI.

A small number of students made specific reference to the relevance of history to everyday life, to society or to the lives of children, while students from NI also made some reference to women in history or the history of particular women as a component in history. Some students (4% of respondents) saw the function of history as explanatory of the present day world and noted that history helped people to understand 'why things are the way they are' in the modern world. In other instances students saw the role of history as helping to predict or influence the present because history had a tendency to repeat itself.

*Interesting, made me understand the world better, see past problems repeating themselves.*  
RoI, entry questionnaire

*A clearer understanding of why/ how events came about and how it affects us today. What we can learn from it.*  
NI, entry questionnaire

Modern history was generally seen as having a particular relevance. Some students felt that learning about world wars, conflict or particular events in history was especially relevant. In other cases the study of Irish history, especially modern Irish history, was judged to be particularly relevant either as a way of understanding the present or as supporting national or community identity.

*Learning about history which I felt was relevant, e.g. World Wars.*  
NI, entry questionnaire

*I loved learning about Irish history and how Ireland has got to the stage we are today, history which related to us.*  
RoI, entry questionnaire

*Loved learning about Irish history as I found it very relevant to my own life.*  
NI, entry questionnaire

As indicated earlier, almost half of the students made negative comments about the nature of history and its relevance. History was seen as difficult mainly because of the need to memorise 'facts' and dates. Students stated that they had difficulty recalling dates, that they had 'struggled with dates' and that there were too many dates to remember. Almost one in five of the total number of students surveyed and over one in three of those with negative views of history as a subject described it as boring, while a few students expressed an extreme dislike of the subject, or of particular topics.

**Table 5.3: Negative attitudinal and descriptive words used most frequently  
(source: entry questionnaire)**

<b>Attitude</b>	<b>% of respondents</b>		
	<b>NI (n=243)</b>	<b>RoI (n=871)</b>	<b>All (n=1114)</b>
Boring / Dull	21	19	19
Didn't like / enjoy	5	2	3
Hated	2	2	2
Not interested	8	6	7
Difficult / complex /confusing	9	7	7

Students who saw history as having little relevance (2% of respondents) often expressed feelings of remoteness from the subject they had encountered at school, particularly its content which was seen as content-heavy and dull. For a few students ( $n = 12$ ), there is some suggestion that community identity played a role in their sense of connection with school history.

*Hated studying history, Irish history was too far back to be interesting, didn't do much about the world wars which are the topics which are most useful to know about.*  
NI, entry questionnaire

*At Secondary level, I found history non-relevant. e.g. I would have preferred to do more Irish history.*  
NI, entry questionnaire

Not seeing the point in wondering and having to record "what might have happened if . . ." History is history - it is over! We cannot change it.  
NI, entry questionnaire

Hated Irish history - seemed very one- sided in presentation.  
NI, entry questionnaire

Not surprisingly, the association of history with examinations influenced students' attitudes towards the subject itself. While there was a small number of positive comments relating to the experience of success in exams, the majority of comments in relation to examinations was negative (7% of respondents overall). In some instances, exams were seen to have dominated the way history was taught as well as its content, and were not seen to measure true ability or skills in history.

*...learning essays off by heart for exams. Sitting in a classroom taking notes for a double period. Watching boring videos to help us remember facts and dates.*  
NI, entry questionnaire

*The exams are structured in a non-appealing way to students as there is so much writing and it must be learnt off by heart and regurgitated which doesn't accommodate the historical thinkers at all. It is far too memory based.*  
RoI, entry questionnaire

### **Summary**

In summary, students' positive experiences of history were characterised by enthusiastic teachers who were interested in their subject, by active approaches to the teaching of history such as fieldtrips and projects, by a range of other active methodologies such as the use of drama and art and by the use of resources such as videos. Students were critical of teachers

who were perceived as boring, dull and uninterested, who taught from the textbook and who required students to engage in an excessive amount of writing, learning off and reading, and who provided little opportunity for discussion or activity. Students with negative perceptions of the subject saw it variously as boring, tedious, difficult and, at times, irrelevant.

There were differences in students' experiences by location. While both cohorts recorded more positive than negative experiences, students from NI were more likely to make a positive comment about their teachers and about their teaching and learning environment. They were also proportionately more likely to make a negative comment about the subject itself. Instances of passive learning environments dominated by textbook-based teaching and learning off were more commonly expressed by students from the Republic while students from NI were more likely to see history as difficult, irrelevant and characterised by too much writing of long essays. In general, while only a handful of students explicitly conceptualised history as evidence-based, there was some association of history with evidence in the built environment while the frequent mentions of projects suggests that the idea of historical investigation was part of their understanding of history.

#### 5.4 Experiences of geography

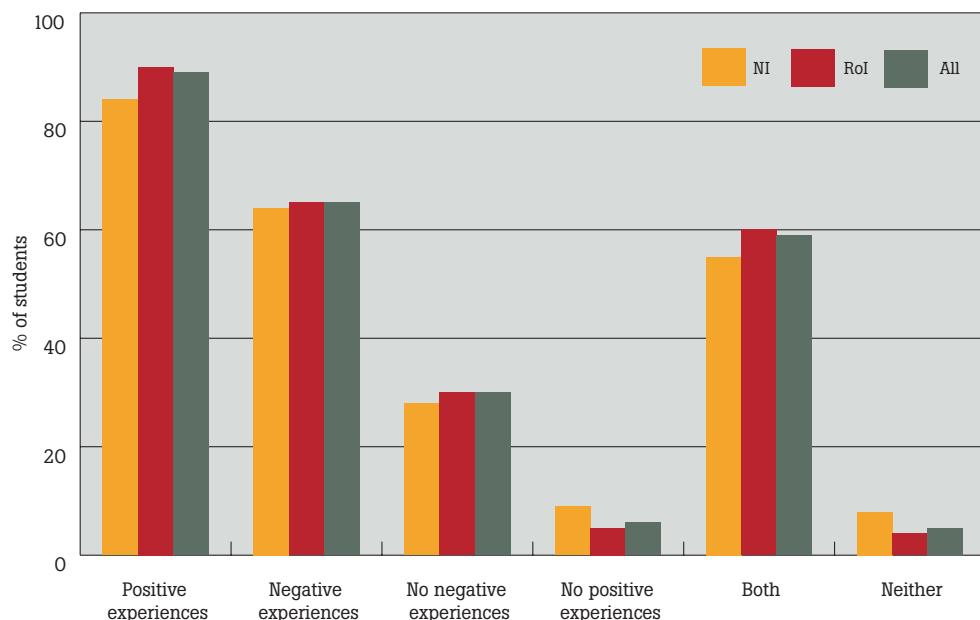
*Our secondary school teacher made geography great fun and interesting but also was very determined to have us learn every thing very well, very encouraging.*

RoI, entry questionnaire

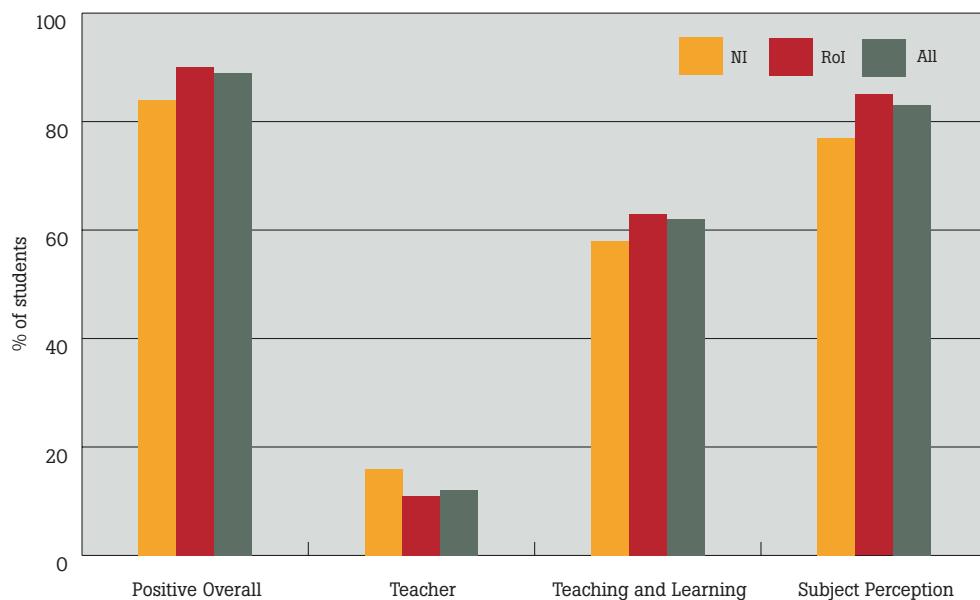
*My teacher in second and third year did not encourage me in the least. We spent our entire class reading and underlining large passages from the text book. She had a very monotonous tone and it soon became one of my least favourite subjects.*

RoI, entry questionnaire

In terms of the overall response of students to their experiences as learners of geography, 89% of respondents indicated at least one positive experience (see graph 5.4 below). Students from the RoI had the higher proportion (90%) making at least one positive comment while students from NI had a slightly lower proportion at 84%. 30% overall indicated that they had positive experiences of geography only. In terms of negative experiences, 65% indicated that they had some negative experiences of geography while 6% overall indicated that they had negative experiences only. The proportion of students from NI indicating that they had no positive experiences of geography was slightly higher than their counterparts in the Republic (9% and 5% respectively). 5% of the students who were surveyed (NI 4% and RoI 4%) indicated neither positive nor negative experiences.

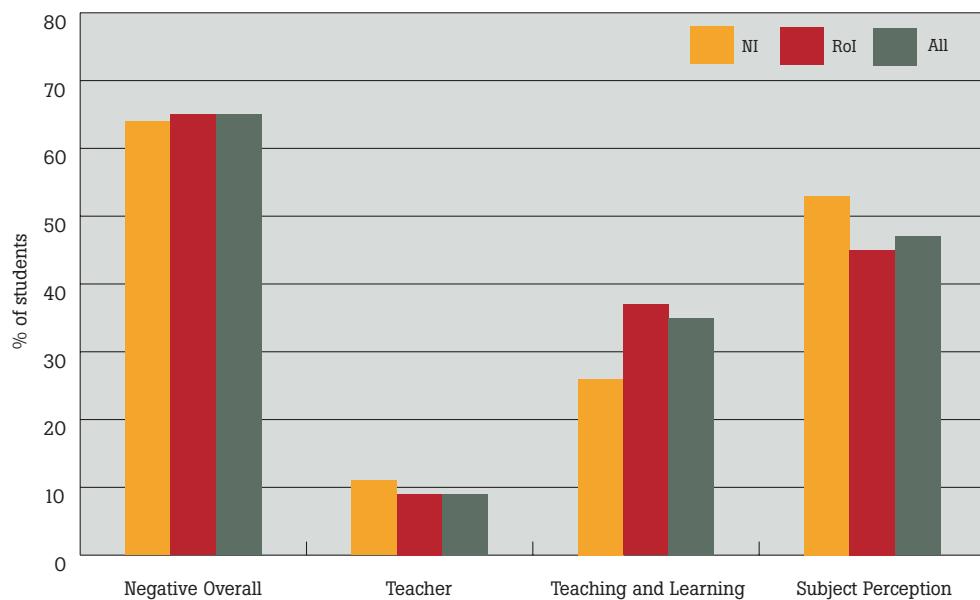
**Graph 5.4: Positive and negative experiences of geography (source: entry questionnaire)**

In terms of the breakdown of positive and negative comments, as graphs 4.5 and 4.6 illustrate, both cohorts had a similar breakdown across the categories. With regard to the positive experiences, there were small differences between the two groups, with a slightly higher proportion of students from the RoI making at least one positive comment in relation to teaching and learning and about the subject itself while a greater proportion of students from NI made positive comments about their teachers. These differences, however, were small.

**Graph 5.5: Positive experiences of geography (source: entry questionnaire)**

When writing about their negative experiences, a greater proportion of students from NI made at least one negative comment about the subject and about their teachers than their RoI counterparts, while students from the RoI were more inclined to make negative comments relating to teaching and learning. This is a similar pattern to the experiences of history noted above.

**Graph 5.6: Negative experiences of geography (source: entry questionnaire)**



#### Teacher characteristics

A total of 138 students (12% of total) made comments that were coded as positive about their teachers' personal qualities and their attitudes to their pupils in geography classes (NI 16% and RoI 11%). Teachers were described variously as 'interesting', 'enthusiastic', 'great', 'brilliant', 'fabulous', 'excellent', 'dynamic', 'dramatic', 'funny', 'motivated', 'dedicated', 'encouraging' and 'helpful'.

Teachers' attitudes towards geography and towards the students were seen to have a positive influence on their own attitudes towards the subject and towards their learning experiences. Some students described their teachers as supportive, encouraging and always willing to help. In other cases, students commented positively on the professional qualities of the teacher, such as the ability to explain well and making geography 'easy to understand'.

*Teacher was really lovely and kind. She didn't shout if you don't know something. She understood that not everyone loved geography.*

NI, entry questionnaire

*Every student was interested because the teacher engaged with the class and provided us with, believe it or not, facts which were very interesting.*

RoI, entry questionnaire

*Had a great teacher that helped me when having trouble and explained things well.*

NI, entry questionnaire

One student noted the importance of the teacher's own experiences of visiting other places and bringing that direct knowledge and enthusiasm back into the classroom:

*Teachers explained things quite clearly. Told us about their own experiences of seeing certain geographical sites etc.*

RoI, entry questionnaire

Almost one in ten students commented on the negative impact of teacher characteristics on their learning, interest and motivation. Students described teachers as 'boring', 'uninterested', 'unenthusiastic', 'awful', 'bad', 'poor' and 'terrible'. The following quotations from student responses exemplify boring, passive classes led by uninterested teachers whose teaching style rarely varied:

*... text books ancient, dull, irrelevant, classes long with lots of writing/copying from the board in silence. Never remember learning anything interesting e.g. about weather/ counties- all about definitions.*

NI, entry questionnaire

*Possibly the worst teacher I ever had for Leaving Certificate. His level of enthusiasm, interest and drive was abysmal; he really didn't inspire us to work hard or study.*

RoI, entry questionnaire

A few students (n=5) wrote about teachers who were too strict and intimidating, and even terrifying, while some stated that their teachers were inexperienced and/or had poor classroom control, leading to little productive or interesting work being carried out. In particular, six students referred to specific difficulties in relation to learning about maps.

*Teacher would put you down, alienate you, humiliate you in front of class. Even when you worked hard at geography the teacher would make you so nervous that you couldn't read your work out.*

NI, entry questionnaire

*We had one teacher who used to donate all of her time to the unruly pupils. I found this very unfair. I remember asking her to show me how to read Ordnance Survey maps and she never came to me.*

RoI, entry questionnaire

In contrast, the student quoted below describes a teacher who was very passionate about his or her subject, but this led to a certain intolerance of pupils' difficulties:

*Teacher so passionate about geography didn't understand that you could have a difficulty; endless map drawing, found it very difficult.*

NI, entry questionnaire

In some cases, the students' negative experiences of their geography teachers made them turn away from studying the subject:

*One of my teachers was very strict. I found it really boring and never really related to it. In primary school and junior years, I loved it and enjoyed it and was very good at it but this faded.*

NI, entry questionnaire

*Very patronising and insulting teacher for sixth year - made me cry every day and turned me off geography for life.*

RoI, entry questionnaire

### Teaching and Learning

The majority of respondents (62%) made positive comments relating to the teaching and learning environments they experienced as learners of geography, with 58% of students from NI and 63% of students from the RoI recording a positive experience in this category. In most cases, respondents referred to specific methodologies or approaches that they particularly enjoyed. Geography classrooms were described as interesting, enjoyable and fun.

*Geography room was really stimulating. It was like a museum with glass cases all around the edges - with stones from different places and pieces of bog oak and the teacher also stuck interesting facts on the walls - it made geography very enjoyable.*

RoI, entry questionnaire

60% of students identified particular approaches of which they had positive experiences. There was some difference in the frequency of comments in relation to methodologies between students from NI (57%) and those from the RoI (61%). The dominant positive experience related to field work of all kinds, including work outside the classroom in the local area, trips away for the day, ‘tours’ and residential fieldwork. Overall 43% of student teachers recalled some kind of field work as a positive experience. This kind of work obviously provided the most memorable and enjoyable geography-based experience during their time at school. Some noted that actually seeing what was being talked about in class brought the subject to life and made learning not just enjoyable but easier as well:

*Many field trips and outings; this helped me to learn and progress at a quicker rate.*  
NI, entry questionnaire

*We completed fieldwork in secondary school and this was a good experience, it allowed us to experience first hand the geography of Ireland; it is easier to understand when you see it at first hand rather than just in text books.*

RoI, entry questionnaire

Others recalled the locations for trips and gave details about what activities were carried out:

*Went to Ballybunion Beach to do fieldwork for Leaving Cert. We were split into groups and had to do everything (measuring, recording, timing etc.) ourselves. Had a fantastic time.*  
RoI, entry questionnaire

*Staying overnight in Magilligan, going out around the town doing surveys, going into a river- hands on experience.*  
NI, entry questionnaire

Students also wrote about other forms of practical activity, not necessarily field work per se and not necessarily occurring far from the school, while several (6%) referred specifically to the benefits and enjoyment of working on projects in groups:

*Measuring rainfall outdoors because it was the only time we went outdoors in primary school for hands on work.*  
RoI, entry questionnaire

*Doing project work – team work made different topics easier to understand.*  
RoI, entry questionnaire

*We did lots of projects on different countries and learned a lot from this and it was fun doing them as we worked in groups. We got to draw things like maps and diagrams so it wasn't all theory.*  
RoI, entry questionnaire

While a few students referred in a favourable way to their enjoyment of using good textbooks with helpful diagrams, a significant number (12%) mentioned maps as something they enjoyed either making or reading. A small number of respondents noted their enjoyment of geography classes which involved discussion and debate; they seemed to value the opportunity to give their own opinions on topics rather than always be provided with other people's solutions or 'the right answer':

*Lively debates on issues of population, pollution etc.*  
RoI, entry questionnaire

*Loved the challenging debates on better/worse in human nature.*  
NI, entry questionnaire

*Class discussion. Coming up with our own explanations/solutions for a particular problem or question.*  
RoI, entry questionnaire

35% of the respondents (26% of students from NI and 37% of students from the RoI) commented on their negative experiences of geography in terms of the teaching and learning environments they encountered in the classroom. Of these, the majority (31% of the overall sample) mentioned specific methodologies or teaching approaches that they particularly disliked. Again, there was a locational difference here with, 34% of students from the RoI making negative comments on methodology as opposed to 23% of students from NI. In general, students wrote about geography lessons where they spent a large amount of time writing notes, copying from books, reading textbooks or listening to teachers read them, and learning off material.

Over 15% of the overall sample and, most strikingly, almost one in three of the students from the RoI who recorded negative experiences, commented on the pressure to memorise notes, pages from textbooks and lists of physical features. While a small number of students from NI ( $n=4$ ) indicated a similar issue, this was overwhelmingly an aspect associated with RoI experiences. Some of this comment related to the breadth of the Leaving Certificate course and the need to memorise essays and information from textbooks. Most related to the phenomenon of 'learning off' rivers, mountains, lakes and towns which was seen as characteristic of their primary geography experience.

*I loved geography in primary school; however learning off the towns and rivers in Ireland by heart was stressful and don't really remember them today.*  
RoI, entry questionnaire

*The volume of essays and rote learning was huge. We would have to learn so much in a short space of time and felt constant pressure on aspects which you didn't like within the subject.*  
NI, entry questionnaire

*Our teacher didn't bring us on a field trip for 6th year. She got all the information, wrote it up and then we had to learn it off. I found it very difficult to remember.*  
RoI, entry questionnaire

Indeed, text book dominated teaching was commented on by some 70 respondents, mostly from the RoI. The students quoted below found the level of work at times too simple and lacking in creativity and challenge, while 7% of students commented on map work as being either boring or difficult

*Did hardly any in primary school and in secondary school it was all just text book so it was boring. Junior Cert standard isn't challenging enough.*

RoI, entry questionnaire

*Never settled in a geography class. Didn't enjoy it, could never read maps or any other types of graphs and tables. Found it very boring at secondary level and never looked forward to the class.*

NI, entry questionnaire

Field trips were mentioned by 38 students in this section, but the majority (n=29) of those comments were complaints that there were not enough/any fieldwork experiences provided. However, not everyone loved field work:

*Field trip to bog in the rain.*

RoI, entry questionnaire

### 5.5 Perceptions of geography

Students' positive and negative experiences of geography give some insight into what they perceive geography to be, what they identify as its key concepts and themes and what their own underlying attitudes are towards the subject. A total of 927 students (83% of the total number) made positive comments which were subject-specific as opposed to general comments relating to teacher characteristics or the teaching and learning environment. This represented 77% of the NI cohort and 85% of the students from the RoI. In these comments the students referred to content and topics covered during their school experience which they had enjoyed, to methodologies that were specifically geographical and to their own attitudes towards geography. As indicated earlier, fieldwork emerges as the quintessential geography experience and the methodology most frequently associated in a positive way with geographical learning. Other ways of engaging with the geographical knowledge included the use of maps and diagrams.

The idea that geography is concerned with learning about other countries and cultures was expressed positively by 11% and 4% of respondents respectively. There was an emphasis on physical geography throughout; it was the branch of geography mentioned most often by name (7%) while many more students mentioned specific elements of physical geography such as rivers, mountains, volcanoes and earthquakes. There were differences in how these were distributed that suggest different emphases in the experiences of students in the two jurisdictions, with rivers, mountains and lakes mentioned either exclusively or largely in the Republic while the majority of students who mentioned volcanoes and earthquakes were from NI.

Of the 34 students that identified geography with nature study and nature walks, all but two were from the RoI reflecting perhaps the ubiquity of the nature table and of nature walks in the Irish primary school experience.

*I loved the nature trails we did at primary level. It instilled a great love and awareness of our environment. Our teachers would let us all grow small plants and we would see at first hand the true meaning of why water was needed for the plant to grow etc.*

RoI, entry questionnaire

5% of respondents saw geography as a relevant and useful subject which was connected to everyday life and could teach you useful skills like map reading. Geography could help you to understand 'why the earth is why it is' and help you learn about 'issues important in the world today such as future power resources, global warming, recycling, etc'. While a small number

(n=4) saw relevance in terms of their local area, only 2% overall conceptualised geography as having a local focus.

*Field trips, local relevance. Fun, interesting classes. Map reading/investigation was interesting and useful.*

RoI, entry questionnaire

Students' own attitudes towards geography were intimately tied into their perceptions of their teachers, the methodologies encountered and the content or aspect of geography they were exploring. Thus students frequently found the subject interesting because their teacher 'made it interesting' or allowed 'class involvement' or because it was 'interesting to learn about different cultures' or to 'learn about your own area'. Table 5.4 lays out the most frequently used attitudinal and descriptive words.

**Table 5.4: Positive attitudinal and descriptive words used most frequently in geography (source: entry questionnaire)**

<b>Attitude</b>	<b>% of respondents</b>		
	<b>NI (n=243)</b>	<b>RoI (n=871)</b>	<b>All (n=1114)</b>
Like	0	8	6
Enjoy	17	10	12
Love	4	4	4
Interesting	16	25	23
Fun	5	2	3

It is worth reiterating here that almost one third of the students recorded no negative experiences of geography. Most of the negative experiences recorded by the students related to teacher characteristics or to boring, passive methodologies and the absence of active approaches. There were comments that suggested a negative perception of geography per se and some interesting points emerge that are worth considering. Almost half of the respondents (47%) overall (53% of the students from NI and 45% of students from the RoI) made comments that indicated a negative perception of geography or of aspects of geography and, in particular, of school geography. Some of these comments related to the nature of the coursework associated with geography, and with examinations in geography. Others related to the students' own attitudes towards the subject itself or towards particular aspects of it. The most pervasive characteristic of school geography that emerges from this data, however, is the idea of geography as facts and lists of physical features which, in many cases, have to be committed to memory. The dominance of this perception is related directly to the practice noted earlier in the section on teaching and learning and is almost wholly identified with experiences in the RoI.

The three students below suggested perceptively that the learning was superficial and at the level of factual knowledge rather than conceptual understanding:

*Learning large amounts of rivers, countries, capitals, towns etc. by heart to regurgitate for test on Friday and once test was over forgetting them completely.*

RoI, entry questionnaire

*Learning pages and pages of useless notes. Learning pages off by heart rather than knowing the content.*

RoI, entry questionnaire

*We didn't learn of other cultures, just the names of places. We learnt off things but didn't learn much about them.*

RoI, entry questionnaire

Students who recorded negative experiences characterised school geography as boring, repetitive, dull, and difficult and indicated their own dislike and lack of interest in the subject or in aspects of it. In some cases, this was a dislike that was rooted in students' perceptions of the subject, in other cases in their experiences with teachers.

*Have always disliked the subject and in fact I'm not 100% sure what is involved apart from maps and locations.*

NI, entry questionnaire

*I never liked geography. I always felt it was about maps, contour lines, etc. The teacher wasn't good at holding the class's interest.*

NI, entry questionnaire

Table 5.5 indicates the attitudinal and descriptive words most frequently used by students in their negative comments. Students were not always explicit in stating their attitudes, but it is worth noting that of the students who recorded negative experiences (two thirds of the overall sample), 21% of the NI cohort and 17% of the RoI cohort described geography or the experience of learning geography as boring.

**Table 5.5: Negative attitudinal and descriptive words used most frequently in geography (source: entry questionnaire)**

<b>Attitude</b>	<b>% of respondents</b>		
	<b>NI (n=243)</b>	<b>RoI (n=871)</b>	<b>All (n=1114)</b>
Boring / Dull	14	11	12
Didn't like / enjoy	4	5	5
Not interested	2	5	5
Difficult / complex / confusing	9	2	3
Not relevant	3	3	3

For over one in ten students (11%) their negative experiences of geography were dominated by examinations and tests. 8% of students from NI commented on the pressure of tests, on the difficulty of A level geography and the volume of course work and case studies associated with the GCSE. For students from the RoI (12%), the Leaving Certificate examination came in for particular criticism, primarily because of the amount of memorisation associated with it. The stress of 'learning off' was one which was associated with class tests and exams also.

*There was a bit too much learning and facts, especially in Leaving Cert course. Would have liked more practical work.*

RoI, entry questionnaire

### **Summary**

It is evident that students from both jurisdictions had many positive experiences as learners of geography. Field work and other practical activities provided a large proportion of those experiences and several provided details of what were for them memorable occasions. A significant number also wrote warmly about teachers who were enthusiastic, engaging and encouraging. However, while it attracted the greatest proportion of students who reported no negative experiences across the three subjects, there was also a significant amount of comment relating to negative experiences of geography, particularly in relation to teaching and learning and perceptions of the subject.

There were differences between the two cohorts in terms of their negative experiences. A major negative factor for RoI students seemed to be their memory of passive lessons, a lot of textbook-

based classes and a large amount of time spent learning material off by heart. Again this tells a similar story to that told by their experiences in history. It is less easy to identify a single factor for their NI counterparts where issues around workload, boredom, dislike of mapwork, statistics and case studies are dispersed throughout their comments. In their comments students were quick to point out the outcome of bad practice in terms of student motivation and to indicate how geography should be taught. As one student noted:

*Too textbook orientated, geography should be "lived" not read!*  
RoI, entry questionnaire

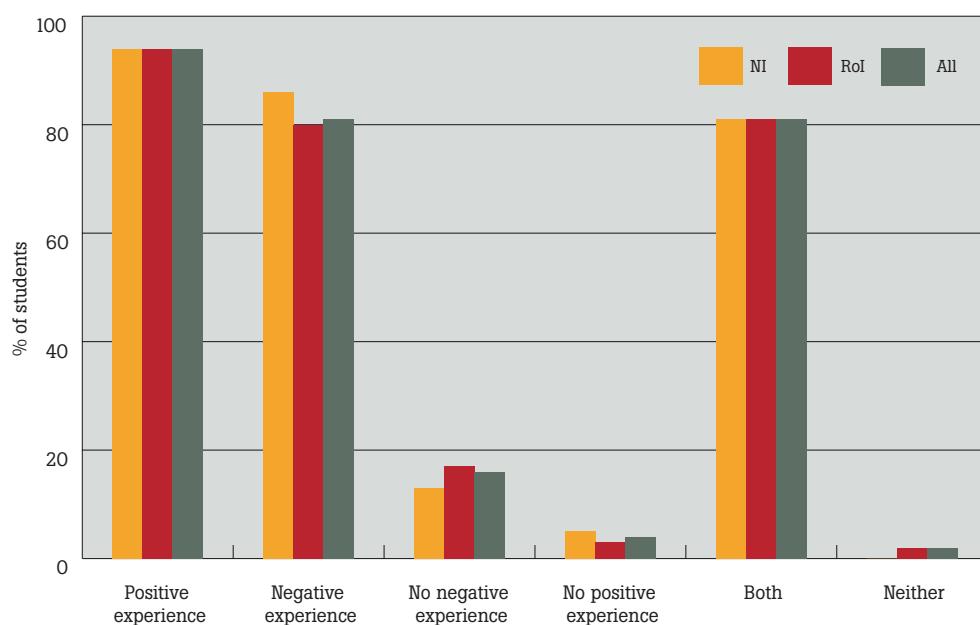
### 5.6 Experiences of science in school

*I had a very experienced, knowledgeable and interesting teacher. I enjoyed doing experiments and learning about actual physical things. I felt science was a very interesting subject and enjoyed it and the way it was taught.*  
RoI, entry questionnaire

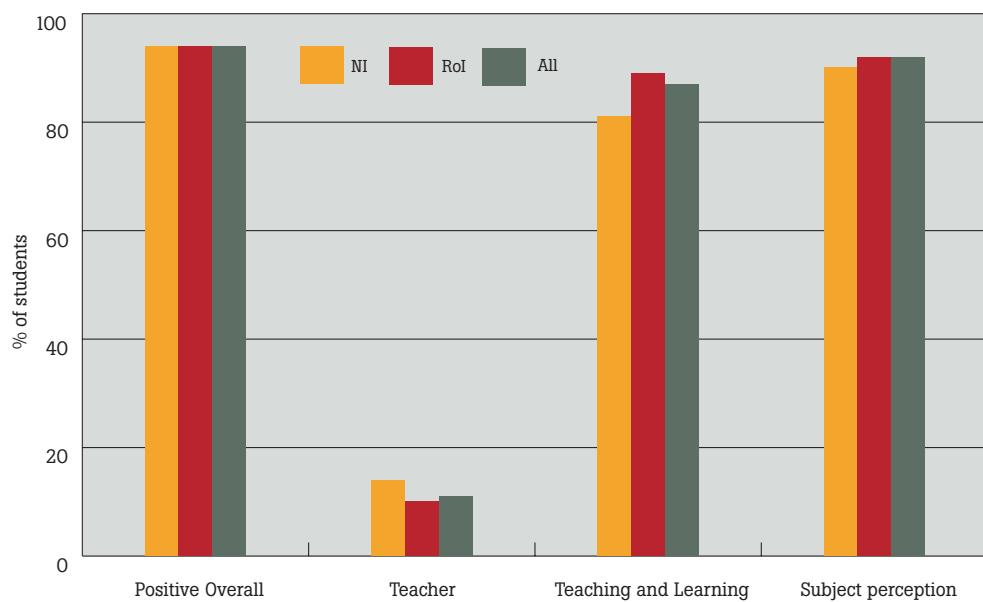
*Continuous classes maybe in a double or treble block which consisted of theory work alone. This was boring and repetitive and did not result in much learning.*  
NI, entry questionnaire

In terms of their overall response to science, 94% of respondents recorded at least one positive experience of science while 81% also recorded at least one negative experience. The proportion of students recording a negative experience from NI was a little higher than their counterparts in the Republic (86% and 80% respectively). It is worth noting that while 5% of the students overall recorded no positive experiences, 18% recorded no negative ones.

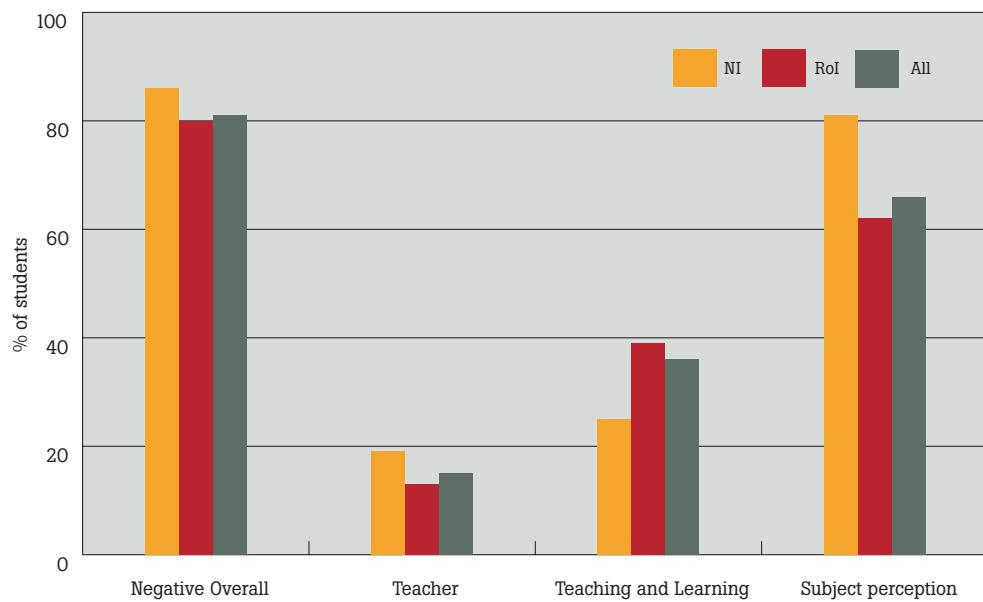
**Graph 5.7: Positive and negative experiences of science (source: entry questionnaire)**



As can be seen from graph 5.8 below, the distribution of positive comments between the main categories was remarkably similar across both cohorts. A slightly higher proportion of students from NI made positive comments about their teachers, while students from the RoI were marginally more likely to make a positive comment in relation to teaching and learning.

**Graph 5.8 Positive experiences of science (source: entry questionnaire)**

Some differences emerged in relation to their negative experiences (Graph 5.9) where science can be seen to follow the pattern already laid down by history and geography i.e. a higher proportion of students from the RoI making negative comments relating to teaching and learning, while a higher number of the NI cohort commented negatively on their teachers and on the subject itself.

**Graph 5.9 Negative experiences of science (source: entry questionnaire)**

**Teacher characteristics**

For some students, their experiences of science were tied to their perceptions of their teachers as interested, competent and responsive to their needs. The students valued teachers who were enthusiastic about their subject and who encouraged them and took an interest in their work. Teachers were described as 'amazing', 'brilliant', 'excellent' and 'fantastic' and their own interest and commitment was seen to influence the students' engagement with the subject.

*I had a very good teacher for the last four years of secondary school. She put a lot of time and effort into teaching us. I learned a lot from her and her love for the subject spilled onto us. I found it very interesting.*

RoI, entry questionnaire

*I had a very experienced, knowledgeable and interesting teacher. I enjoyed doing experiments and learning about actual physical things. I felt science was a very interesting subject and enjoyed it and the way it was taught.*

RoI, entry questionnaire

Some students commented favourably on teachers who were good communicators and who could interact with their students or who could explain complex ideas and processes. As one student noted, her teacher was a

*...lovely, lively and enthusiastic teacher who explained everything clearly, did all of the practical work required and made science a very enjoyable fun and interesting subject.*

RoI, entry questionnaire

Teachers who were helpful, encouraging and interested in their students were also valued by the students.

*Biology teacher motivated me, and was able to recognise that I did have ability for the subject. She made me love the subject, whereas before I didn't.*

NI, entry questionnaire

Students were also critical of their science teachers in their negative responses. Indeed, there was a higher frequency of negative responses than positive ones with 19% of NI students and 13% of ROI students commenting in this category. Students complained of 'boring' and 'unenthusiastic' teachers who 'seemed uninterested' in their subject. Others referred to teachers not explaining things properly and not providing students with sufficient help.

*No teacher seemed to have the time to explain what you didn't know, many of the words sounded the same and were very long which I had great difficulty spelling.*

NI, entry questionnaire

*Not a very nice teacher. Not helpful. Pressurising.*

RoI, entry questionnaire

A few students ( $n=7$ ) reflected on how they were at times made feel uncomfortable or 'alienated' by their teachers for not understanding the science content or for not having a good aptitude for a particular science subject. Students from NI in particular were critical of teachers who failed to explain science. Some wrote about their teachers being overly 'strict' or 'scary', particularly in relation to labwork. Others referred to lack of organisation, poor management skills and lack of discipline as a negative aspect of their school science experiences:

*Having to teach myself physics because the teacher alienated students who found the subject remotely difficult, and asked questions.*

NI, entry questionnaire

*Our teacher in secondary Junior Cert was very sarcastic and strict. Even breaking something by accident - hell to pay. We never did any real experiments in science in secondary, just took notes we didn't really understand.*

RoI, entry questionnaire

*Not being explained physics very well put me off the subject a bit; lack of teacher discipline on some pupils led to water being sprayed in classroom and lab stools thrown around - didn't always learn when I needed to (for GCSE).*

NI, entry questionnaire

### **Teaching and learning**

The vast majority of students (87%) made positive comments about the teaching and learning environment they experienced as learners of science. They reflected on science classes that were 'interesting and enjoyable experiences' and 'fun to take part in'. Students wrote positively about opportunities to engage in problem solving and challenging activities. Incidences where students were able to take ownership of their own learning and where students could work together in groups were also valued by students.

*I like working out problems, testing formulas and doing experiments.*

RoI, entry questionnaire

*Doing group projects, experiments especially when we did them ourselves.*

RoI, entry questionnaire

*Getting together in groups to carry out experiments. They were enjoyable experiences and we were learning something at the same time.*

RoI, entry questionnaire

*Working in groups. Using the Bunsen burner and all other practical activities.*

NI, entry questionnaire

A particularly high percentage (78%) of the students from NI and RoI colleges (74% and 80% respectively) gave positive comments regarding the different methodologies they had experienced during school science. Typically the students had positive recollections of conducting 'experiments', 'practicals' and other hands-on investigations in science. It is evident from this data that experiments added greatly to the enjoyment of science. A small number of students were explicit in the value they attributed to practical work in science and stated that doing experiments and practical work made the science content easier to learn, understand and helped clarify scientific theories for them:

*Doing practical work such as various experiments made the subject more enjoyable and broke down the theory work, especially in experiments making it more understandable.*

NI, entry questionnaire

*Experiments helped to make things clear.*

RoI, entry questionnaire

*Very interesting and enjoyable; could actually see that info learned was worthwhile from experiments.*

RoI, entry questionnaire

For some students (n=16) drawing diagrams and recording data were aspects of science which they recalled in a positive manner while others were positively disposed towards the processes of proving and disproving hypotheses and theories:

*Very interesting subject; it also enjoyable as it's a break from the more academic subjects, for example the experiments were enjoyable to do right through to the time when you succeed in proving a theory or hypothesis, or the experiment worked as it should.*

RoI, entry questionnaire

Overall, 36% of students commented negatively on the teaching and learning environment they had experienced with proportionately more students from the RoI giving negative comments than their NI counterparts (39% and 25% respectively). While both cohorts mentioned similar themes, there were interesting differences in emphases. Most of the comments related to methods of teaching that the students had experienced or not experienced as part of their science education. By far the most frequent comment related to 'learning off' off theories, formulae and science content that they did not understand. This was predominantly a feature of the RoI data, with 12% of the total RoI cohort recording this experience as opposed to 6% of their counterparts in NI.

*Being told formulas to rhyme off, without given a meaning of where they came from.*

NI, entry questionnaire

*Learning everything off by heart, boring, repetitive exercises, watching the teacher doing all the experiments instead of being allowed to do them ourselves*

RoI, entry questionnaire

*Not understanding complicated experiments but having to do them anyway. Having to learn off loads of experiments, but perhaps not having them fully explained.*

RoI, entry questionnaire

Many students (11%) commented on the lack of opportunities they were afforded to conduct hands-on experiments in science class. Though this was predominantly a feature of the RoI data, a small number of students from NI also made this comment (n=11). In part, the lack of opportunity to engage in practical work was seen to be the result of under equipped science laboratories and insufficient resources for science. Again, this was more evident amongst the RoI students' responses:

*Not enough practical work at A level biology, too much copying theory from overheads, physics was impossible and not much help given, physics and chemistry pulling down grade at double award*

NI, entry questionnaire

*Reading page after page from some book, day in and day out without any experiments or practicals*

RoI, entry questionnaire

*Our secondary school had very poor science materials and facilities. Our labs were very small and we didn't have the material for most experiments.*

NI, entry questionnaire

A small number of students did not like doing experiments per se, in some cases because of their boring nature or because of the 'bad smells'. Rather more students (n=37) cited experiments that had gone wrong. Some recalled feeling anxious about conducting experiments because of dangerous chemicals:

*Getting in trouble for experiments going wrong.*

RoI, entry questionnaire

*Hard, experiments going wrong, not sure what to do, scary chemicals*

NI, entry questionnaire

Some students instanced specific experiences in the science classroom which they saw as negative, with experiences relating to dissection being the most frequently mentioned. In the case of one student, her vegetarianism made the experience even more difficult.

*Dissecting worms, it hurt them though they were chloroformed didn't take part though attended the class.*

RoI, entry questionnaire

*As a vegetarian I found dissecting animals e.g. lambs heart etc. disturbing.*

RoI, entry questionnaire

### 5.7 Perceptions of science

Many of the comments made by the students related directly or indirectly to their beliefs and attitudes about the subject. Overall, the vast majority of students made comments that could be perceived as positive about science or an aspect of science (92%) with little difference between the two cohorts. A significant difference emerges, however, in relation to negative comments about the subject of science, where a notably higher proportion of students from NI made negative comments relating to science than their RoI counterparts (81% and 62% respectively, with 66% rate overall). In terms of positive responses, table 5.6 indicates the most popular attitudinal and descriptive words used by the students in relation to the subject or an aspect of the subject.

**Table 5.6 Positive attitudinal and descriptive words used most frequently in science  
(source: entry questionnaire)**

<b>Attitude</b>	<b>% of respondents</b>		
	<b>NI (n=243)</b>	<b>RoI (n=871)</b>	<b>All (n=1114)</b>
Interesting	11	25	22
Enjoy	14	12	13
Fun	8	5	6
Like	4	6	5
Love	2	4	4

For the most part the students' reflections referred to science in post-primary school. However, some did reflect on their experiences of science in primary school. While a handful in both jurisdictions mentioned experiments as part of the primary experience (15 RoI students and 7 NI), others identified primary science with learning about plants and animals, and with such phenomena as the nature table and the nature walk. In the main, however, science is conceptualised by the students as a practical subject with experimentation as the archetypal mode of scientific investigation.

Students named several areas of science from which they drew particular enjoyment. In physics, for example, there were frequent references to electricity, light, magnetism and learning

about 'how things work'. Using Bunsen burners and chemical reactions which seemed 'like real science' were aspects of chemistry that the students referred to positively. With regard to biology, several of the students referred to learning about the human body and 'how the body works' in a positive manner. Frequently, the students maintained learning about the different organs and body systems was interesting and relevant. As one student noted, biology was interesting and relevant because it was.

*... about my own life and body and its processes.*

NI, entry questionnaire

There were differences in how the students viewed the different science subjects. Table 5.7 below indicates the proportion of students who named Biology, Physics and Chemistry as either a positive or negative experience. From this analysis, Physics appears to be the least positively viewed, while Biology attracted both the highest number of positive comments and lowest number of negative ones.

**Table 5.7: Positive and negative comments on biology, chemistry and physics  
(source: entry questionnaire)**

<b>Attitude</b>	<b>% of respondents</b>					
	<b>Pos NI</b>	<b>Neg NI</b>	<b>Pos RoI</b>	<b>Neg RoI</b>	<b>Pos All</b>	<b>Neg All</b>
Biology	17	12	19	9	18	10
Chemistry	7	19	5	11	6	13
Physics	2	20	3	13	3	15

Students found aspects of Chemistry and Physics 'difficult', 'confusing' and not easy to understand. With regard to Chemistry, typically students were not positively disposed towards learning chemical equations, balancing formulae or the periodic table. Some students maintained the mathematical components of Physics were difficult. Others indicated that they had difficulty understanding the theoretical content of Chemistry and Physics.

**Table 5.8: Negative descriptive words used about science or elements of science  
(source: entry questionnaire)**

<b>Attitude</b>	<b>% of respondents</b>		
	<b>NI (n=243)</b>	<b>RoI (n=871)</b>	<b>All (n=1114)</b>
Boring	12	11	11
Difficult and hard	19	12	13
Complicated	4	1	2
Confusing	4	<1	1

As can be seen from table 5.8, while there was little difference between the two cohorts regarding the proportion who found science or elements of science to be boring, students from NI were more likely to find science to be difficult, complicated and confusing. This largely accounts for the difference between the two groups in terms of subject perception and is related also to the greater concerns expressed about teachers' abilities to explain science to their students. While both cohorts indicated that the courses contained too much content, for some students from the Republic, the Leaving Certificate course, in particular, was reduced to the 'learning off' of a vast amount of 'definitions and theories that didn't make sense' which were both irrelevant and boring.

*Learning off definitions and theories that didn't make sense. Not made relevant to world we live in.*

RoI, entry questionnaire

*My GCSE chemistry was at a very difficult level requiring constant memorising with little understanding. I found physics also taught in an unappealing way at A level – too high for my ability.*

NI, entry questionnaire

### Summary

It is apparent from the students' responses that they valued teachers who were enthusiastic, interested in their students, professionally competent in how they organised science classes and who took the time to ensure that their students understood the concepts and processes with which they were engaged. It is also evident that 15% of the respondents perceived badly organised teachers with poor classroom management skills, uninterested and indifferent teachers and overly strict and unresponsive teachers to have provided negative learning experiences, affecting both the development of their understanding of science and their capacities to engage with the science subjects. The vast majority of students, however, had some positive experience of learning science. Many of those experiences were tied into their enjoyment of active and practical-oriented learning environments and the opportunities they received to participate in experiments with their classmates. While not all students enjoyed doing experiments and many were fearful of the consequences of 'experiments gone wrong', they provided the archetypal scientific experience for the students.

While both cohorts of students shared similar experiences, there were some differences between them. The absence of opportunities to participate in experiments, either because of an over-emphasis on passive text-based practices such as note taking and textbook-based teaching or the consequence of poorly equipped science classrooms, was a frequently mentioned characteristic of classrooms that provided negative experiences, particularly for students from the RoI. The most frequently expressed negative experience, however, was that of 'learning off' experiments, definitions and formulae which, in many cases, were poorly understood or seen as irrelevant. While students from both jurisdictions shared a concern with the pressure of memorising large volumes of scientific content, it was more evident in the RoI data. A proportionally greater number of students from NI, however, perceived science subjects to be difficult and complex and were critical of teachers who did not make enough effort to explain.

### 5.8 Discussion and conclusion

The students who took part in this study were drawn from the population of students who were among the most successful in negotiating the education systems of both jurisdictions. They had achieved well and, by and large, the system had worked well for them. Yet it is evident that the remembered experiences of student teachers on entry to initial teacher education were substantially consistent with research into the experiences of children in second level education in the RoI (Smyth, Dunne, McCoy and Darmody 2004, 2006; Smyth, Dunne, Darmody and McCoy, 2007). While there are differences in emphasis in both studies, students talked about teacher qualities, the teaching and learning environment and the subjects themselves in broadly similar ways.

If the overall levels of positive and negative comments are compared across the subject areas for the whole cohort, science emerges as the subject attracting the most positive comments and the most negative ones, with students' enjoyment of experiments frequently balanced by concerns about the implications of 'experiments gone wrong', the complexity of the subject, and its association with the need to memorise vast quantities of definitions and formulae. Geography emerges as the subject with the most positive only comments, many of which focused on their enjoyment of fieldwork. While history attracts the most negative only comments and a significant number of students saw it as a boring and irrelevant subject, the proportion of students with no positive experience of history was a little less than one in ten (graph 5. 10). Table 5.9 below lays out the percentages of each cohort that saw each of the subjects as boring

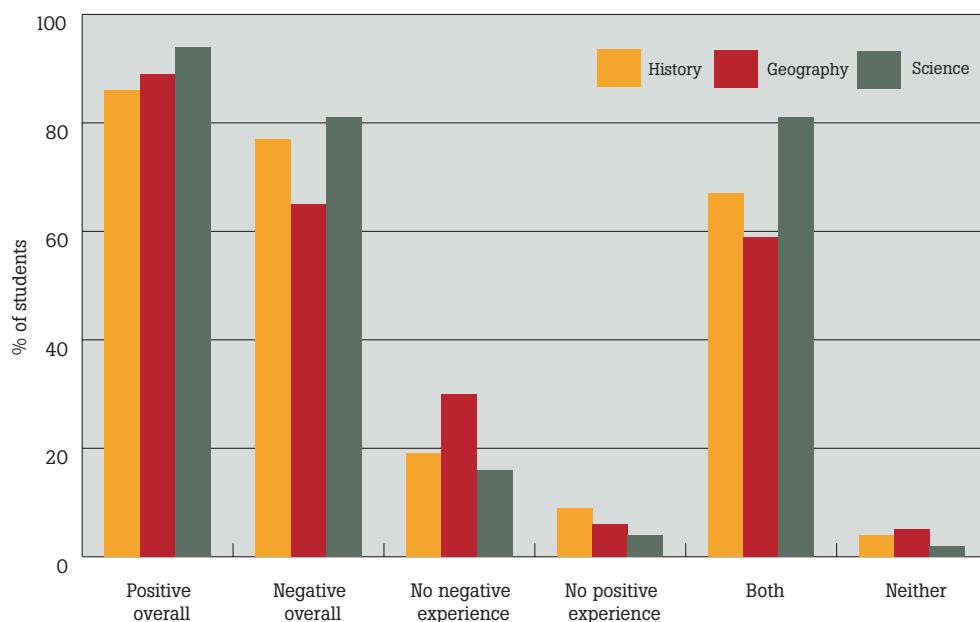
or difficult. Again it is evident that a greater proportion of students from both cohorts used words around difficulty when writing about science, while history attracted the most comments relating to boredom. The idea that science is considered to be both more interesting or 'less boring' and more difficult than the other two subjects is similar to the findings of Smyth et al (2004, 2007), while history fared better in their study in terms of interest.

**Table 5.9: Attitudes towards subjects (source: entry questionnaire)**

<b>Attitude to subjects</b>	<b>% of respondents (n=1,114)</b>	
	<b>Boring/dull/monotonous</b>	<b>Difficult/confusing/complex</b>
History	19	7
Geography	12	3
Science	11	16

It is also evident that differences emerged across the two cohorts, with students from NI more likely to use words relating to boredom and complexity about each of the subjects than their counterparts in the RoI (see tables 4.3, 4.5, 4.8). A similar finding was outlined in chapter 4 in relation to the quantitative data, which found that students in the RoI were more positive for all three subjects on entrance to initial teacher education. What is also obvious, however, is that for the most part students could draw on a range of experiences, some positive, some negative, as learners of history, geography and science.

**Graph 5.10: Positive and negative experiences of history, geography and science (source: entry questionnaire)**



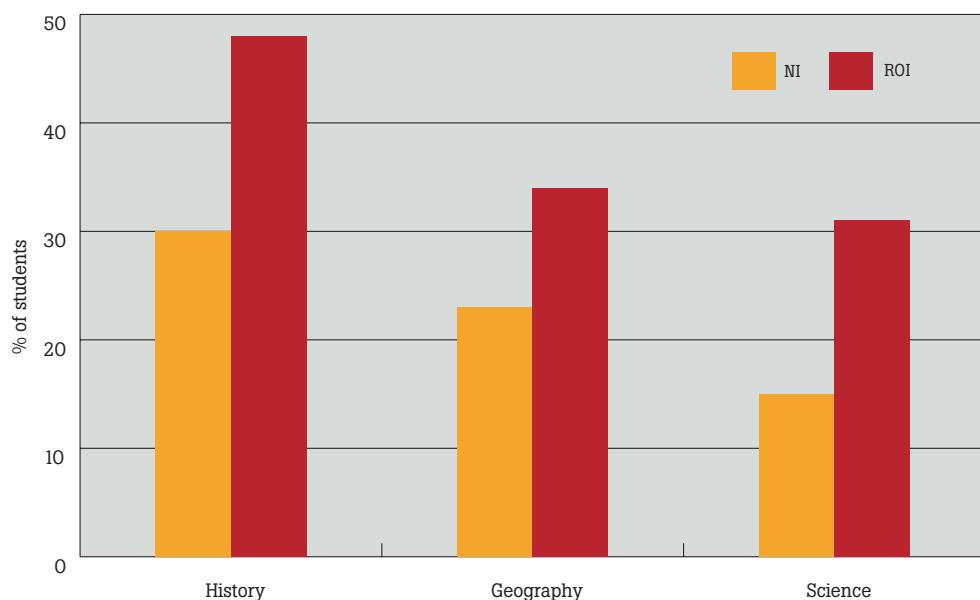
Overall, it is evident that there were many common experiences, both positive and negative, shared across subjects and across jurisdictions. Regardless of the subject, student teachers valued teachers that were enthusiastic, interested, good at explaining and capable, and were alienated by teachers whom they perceived to be boring, not interested in their subject, overly strict or unsympathetic. For many of the students, their perceptions of their teachers' engagement with the subject and with themselves had a direct bearing on how they viewed the subject. Positive teaching and learning environments were characterised by active and participative methodologies which were, to some extent, subject specific, such as fieldwork

in geography, experiments in science and a combination of trips to historic sites and projects in history. Students valued opportunities to work together and to interact with their teachers. In describing their negative experiences of teaching and learning, students identified practices associated with traditional book-based teaching and memorising content frequently characterised as irrelevant, boring or simply 'too much'. For many students subjects were considered difficult, complex and confusing. This was especially the case for science and history.

A number of aspects of students' experiences stand out which are revealing in terms of their experiences as learners in both jurisdictions. First, there is an almost complete absence of any reference to digital learning across all subjects in both the positive and negative experiences. In sum, there are three mentions of computers, two of which are positive. It is evident that, apart from videos, technology played little part in students' remembered experiences of the three subjects. Given the priority placed on the use of ICT by policy makers in both jurisdictions, this is a significant absence. Reports into the use of ICT in schools in the RoI have consistently found it to be a cause of concern. Varley, Murphy and Veale (2008), for example, found little evidence that primary children in the RoI were experiencing the use of ICT as an integral part of their science education (pp. 84, 85). Other reports have also indicated an underuse of ICT in the teaching of science at both primary and second level (NCCA, 2008; Eivers, Shiel and Cheevers, 2006) and in primary teaching and learning in general (DES, 2008a). In NI there is evidence of a more successful integration of ICT into children's learning experience. A 2005 report into the use of ICT in primary schools found that the quality and range of children's experiences of ICT were satisfactory or better in over three quarters of the schools who took part in the study (ETI, 2005).

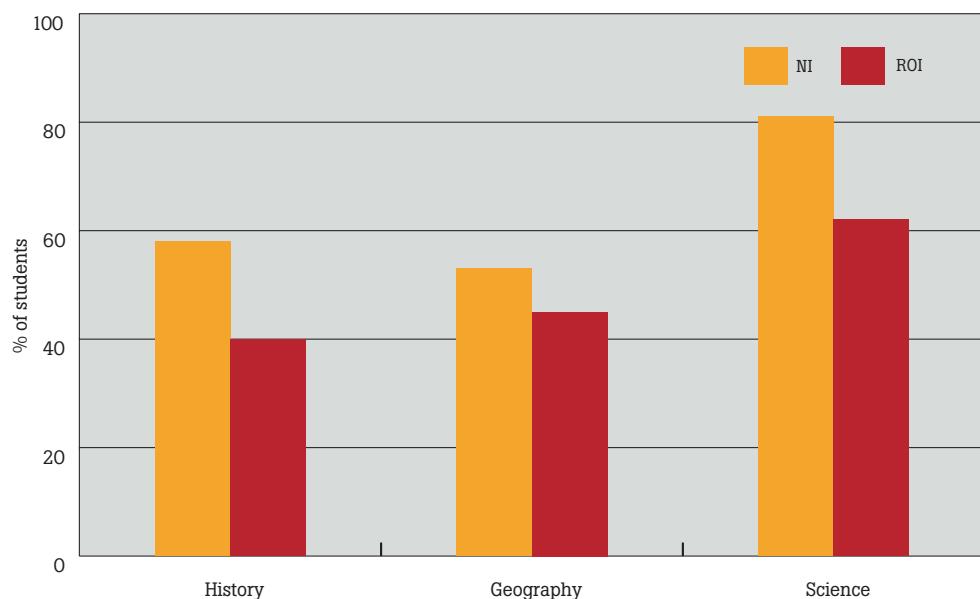
Second, there are two key aspects where location made a difference. The first was in relation to students' negative experiences of teaching and learning approaches. While both cohorts experienced teaching that was book-based and which was characterised by rote learning, this was predominantly a feature of the RoI data and was consistent across all three subjects. As graph 5.11 illustrates, students from the RoI had a higher level of negative comment relating to methods than their counterparts in NI across history, geography and science. Of the three subjects, history attracted the greatest volume of negative comment from both cohorts, while science attracted the least. Again, this is consistent with existing research in the area, which would suggest that in the RoI textbooks and textbook-based teaching continue to play a substantial role in children's experiences at primary and post-primary level (NCCA, 2008; Eivers, Shiel and Cheevers, 2006). A recent report on geography at second level found that the 'culture' of 'teacher talk' and 'students as silent learners' was evident, though only in a minority of cases where a 'lecturing style and an over-reliance on the textbook as the only stimulus were apparent.' (DES, 2008b, p22). Eivers, Shiel and Cheevers, on the other hand, found that student textbooks to be the most commonly used resource for both planning and classwork in science at Junior Certificate level (2006, p17, 18).

**Graph 5.11: Negative experiences of methods in history, geography and science**  
 (source: entry questionnaire)



There was also an evident difference in subject perceptions across all three subjects with, as noted earlier, students from NI more likely to find all three subjects boring and difficult than their counterparts in the RoI (see graph 5.12). While comments in relation to confusion and to inadequate explanation from teachers, the complexity and difficulty of course content and the pressure of workload were present in both sets of data, they were significantly more evident in the experiences of students from NI across all three subjects. This suggests that on entry to initial teacher education in NI students' perceptions of science in particular, and to a lesser extent geography and history, were shaped by their experiences of exam-related and course-related pressures. With history there was also some evidence of a disengagement or alienation from the subject. This should not be overstated, however, and was present explicitly in only a small number of cases.

**Graph 5.12: Negative perceptions of history, geography and science**  
 (source: entry questionnaire)



The picture that emerged, then, from both the quantitative and the qualitative data is a complex one. While student teachers presented as predominantly positive in their attitudes towards the three subject areas, there was consistent evidence across the subjects of issues relating to teaching methods and course content, particularly at second level, that affected their attitudes towards and perceptions of the three subjects in a negative way. It must be reiterated, however, that this was within a broadly positive frame which showed evidence of developing constructs about what makes a good teacher and what makes a good teaching and learning environment; this will be explored further in chapter 7.

### About Sally

#### Female student at a large college in the Republic of Ireland (Phase 3)

Sally was studying history as an academic subject as part of her BEd course in one of the large colleges in the Republic of Ireland. She had taken courses in history, geography and science education in the first two years of her BEd programme and now she was almost at the end of her final year.

Sally strongly agreed that liked history, geography and science. She had always liked them and disagreed with the idea that she liked them more at the end of her ITE than she had at the start. Judging from her responses, Sally had very positive experiences on teaching practice and in college. She did have some issues over how curriculum courses were taught, particularly in relation to the lecture format of some courses.

Sally indicated that she had some very positive experiences during her school placements. For example, in history she enjoyed teaching the Romans to Fourth Class. She used photographs of the remains of Ancient Rome and dressing up to help the students learn. She even did what she described as a '*Who Wants to be a Roman quiz*' using PowerPoint. She was delighted with this lesson as she and the children enjoyed it. However she was very disappointed that her supervisor wasn't there to see it and instead came in to the very next lesson! However sometimes school placement was not easy. She remembered teaching Fourth Class about Celtic monasteries in her first year in college and described it as '*a flop*', though she realised on reflection that more activities were needed. Needless to say, Sally thinks '*a history teacher should make the lesson interesting and fun*'. Like many students Sally thinks teachers should have a positive attitude to history and to the past. She also thinks that photographs and artifacts are always a good starting point to a history lesson.

Sally states she had no negative experiences of teaching geography, only positive ones! She particularly notes doing the journey of a river with Senior Infants. Once again, she obviously engaged the children by using song, painting the journey of a river in a chart and using discussion. She used character familiar to the children, Nemo from the Pixar / Disney film by making '*a magical fish to swim the journey of the river at the end from the top of the mountain out into the big sea to find their little friend – Nemo*'. Not surprisingly she noted '*the children's responses were amazing*'. Sally also believes that '*a geography teacher needs to teach the children the current world issues*'. She notes the importance of resources such as newspapers and the news and gives the examples of tsunamis, earthquakes and instances of global inequality as issues and events that teachers should draw on.

Sally's enthusiasm for teaching once again was evident in her description of positive experiences in relation to teaching science on school placement. She described how she taught magnetism with Fourth Class by making compasses. She did similar types of activities with light, using torches in the dark and different kinds of paper to predict if the light would go through or not. As she stated herself '*IT WAS COOL!*'. Once again, Sally recorded that the children loved it, with one child telling her '*I love school when we do those things, teacher*'. Sally did not have any negative experiences of teaching science, but recognized that organisation, especially with infants, was important to '*avoid chaos*'. Sally describes good science teachers as facilitators and sees the good teacher of science as someone who '*makes science interesting – experiment and activity based*'. She believes it is good to give the children opportunities to predict outcomes and to find out for themselves what happened.

**Chapter Six****STUDENT TEACHERS' EXPERIENCES OF TEACHING GEOGRAPHY, HISTORY AND SCIENCE DURING SCHOOL PLACEMENTS**

*Overall the teaching of SESE History, Geography and Science has been very positive. Maintained class attention. Brought about a positive and warm classroom environment and taught relevant topics. I was very confident and competent in teaching Science. Enjoyed thoroughly working with all class levels and had a great rapport with children. Fun and active participation.*

RoI, exit questionnaire

**6.1 Introduction**

In the phase 2 interviews and phase 3 exit questionnaire participants were asked to comment on their experiences of teaching history, geography and science in schools. The questionnaire and interview schedules (appendices 1-3) were designed so students could comment on their positive and negative experiences during teaching practice (RoI) and school experience (NI), referred to here as school placements (SP).

As described in chapter 2, student teachers' experiences on SP make a significant contribution to their emerging identities as teachers, contributing formatively to concept formation around student learning, classroom ethos, teacher qualities and instructional strategies (Levin and He, 2008). The relative contribution of students' prior experiences as learners, course work in college and experiences on school placement to the construction of identity varies according to the aspects of identity under consideration (Levin and He, 2008). Different dimensions of experience, in any case, in constant interaction with each other, develop and change as students move through ITE. This chapter helps to illuminate that interaction.

As with students' prior experiences, outlined in chapter 5, it was not the intention to assess whether or not students were more positive or more negative in relation to their experiences of teaching history, geography and science during their BEd courses. The balance of responses, however, indicated that student teachers had more positive than negative experiences overall. A number of considerations should be kept in mind. First, while positive experiences tended to elicit broad descriptions, negative experiences tended to be one off events or problems overcome by the students; examples of these are shown in table 6.1. Second, there was variation in the comments made by students across subjects and across locations, as illustrated in table 6.1. With these caveats in mind, the balance of negative and positive comments does give some indication of overall experience.

**Table 6.1: Students' experiences of teaching geography, history and science during school placement (Source: exit questionnaire)**

*Geography Positive: Nature trails and planting plants.*

*Geography Negative: Not sure.*

*History Positive: Letting the kids focus on history from surrounding area.*

*History Negative: Focusing on topic of Victorians - kids were not interested.*

*Science Positive: Conducting experiments.*

*Science Negative: Experiments going wrong.*

**NI, exit questionnaire**

*Geography Positive: Local trail – incorporated aspects of local geography which the children were very interested in.*

*Geography Negative: Lack of motivation at times.*

*History Positive: Local trail – children interested in the history of the people and places (landlords and tenants) of their own area and more motivated when they saw the area on the trail.*

*History Negative: Difficult to get children to see the relevance of history for their lives.*

*Science Positive: Teaching sound – children were very interested and motivated.*

*Science Negative: Time management. Results don't always turn out to match what was expected.*

#### **RoI, exit questionnaire**

As with chapter 5, this chapter outlines and discusses the findings in each of the three subject areas and then examines the common threads of experience across the subject areas. Given that the sample includes students from two locations, NI and the RoI, any significant differences in their reported experiences are again noted.

Unless otherwise indicated, all percentages are based on three figures: the total sample of students surveyed (n=824), questionnaire respondents from the RoI (n=651 / 79% of the students) and questionnaire respondents from NI (n=173 / 19% of the students). The language key identified on page 26 is used throughout this chapter, alongside or instead of percentages. Interview data from phase 2 of the study is included in this chapter where appropriate to illustrate further points made from the exit questionnaire data. This chapter, then, outlines the patterns of positive and negative experiences on SP, drawing on the voice of the students from the exit interviews and the interview questionnaires.

**Table 6.2: Students responding to questions about school placement  
(Source: exit questionnaire and interview)**

	<b>Exit questionnaire (n=)</b>	<b>Interview (n=)</b>
Northern Ireland	173	8
Republic of Ireland	651	24
Total	824	32

#### **6.2 Experiences of history geography and science on school placement**

As is evident from table 6.3, the vast majority of students made positive comments in relation to their experience of teaching history, geography and science on SP (history 91%, geography 86% and science 90%). In contrast, the proportion of students who made negative comments was much lower (history 68%, geography 56% and science 68%). Around a quarter of the students, therefore, made positive comments only, with no corresponding negative comments. History attracted the greatest proportion of students making positive comments about their experiences while science attracted marginally more negative responses than history (see table 6.4 and graph 6.1 on next page).

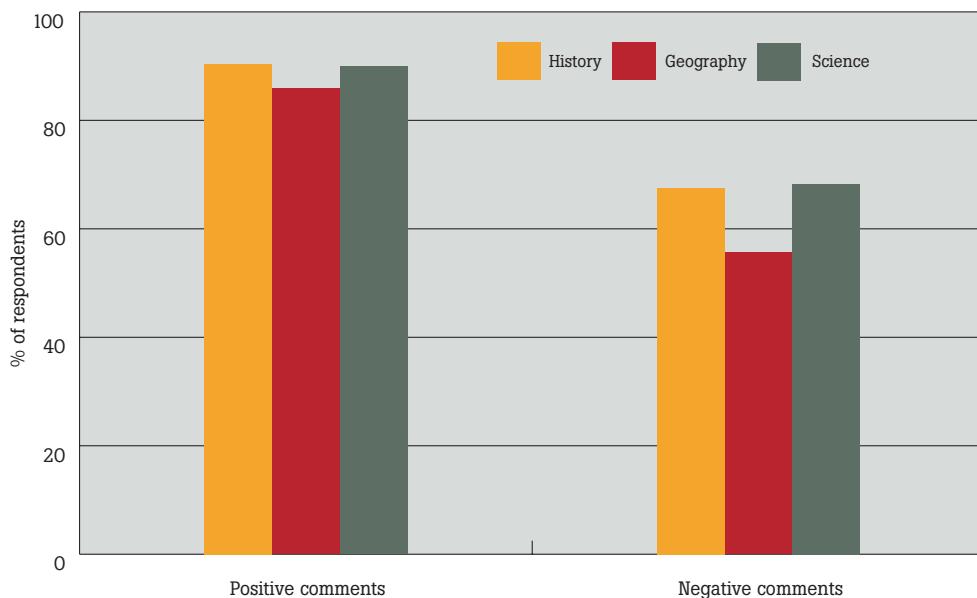
**Table 6.3: Comments made by students in relation to teaching history, geography and science on school placement (Source: exit questionnaire)**

	History		Geography		Science	
	n=	%	n=	%	n=	%
Positive comments	745	91	708	86	741	90
Negative comments	556	68	458	56	563	68

**Table 6.4: Average number of words in comments made in reference to the school placement (Source: exit questionnaire)**

		RoI	NI	All students
History	Positive	13	7	12
	Negative	9	5	8
Geography	Positive	11	8	10
	Negative	7	3	6
Science	Positive	10	8	10
	Negative	8	5	7

**Graph 6.1: Comments made by students in relation to teaching history, geography and science on school placement (Source: exit questionnaire)**



Using the constant comparative method (Glaser and Strauss, 1967) as outlined in chapter 3, two main categories of analysis emerged – Learners and Teachers (comments about the student teachers themselves, the children and other people such as class teachers, principals and parents) and Teaching and Learning (comments about the subject, about methods and resources). These categories and sub-categories are outlined in table 6.5.

**Table 6.5: Categories for the data relating to experiences on school placement  
(Source: exit questionnaire)**

Category	Sub-category	Category included comments relating to:
Learners and Teachers	Teacher	Student teacher
	Children	Class Children Individual children
	Others	Class teacher Principal Curriculum designers Producers of resources
Teaching and Learning	Subject specific	Subjects itself Topics within the subject Concepts within the subject Learning the subject
	Methods	Methods of teaching Methods of learning Classroom organisation
	Resources	Any classroom resources

A number of patterns emerged within the data and it was evident that student teachers had a range of positive experiences during school placement. While there were many comments about the children's engagement with the topics and methods introduced by the student teachers, there were fewer positive comments about the role of other people or about resources. A high proportion of student teachers made positive comments about the interaction between themselves as teachers and the children as learners. Comments in both the interviews and exit questionnaire described many such interactions, which were generally multifaceted:

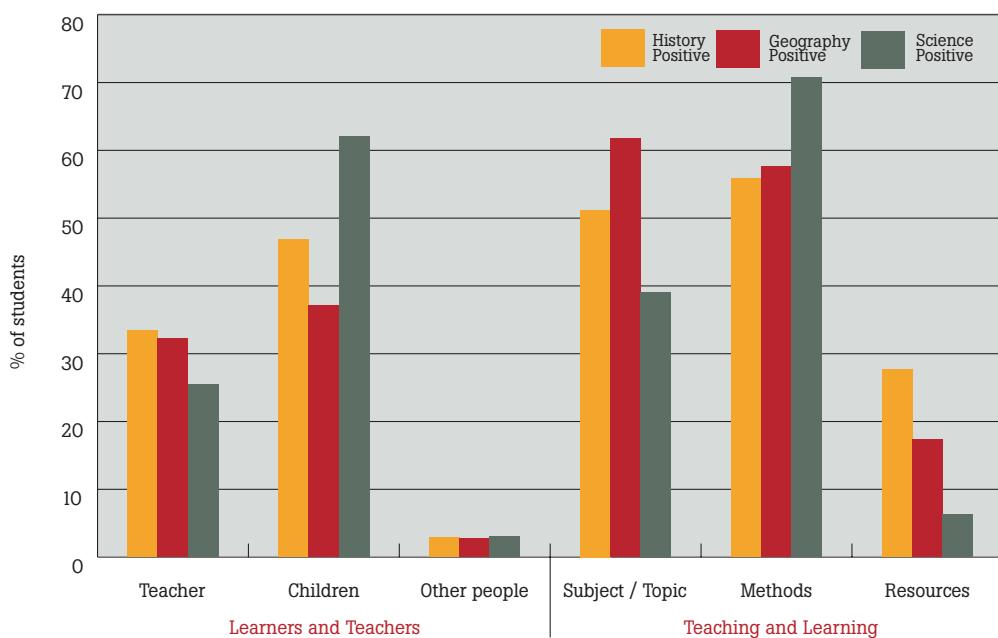
*Last year the topic was 'children around the world' and the children were so fascinated by learning about children the same age as themselves, what their culture was like and their home background. They loved it.*

NI, interview

*'The Journey of a River' with Senior Infants - song, painted the journey of a river in a chart, discussion - the children's responses were amazing - we made magical fish to swim the journey of the river at the end from the top of the mountain out into the big sea to find their little friend NEMO (a fish).*

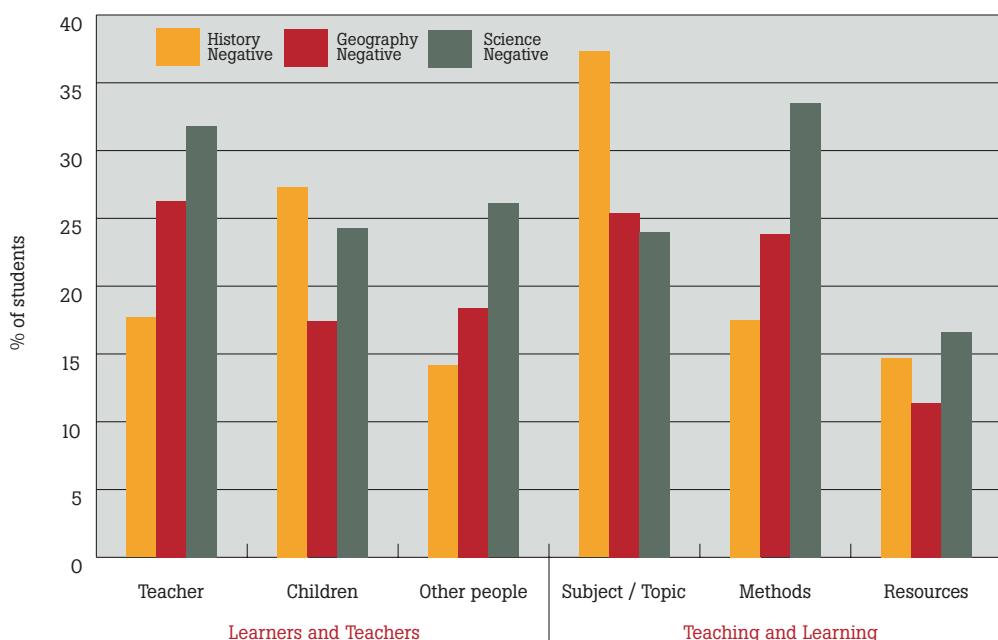
RoI, exit questionnaire

**Graph 6.2: Positive comments made by students in relation to teaching geography, history and science on school placement (Source: exit questionnaire)**



As noted earlier, negative comments tended to be about one-off occurrences rather than the broader experiences which were more characteristic of the positive comments. While the same categories emerge in the data, there were differences in the distribution of comments within those categories. Most notably, the sub-category of 'other people', which includes class teachers, college supervisors, principals, parents and other decision makers, had a greater representation in the negative experiences than it had in the students' positive experiences (graph 6.3).

**Graph 6.3: Negative comments made by students in relation to teaching geography, history and science on school placement (Source: exit questionnaire)**



While many similar comments were made with regard to their experiences of teaching history, geography and science, however, comments relating to each subject area also had their own characteristics which are outlined below.

### 6.3 History on school placement

#### Students' positive experiences in history on school placement

Students described a range of positive experiences with regard to teaching history on school placement in both the interviews and the exit questionnaire. As is indicated in table 6.6, many of those comments referred to the student teachers as teachers (33%) and to the children as learners (43%). In contrast, only a handful of students in either NI (4%) or the RoI (3%) mentioned other people in relation to their positive experiences. Students from the RoI were more likely to focus on the response of children to their teaching than their NI counterparts. This difference was found to be consistent across all of the subjects and across the negative and positive experiences, and appears to be linked, at least in part, to the differences between the cohorts in relation to prior experiences noted in chapter 5. These links are not explicit, however, and further research would be needed in order to draw any firm conclusions.

**Table 6.6: Themes in relation to student's positive experiences of history during school placement (Source: exit questionnaire)**

Category	Sub-category	Number of students	% of students
Learners and Teachers	Teacher	275	33
	Children	386	43
	Others	24	3
Teaching and Learning	Subject specific	422	51
	Methods	460	56
	Resources	228	28

For many students then, positive experiences of teaching history were generated by the interactions between the students as teachers and the children as learners, particularly where children showed evidence of engagement with specific methodologies that the student teacher introduced or indicated increased understanding of issues and topics. Students also focused on the idea of a positive classroom ethos, using words such as 'fun', 'engaging' and 'warm' to describe their preferred context for learning and focusing on children's enjoyment of and positive attitudes towards history.

*Children were interested in examining other children's lives via role-plays, diaries etc. They were more involved than I was ever at school and could retain more information.*  
RoI, exit questionnaire

*Seeing pupils make links between themselves and the lives of others and [having] the ability to retain knowledge of many topics.*  
NI, exit questionnaire

Students also wrote about teaching and learning in terms of what was taught (topics and subject specific elements), how it was taught (methodologies) and the resources used. RoI students, in particular, wrote positively about teaching history successfully through enquiry-based approaches.

*On this particular (teaching practice) I practised what we had learned and provided documentation for the children to examine. Worked very well.*  
RoI, exit questionnaire

*Basing all history schemes on an 'enquiry' approach. Allowing children to make projects.*

*Getting children interested in archaeology.*

RoI, exit questionnaire

*With 5th class I covered the famine. Used the enquiry approach. Children reacted well to the group work.*

RoI, questionnaire

As well as making general references to teaching and learning approaches, such as enquiry and investigation (12%), specific methodologies were also mentioned. While only a few students mentioned the use of historical sources with children (2%), others wrote about historical fieldwork, making and using timelines (7%) and the use of story (7%), while groupwork was mentioned by 6% of students. Despite possible concerns about taking children out of school as a student teacher, 94 students (11%) mentioned organising such activity as a positive experience:

*One that stands out is doing local history on Home TP; because it was so relevant to the class it really brought history to life for them, and for me, especially a local trail.*

RoI, exit questionnaire

*Hobbies - past and present. Toys - old and new. Children engaging and learning about topics. Using story and picture.*

RoI, exit questionnaire

Overall the most positive experiences for the students were methodologies where children were enabled to work more independently and actively. As was noted in chapter four, this was not a particularly strong theme in many of the students' own experiences of school, despite being popular where they did experience it. The contrast between how students themselves had experienced history in primary school and the approaches they were introduced to in college was noted by students during the focus group interviews:

*When I was going to school it was totally different and I didn't realise that until I came to college. I think the seminars we've had in history and geography particularly helped us, like the enquiry approach and fieldwork. It just gives you ideas of what you can do with the students in the class, and it's not you all the time giving out information, and the kids enjoy it more and they're more active.*

RoI, Interview

Over half the students (51%) referred to history itself or to the content of the history curriculum when writing about their positive experiences. Some students mentioned specific topics and aspects of history that they and the children had enjoyed, including local history (89), the Great Famine (48), the Vikings (41), the Egyptians (27), the Victorians (18) and the 1916 Easter Rising (14).

The use of resources was strongly connected to positive teaching experiences in history, to a greater degree than was evident in either science or geography. For a substantial number of students (28%), their positive experiences of teaching various topics were intimately connected to the availability and nature of the resources used.

*Teaching the Famine to 6th class as I had a lot of resources (primary and secondary sources) and the children were interested in the topic. Teaching Ancient Egypt to 3rd class as it was interesting and plenty of resources to aid teaching.*

RoI, exit questionnaire

### **Students' negative experiences in history on school placement**

Students also had a wide range of negative experiences during their school placements, as can be seen in table 6.7. Again there was a broadly even split between comments about Learners and Teachers and those about Teaching and Learning. The sub-category that gained the most comments was that of subject specific, where students referred negatively to the subject itself or to curriculum topics.

**Table 6.7: Themes in relation to students' negative experiences of history during school experience (Source: exit questionnaire)**

<b>Category</b>	<b>Sub-category</b>	<b>Number of students</b>	<b>% of students</b>
Learners and Teachers	Teacher	146	18
	Children	225	27
	Others	117	14
Teaching and Learning	Subject specific	307	37
	Methods	144	18
	Resources	121	15

In the category Learners and Teachers, the students focused mainly on the children as learners (27%) and on themselves as teachers (18%). Again, there was some variation between the two cohorts with regard to references to children, with students from the RoI more likely to mention children as part of their negative experiences, generally in the context of comments relating to children's relative inexperience with the approaches the students were taking. Two themes in particular emerged in relation to children's negative interactions with history, i.e. children's behaviour and issues relating to the teaching of history in junior classes, especially in the case of early school placements in the first year of their BEd programme:

*Teaching the Famine to a P7 class who had behavioural issues; when lessons were made interactive the class was not focused on the tasks.*

NI, exit questionnaire

*I found it difficult in the beginning to teach history to a junior infant class. However I felt my using resources / artefacts etc. maintained the children's attention for longer.*

RoI, exit questionnaire

A significant difference between the positive and negative experiences in relation to history was the increase in the proportion of students making negative comments about other people (14%). In contrast, only 3% of students overall referred to other people (e.g. class teachers, school principals, curriculum planners and producers of resources) as part of their positive experiences. In some cases students referred to conflicts with class teachers in relation to content and method, and were concerned about their lack of control over what they could teach. The requirement to use history textbooks emerged as a particular concern for RoI students.

*Being restricted by the class teacher on elements that should be covered in the lessons.*

NI, exit questionnaire

*Teachers asking me to teach myths and legends out of the workbook. 3 pages each week.  
Boring.*

RoI, exit questionnaire

Students' own knowledge of history also emerged as an issue in the questionnaire responses while, as indicated in chapter 4, concern with subject knowledge was also evident during the focus group interviews in relation to all three subjects.

*In geography and history we are not sure what we're supposed to be teaching.*

NI, interview

*I had to do a lot of research myself because I forgot a lot of the information from primary school. Therefore I wasn't very sharp to answer questions.*

RoI, exit questionnaire

In relation to teaching and learning, while a significant number of students (18%) referred to the methodologies they used in negative terms, most of the comments referred to problems over general methodological issues rather than to specifically historical methods. As indicated earlier, textbooks emerged as a significant issue in the negative experiences of RoI students. In general they were very negative in their observations on textbook-based teaching and on the overuse of textbooks as a resource in history teaching. This is consistent with their stated attitudes on the use of textbooks in both their prior experiences as learners (chapter 5) and their concepts of the good teacher (chapter 7).

*When I used 'chalk and talk' and only a few visual resources.*

RoI, exit questionnaire

*Children being unaccustomed to working in group activities. This meant that children were not learning from each other.*

RoI, exit questionnaire

37% of students commented in negative terms about the subject of history or about specific topics within history, either in relation to their own likes and dislikes or with regard to the attitudes of children.

*Teaching a topic I didn't like, i.e. Stone Age.*

NI, exit questionnaire

*Children's attitudes towards history in the senior end of the school.*

RoI, exit questionnaire

Resources were identified as a source of negative experience by 15% of students. Virtually all of the negative comments relating to resources focused on the difficulties experienced by the students in finding resources, making resources and accessing school resources. There was some variation here by location, with RoI students more likely to make such comments than their NI counterparts; nonetheless students from both cohorts expressed concern about the availability of resources. For some students paying for resources was a particular issue:

*Not so much negative, but it did take a lot of work organising packs and developing photo;; also this can cost a lot.*

RoI, exit questionnaire

*Difficult to provide interesting materials as it was through the medium of Irish - lack of resources.*

RoI, exit questionnaire

*Searching around my house, attic and shed at home looking for resources to add innovation to lessons!*

NI, exit questionnaire

In general, students' experiences on school placement with regard to the teaching of history were generally positive. Students enjoyed teaching history using enquiry-based approaches and

showed commitment to resourcing their lessons well and appropriately. Negative experiences of history teaching raise a number of key issues that will be addressed further below: student teachers' concerns about their own knowledge base in history, existing practices in schools, class teachers' expectations relating to the use of textbooks and children's inexperience of enquiry-based work. These concerns were present to varying degrees across the two cohorts, largely in response to the different educational contexts.

#### 6.4 Geography on school placement

##### Students' positive experiences in geography on school placement

Students described a wide range of positive experiences of teaching geography during their school placements. Table 6.8 indicates the spread of positive comments in relation to the main categories and sub-categories. As with history, the majority of comments made by students related to teaching and learning, with comments about the subject of geography and methodologies predominating. A substantial number of comments were also made in relation to the category of Learners and Teachers, most of which related to the student as teacher and the child as learner. As with history, few students commented positively on the role of others.

**Table 6.8: Themes in relation to students' positive experiences of geography during school placement (Source: exit questionnaire)**

Category	Sub-category	Number of students	% of students
Learners and Teachers	Teacher	266	32
	Children	306	37
	Others	22	3
Teaching and Learning	Subject specific	509	68
	Methods	475	58
	Resources	143	17

Almost one in three students overall (32%) made positive comments about themselves as teachers, with little variation between the two cohorts (NI, 40% and RoI 37%). 37% of students overall commented on the children they taught, indicating again the centrality of positive classroom interactions to the quality of student experience on school placement. As the quotes below illustrate, children's engagement with the learning experiences provided by the student teachers provided positive affective feedback for the students. :

*Katie Morag - An Island Home - Senior Infants: great work done, asked every day to do the lesson. Geography 6th Class: rainforest - engaged with topic, very eager. Mexico - again difficult 6th Class: enthusiastic and responsive. Journeys to school - Infants: map work really improved over course of a few lessons.*

RoI, exit questionnaire

*Seeing the children being so engaged and interested in the topics covered.*  
NI, exit questionnaire

Children's interest in particular topics and their level of engagement with the ideas and issues raised during their lessons had a strong impact on students' positive feelings about school placements. Indeed students were most pleased with their school experiences when they could see that the lessons they planned had actively engaged the children. A small number of students wrote about the enjoyment of learning alongside the children, while others were surprised by the range of children's interests

*Observing children's fascination about certain issues that I wouldn't have believed they would have liked.*

RoI, exit questionnaire

*Transport - enjoyed this. Northern Ireland counties - enjoyed and ended up learning with the children.*

NI, exit questionnaire

There were few positive comments relating to the role of 'other people', with only 3% of students making observations that fell into this category. Most of these comments related to the practice of 'bringing in' other people to enhance geography lessons, such as local service people, etc. Within their positive experiences however, a small number of students reflected critically on the level of preparation they had experienced in college, particularly in relation to teaching geography in early years settings.

*I have had more positive experiences working with junior classes despite not being prepared to do so by the college. Connecting story to children's views about geography.*

RoI, exit questionnaire

While the breakdown of comments into categories for geography in relation to teaching and learning was broadly similar in proportion to the breakdown in relation to history, variation was evident within categories. Where subject specific comments were concerned there was a higher level of positive comment relating to geography than for the equivalent category in history, with 68% of students overall commenting favourably about geography in general or about specific geographical topics.

Students' positive comments about geography included comments relating to their own attitudes towards the subject as well as comments on particular topics which they had enjoyed teaching or which the children had enjoyed learning. For some students their feelings about geography were reason enough for positive experiences.

*I like geography so I knew a lot of information.*

RoI, questionnaire

*I like geography more than anything else for children I find it's easiest to get across. For example with P7 I taught Fair Trade and Africa, the children really got into it. I was interested and that helped. You have the passion or you can pretend to have the passion. I think geography is very interesting and that comes across.*

NI, interview

Students frequently commented on topics that had gone well for them in the classroom. The opportunity to introduce children to issues around global justice and development brought particular satisfaction to some students. For one student, the idea that her lesson positively influenced one of her pupils to engage in action around fair trade was singled out for mention.

*I was able to get the children genuinely interested in the topic of development education through role play activities. This prompted one child to go out and buy fair trade products as a result of my lesson.*

RoI, exit questionnaire

One in ten students mentioned using the local area for geography while 15% wrote about their positive experiences of teaching about other countries and cultures. However only 2% of students mentioned that they enjoyed teaching about Ireland.

*Comparing foreign cultures with the children was enjoyable. I also had several authentic India objects, which made it so real and interesting for the children.*

RoI, exit questionnaire

The richest comments were those where students went beyond the topic to address the methodologies they used and the dynamic relationship between topics, methods and children's learning. Over half of the students (58%) made positive comments about particular methods they had enjoyed while several linked those comments to ideas about how children learn (8%)

*Teaching a country using an enquiry approach – the children loved it!*

RoI, exit questionnaire

*Taught local area and was able to incorporate a walk at of local area; designed their own maps as well as collecting.*

NI, exit questionnaire

*Making an actual rainforest by creating a tree with their cut-out leaves on a piece of wall paper and then adding their animals to the correct strata. The activity made research more purposeful.*

RoI, exit questionnaire

Many students were also positive about resources they used in teaching geography during SP although there were fewer positive comments in this category in geography than in history. Overall it appeared that resources contributed to the positive experiences of both students in NI (17%) and in the RoI (15%), although they were not as significant as other dimensions of teaching and learning.

Many students referred positively to using maps with children. Others recounted how they used aerial photographs to help children learn about their local area while a few students noted positive experiences in relation to the use of interactive whiteboards.

*Resources for geography are a great help. Getting them to research things. I taught a lesson on the Metro and children were fascinated by maps.*

RoI, exit questionnaire

*Teaching weather - allowing children to be weather forecasters using the interactive whiteboard.*

NI, exit questionnaire

*Map work and aerial photos of the local community. I had planned lots of activities with the photo but found when I introduced it first that it was best just to let the class explore the photo freely.*

RoI, exit questionnaire

Overall students' positive experiences in teaching geography were related to their interactions with the children, with well-planned engaging activities and topics aided by useful resources, especially visual material such as maps.

### **Students' negative experiences in geography on school placement**

Students made fewer comments about their negative experiences in geography than their positive experiences. As with their own prior experiences as learners outlined in chapter 5, student teachers also had fewer negative comments to make in relation to geography on school placement than they did in relation to history, as illustrated in table 6.9. However, like history, their comments were insightful and varied.

As is evident from table 6.9 below, there was a fairly even split between the two main categories. The capacity of student teachers to critique their own practice was evident in the

comments relating to themselves as teachers. Around one quarter of students (26%) were self critical, referring to actions taken by them during school experience which had negative outcomes. Most of these comments related to the work they had planned which did not work out as anticipated:

*It is difficult sometimes to structure and monitor everyone's progress and how well they have learned the topic.*

RoI, exit questionnaire

**Table 6.9: Themes in relation to students' negative experiences of geography during school placement (Source: exit questionnaire)**

Category	Sub-category	Number of students	% of students
Learners and Teachers	Teacher	217	26
	Children	143	17
	Others	152	18
Teaching and Learning	Subject specific	209	25
	Methods	196	24
	Resources	94	11

The students also had negative experiences relating to the children's responses to or engagement with their teaching, with 17% of students referring to children in this category.

*Children could sometimes find key concepts difficult to understand and visualise.*

NI, exit questionnaire

There were differences between the two exit cohorts in relation to the level of comment about children, with RoI students more likely to mention them than their NI counterparts. As in the case of history, this variation was partly due to the frequency with which students in the RoI made implicit and explicit observations about the children's familiarity with the teaching and organizational approaches they were taking, and the differences between their approaches to teaching and learning and the general experiences of children:

*Group work in the enquiry approach was a struggle for majority of pupils.*

RoI, exit questionnaire

The most significant difference between the spread of positive and negative comments was in relation to the category of 'others'. Students referred directly or indirectly to a number of people other than themselves or the children who had a negative impact on their experiences of teaching geography. These included class teachers and tutors at college, as well as other decision makers such as those influencing timetables and curricula. Students identified conflicting ideas on the nature of primary geography as an issue. Examples were given of conflicts between the class teachers' ideas and the students' ideas and between those of the student and producers of textbooks. For one student, children's perception of the nature of geography was identified as an issue:

*Children believed geography was about rote learning.*

RoI, exit questionnaire

*We have to teach how the school would like us to teach.*

NI, interview

*Sometimes it is hard to complete workbooks as the teacher wanted you to as the topics do not correspond. I did not want to use them at all.*

RoI, exit questionnaire

Not all students were supportive of recent curriculum innovations in geography. A handful observed that locational knowledge, which would have featured largely in the school experiences of RoI students (see chapter 5), could be overlooked with all the 'new' content and approaches:

*Don't learn basics, i.e. mountains, rivers, lakes of IRELAND!*  
RoI, exit questionnaire

For some students from NI recent curriculum change gave rise to uncertainty about the nature of primary geography and its standing as a subject.

*Confusion as to what it is now called - Geography or World about Us!!?*  
NI, exit questionnaire

*It's supposed to be integrated because it is now the World Around us but we still have to write schemes for the separate subjects.*  
NI, interview

Some methodologies generated negative comments. While many of these related to single experiences and were specific to particular classes and contexts, others related to students' apprehension or lack of experience of certain methods used on geography:

*Group work with a 1st Class in which there were two children with ADHD - nervous about fieldwork.*  
RoI, exit questionnaire

As indicated earlier, students had generally positive experiences of using maps with children. However some issues were identified such as children's lack of experience of using them in the classroom. Other comments revealed students' own misconceptions about how maps should be used in geography.

*Bad lessons based around mapping with no other content - I didn't realise we weren't supposed to do a lesson just on mapping.*  
RoI, exit questionnaire

As indicated earlier, subject knowledge was identified as an issue in relation to all three subjects. In their questionnaire responses, some students also identified their role in developing their knowledge base:

*When teaching 6th class I found it difficult to answer some of the questions the children had. I researched these and answered them the following lesson.*  
RoI, exit questionnaire

As with their positive experiences, resources issues were identified less frequently as contributing to the students' negative experiences in geography in comparison with history. However, over one in ten experienced difficulties in this area (11%). There was again some variation between the two exit cohorts on this issue with, RoI students more likely to name resources as a problem than their NI counterparts.

In general, while student teachers' negative experiences of geography on school placement included references to classroom interactions, these were far outweighed by the positive comments indicated earlier. Students' negative experiences could be due to their own inexperience in using particular methods and organizational approaches or to the children's prior experience of them as learners. A key issue that emerged for students, however, related

to the expectations of 'others' – teachers, curriculum planners and college tutors – whose conceptions of geography and of what could and should be achieved in the geography classroom could be in conflict with their own.

### 6.5 Science on school placement

#### Students' positive experiences in science on school placement

As with history and geography, students described a wide range of positive experiences of teaching science during their school placements. As can be seen in table 6.10, while students' responses were distributed across the same categories, there was a quantifiable difference in how those comments were distributed. More students made comments relating to children as learners and to methods of teaching and learning in science than in the equivalent categories for either history or geography (history, 43% and 56% respectively; geography 37% and 58% respectively). Overall the students talked of similar elements within their positive experiences. However there were differences between the students in NI and RoI, with NI students more likely to refer to the content taught and RoI students more likely to refer to methods used in both their positive and negative experiences.

**Table 6.10: Themes in relation to students' positive experiences of science during school placement (Source: exit questionnaire)**

Category	Sub-category	Number of students	% of students
Learners and Teachers	Teacher	210	26
	Children	511	62
	Others	25	3
Teaching and Learning	Subject specific	322	39
	Methods	583	71
	Resources	52	6

The vast majority (90%) of the students made positive comments relating to their experiences of teaching science on school placement. While this is slightly lower than the equivalent data in history, it is higher than geography. Across the data it was once again evident that positive experiences clustered around interactions between students and children and around their own success in promoting interest and child learning:

*Children grasping concepts that are difficult that I have taught.*  
RoI, exit response

*The children's intense interest in science and the enjoyment and learning they gained in the experimentation aspects.*  
RoI, exit questionnaire

In relation to the category of Learners and Teachers, almost two-thirds of students wrote about the children in their responses to positive experiences in the exit questionnaire (62%), with students in the RoI more likely to refer to the children and NI students more likely to refer to their actions as teachers. There were far fewer references to 'others' as an influence on their positive experiences (6%). This is consistent with the data for geography and history. Students commonly referred to how children enjoyed group discussions, with many mentioning the positive interactions between children and student teachers as teachers while working in groups:

*Children discovering for themselves through experiments. Children disagreeing with me and making up their own experiments.*  
RoI, exit response

When commenting on Teaching and Learning there was a significant emphasis on methodology as part of their positive experiences of science teaching. As noted earlier, this was far more evident in science than in history or geography, confirming again the positive perceptions of science methods noted in their own prior experiences as learners (see chapter 5).

*Doing experiments with the children. They enjoyed predicting and outcomes and then seeing what happened.*

RoI, exit response

The vast majority of students (71%) referred to the methods used by themselves and the children in relation to science in their positive comments. Typically students commented on the hands-on / practical nature of the science lessons which resulted in high levels of child engagement:

*Practical activities - dissolving, solid to liquid, vice versa. Children's understanding was enhanced and everyone enjoyed the tasks.*

RoI, exit response

The most commonly used word in relation to positive experiences in science was 'experiments': overall 323 students referred to experiments, with no variation between the two exit cohorts:

*Pupils' enjoyment of being actively involved in the carrying out and recording of experiments.*

NI, exit questionnaire

*Taking records with the children of the results of their experiments made them feel very important and grown up! It made them more tuned into the subject and they enjoyed it more.*

RoI, exit questionnaire

Students also commented positively on science in general or on specific topics in science. Students referred to a broad range of topics, including 'floating and sinking', 'light', 'senses', 'forces' and the 'human body'. Although each of these topics individually was mentioned by only a handful of students, together they accounted for a significant proportion of the students' comments.

Students also indicated that they had positive experiences of using the children's ideas as starting points to their lessons and assessing change in children's ideas. Concept maps, for example, were mentioned by 2% of students:

*Concept maps - extremely useful to find out children's ideas.*

RoI, exit response

As with history and geography, students made reference to the interaction between methods and topics which resulted in children's learning. While learning was implicit in many of the statements made by students, the number of references to children's learning in science was lower than in history, though similar in quantity to geography, with 6% of students using the term 'learning'.

*Planning and teaching lessons in a fun and stimulating environment to promote the children's learning in a positive way.*

NI, exit questionnaire

Resources were mentioned by fewer students in relation to their positive experiences of science, with only 6% of students referring to science equipment and other resources. Typically positive comments referred to the availability of resources in schools and to their benefits in facilitating successful hands-on practical lessons. Many of the students commented on how handling and utilising resources helped maintain pupils' attention:

*Experiments and use of interactive white board allowing children to actively be involved.*  
RoI, exit response

*Children responding well to equipment and resources - enjoying finding out for themselves and constructing theories.*

RoI, exit response

Students' resilience and willingness to overcome difficult situations came through in some of the responses especially in relation to methods and resources. Comments made reference to providing children with opportunities to conduct the practical hands-on components of science despite issues over resources and management:

*Activities, although difficult classroom management wise - were invaluable for learning.*  
RoI, exit questionnaire

*Working as a group. Team teaching - pooling of resources for presentations and stories.*  
RoI, exit questionnaire

#### **Students' negative experiences in science on school placement**

Like history and geography the students' positive experiences outnumbered their negative experiences, while comments were distributed across the full range of categories, as summarised in table 6.11.

**Table 6.11: Themes in relation to students' negative experiences of science during school placement (Source: exit questionnaire)**

Category	Sub-category	Number of students	% of students
Learners and Teachers	Teacher	262	32
	Children	200	24
	Others	215	26
Teaching and Learning	Subject specific	198	24
	Methods	276	34
	Resources	137	17

Almost one in three students commented critically on their own actions as teachers while 24% referred to the actions or responses of children. Again many of these comments focused on the students' interactions with children in the classroom. Students made a significant number of comments about their classroom management and organisational skills, and it was evident that the organisation and management of group experiments and investigations was a concern for students:

*I found it difficult on some occasions when conducting experiments to organise and maintain management - as the children may not have been used to this methodology of teaching.*  
RoI, exit response

Almost one in four students (24%) commented on the children when writing about their negative experiences, with many focusing on children's previous experiences of learning

science, or their lack of experience of the kinds of activities, organisational strategies and methods favoured by the students:

*Using group work when children were not used to it. Lack of space and resources in classroom.*

RoI, exit questionnaire

A small number of students also revealed concern over catering for students with different abilities. This type of statement was made in relation to science but not in relation to geography or history:

*Some children have a much better and quicker understanding of scientific concepts.*

*Sometimes difficult to cater for early finishers in this subject.*

RoI, exit response

Over one in four indicated that a range of 'others' had a negative impact on their experiences of teaching science. As with geography and history, some students referred to the expectations of classroom teachers negatively, particularly in relation to their over-reliance on textbooks and their tendency not to employ hands-on approaches in teaching science. As a result it was apparent that these students were not provided with frequent opportunities to implement more hands-on, constructivist approaches to teaching science:

*Again, some teachers relying heavily on books and not seeing the benefits of constructivist learning.*

RoI, exit response

This could result in conflicting expectations of the students being held by school staff and college tutors. This, in turn, had a negative impact on the students, who were caught in the middle between two contradictory conceptions of what constituted good teaching.

*Criticised for following ideas of teacher by tutor.*

NI, exit questionnaire

In relation to the nature of science and science topics, nearly a quarter of students (24%) made reference to negative experiences. Students from NI were more likely to refer to negative experiences relating to the content of science: for example, issues over particular topics in science and the pupils' engagement with the topics. As these comments reveal, the subject matter of science caused problems at times:

*Teaching recycling, these lessons were very boring. It was difficult to get the information across through fun and interactive lessons.*

RoI, exit response

*Sometimes difficult to keep children on task.*

RoI, exit response

Echoing the concern expressed about subject knowledge in history and geography, some students maintained that they had insufficient scientific content knowledge in science and, as a result, did not feel confident about teaching these aspects; this issue is explored more fully below:

*When teaching sound I felt that there were aspects I didn't really understand myself (5th and 6th).*

RoI, exit response

Whilst most students referred to methodologies positively, as outlined above, negative comments about methods were more prevalent in science than in either geography or history. While experiments were generally viewed as providing positive teaching and learning experiences, they did not always go to plan and some comments were reminiscent of the concern with 'experiments gone wrong' expressed in chapter 5. Overall, 34% of students referred negatively to methods used in the classroom, with RoI students more likely to refer to methods negatively than their NI counterparts.

*Results don't always turn out to match what was expected.*  
RoI, exit response

*I try to avoid organising experiments, as they can be messy.*  
RoI, exit questionnaire

As mentioned above, a small number of students (6%) had concerns regarding group work. However these mostly related to management and resource issues:

*Some classes are not familiar with group work. Groups may be too big.*  
RoI, exit response

Resources emerged as an issue for students in science more so than in history or geography. Although more students in the RoI referred to resources as part of their negative experiences than NI students, it appears that there was more variance in the availability of resources overall between schools than there was between NI and RoI schools. This also emerged as an issue in the phase 2 interviews:

*Lack of equipment in the schools. Lessons haven't gone as well as they should have due to under-resourcing of science equipment.*  
RoI, exit response

In general, positive experiences were associated with opportunities to plan interactive lessons for the children that they would enjoy and learn from. For some NI students, these opportunities could be negatively affected when concern about their own knowledge was exacerbated by the pressure of preparing children for transfer tests. For RoI students, children's limited experiences of 'hands-on' science, the expectations and practices of others and resource issues contributed to their negative experiences. However, it is worth restating that, as with history and geography, many negative comments tended to be about one off events while positive comments usually related to the general experience of teaching science.

## 6.6 General themes within the students' experiences

As noted elsewhere, school experience is a complex process for student teachers. The varied and occasionally conflicting experiences of the students bore this out. What was evident across the data was that the agency of the students in providing positive learning experiences for the children and their positive interactions with them were a source of affirmation and enjoyment for the student teachers in this study. On the other hand, issues relating to their own expertise and the actions and expectations of others were identified as contributing to their negative experiences across the three subjects.

### Positive learning experiences

The continued use of words such as interest / interesting (426 mentions) and enjoy / enjoying (383 mentions) indicates that students were overwhelmingly positive about children's enjoyment of history, geography and science in schools. The references to learning, though lower, also indicate the emerging identity of student teachers as competent professionals

concerned with the complex interactions that promote children's learning. However while references to learning were spread fairly evenly across the three subjects (history 10%, geography 8% and history 9%), students were less likely to refer to learning than to children's enjoyment of lessons. Learning also featured in the negative experiences of students, with some students identifying problems relating to the assessment of children's knowledge and the difficulty of 'knowing the children had learnt'.

Students' comments, in general, revealed their enthusiasm for teaching and their commitment to providing positive classroom experiences for children. There were differences in emphasis between the two cohorts in what the students chose to write about. Some students focused on the process of learning. Most references to processes such as enquiry, for example, came from RoI students. For other students positive experiences were about the children learning concepts or gaining knowledge; this was particularly true for students from NI. These differences may suggest the continuing influence of students' prior experiences where a similar dichotomy was recorded as well as contextual differences related to issues of testing and curricula. However ideas about positive learning were also varied across the students within each cohort. Overall the most positive experiences for student teachers across the subjects in both NI and RoI were experiences where children learned in an interesting way with stimulating resources due to their planning and teaching.

### School and college provision

From the data it is evident that both colleges and schools are providing opportunities for student teachers to teach children in interesting and challenging ways. Students were positive about colleges and schools in relation to this:

*Practical group work activities. Timelines. Using projects done in college.*  
RoI, exit questionnaire

*Again with a 6th class the approach advocated by the curriculum geography department worked very well and the children completed wonderful projects on Germany.*  
RoI, exit questionnaire

Students were also positive about the support teachers and tutors gave them, especially when talking about school experiences in the interviews:

*Teachers have been really helpful and have helped me. Brilliant. Giving me resources to teach.*  
NI, interview

*Some tutors are very helpful and lend resources.*  
NI, interview

However, as noted earlier, teachers and college tutors as 'others' were referred to more in relation to the negative experiences of students than they were in the students' positive experiences, although the total number of references was low.

Students identified a number of issues relating to the organisation and structure of schools and school placement which had an influence on their experiences, including the timing and structure of school placements and the time-tabling and structure of the school day. Students were concerned about how time-consuming it was to work with children in more creative and enquiry-based ways and identified it as an issue for class teachers. This was a particular problem for students in the RoI in relation to enquiry work in history and geography and investigation work in science. For some students the focus on numeracy and literacy (NI)

or English, Irish and mathematics (RoI) meant that the opportunities for teaching history, geography and science were limited.

### School and college expectations

Across the history, geography and science data it was evident that there were tensions between the expectations of students, children, class teachers, college tutors and other people in relation to teaching and learning. One recurring theme was the differing concepts of curriculum mediation and implementation held by students and others; this is an issue that is found across the literature (Catling, 2003).

Students in NI tended to refer to differing expectations in terms of pressure of time on literacy and numeracy, whereas students in the RoI tended to refer to teachers expecting students to teach in more didactic ways:

*How the teacher teaches it, and the pressure of the teacher and the pressure to teach in a certain way, to get the certain results. The teachers teach to the test, not because they don't want the children to have a good experience but because they feel pressured from the education system and from parents. Although if the children get good results then they've done something good for them, getting them into a grammar stream.*

NI, interview

As indicated above, a particular issue for RoI students was when the expectation of college supervisors that they would plan for sustained experiences of topics clashed with the expectation of class teachers that the students would cover particular sections of the class textbooks which were characterized by a superficial engagement with the topics in question.

*Textbook: 2nd class: no topic could be sustained over a 3 week period!*  
RoI, exit questionnaire

It is clear that differing expectations are an issue for all groups concerned - students, tutors, teachers and children. However the overwhelmingly positive statements in relation to children's learning, as outlined above, indicate that this is an issue either for a minority of students or that it is an issue that students work to overcome. Nonetheless working to bring a greater congruence between the expectations of different groups involved in school placement in the areas of history, geography and science would facilitate students in implementing the kinds of approaches that are endorsed by both curricula and by teacher education in general and which students themselves support.

### Students' subject expertise

As indicated earlier, both the questionnaires and the interviews suggested some variation by location in relation to concerns about students' own knowledge base. However subject content knowledge emerged as an issue for many students in both jurisdictions and in all subjects. Students felt that having a background in the subject was an advantage.

*I've studied History and Geography up to Leaving Cert and Science in Junior Cert and personally I think it does help.*  
RoI, interview

There was at times an expectation that college courses should include all of the content required to teach history, geography and science:

*It's only four weeks worth of Geography seminars that we have before we out there, and I mean if you don't have a great knowledge of Geography going out there it's not enough.*  
RoI, interview

*6th class science - they knew more than me! No sound training in college.*

RoI, exit questionnaire

However students, especially those in NI, were generally aware that this was a part of the professional responsibility of a teacher.

*I would not have a good background in history or geography, but I actually enjoy looking up the background knowledge. It makes me feel more confident when I go into a classroom.*

NI, interview

### 6.7 Discussion and conclusion

Students' views on positive and negative experiences on school placement were very insightful. Overall students' experiences were positive. Analysis of the data revealed that students' positive experiences generally focused on classroom interactions around teaching and learning, particularly when they felt that they had taught children using engaging and challenging varied techniques:

*Overall the teaching of SESE History, Geography and Science has been very positive. Maintained class attention. Brought about a positive and warm classroom environment and taught relevant topics, thoroughly working with all class levels and had a great rapport with children. Fun and active participation.*

RoI, exit questionnaire

Experiences like those described above were easier to achieve where the children were co-operative and teachers supportive, and when there were no issues relating to time and resources. Where these factors did present as problems students often appeared creative in working around difficult situations.

However, as is evident from the analysis presented above, not everything brought forth positive experiences. Some issues were difficult for students to resolve while some topics and strategies were harder to use than others. Students expressed some frustration with the colleges and with schools about the less than perfect situations in which they found themselves where they felt under prepared, particularly in the case of younger and / or more challenging classes. Students also felt that there were differences between colleges and schools in their expectations of the student as teacher. Many students identified their subject content knowledge as an issue and argued that colleges should prepare them better in this regard. Students also recognized, however, that negative experiences were part of the process of becoming a teacher. The questionnaires captured snapshots of students' feelings and perceptions at just two particular points in their BEd courses. In reality, as this student notes, becoming a teacher is a process in which students' identities as teachers are constructed in part through the interaction of negative and positive experiences in the context of reflective practice.

*Trying something that hasn't worked very well, but learning from this experience and developing and changing parts to ensure it goes better in future teaching experiences.*

RoI, exit questionnaire

## Chapter Seven

### CONCEPTS OF THE GOOD TEACHER OF HISTORY, GEOGRAPHY AND SCIENCE

*The teacher should have a broad knowledge of the course, be creative in its teaching methods, and open-minded, allowing students to put forward their own views and opinions.*

RoI, entry questionnaire

#### 7.1 Introduction

The idea of asking students on entry to initial teacher education to write about their concepts of what makes a good teacher arose primarily from the desire to know what ideas the students were bringing with them to college and what were the identities they foresaw for themselves at the end of the process on which they had embarked. The working hypothesis for asking students to write about their concepts of the good teacher on entry and on exit was that a comparison of both might give some insight into the impact of courses in history, geography and science education in the colleges. It was expected that over the course of the three / four years that the students' conceptions would have changed and evolved.

This section of the research addressed two main questions, therefore:

- What models of good teaching do student teachers bring with them into initial teacher education?
- How do these models change over time?

The extent to which the data can be looked at to evaluate change is, however, limited. First, changes in the sample over time, discussed in chapter three, make a direct comparison less valid and any findings suggestive only. Second, as colleges had significant differences in the duration, placement, mode of delivery, and, in some cases, in the content of their courses, a general comparison can obscure differences between colleges which may be greater than differences over time or indeed between the cohorts from Northern Ireland (NI) and from the Republic of Ireland (RoI). Despite these limitations, however, the findings suggest a range of areas where students' thinking differs on entry and exit, along with areas whose absence or under-representation suggests the need for new approaches. Furthermore, they give an interesting picture of the kinds of concepts of good teachers the students bring with them into initial teacher education.

With a couple of exceptions, identified in the text, all percentages given are based on three populations – the total sample of students surveyed, respondents from the RoI and respondents from NI. Table 7.1 below gives the numbers for these cohorts. In order to avoid a proliferation of statistics, while ensuring a common understanding of number-related terms, the language key identified on page 26 will be used throughout alongside or instead of percentages.

**Table 7.1: Numbers of students in each cohort for entry and exit (source: entry and exit questionnaire)**

Cohort	NI	RoI	All
Entry	243	871	1114
Exit	173	651	824

As indicated in chapter two, the literature in general suggests the dominance of the interpersonal and the affective over the cognitive and pedagogical in how prospective teachers characterize their ideal teachers. Student teachers in this study, however, while acknowledging the relevance of teacher characteristics, affective and cognitive, focused in the main on the learning environment created by and the teaching approaches characteristic of the good teacher (see graph 7.1). This is consistent with their responses in relation to their experiences

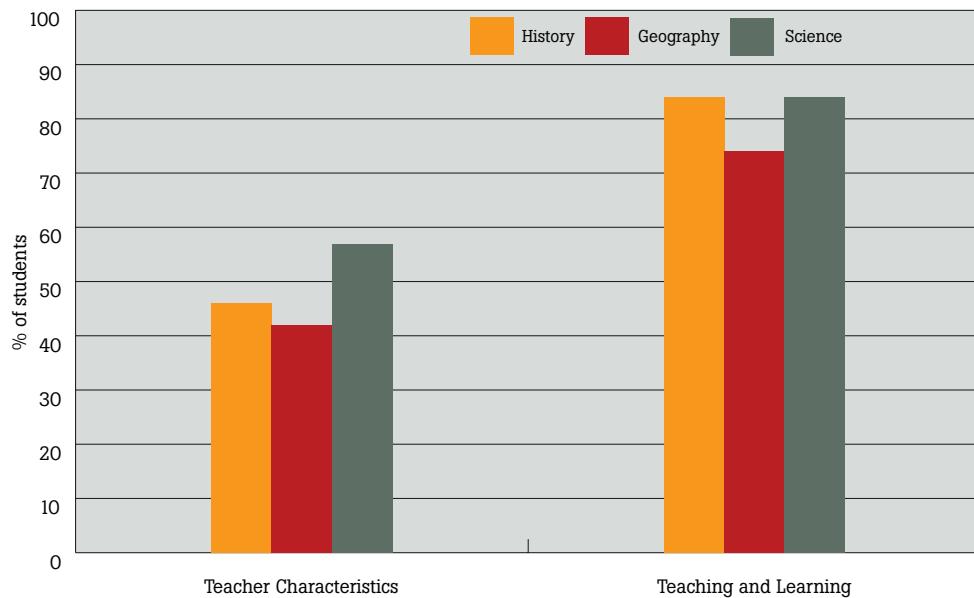
and may be a consequence of the questions asked, which were specific to the subjects rather than general – what makes a good teacher of science / history / geography as opposed to what makes a good teacher *per se*.

As outlined in chapter three, the data for this section of the questionnaire were subjected to grounded analysis through the constant comparative method in the initial phase of the analysis. The themes that emerged were grouped to form two main categories similar to those used in the analysis of the positive and negative experiences of the students and that responded to the following questions: What is the good teacher like? What does the good teacher do? Each category, then, has a range of sub-categories and related themes as outlined in table 7.2. In addition, key ideas were identified which were tracked across the entry and exit data. These are outlined below in each subject section. Each comment in the students' responses was coded. Counts are based on the number of respondents expressing an idea rather than the number of comments. While this approach underestimates the extent to which an idea is represented in the data, in that a respondent could make more than one comment relating to a particular theme, it does allow for some comparison between the proportions of respondents that include that idea in their concept across time and space. However a comment could express more than one idea and be coded in each of the two main categories. For example, a respondent who observed that the good teacher should be good at organising fieldtrips was given one count for the category of teacher characteristics which included the idea of professional competence (planning and organisation), and one count in the category of teaching and learning for identifying fieldtrips as a teaching approach (see table 7.2).

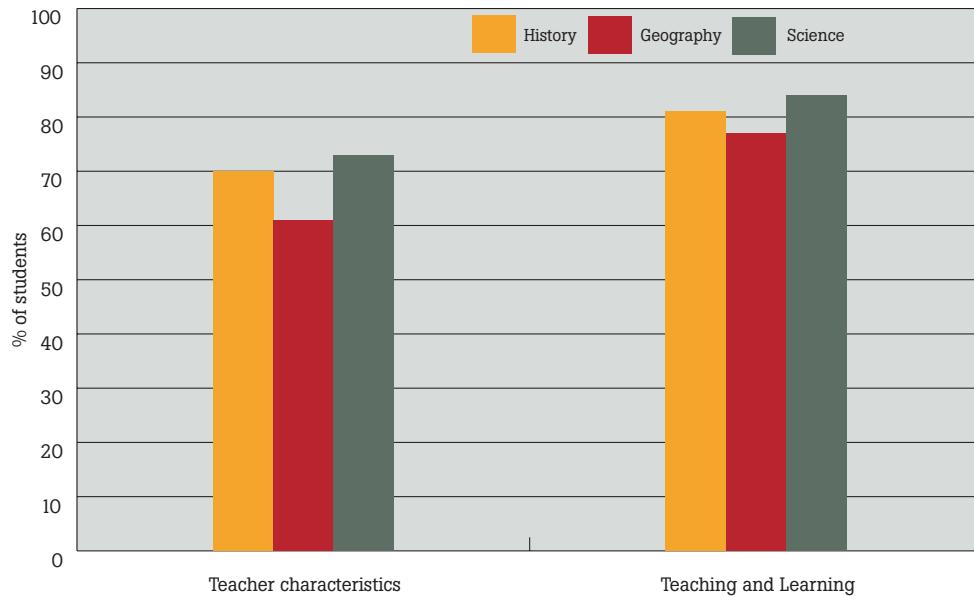
**Table 7.2: Categories and themes in the students' models of good teachers of history, geography and science (source: entry and exit questionnaire)**

Key Questions	Main Categories	Sub-Categories	Internal Themes
What is the good teacher like?	Teacher characteristics	Personal and Interpersonal Characteristics	Personal Interpersonal
		Professional Characteristics	Preparation and organisation Knowledge Teaching skills and dispositions
		Subject-based	Dispositions Capacities
What does the good teacher do?	Teaching and Learning	Learner centred	Accessibility Constructivism Children's voice
		Approach	Active learning Other
		Relevance	To the child To everyday life To the present
		Motivation and Interest	Motivation and interest
		The good teacher doesn't...	The good teacher doesn't..

Graph 7.1 below presents the breakdown of the main categories across subjects in the entry questionnaire and indicates the percentage of respondents overall who made at least one comment in each of the two main categories. What the good teacher does in terms of the teaching and learning environment provided emerges as the largest category, although a substantial proportion of students also commented on what the good teacher is like in terms of the characteristics of the good teacher.

**Graph 7.1: Breakdown of categories on entry, by subject (%) (source: entry questionnaire)**

On exit, while the teaching and learning environment created by the good teacher remained the largest category, there was a substantial variation in the proportion of respondents making one or more comments relating to what the good teacher is in terms of characteristics of the good teacher (graph 7.2). Moreover, as will be outlined below for each subject area, considerable differences in terms of sub-categories and themes also emerged.

**Graph 7.2 Breakdown of categories on exit, by subject (%) (source: exit questionnaire)**

The remainder of this chapter outlines the concepts of the good teacher identified by the respondents in each of the three subject areas on entry and exit, before going on to look at the key issues raised across all three subjects. As one would expect, there were few significant

differences between the two cohorts (NI and the Republic of Ireland). Where differences did occur they will be identified.

## 7.2 What makes a good teacher of history?

*Someone that has an interest in the topic. Someone who has a lot of background info on topics. They need to involve the children e.g. projects and not just read from a book and then do review questions. Someone that can 'look outside the box!' and think up new ways to teach as history covers so many topics.*

NI, entry questionnaire

*A teacher who is willing to explore all areas of history with children, particularly local history. An innovative person willing to take risks and bring children on field trips. A teacher who highlights change and integrates history into every day teaching. Resources are very important.*

RoI, exit questionnaire

### What is the good teacher of history like?

In presenting their ideas on what makes a good teacher of history, almost half of the respondents on entry (47%) wrote about the characteristics of the good teacher in terms of personal and interpersonal characteristics, professional characteristics and dispositions towards the subject itself (see graph 7.1). A relatively low proportion of students commented on the kinds of personal qualities that contributed to making good teachers, describing them variously as 'interesting', 'not boring', 'patient' and 'lively'. For some students, the good teacher needed to be creative and imaginative, while a few prioritised warmth, humour and fairness.

*The teacher needs to have qualities such as patience, [be] trustworthy, understanding etc. but especially for history the teacher needs to be creative and to show imagination so as to keep 'history' interesting and appealing to the children.*

NI, entry questionnaire

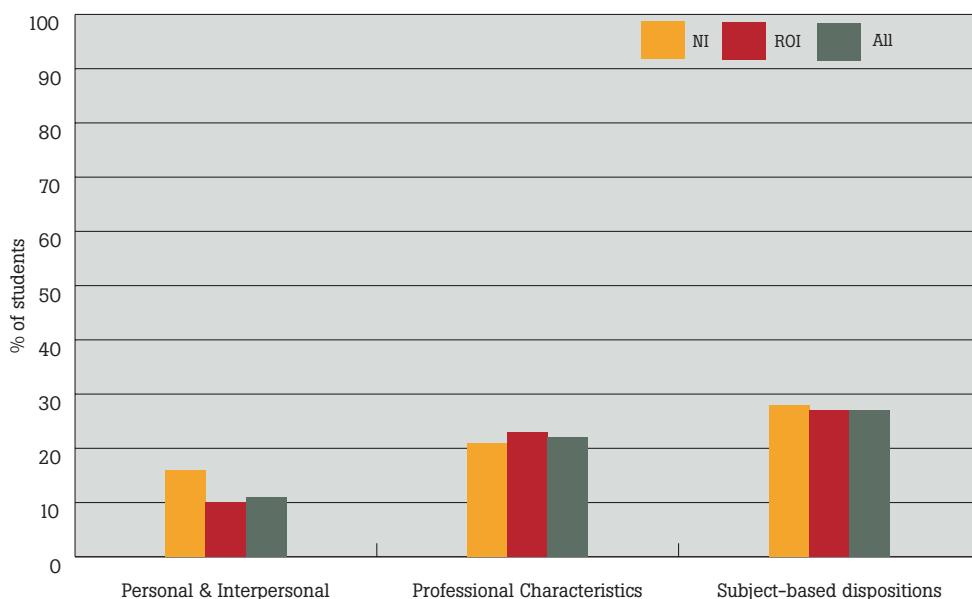
The respondents also identified a range of characteristics that suggest the idea of the teacher as a competent professional. Thus the good teacher should be knowledgeable, put time into planning and resourcing his/her teaching and be good at communicating and explaining.

*Very clear, concise way of explaining stories, events, dates. Need also to be interesting or have novel ideas on how not to be boring.*

RoI, entry questionnaire

*A knowledge of the primary curriculum is needed and well prepared. History I think can be quite boring so topics that are not too heavy for children to understand.*

NI, entry questionnaire

**Graph 7.3: Teacher characteristics: history, on entry (%) (source: entry questionnaire)**

As graph 7.3 illustrates, most of the comments made by the respondents about the characteristics of the good teacher focused on attitudes towards the subject. The good teacher of history had to be interested in and enthusiastic about the subject. Teachers of history should have 'a passion' for the past and appreciate its importance. Indeed one in four respondents commented on the need for teachers to have a positive disposition towards history (table 7.3). Teacher interest and enthusiasm was seen by many as a prerequisite for children's engagement with history.

*A teacher who is interested in the subject. History can be boring but if the teacher is interested in the subject and is enthusiastic then this will have an effect on children's attitude to the subject. I have experienced this at first hand.*

RoI, entry questionnaire

A small number of students mentioned the need for teachers of history to be unbiased, objective and impartial in their view of the past and prepared to take different perspectives and viewpoints on board.

*To ensure that the teacher presents history lessons in an objective and balanced way and does not enforce opinions.*

NI, entry questionnaire

*An interest, a thorough knowledge of the subject, good at instructing. A person who is not biased, someone who can see both sides of a political situation.*

RoI, entry questionnaire

In all three subject areas a small but coherent cluster of comments was identified in both the entry and the exit questionnaire that cut across the three categories of personal and interpersonal characteristics, professional characteristics and subject-based dispositions. These suggested the idea of the teacher as an innovative and creative thinker who was prepared to take risks. Included in this concept of 'risk-taker' are personal characteristics such as creativity, imagination, being prepared to 'think outside the box', professional characteristics such as being willing to try innovative and 'unconventional' ideas in the classroom, not being afraid to have

children working in groups, and subject-based dispositions such as being willing to take risks in 'visiting historic sites'. As one student wrote:

*If it is obvious that the teacher has a love of history then this will encourage the children to take an interest. The teacher should not be afraid to let the children act out parts e.g. landlord - use drama to make it more interesting.*

RoI, entry questionnaire

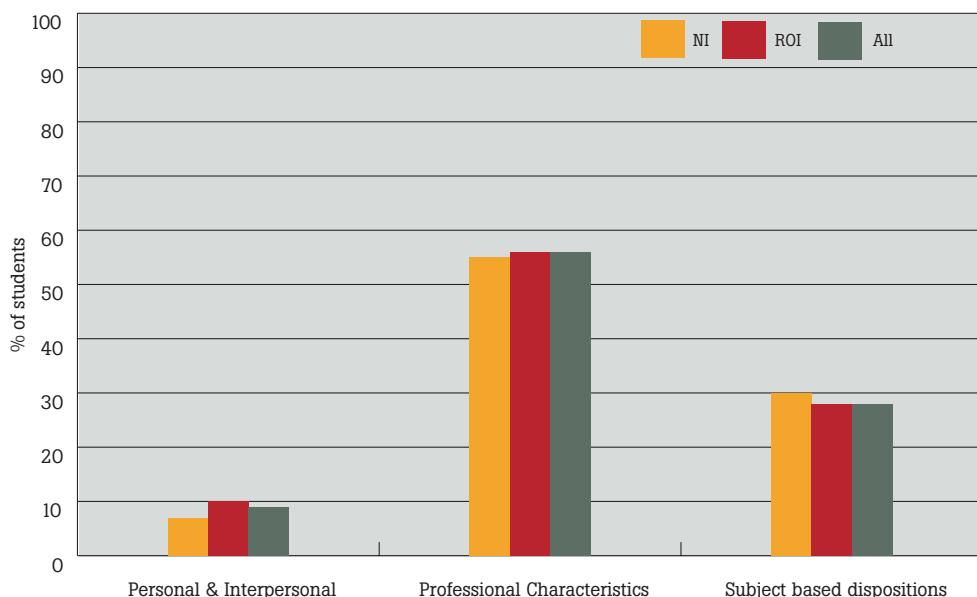
As table 7.3 indicates, student teachers from the RoI and from NI had similar priorities in terms of teacher characteristics.

**Table 7.3: Teacher characteristics for history, on entry (%) (source: entry questionnaire)**

Key Ideas	NI (n=243)	RoI (n=871)	All (n=114)
Positive disposition	26	25	25
Teacher Knowledge	12	13	13
Preparation	4	6	5
Risk taking	5	4	4
Impartiality	1	2	2

The concepts of the good teacher constructed by the exit cohort shared many of the same characteristics as those of the entry group. As graph 7.4 indicates, there was remarkable concurrence across both exit cohorts in terms of the key ideas found in their comments. The idea of the teacher as a competent professional emerged as the largest category with 56% of respondents making comments in this area. The good teacher's attitudes towards history also attracted a substantial amount of comment (28%), while almost one in ten students wrote about the kinds of personal and interpersonal characteristics the good teacher should have (graph 7.4)

**Graph 7.4: Teacher characteristics for history, on exit (%) (source: exit questionnaire)**



Although some respondents highlighted the need for teachers to be creative, resourceful, fun and imaginative, there was relatively little focus on the kinds of personal and interpersonal qualities teachers bring with them into teaching. For the exit cohort the dominant theme that emerged in terms of teacher characteristics was the idea of the teacher as a competent and well

organised professional. As is indicated in graph 7.5 below, this was significantly more evident in the concepts of the exit group than it was in the concepts of the earlier cohort. Overall 56% of students made comments about the professional characteristics of the good teacher.

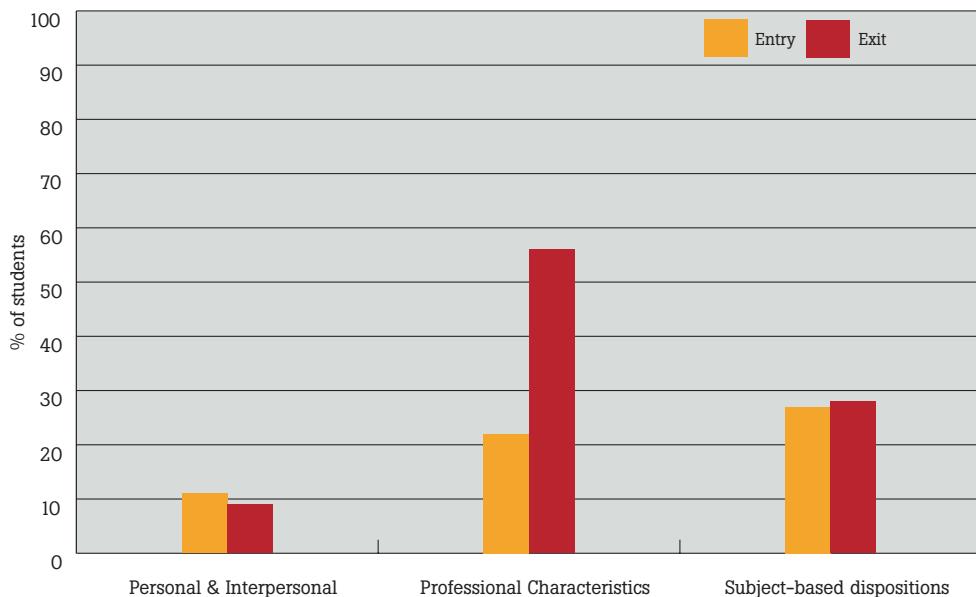
*Subject knowledge (to a lesser extent that the old curriculum however). Imagination (regarding how to introduce a new topic for enquiry). A keen eye for resources (primary and secondary).*

NI, exit questionnaire

*Someone who will research the topic well and collect good resources. Devise activities to structure and build on lessons. Gets the children interested in topics and questioning and finding out more about the topic.*

RoI, exit questionnaire

**Graph 7.5: Teacher characteristics for history, on entry/exit (%)  
(source: entry and exit questionnaire)**



Teachers, then, should be knowledgeable about history and not dependent on the text book. Preparation and planning were identified as a key component of good teaching in terms of the provision of appropriate resources; the ability to plan lessons that are varied in methodology, that integrate with other areas of the curriculum and that are in keeping with the curriculum. Good teachers should also be organised and have good classroom management skills, particularly in terms of organising groupwork.

One in four respondents in the exit group emphasised the need for teachers to be interested in and enthusiastic about history, tying teacher interest into children's engagement. Having a positive disposition towards the subject, then, remained a key element in students' constructions, while a small number of respondents identified the idea of objectivity, balance and lack of bias as an integral part of being a good teacher of history.

*Someone who makes history fun for the children and interesting. Must be interested and enthusiastic and make the lesson interesting for the children.*

NI, exit questionnaire

*A good teacher should have an open mind and be aware of his/her own values, beliefs and biases.*

NI, exit questionnaire

*Someone who can see different perspectives of a situation/can separate themselves from history.*

RoI, exit questionnaire

As table 7.4 indicates, however, while the idea that the good teacher of history should be open to different perspectives and aware of her/his own 'bias' was present amongst the exit cohort, the proportion of respondents that included it in their definitions was low. Neither was there any variation across the two groups of students in terms of location. There was some variation in relation to the idea of the teacher as risk-taker, with 7% of respondents from the RoI as opposed to 4% from NI identifying characteristics across categories that suggest this idea. Thus, a good teacher is one who 'shouldn't be afraid to let the children work in groups' or who.

*... is willing to explore all areas of history with children particularly local history. An innovative person willing to take risks and bring children on field trips.*

RoI, exit questionnaire

**Table 7.4 Teacher characteristics for history, on exit (%) (source: exit questionnaire)**

Key ideas	NI (n=173)	RoI (n=651)	Total (n=824)
Positive disposition	25	26	26
Knowledge	30	30	30
Planning	36	33	34
Risk-taking	4	7	6
Impartiality	2	2	2

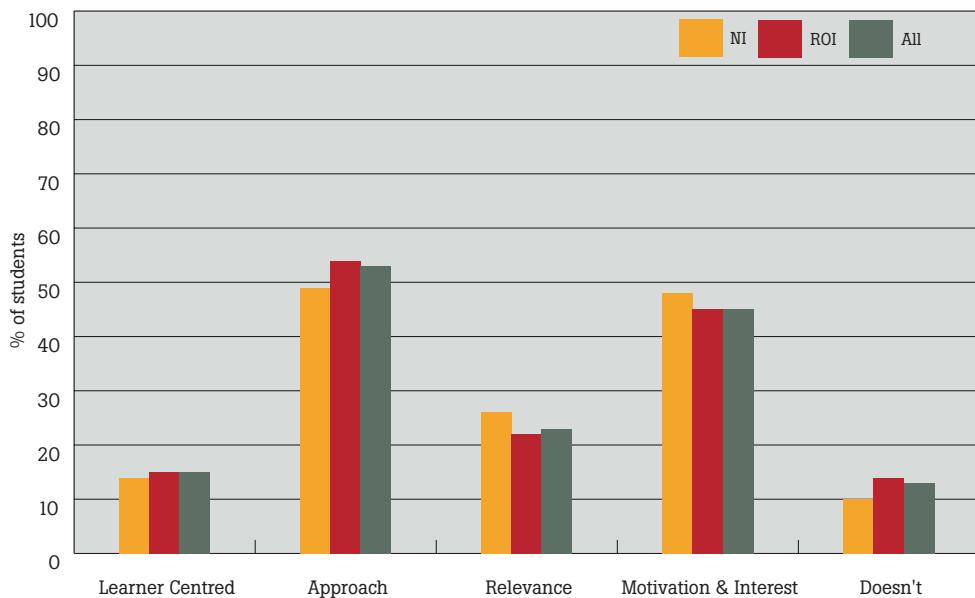
As in the entry questionnaire, there is a suggestion in this data that certain activities and modes of organisation were being conceptualised as risky and outside the norm, even though they may be considered by teacher educators as integral to good teaching. This is particularly a characteristic of the RoI data. Table 7.5 illustrates where the key differences emerged between the entry and exit group with both teacher knowledge and preparation emerging as important themes in the exit questionnaire.

**Table 7.5 Teacher characteristics for history on entry/exit (%) (source: entry and exit questionnaire)**

Key Ideas	Entry (n=1114)	Exit (n=824)
Positive disposition	25	26
Knowledge	13	30
Preparation and Planning	5	34
Risk-taking	4	6
Impartiality	2	2

#### **What does the good teacher of history do?**

In the entry questionnaire students' constructions of the good teacher focused predominantly on what the good teacher should do in terms of creating a positive teaching and learning environment for children. As graph 7.6 illustrates, over half of the students wrote about the learning approaches that the good teacher of history should take (53%), while motivating and interesting children in history was commented on by 45% overall. A substantial number identified the need make history relevant (23%), while over one in ten identified a range of ideas that promote a 'learner-centred' approach such as beginning with children's own experiences, making history accessible to children and being prepared to listen to the child's views (15%). As well as describing what the good teacher should do, many also identified what the good teacher should not do (13%).

**Graph 7.6: Teaching and learning in history, on entry (%) (source: entry questionnaire)**

The idea that history had to be made ‘interesting’, ‘exciting’ and ‘fun’ for children if it was to keep their attention was strongly present in the students’ constructions. Many students noted the need to make history ‘come alive’ and ‘more interesting’ if children were to be engaged by it and to counteract its potential for boring children. This is consistent with the students’ own remembered experiences where history emerged as ‘boring’ for a substantial number of respondents (chapter 5).

*Bringing the subject to life, and escaping the idea of history being boring.*  
NI, entry questionnaire

*A teacher that makes history exciting and fun, as history can get very boring at times.*  
NI, entry questionnaire

*Someone that can bring history alive for the children and make it as interesting as possible.*  
RoI, entry questionnaire

In many cases there was an explicit link between motivation and the strategies and methodologies teachers should take in the history classroom. Most of the comments relating to teaching approaches were centred on the idea of the good teacher of history drawing on a range of active and participatory approaches. Some of this comment was general and referred to ‘active learning’, ‘practical approaches’ or ‘learning by doing’. In other cases, specific methodologies such as fieldwork or role-play were mentioned.

*The teacher needs to make the subject interesting. Learn things by doing them. Look at things that the children use now and how they evolved.*  
RoI, entry questionnaire

While it was strongly present in the constructions of both groups, a higher proportion of students from the Republic focused on the idea of active learning than their NI counterparts (35% as opposed to 26%) responding, perhaps, to the greater concern with methods of teaching and learning that emerged from their experiences (chapter 5). This largely explains the difference between the groups evident in graph 7.6.

*History I found was just taught out of a book. We never did activities around topics which I think would get children who didn't have much interest in the subject wanting to become more involved - actively learning.*

RoI, entry questionnaire

In most cases students were specific about the methodologies that should be used. Trips to historic sites featured prominently, as did the idea of children doing research through projects and finding out about the past from photographs, artefacts and oral sources. Overall almost one in five students referred to approaches that could broadly be described as historical investigation (fieldtrips to historic sites, using sources such as photographs, objects and asking questions about the past).

*Someone who gets the children to investigate the past as if they were detectives.*

RoI, entry questionnaire

*Listens to students opinions, goes on group trips, brings in sources and objects for students.*

NI, entry questionnaire

The idea that the good teacher should be a 'good storyteller' and that history should be told 'more as a story, rather than as a whole list of facts' was present in 7% of concepts. One of the surprising features of the students' concepts was the frequency with which drama-based approaches were mentioned as ways of bringing the past 'to life'. Students also referred to art, music and dressing up as ways in which history should be enlivened. The idea of integrating history with other subjects was generally presented as a way of making the subject more interesting. These approaches have been grouped together in table 7.6 below as 're-imagining the past'.

*A lot of children find history boring. If the teacher has good storytelling techniques, they won't have this problem. Children will remember every detail of a story they've heard.*

*History is just a lot of fun, interesting and important stories.*

RoI, entry questionnaire

*A teacher that makes history fun through role play or art instead of focusing on books and dates.*

NI, entry questionnaire

**Table 7.6 Most frequently mentioned methodologies for history, on entry (%)**  
(source: entry questionnaire)

Methods / Entry	NI (n=243)	RoI (n=871)	All (n=1114)
Active Learning (total)*	26	35	33
Historical investigation	16	20	19
Re-imagining the past	17	18	18
Story	5	8	7
Other	8	10	10

\*this includes all students who made general and specific comments about active learning

The students' constructions of the good teacher also showed them to be conscious of the need to make history relevant to the lives of children, to real life and to everyday life. The idea that making history relevant to everyday life and to 'the real world' through giving 'everyday examples to make the subject realistic' was expressed in a range of ways and included the idea that history should be about the local area.

*Teaching relevant and interesting topics. Not going into ancient history, but local.*

NI, entry questionnaire

Linking the past to the present and using history to explain current issues and events also helped to make it more relevant. The idea that history should be about 'real' people as opposed to remote historical figures or dates was expressed by several respondents. Furthermore, teachers should concentrate.

*...on how ordinary people lived so children can relate to it.*

RoI, entry questionnaire

*Someone who can make the subject interesting and help the children to see how events from the past have influenced their lives today to make the subject more relevant.*

NI, entry questionnaire

*Talk about real people, not dates and battles. But teach the truth, don't candy coat Florence Nightingale.*

NI, entry questionnaire

A view of learning that put the learner at the centre of what happened in a history class was expressed in a range of ways by students. Students were concerned with making history accessible to children, making it 'understandable' and 'less complicated'. The idea that history had to be 'made simple' and 'at their level' is coupled with teachers' abilities to 'explain it in an easy to understand way'. History has to be made clear...

*...to be understood easily as this is a difficult subject.*

NI, entry questionnaire

Others commented that teachers of history should begin with the child's experience and build on what they already know, while a small number suggested that the good teacher would take account of children's interests, give them opportunities to voice their opinions, ask their own questions and direct their own learning. Teachers should show 'willingness to hear the children's views and arguments' and allow children 'to put forward their own views and opinions and encourage 'independent thinking on controversies'.

While the bulk of comments related to positive constructions of good teachers of history, there was a significant focus on practices in which the good teacher should not engage. There was some variance between the two groups (NI 10% and RoI 14%) but across both cohorts such comments typically warned against history lessons dominated by textbooks, memorisation, reading and dates echoing, in some cases explicitly, their own negative experiences as learners of history.

*One who makes history interesting. Who doesn't simply make a class learn off dates and facts, but makes the learning interactive.*

RoI, entry questionnaire

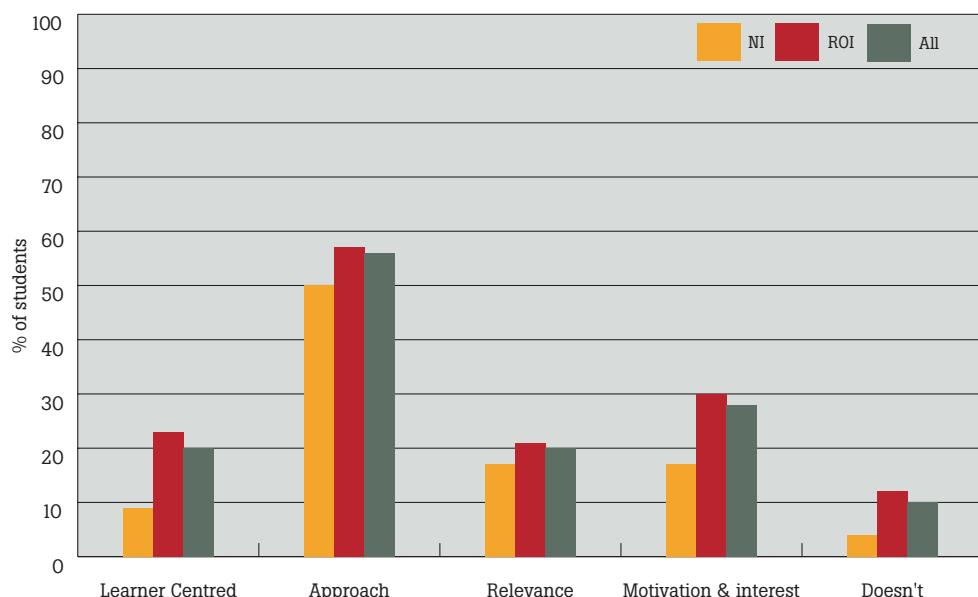
*Doesn't just read out of a text. Gets children involved e.g. dressing up. Children's own history.*

NI, entry questionnaire

Similar to the characteristics of the good teacher, the concepts constructed by the exit cohort in relation to the teaching and learning environment display many of the same features as those presented in the entry questionnaire, with differences occurring within rather than between

sub-categories. As graph 7.7 indicates, in terms of the exit cohort itself, 56% of the students commented on the teaching approaches adopted by the teacher, with proportionately more students from the ROI making comments in this area than their northern counterparts (57% and 50% respectively). Indeed, this pattern is repeated across all of the subcategories, most notably in relation to the centrality of the learner (23% and 9%) and the idea of motivation and interest (30% and 17%).

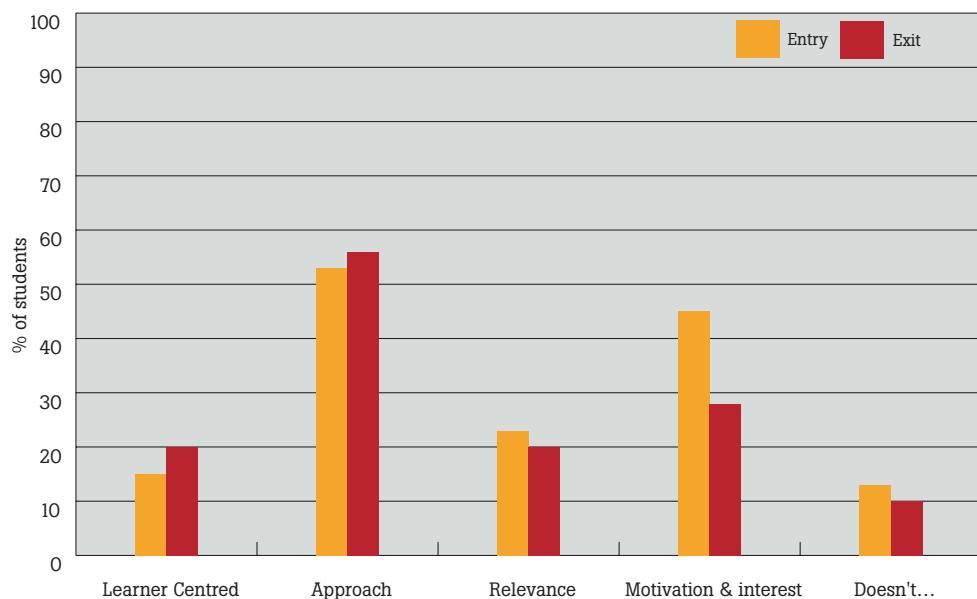
**Graph 7.7 Teaching and learning for history, on exit (%) (source: exit questionnaire)**



When the responses from the exit cohort are compared to those from the entry cohort, the differences across categories are, in the main, slight (see graph 7.8 below). There is somewhat more comment relating to the centrality of the learner (20% exit as opposed to 15% entry) and marginally more in relation to teaching approach (56% exit, 53% entry). In the three remaining categories, the proportion of students commenting was lower on exit than on entry. In other words, fewer students wrote about the need to make history interesting and relevant or wrote about what the good teacher should not do in the exit questionnaire than in the entry questionnaire, with the largest drop evidenced in relation to 'motivation and interest'.

One interpretation of this drop is that the exit group was less concerned with the idea of motivating children to learn through providing interesting learning experiences than the entry group. A second interpretation, however, and one that is supported by the data, is that the exit cohort did not see history as innately dull, difficult and boring or history teaching as necessitating extraordinary measures in order to engage children. Thus in the exit questionnaire less than 1% of students described history as 'boring' or potentially boring, whereas the equivalent proportion in the entry questionnaire was 6% overall. The difference was even more dramatic in relation to the NI data, where no student in the exit cohort described history as either boring or potentially so, as opposed to 8% in the entry cohort. There was also, as will be explored below, a decreased concern with the need to bring history alive through drama-based activities. Both would point towards the view that the students who completed the exit survey did not conceptualise history as necessarily problematic in terms of engaging children. The idea of making the teaching of history relevant to today, to current issues and to everyday life, however, is also intimately bound up with the idea of purpose in history teaching, in which case the relatively few concepts that included ideas relating to relevance could indicate a disengagement from purpose.

**Graph 7.8: Teaching and learning for history, on entry/exit (%)**  
 (source: entry and exit questionnaire)



Students in the exit cohort are also concerned with the centrality of the learner to the teaching and learning process but there are differences in relation to emphasis (see table 7.7 below). While accessibility is still an issue, the entry and exit cohorts differ on both the nature and the amount of comments made, with 6% of students in the exit cohort referring to making history accessible, as opposed to 9% in the entry cohort. The nature of comment has also changed. Whereas at entry students were focusing on the inherent complexity of history and the need to make it understandable to children, students' constructions in the exit questionnaire evince some concern with differentiation and with providing 'a variety of resources for children of all ability levels'. The idea of building on children's existing knowledge and experiences, identified explicitly by a few students as 'constructivist', is also more developed in the exit questionnaire (table 7.7). There is some variance here across the NI and RoI cohorts in the exit questionnaire in relation to constructivism (3% NI, 11% RoI) and listening to children's voices (3% and 8% respectively).

*Confident in teaching it. Allows the children some ownership of the lessons - does not dominate the lesson, actively engages the children.*

RoI, exit questionnaire

*Somebody who is knowledgeable about the subject but does not dictate their knowledge to the children. Someone who fosters a love of the subject in the children and encourages them to create their own questions and allows them to explore.*

RoI, exit questionnaire

**Table 7.7 Learner-centred for history on entry/exit (%)**  
 (source: entry and exit questionnaire)

Learner Centred	Entry (n=1114)	Exit (n=824)
Accessibility	9	6
Constructivism	1	9
Children's voices	4	7

In relation to teaching approaches, while the difference between the two cohorts (entry and exit) in terms of the proportion of students commenting is slight, there are some significant changes within the category. First, the proportion of students commenting on active learning is

greater in the exit questionnaire (45%), while the specific methods mentioned by the students evidence a greater concern with historical investigation and the use of historical sources. Thus, a good teacher is a.

*... teacher who makes history interesting and relevant for the children, who makes reference to the pupils own local history through the exploration of local evidence. Use of artefacts also important.*

RoI, exit questionnaire

*One who knows a lot about the topic they're teaching or finds out if they don't. One that tries to use as many different primary resources as possible. One who uses as many different ways of responding to sources as possible.*

NI, exit questionnaire

**Table 7.8 Most frequently mentioned methodologies for history, on entry/exit (%)  
(source: entry and exit questionnaire)**

Methods / Entry	Entry (n=1114)	Exit (n=824)
Active Learning (total)*	33	45
Historical investigation	19	34
Re-imagining the past	18	7
Story	7	5
Other	10	4

\*this includes all students who made general and specific comments about active learning

What is evident from table 7.8 is that while the idea of re-imagining the past through other subject areas such as drama is still present, it has given way to reconstructing the past through the use of evidence. While there is a decrease in the level of comment relating to fieldwork, the idea of historical enquiry, of using historical sources to find out how people lived and thought in the past, is explicitly stated by one in three respondents overall while many students focus on the development of historical skills and concepts.

*Makes it relevant i.e. brings it back to their interests e.g. connecting to local area.  
Introducing and making topics of history interesting and fun. Enquiry approach - let children find out instead of telling them.*

RoI, exit questionnaire

*A teacher who uses enquiry approach and allows children come up with questions they would like to know and then go and find out information.*

NI, exit questionnaire

*A good background knowledge of history is essential. The children should be taught how to use historical skills, use evidence, make deductions and relate to the past. A good teacher will allow them do this by providing appropriate tasks.*

RoI, exit questionnaire

What is absent or virtually absent from the responses of both cohorts is any consideration of digital learning or ICT as part of history education. While less than 1% of respondents in the entry questionnaire mentioned ICT, only 2% of those surveyed in the exit questionnaire include ICT as part of teaching and learning in history. The idea of discussion or talking about history is also mentioned infrequently, with only 2% of respondents in the entry questionnaire and less than 1% in the exit questionnaire including discussion as part of how history should be explored with children.

**Summary**

In terms of how students construct their ideas of the good teacher of history on entry to teacher education, they ascribe certain characteristics to the good teacher including personal characteristics such as an interesting personality, creativity and imagination. Professionally they see the good teacher as competent, knowledgeable and prepared while they also need to have an interest in and enthusiasm for history. The idea of the good teacher as one who is prepared to take risks is also evident. The exit cohort ascribed many of the same characteristics to the good teacher, but there was a significant increase in the proportion of students who saw the good teacher as one who was professionally competent. This increase was particularly evident in the areas of teacher knowledge and preparation.

In terms of what the good teacher does, what was most notable about the entry cohort was the extent to which they were already committed to ideas which are key ideas in primary education, such as active and participatory approaches to teaching and learning. It was evident, however, that much of the impetus for their ideas around methods, relevance and accessibility came from an underlying sense of history as problematic, boring and potentially alienating for children. This sense of history as inherently problematic was much less evident in the responses of the exit cohort, though it was still present in a small number of constructions. The differences between the two cohorts (entry and exit) in terms of their constructions were by and large within categories rather than between categories. There was a significantly greater emphasis on the idea of historical enquiry and a concept of the teacher as scientific historian (Evans, 1996). This went hand in hand with a decrease in concern with relevance, accessibility and motivation, and fewer students subscribing to the idea that in order to interest children in history the teacher would have to 'teach it through another subject'.

**7.3 What makes a good teacher of geography?**

*Someone who teaches the course enthusiastically and who relates it to each child as much as possible. Visual aids and practical tasks e.g. cutting out and sticking etc. would help the child enjoy the subject more as well and this is of vital importance.*

NI, entry questionnaire

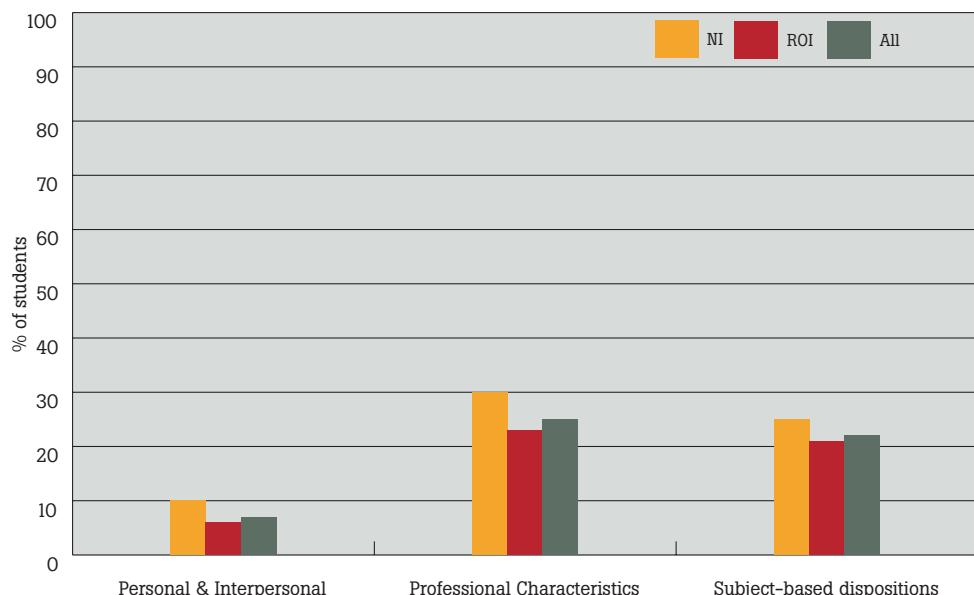
*I think the enquiry approach is very helpful in geography with pupils becoming active constructors of their own knowledge.*

RoI, exit questionnaire

**What is the good teacher of geography like?**

In constructing their concepts of the good teacher of geography at the start of their initial teacher education programme, 42% of respondents commented on the kinds of characteristics that teacher should have (see graph 7.1). As graph 7.9 illustrates, students focused least on the kinds of personal and interpersonal characteristics a good teacher should have and most comment related to the professional characteristics and the subject-based dispositions that respondents saw as part of the identity of the good teacher.

**Graph 7.9: Teacher characteristics for geography on entry (%) (source: entry questionnaire)**



However several did point towards a range of personal and interpersonal qualities that contribute to that identity. For some students the good teacher of geography should be a 'helpful', 'understanding', 'encouraging' and 'patient' person. Others emphasised the need for good teachers to be 'interesting', 'creative' and 'resourceful'.

*Good listener, classroom manager, kind, compassionate, energetic and enthusiastic.*  
RoI, entry questionnaire

*Make it fun! A teacher has to be interesting and creative.*  
NI, entry questionnaire

Almost one in four of the respondents focused on professional characteristics. Thus the good teacher of geography was someone who was knowledgeable and well prepared, putting time and effort into resources and into planning. Like the good teacher of history, students identified a range of teaching skills such as 'being good at presenting' and 'a good explainer' as important. This concern with teachers' abilities to explain is consistent with research into children's experiences in post-primary education in the RoI where skill at explaining was identified as the teacher characteristic that enabled them to learn best (Smyth, Dunne, McCoy and Darmody, 2006, p120).

*Organisation and interesting lesson plans will generally hold the children's attention and make it easy to teach them.*  
RoI, entry questionnaire

*Knowledgeable and enthusiastic. Ability to explain things clearly which some of the children may find difficult.*  
NI, entry questionnaire

Many students emphasised the need for teachers to be enthusiastic and interested in geography, in some cases linking teacher enthusiasm and interest to children's engagement.

*Someone who is enthusiastic and is interested in geography and can make the children interested and caring about the subject.*

NI, entry questionnaire

A small number of respondents commented on the desirability of the good teacher of geography being aware of different countries and cultures, drawing, where possible, on their personal experiences of travelling and living in other places. This suggests an underlying competence around recognizing and valuing cultural diversity and seeing the connection between geography and the development of understanding of cultural diversity. While the numbers of comments were few, the concept of cultural competence was identified as a key idea to be tracked across the entry and exit cohort. The idea of environmental awareness and care was equally nascent and again was identified as a key, if emergent, idea.

*Someone who is interested in the area, maybe someone who has travelled and is interested in bringing artefacts from different countries into the classroom.*

NI, entry questionnaire

*Geography helps children to realise there are lots of different people in the world and opens the child's mind to different cultures, people and traditions.*

NI, entry questionnaire

*Someone who cares about the environment and is creative, imaginative and confident.*

NI, entry questionnaire

*Raising environmental issues through geography is a good idea, helps them understand why the environment must be protected.*

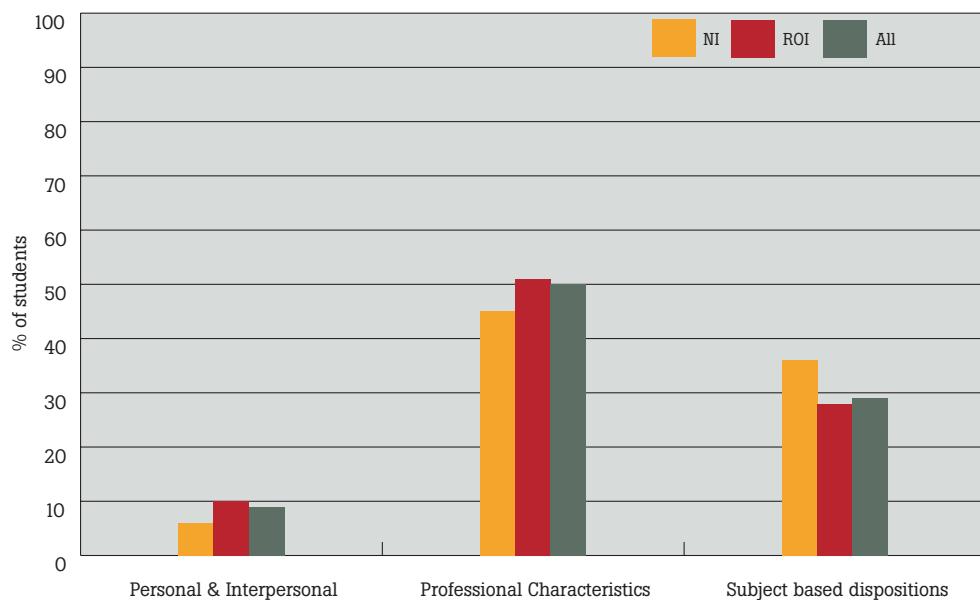
RoI, entry questionnaire

Once again the idea of the good teacher as risk-taker, creative thinker and innovator emerged in a small cluster of comments. In some cases, this was linked to fieldwork and 'not being afraid' to take children outdoors. In others, it was associated with using approaches that were seen as innovative, such as drama-based approaches. As is apparent from table 7.9, there was some variation across the two cohorts in relation to key ideas, which explains the locational differences evident in graph 7.9 above. Thus proportionately more students from NI made comments in relation to dispositions such as enthusiasm and cultural competence. Teacher knowledge was commented on more frequently by NI than by their RoI counterparts.

**Table 7.9 Teacher characteristics for geography, on entry (%) (source: entry questionnaire)**

Key Ideas	NI	RoI	All
Positive Disposition	21	17	18
Knowledge	18	12	13
Preparation and planning	7	6	8
Risk taking	3	4	4
Cultural competence	6	2	3
Environmental awareness	2	2	2

As graph 7.10 illustrates, the students' constructions of the good teacher of geography on exit addressed similar characteristics to the concepts of the entry cohort. The idea of the good teacher as a competent professional emerges as the largest category (50%). A substantial proportion of students identify teachers' attitudes towards the subject as a key issue (29%) while less than one in ten focus on personal and interpersonal characteristics (9%).

**Graph 7.10: Teacher characteristics for geography, on exit (%) (source: exit questionnaire)**

There were significant differences in the distribution of comments across categories between the exit and entry group (graph 7.11). The exit concepts exhibited greater levels of comment across all three main categories, with the most significant difference occurring in relation to the professional characteristics of good teachers. While it remained the smallest category, several students wrote about the personal and interpersonal characteristics of the good teacher. Again, as with the entry concepts, there was an emphasis on creativity. Good teachers were described variously as resourceful, adventurous, open minded and dynamic. Interest in and enthusiasm for geography remained important and there was a greater level of comment relating to subject-based dispositions evident.

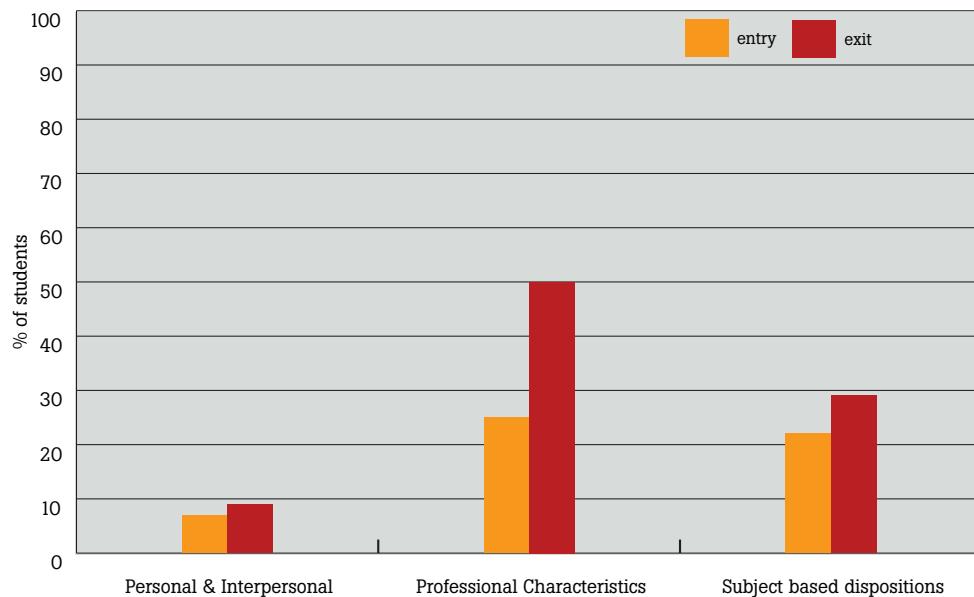
*Someone who understands geography. An adventurous person who can think outside the box.*

RoI, exit questionnaire

*A teacher that gets really involved with the class and shows passion and enthusiasm towards the subject.*

NI, exit questionnaire

**Graph 7.11: Teacher characteristics for geography, on entry / exit (%)**  
 (source: entry and exit questionnaire)



As is evident from table 7.10 and table 7.11 below, while they are more evident in the NI data, the concepts of cultural competence and environmental awareness have no greater representation overall in the exit concepts than they had in the concepts of the entry group. In other words, the concepts of the good teacher of geography constructed by the exit group showed no greater awareness of environmental issues or of issues pertaining to cultural diversity in relation to the teaching of geography than that shown by the concepts of the entry cohort. As one student noted, a good teacher needed to have.

*...an interest and care for environment (not a 'tree hugger' but a vague interest required).*  
 RoI, exit questionnaire

**Table 7.10: Teacher characteristics for geography, on exit (%) (source: exit questionnaire)**

Key Ideas: Exit	NI (n=173)	RoI (n=651)	All (n=824)
Positive dispositions	27	21	22
Knowledge	26	21	22
Preparation and planning	23	35	27
Risk taking	5	12	10
Cultural Competence	5	2	3
Environmental Awareness	4	1	2

**Table 7.11: Teacher characteristics for geography, on entry/exit (%)**  
 (source: entry and exit questionnaire)

Key Ideas: Exit/Entry	Entry (n=1114)	Exit (n=824)
Positive dispositions	18	22
Knowledge	13	22
Preparation and planning	8	27
Risk taking	4	10
Cultural Competence	3	3
Environmental Awareness	2	2

The largest category represented in the exit data is the idea of the teacher as a competent professional. Indeed, as is evident from graph 7.11 above, this is the category where one finds the greatest difference between the concepts of the good teacher constructed by the students in the entry and exit cohorts. Table 7.11 indicates where those differences mainly lie i.e. greater emphasis on the need for good planning, preparation and organization and on the need for teacher knowledge. The good teacher, therefore, is 'a well prepared, organized teacher', who is 'well resourced' and 'plans interesting lessons for the pupils'. He/she has 'good subject knowledge', 'good knowledge of the curriculum' and is, in some cases, knowledgeable about 'current affairs' and 'global issues'. Students from the RoI appear to be less concerned with teacher knowledge and disposition and more concerned with preparation and planning than their NI counterparts. They are also more likely to view the good teacher of geography as a 'risk-taker'. This is particularly evident in relation to taking children on field trips, which is perceived by many of the RoI students as an inherently risky and troublesome activity.

*A teacher who is prepared to take risks and take the children outside of the classroom to really experience their local environment.*

RoI, exit questionnaire

*Enthusiasm and willingness to try new things and not be afraid of mess or taking time for organisation.*

RoI, exit questionnaire

*One who is willing to go to the hassle of organising field trips and teach this subject in a 'practical' way outside of the classroom.*

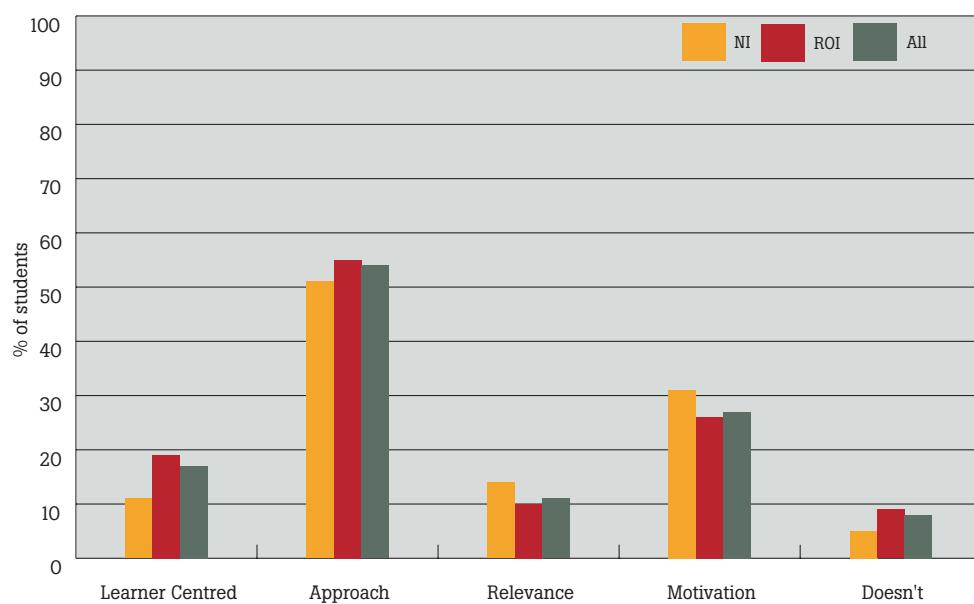
RoI, exit questionnaire

### What does the good teacher of geography do?

In constructing their models of the good teacher of geography, students in the entry cohort focused predominantly on what the good teacher should do in terms of teaching and learning (see graph 7.12).

**Graph 7.12: Teaching and learning for geography, on entry (%)**

(Source: entry questionnaire)



As with history, over half of the students (54%) wrote about the learning approaches the good teacher should take, the majority of whom focused on the idea of active learning. 39% of the overall cohort and the vast majority of those who wrote about teaching approaches explicitly named active and participatory approaches, either in terms of general endorsements of 'active learning' 'practical activities' and 'hands on learning', or by naming specific methodologies such as fieldwork, making models, sand play and setting up weather stations.

*Have a weather station, make it practical e.g. go out and collect leaves when studying trees.*

NI, entry questionnaire

*Lots of field trips, let children explore geography for themselves, take lessons outside of the classroom.*

NI, entry questionnaire

*Someone who uses lots of visual aids and has activities for children to participate in.*

RoI, entry questionnaire

Most of the practical methodologies and activities mentioned could be classified as geographical investigation with fieldwork, research projects and using and making maps predominating. Table 7.12 below presents a global figure for active learning and for geographical investigation, and then breaks them down in terms of the most frequently mentioned activities.

**Table 7.12 Most frequently mentioned activities/methods in geography, on entry (%)**  
(Source: entry questionnaire)

Methods / Entry	NI (n=243)	RoI (n=871)	All (n=146)
Active learning (total)*	37	40	39
Geographical investigation (total)**	30	28	29
Fieldwork	22	22	22
Map activities	2	4	3

\*this includes all students who made general and specific comments about active learning

\*\*this includes all students who made general and specific comments about geographical investigation

Despite this focus on active and practical approaches, there was a considerable amount of comment on more traditional and less participative approaches which would allow the good teacher to 'pass on knowledge' and 'tell them the facts'. Much of this involved the use of coloured maps, 'visuals' and quizzes to make the 'facts' more interesting and easier to remember.

*A good primary geography teacher should do fun games and quizzes to help the children to learn about the counties, rivers, etc.*

RoI, entry questionnaire

There was an evident link between the kinds of methodologies suggested by the students and the idea of interest and motivation. In a number of cases the methods chosen were chosen on the basis that they could 'make it seem like they are not doing geography'. Like history, the need to bring the subject alive frequently necessitated an integrated approach. As with history, integration was generally conceptualised as a way of making geography more interesting rather than as something that contributed to children's learning.

*Making the subject relevant to the lives of the children, relating it to their interests, bringing the topic alive through drama, role play, relating it to other subjects on*

*curriculum. If they aren't interested in a topic, do my best to find out why and vary my teaching methods to suit their interests.*

RoI, entry questionnaire

The idea that teachers should motivate children and seek to engage them was commented on by a substantial number of students (27%). Sometimes the idea that geography should be fun, interesting and exciting is presented as an end in itself, with a somewhat tangential association with children's learning. In other cases, the idea that the good teacher should 'ensure the class is enjoying' geography and 'make it exciting' for children is linked to children's interest in and engagement with geography. At times, however, as with integration, the idea of motivation and interest is associated with a view of geography as essentially boring.

*Being interested in the subject, making the lesson fun for the children at the same time, the kids are gaining something from it.*

RoI, entry questionnaire

*A teacher who can make geography interesting and not a total bore.*

NI, entry questionnaire

*If he/she can take potentially boring material and somehow make it interesting for the pupils.*

NI, entry questionnaire

*Incorporate field trips and other events to make it likeable.*

RoI, entry questionnaire

One in ten students wrote about the good teacher as one who ensured that geography was relevant to the lives of children, focusing on places and topics to which they could relate, such as the geography of their own local area. While using the child's locality as a site of learning was generally conceptualised in terms of children's ability to relate to familiar places and to real landscapes, some students linked it to a more constructivist approach to children's learning.

*Someone who is interested in subject and makes it fun for children by making it relevant to them, talking about local geographical features etc.*

RoI, entry questionnaire

*A knowledge of the surrounding area of the school/community is needed as geography is all around us and should begin with the environment the children have experienced.*

NI, entry questionnaire

*Knowing the local environment and using that to allow children to understand what's going on globally. Always bring geography back to what they know.*

RoI, entry questionnaire

This idea of building on what children know was evident in a small number of concepts. While 17% of the students included ideas that suggest a learner centred approach i.e. making geography accessible to individual children, beginning with the existing knowledge of the child and providing opportunities for children's voices to be heard, the majority of those focused on the idea of accessibility (table 7.13). The perception that geography was complex and needed to be made 'more easily understood' was expressed by a significant number of students. The good teacher should be able to 'simplify complex ideas. Be in tune with standards of children'. The ability to make geography accessible to children was frequently linked to practical approaches and to teachers' abilities to explain well.

*Knowledgeable and enthusiastic. Ability to explain things clearly which some of the children may find difficult.*

NI, entry questionnaire

*Break the topics down to being very simple and bring the children into the field to help them understand.*

RoI, entry questionnaire

**Table 7.13: Learner centred for geography, on entry (%) (source: entry questionnaire)**

Learner Centred	NI (n=243)	RoI (n=871)	All (n=1114)
Accessibility	9	13	12
Constructivist	2	4	3
Children's voices	0	3	2

Conceptualising the good teacher in terms of what she/he should not do characterised the concepts of 8% of the overall group. Over reliance on textbooks, memorisation of lists of physical features and reducing geography to 'just sitting at a desk learning from a book' were the dominant practices students warned against. Again, as with history, this was more prevalent in the concepts of the students from the RoI than those from NI (9% and 5% respectively) and is consistent with the greater concern with textbook-based teaching evidenced in their remembered experiences (chapter 5).

*Doesn't constantly read out of the book.*

RoI, entry questionnaire

*Someone who doesn't just drum place names and mountain ranges etc. into kids - show them geography is useful and how it incorporates cultural as well as physical aspects.*

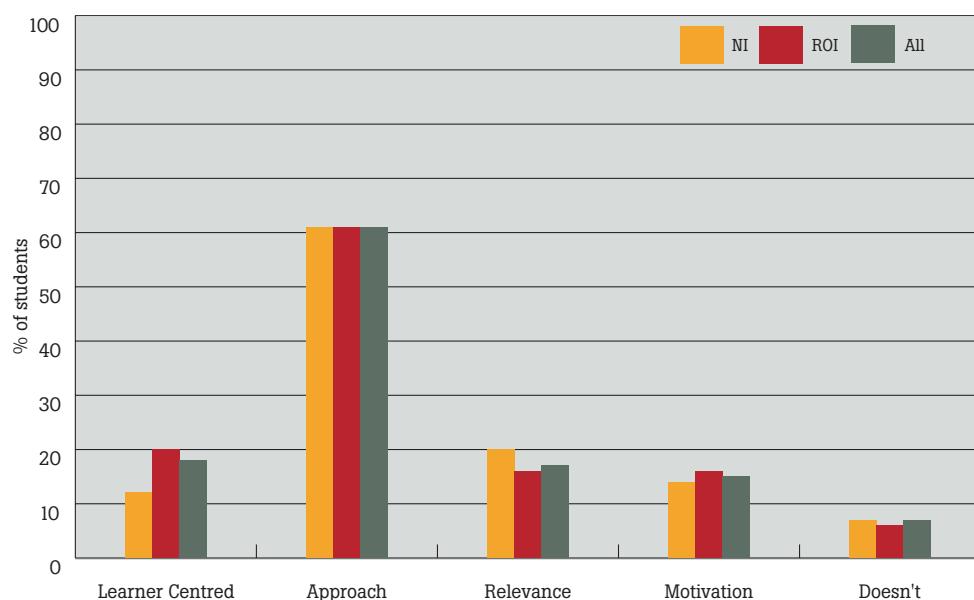
RoI, entry questionnaire

There is some tension evident in students' conceptions between their negative experiences of 'learning off' lists of physical features and their understanding of what geography is about. In many cases geography continues to be reduced to the memorisation of names and places except that this should be done in a 'fun' way. The good teacher is one who can 'think of easy ways to help the children remember the towns, rivers, mountains of Ireland'. In a small number of cases the idea of geography itself is problematised as in the idea of making geography class 'not geography'. As another student argued:

*How would children experience geography? Teachers should give a rough guide of what sort of things are to do with "geography".*

NI, entry questionnaire

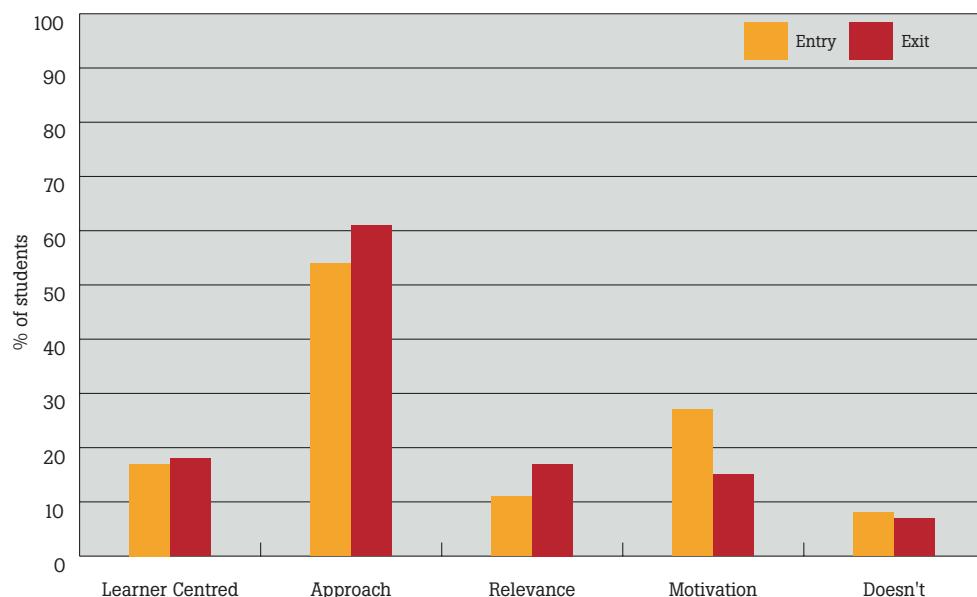
**Graph 7.13: Teaching and learning in geography, on exit (%) (Source: exit questionnaire)**



The concepts constructed by the cohort who completed the exit questionnaire (graph 7.13) shared many of the same features as the concepts of the entry group, most noticeably a preponderance of comment relating to teaching approaches and methodologies (61%). The idea that the good teacher should plan lessons that motivate and interest children was represented in 15% of the concepts while relevance was identified as a concern by 17 of the students. Students from NI showed a higher level of comment relating to relevance than their counterparts in the Republic (20% as opposed to 16%) while the reverse was the case in relation to the centrality of the learner, where one in five students from the RoI as opposed to 12% of students from NI made comments relating to accessibility, constructivism and children's voice.

As is evident from graph 7.14, some differences emerge between the entry and exit cohorts. However, as with history, the variation between the two cohorts that emerged within categories was more significant than any variation between categories. Like history, students in the exit cohort were less concerned with motivation, and there was marginally more comment on the centrality of the learner and a more substantial increase in the level of comment relating to teaching approaches. With the exception of the increased level of comment about relevance, the increases and decreases were similar in pattern to those found in history. The differences in relation to relevance are largely explained by the students' comments about the role of the local environment in geography, and the need to relate geography to children's lives and to current global issues.

**Graph 7.14: Teaching and learning in geography, on entry/exit (%)**  
 (Source: entry and exit questionnaires)



*Someone who makes connections for children to their daily lives, gives them opportunities to do own research, makes it relevant to them, doesn't follow textbook slavishly.*  
 NI, exit questionnaire

*Geography teacher needs to teach the children the current world issues - newspapers and news are useful sources of information - things that are happening now - good opportunity for a teacher to take - Tsunamis, Earthquakes, Inequality in Third World etc.*  
 RoI, exit questionnaire

Use of the local area and of the school surroundings was intimately tied in with ideas about child learning. Students identified the need to provide children with a context for wider global issues as well as recognising opportunities to 'start with what they know and then build the world around them' and the inherent constructivism of environment-based learning.

*Someone who focuses at first on the local environment of the child. Someone who then helps child to learn about the wider world, so s/he can appreciate and recognise their place within it.*  
 RoI, exit questionnaire

As table 7.14 indicates, explicit reference to constructivism or to constructivist-related ideas was more present amongst the exit cohort, as was a concern with providing children with opportunities to take control of their own learning and to give their opinions (children's voices). As with history, the idea that geography had to be made more accessible to children was less present, however, and was largely expressed in terms of the need to differentiate rather than in terms of any inherent difficulties with geography itself.

**Table 7.14: Learner centred for geography, on entry/exit (%)**  
 (Source: entry and exit questionnaire)

Learner Centred	Entry	Exit
Accessibility	12	5
Constructivism	3	8
Children's voices	2	7

*One who is aware of the spiral nature of the curriculum and uses it to their advantage by building on past experiences. One who allows investigation and discussion and recognises that geography is not simply physical but political.*

RoI, exit questionnaire

*Patience and excitement and an ability to take children through their development at their own pace, especially with the likes of maps.*

NI, exit questionnaire

*Confident in teaching it. Allows the children some ownership of the lessons - does not dominate the lesson, actively engages the children. Not afraid to try out new and fun methodologies that make learning more interesting. Engages the children in plenty of group work.*

RoI, exit questionnaire

As noted earlier, a substantial majority of respondents commented on the teaching approaches that good teachers should take, with 50% of the students overall and 83% of those who wrote about teaching approaches identifying methodologies and approaches that were active and participatory. The good teacher used approaches that were 'hands-on' and 'practical' and that involved children in investigation and experiential learning. While methods were still tied to motivation in some cases, in many others they were more closely associated with children's learning. There was some variation in this across the two exit cohorts with 54% of NI students and 49% of RoI students mentioning active approaches.

*A good geography teacher is someone who organises the different topics well. Someone who challenges the children to think. Someone who has devised good activities that are fun but also further the children's learning and deepening it.*

RoI, exit questionnaire

Fieldwork remained the most popular approach to geography but there was increased diversity in the range of activities and approaches mentioned such as the use of photographs, problem-based and enquiry-based learning.

*... someone who enjoys teaching geography and transfers this to the student. Use of resources, books, tapes, videos, maps etc and who uses the locality and school grounds as a base for geographical investigation.*

NI, exit questionnaire

**Table 7.15: Methods and activities in geography, on entry/exit (%)**  
**(Source: entry and exit questionnaires)**

Methods : Entry/Exit	Entry	Exit
Active learning (total)	39	50
Geographical investigation (total)	29	35
Fieldwork	21	21
Map activities	3	5

\*this includes all students who made general and specific comments about active learning

\*\*this includes all students who made general and specific comments about geographical investigation

As noted in relation to history, however, there was little mention of either the use of ICT or of providing children with opportunities for discussion, with only 13 students overall identifying ICT as an appropriate medium and 9 students including discussion as one of the ways in which children develop geographical understanding.

Some concern with what the good teacher of geography should not do was evident in the entry concepts. Focusing mainly on 'not just relying on textbooks' and 'not just learning of counties', good teachers were also warned against 'passive learning' and too much mapwork.

*To ensure that the content is relevant to their age and it's not just learning off facts, figures and places. Exploring different issues and countries as well as carrying out practical work.*  
RoI, exit questionnaire

*Someone who can make it lively. Primary geography can often be taught in a very passive 'learn it off my heart' way. The children need to be able to relate to the topics, apply them to their own area.*

NI, exit questionnaire

### Summary

The idea of the good teacher of geography constructed by students on entry is one who is knowledgeable about geography, competent in a range of key teaching skills and prepared to put time into preparation and planning. The good teacher is also a creative and resourceful person, with an interesting personality. Students identified teachers' own engagement with the subject as an important component of the characteristics of a good teacher while there was some concern with the ideas of cultural competence and environmental awareness. The exit cohort expressed many of the same ideas about teacher characteristics, but there was a significantly greater preoccupation with the teacher as competent professional who plans and resources her/his teaching and who is knowledgeable about geography and about global issues. Students on exit also placed a greater emphasis on teacher interest and enthusiasm and on the idea of the teacher as risk-taker, particularly in the context of fieldwork. There was little evidence, however, that either cultural competence or environmental awareness were seen as important components of the characteristics of the good teacher.

Like history, students' predisposition towards active and participatory learning on entry to initial teacher education was very evident. Again, like history, there was an evident connection between methodology and motivation, with active methods frequently justified in terms of child interest rather than child learning. There was some tendency, then, to see geography as problematic and needing to be rescued through the use of fun methods or through integration with other subjects. This tendency was far less marked in the exit cohort, where the ideas of geographical investigation and of using the child's locality for learning were very evident in a substantial number of responses. While fieldwork was the most frequently mentioned approach, there was evidence of a broader concept of geographical investigation that included the concept of enquiry-based learning.

### 7.4 What makes a good teacher of science?

*Uses a variety of media, makes learning fun and exciting, makes science understandable for children, gives children the chance to experiment and investigate for themselves.*  
NI, entry questionnaire

*I think that as a science teacher you have to allow the students plenty of scope to hypothesise, formulate their own ideas, make predictions and work in groups. A good science classroom would not be a particularly quiet classroom as the children should be engaged in discussion, carrying out experiments etc to clarify their own concepts or correct their misconceptions about certain areas.*

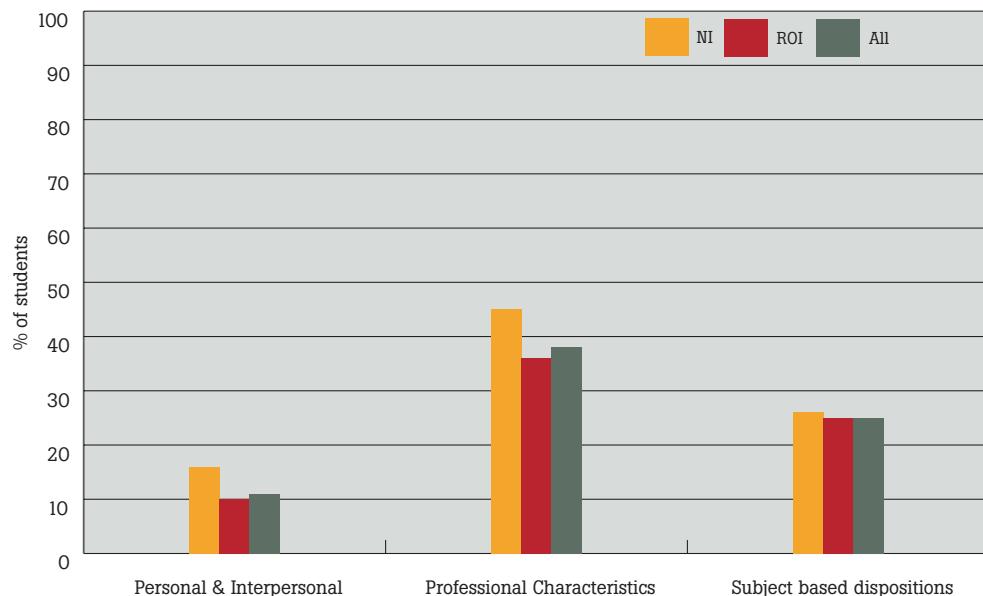
RoI, exit questionnaire

### What is the good teacher like?

In constructing their concepts of the good teacher of science, over half of the respondents (56%) made comments in relation to characteristics of the good teacher in terms of their personal

and interpersonal qualities, professional characteristics and dispositions towards the subject (graph 7.1). There was some variation by location, with a greater proportion of students from NI commenting on teacher characteristics than their counterparts in the RoI (63% and 54% respectively)

**Graph 7.15: Teacher characteristics for science, on entry (%) (source: entry questionnaire)**



As can be seen from graph 7.15, most of the comments related to the professional characteristics of the good teacher and the idea of the teacher as a skilled professional, who is knowledgeable, organised, well prepared and competent in a range of key teaching skills. Classroom management and organisational skills were particularly associated with doing experiments and practical work and creating a safe environment for children.

*A teacher who is well-organised and can manage the class when doing practicals in science, as this is probably the aspect of science primary school children would most enjoy.*  
NI, entry questionnaire

*An interested teacher that can explain things clearly to the children, has good control and discipline over children - as its practical they would get chatty.*  
RoI, entry questionnaire

*An interest; thorough knowledge of the subject good at instructing and aware of safety.*  
RoI, entry questionnaire

The suggestion that the good teacher should be especially skilled in explaining and communicating was noticeably more present in their concepts of the good science teacher than for either history or geography. Frequently linked to the notion of science as a difficult and complex subject, students saw the ability to explain clearly as a key skill for teachers. Good teachers of science were also seen as committed, confident and 'willing to put the effort in'.

*Being able to explain things clearly to your class. Being patient and understanding towards individuals who find it more difficult than others.*  
NI, entry questionnaire

*A teacher who explains everything as much as possible; a person that will not mock children for getting it wrong. A teacher who is willing to make science fun i.e. making models, looking at how things work etc.*

RoI, entry questionnaire

While just over one in ten students overall commented on personal and interpersonal qualities that the good teacher should have, there was a noticeable difference between the two cohorts, with students from NI making proportionately more observations (see table 7.16) in this category. In general, the good teacher was seen as an interesting, creative and resourceful person, who was patient, encouraging and lively.

*Science must be made fun and there is so much of it around. A fun, energetic and properly prepared teacher. Must know what he/she is on about.*

NI, entry questionnaire

*Knowledge about scientific things allowing the children to carry out the experiments, being patient with them yet very careful.*

RoI, entry questionnaire

Students also commented on the attitudes and dispositions that the good teacher of science should have towards the subject. He/she should be enthusiastic about science, interested in it and enjoy it. Some students identified a range of attitudes that the good teacher should have towards experiments. The good teacher should feel 'comfortable carrying out experiments' and like doing them. Moreover, he or she should 'not be afraid' to experiment in the classroom. The idea of the good teacher as a 'risk taker' was reflected in just over 7% of the concepts on entry and was typically expressed as the teacher being prepared to try something out or willing to allow certain kinds of activities such as experiments. As table 7.16 indicates, differences relating to the proportions of students in both cohorts identifying knowledge, preparation and skill at explaining largely explain the variations across the categories illustrated in graph 7.15.

**Table 7.16 Teacher characteristics for science, on entry (%) (Source: entry questionnaire)**

Key Ideas: Entry	NI (n=243)	RoI (n=871)	All (n=1114)
Positive Disposition	26	23	23
Teacher Knowledge	19	16	17
Preparation and planning	10	6	7
Risk taking	4	8	7
Good at explaining	10	7	7

Like the entry cohort, the constructions of the good teacher of science which the exit cohort created focused predominantly on the professional characteristics of the teacher (graph 7.16). Again the broad pattern was similar to the entry questionnaire, but there were definite shifts both across and within categories, as well as strong variations between the two exit cohorts (graphs 7.16 and 7.17 below). By the time student teachers were in the final year of their programme, over 60% of them saw professional characteristics around planning, preparation, competence, teaching skills and the capacity to organise practical lessons as central to the idea of the good teacher of science. Teachers should also be knowledgeable about science and about how children learn, and should value the role of practical experience in the construction of knowledge.

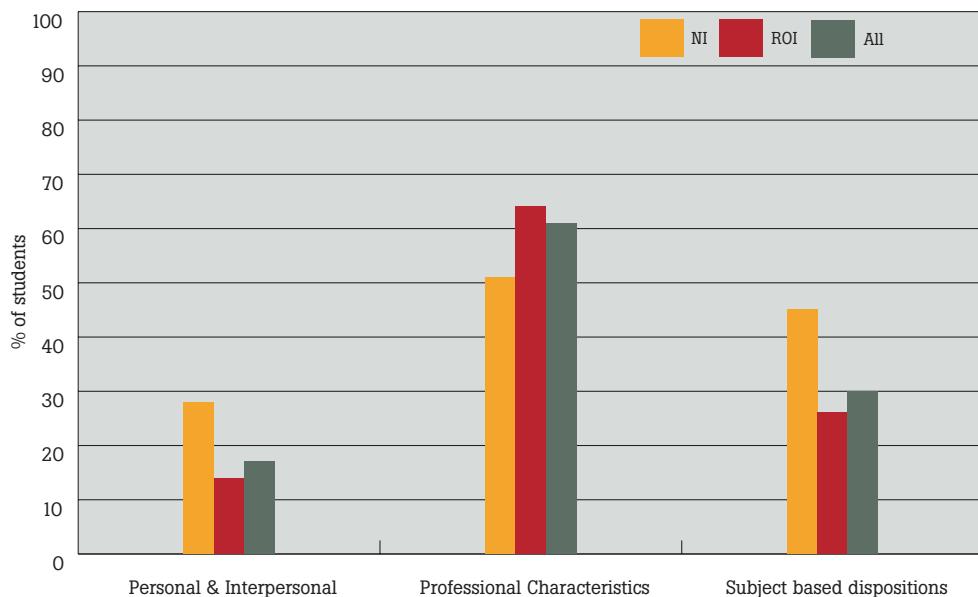
*One that values a hands on approach and engages the children in scientific thinking.*

RoI, exit questionnaire

*Willing to incorporate group work. Willing to allow exploration and experimentation. Sees value in the process itself (not just a textbook).*

RoI, exit questionnaire

**Graph 7.16: Teacher characteristics for science, on exit (%) (Source: exit questionnaire)**



The idea of the good teacher of science as a competent, knowledgeable and well-prepared professional was significantly more present in the concepts of the exit cohort than it was in the earlier data. As table 7.17 indicates, much of this was due to the high level of comment relating to preparation and planning found in the concepts of the students from the Republic of Ireland. This strong emphasis on planning, preparation and organisation is consistent with the data in history and geography and indicates a marked tendency in the data from the Republic.

*A teacher who is well equipped for every lesson and is always well planned and someone who allows the children to experiment and find out the answers to scientific questions instead of the teacher telling them.*

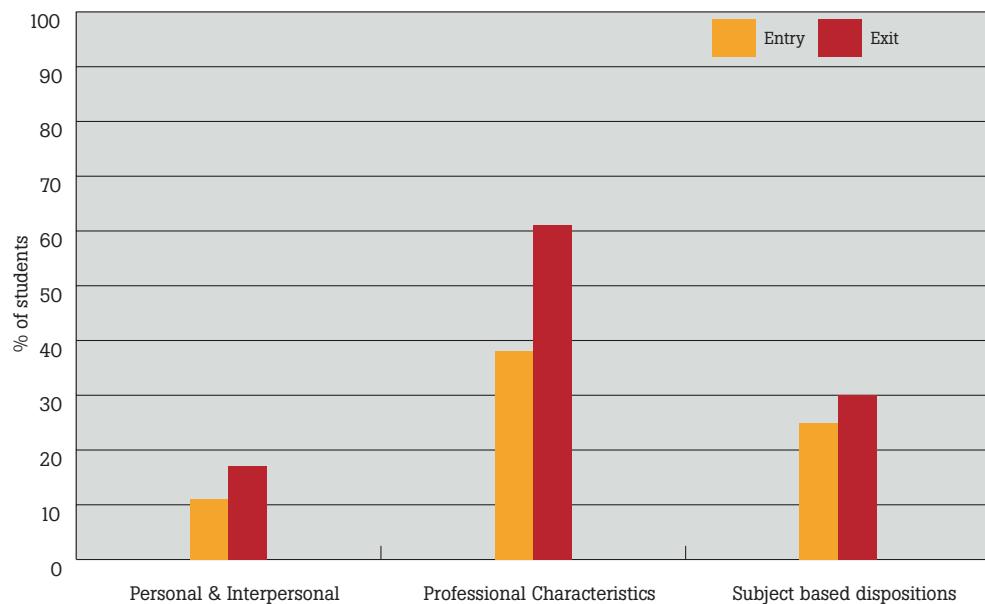
RoI, exit questionnaire

Graph 7.17 illustrates that, unlike the good teacher of history and geography, the concepts of the good teacher of science constructed by the exit group showed a greater emphasis on personal and interpersonal qualities than the equivalent data from the entry cohort (17% as opposed to 11% in the entry data). This was largely due to higher level of comment from the exit cohort relating to creativity and imagination which was particularly evident in the data from NI and indicates, perhaps, a particular influence in relation to ITE coursework (see chapter 1).

*Creative, flexible. Allows the class to be messy. Provide good practical activities, fieldwork.*

NI, exit questionnaire

**Graph 7.17: Teacher characteristics for science, on entry/exit (%)**  
**(Source: entry and exit questionnaire)**



In terms of the good teacher's attitude towards science, over one in five of the students overall indicated the importance of having positive attitudes towards science. As can be seen from table 7.17, this was particularly strong for the NI cohort. Respondents used a range of words to describe the attitude of the good teacher, such as interest, enthusiasm, passion, enjoyment and love. Good teachers should also have a 'desire to experiment', be 'comfortable' doing them, be 'willing to give the time needed for experiments' and 'not be afraid to let children do experiments'. The idea of risk taking in relation to experiments was strongly evident.

*Teaching with enthusiasm, making the subject exciting and relevant to the children.*

*Allowing the children to be involved in their own learning as much as possible.*

NI, exit questionnaire

*A teacher who is enthusiastic and very interested in attempting experiments with their class. The teacher should not worry about noise level but should have all children actively learning.*

RoI, exit questionnaire

*Need to be prepared to take risks and experiment. Can't be a perfectionist. If something doesn't work out then just try again.*

RoI, exit questionnaire

The concept of the good teacher as risk taker and innovator has been tracked across all three subjects and is most evident in relation to science. Comments relating to risk-taking were noticeably more evident in the concepts of the exit cohort, where almost one quarter of the respondents included an element of risk taking as part of their concepts. This belief that the good teacher of science should be 'not afraid of making a mess in the classroom', 'willing to work on a trial and error basis', 'willing to do lessons that may be noisy and messy' and 'not afraid to allow children to be scientists', is an interesting one, and includes the recognition that classroom investigations are not 'safe' in the same way as textbook work, that they require commitment in terms of preparation, that their outcomes are not always predictable and that they require teachers to cede control to children.

*Someone inquisitive, willing to try new things. Taking 'risks' in the classroom in science is necessary to make it more real for children.*

RoI, exit questionnaire

*Someone who is willing to allow the children to investigate for themselves - to motivate them to be hands on - not scared to try new things.*

NI, exit questionnaire

*A teacher who is prepared to experiment with ideas and concepts. A teacher who is not afraid to allow the children to be scientists and to conduct experiments for more informed learning. A teacher who is open to new ideas.*

RoI, exit questionnaire

As table 7.17 indicates, there were differences in the concepts of the two exit cohorts in terms of a range of key ideas. A higher proportion of students from NI wrote about teachers' positive attitudes towards science, about the need for teacher knowledge and about risk taking. One in three student teachers from NI made comments that indicate risk taking, while just over one fifth of their counterparts in the Republic indicated a similar tendency. The higher incidence in the NI data is mostly explained by the higher level of comment in relation to creativity as an essential element of the good teacher.

**Table 7.17: Teacher characteristics for science, on exit (%) (Source: exit questionnaire)**

Key Ideas: Exit	NI (n=173)	RoI (n=651)	All (n=824)
Positive Disposition	37	17	21
Teacher Knowledge	27	23	24
Preparation and planning	6	26	22
Risk taking	33	21	24
Good at explaining	0	3	2

As with the history and geography data, students from the RoI displayed a significantly greater concern with issues of preparation, planning and organisation than their NI counterparts, with over one in four students addressing these ideas in their concepts. The exit cohort from NI on the other hand indicated a lower level of concern in this area than the equivalent group in the entry cohort. As table 7.18 indicates, concern with teacher knowledge, preparation and risk-taking was considerably more evident in the concepts of the exit cohort by comparison with the entry group. The idea that good teachers need particular skill in explaining, however, was not very evident, suggesting that for the exit group science was not perceived to be as complex as it had been for the entry group.

**Table 7.18: Teacher characteristics for science, on entry/exit (%) (Source: entry and exit questionnaire)**

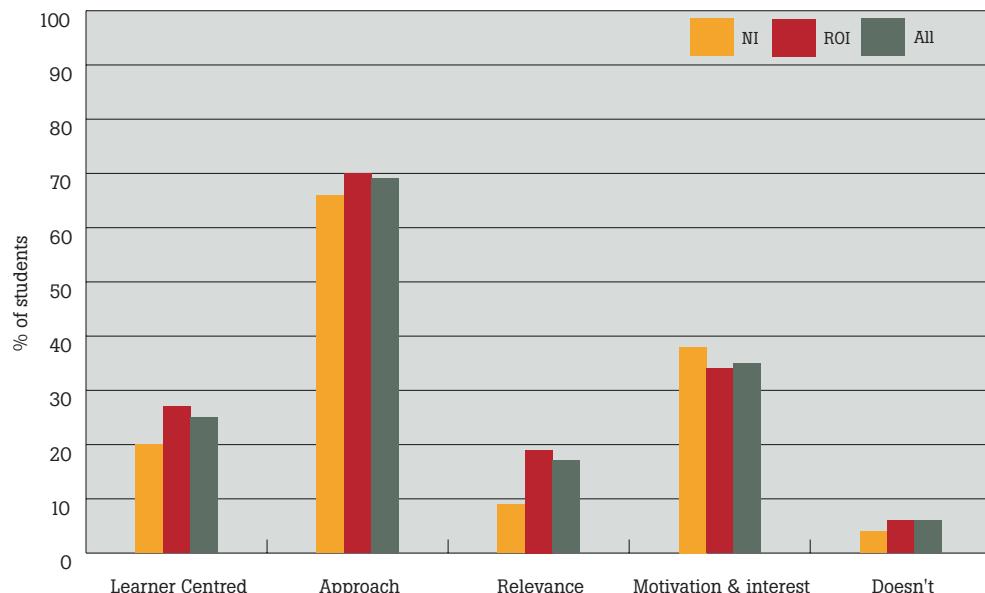
Key Ideas: Exit	Entry (n=1114)	Exit (n=824)
Positive Disposition	23	21
Teacher Knowledge	17	24
Preparation and planning	7	22
Risk taking	7	24
Good at explaining	7	2

#### **What does the good teacher of science do?**

In their concepts of the good teacher of science, the entry cohort wrote largely about the kind of teaching and learning environment that the good teacher should create. This is similar to the pattern for history and geography. Within that category, comments relating to teaching and

learning approaches predominated, with 69% of all students making at least one comment about the methods and approaches a good teacher should use. The idea that motivating and interesting children in science was important is reflected in the concepts of 35% of the total entry cohort, while 17% saw relevance as a key issue (see graph 7.18 below). This was the category with the greatest variance between the two entry cohorts with students from the ROI placing greater emphasis on relevance (19%) than students from NI (9%). One in four students overall identified aspects that suggest the centrality of the learner to the teaching and learning process. Again this varied between the two locations with 20% of students from NI and 27% of students from the ROI expressing such ideas. Finally, comments about what the good teacher should not do were present in the concepts of 6% of students overall.

**Graph 7.18: Teaching and learning for science, on entry (%) (Source: entry questionnaire)**



The high level of comment relating to teaching and learning approaches centred primarily on the idea of active learning, with 59% of students overall and 85% of those who wrote about teaching and learning approaches identifying active and participatory approaches. Most of those comments related to specific methodologies (as opposed to general terms such as active learning) centring on the idea of scientific investigation (40% of respondents) with 10% of respondents overall commenting on other methods such as teacher demonstrations, using visual aids and using examples. The most common single methodology was the experiment, which was mentioned by 36% of respondents. As table 7.19 indicates there was some variation across the two entry cohorts on this. While a small number of students wrote about the teacher demonstrating experiments, children's participation in experiments was the dominant model presented. Indeed comment relating to experiments and children's involvement in their own learning typically went hand in hand. As in the case of history and geography, however, less than 1% of respondents mentioned the use of ICT or discussion as possible methodologies.

*Using proper resources and letting the children experiment and find out things for themselves, teaching science in an interesting way and keeping the children active and exploring possible ideas.*

ROI, entry questionnaire

Some students indicated an appreciation of the social dimension of learning, commenting positively on groupwork and learning with others, while the idea of discovery learning and of

children 'finding things out for themselves' and investigating their own questions was evident in several concepts.

*I think this should be done in groups like when I was in school. I really enjoyed group work for different experiments, opinions, outcomes, theories, suggestions. Also projects are a good way of doing your own work.*

RoI, entry questionnaire

*Someone who will make science appealing and allow the children to offer ideas about the world or experiments and let them themselves discover the outcome rather than being told.*

NI, entry questionnaire

*Inquisitive nature. Get students to question the world around them; then create experiments to let them find the answers.*

RoI, entry questionnaire

**Table 7.19: Most frequently mentioned methods in science, on entry (%) (Source: entry questionnaire)**

Methods: Entry	NI (n=243)	RoI (n=871)	All (n=1114)
Active Learning*	59	59	59
Scientific Investigation (overall)**	38	42	40
Experiments	31	37	36
Fieldwork	2	3	3

\*this includes all students who made general and specific comments about active learning

\*\*this includes all students who made general and specific comments about geographical investigation

The centrality of the learner to teaching and learning was evident in over one in five of the students' concepts. As the quotes above illustrate, the idea of children actively constructing their own knowledge was apparent as an emerging idea in the concepts. While relatively few addressed this explicitly, it was, nonetheless, more directly addressed in science than in the equivalent data for history and geography, although geography evidenced a similar rate of comment. Students were also more concerned about accessibility in science than they were in the other two subjects. Students wrote about good teachers who could 'use language children can understand', and 'not assume everyone knows certain principles'. This concern with accessibility was linked to the idea of science as complex and to the notion of the good teacher as skilled at explaining difficult ideas.

*Someone who can explain to students in simple terms without using a lot of technical language to confuse the pupils. Someone who makes science exciting for everyone so they want to learn. Use outdoor to help explain plants/animals etc.*

NI, entry questionnaire

*Having an enthusiasm for what you are teaching, involving the children, giving them hands on experiences of the experiments and keep it simple for them, as science to me is very complicated.*

RoI, entry questionnaire

**Table 7.20: Learner centred for science, on entry (%) (Source: entry questionnaire)**

<b>Learner Centred: Entry</b>	<b>NI (n=243)</b>	<b>RoI (n=871)</b>	<b>All (n=1114)</b>
Accessible	14	21	19
Constructivism	3	3	3
Child's voice	5	6	5

Some students also addressed the idea of agency and of listening to children's voices, generally in the context of children's involvement in experiments. They indicated that the good teacher should provide opportunities for children to use their initiative and to take control of their own learning. As noted earlier, however, the idea that children and teachers should talk together about science was evident in only a few concepts.

*Someone who will make science appealing and allow the children to offer ideas about the world or experiments and let them themselves discover the outcome rather than being told.*  
NI, entry questionnaire

*Lots of practical work aiding the theory. Allowing primary students to be responsible for experiments.*  
RoI, entry questionnaire

Over a third of the respondents (35%) focused on the need for primary science to be 'fun', 'interesting' and 'exciting', particularly in relation to the perceived complexity of the subject. 'Hands on work', practical activities and experiments were generally seen as the way in which science could be made both interesting and fun for children. This echoes comments relating to both history and science where active methodologies were proposed as a way of motivating children. With science, however, there was less suggestion of any inherent boredom factor to be overcome and, as noted earlier, active learning approaches were also seen to contribute to children's learning.

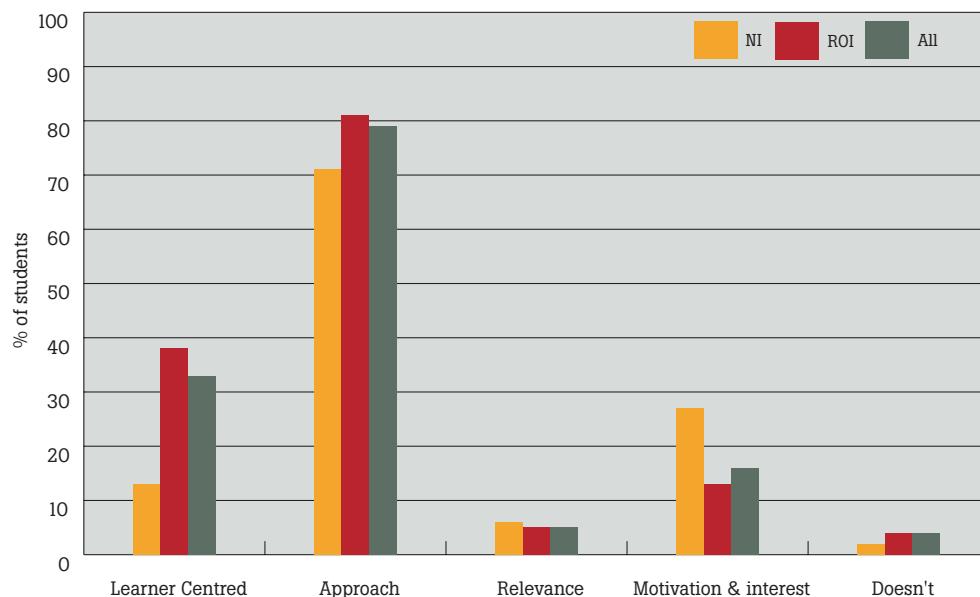
*The teacher has to make the learning fun and engaging as it can be a difficult subject at times. Use lots of hands on work for the children as it makes learning easier.*  
NI, entry questionnaire

*Need to have a good memory for all the knowledge; it can be boring so teachers need to 'spice it up', make it more appealing and hold attention span.*  
RoI, entry questionnaire

The idea that science should be made relevant to children and to children's lives was mentioned by 17% of the overall cohort. Variations between the two entry groups in relation to relevance are accounted for by the greater focus in the RoI on the need for teachers to create links between science and the everyday life of the child.

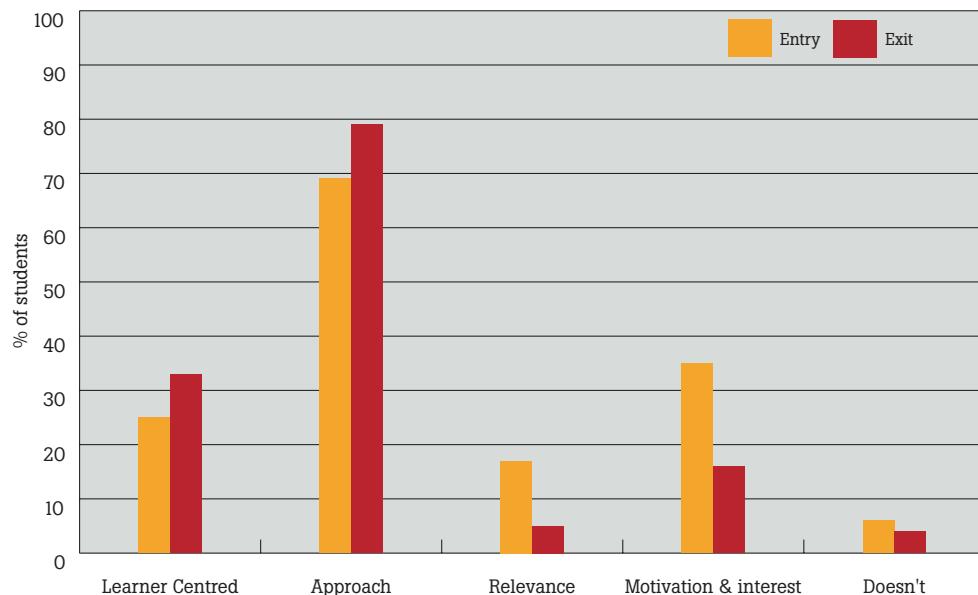
*Someone who makes science more relevant to kids in their every day lives-so they can relate to knowledge. I think people often dislike science because it seems too abstract and difficult to apply to ordinary life despite the fact that science is essential and is, in fact, all around us.*  
RoI, entry questionnaire

As with the other two subjects, several respondents included comments relating to what the good teacher of science should not do. These comments, which were more evident in the concepts from the Republic of Ireland, focused mainly on the need for science to be less theoretical and complex, and less text-book based.

**Graph 7.19: Teaching and learning for science, on exit (%) (Source: exit questionnaire)**

While the same five categories are evident in the data from the exit questionnaire (graph 7.19), there are significant differences in how comments are distributed across categories. Teaching approaches again dominate the responses, with 79% of students overall including comments in this area in their constructions of the good teacher. There was some variation across the two exit cohorts on this, with 81% of the respondents from the RoI as opposed to 71% of their counterparts in NI making comments in this category. There is a marked difference also in the proportion of students from each jurisdiction making comments relating to the motivation of learners, with 27% of the students from NI and 13% of students from the RoI making comments on motivation and interest, giving a 16% response overall. Students from NI, on the other hand, make significantly fewer comments relating to the centrality of the learner than their counterparts from the RoI (13% as opposed to 38%).

When the responses of the exit cohort are compared to those of the entry cohort a number of differences appear. First, there is a higher level of comment in relation to teaching approaches and the centrality of the learner evident in the exit groups and, second, comments in relation to relevance and motivation have considerably less presence in the concepts of the exit group than in the earlier data (see table 7.21 below).

**Graph 7.20: Teaching and learning, on entry/exit (%) (Source: entry and exit questionnaire)**

For several students, the idea that good teaching begins with the child's existing knowledge, experiences and ideas is extended to include a concern with children's misconceptions. Overall, the role of the teacher as facilitator and guide, who enables and supports children's learning, is evident in many of the concepts (see table 7.21 below). The idea of constructivism was substantially more present in the exit concepts than in those constructed by the entry group. However, of all constructs it appeared to be the most sensitive in relation to location in that the majority of explicit comments relating to constructivism in science were attributable to one college. For this reason, the overall percentage given for the presence of the theme of constructivism in the exit questionnaire conceals as much as it reveals. Despite this caveat, there was generally a greater representation of constructivist ideas evident in the exit concepts.

*I feel that it is someone who is not afraid to experiment with different topics. Science teaching must be active, working collaboratively and building on prior knowledge – constructivism.*

RoI, exit questionnaire

*One who engages children in investigations about different aspects of the curriculum, who approaches science in an active and enthusiastic way and who works to challenge children's misconceptions about different topics.*

RoI, exit questionnaire

*Someone that is particularly involved with developing science through the children's interests – starting from what they know and relating this to the world around them in an explorative and practical environment.*

NI, exit questionnaire

*Good knowledge of curriculum. Allows children to work out answers for themselves, to do practical work and use the skills specified in the curriculum. To be a support to students learning and to guide them to the right answers.*

RoI, exit questionnaire

**Table 7.21: Learner centred for science, on entry/exit (%) (Source: entry and exit questionnaires)**

Learner Centred: Entry/Exit	Entry (n=1114)	Exit (n=824)
Accessible	19	9
Constructivist	3	15
Children's voice	5	17

Concern with the accessibility of science, with its complexity and with its relevance were all indicated in the entry concepts, whereas in the exit questionnaire one finds less concern with all three. 5% of the exit group included ideas about relevance in their concepts, with no evident emphasis on any element, such as 'everyday life', as there was in the earlier data. The idea that the good teacher should make science learning interesting, stimulating and fun was present in 16% of concepts. As noted earlier this was predominantly a feature of the NI data.

*By making the subject fun and relevant to the children's lives. It is also important for the children to carry out the experiments themselves and develop their skills of observing, recording, analysing, etc.*

RoI, exit questionnaire

*Making the teaching and learning interactive and stimulating. Ability to catch attention of students and make science enjoyable.*

NI, exit questionnaire

As with the entry cohort, the preponderance of comments made by the students in relation to teaching and learning referred to teaching approaches. Again, like the earlier data, most of those comments referred to active methodologies, with 74% students overall and 93% of those who wrote about learning approaches making either general references to 'active learning', 'practical experiences' or 'discovery approaches' or referring to specific methods of scientific investigation such as experimentation.

*Someone who encourages investigative and exploratory learning, inspiring their pupils to develop their awareness and appreciation of the world around them. Also lots of practical and outdoors experience.*

NI, exit questionnaire

*One that facilitates open discussion and enables the children to guess how a problem can be solved, how to carry out experiments, present and discuss findings. 'Our guess' should always precede 'our result'.*

RoI, exit questionnaire

*Someone who is willing to use the constructivist approach - building on what the children already know and making science fun through practical methods of teaching and learning.*

RoI, exit questionnaire

Experiments were, once again, the most frequently mentioned method. There was, however, a marked difference in the proportion of respondents that mentioned scientific investigation other than through experiments on entry and exit (table 23). Explicit mentions of enquiry, research and project work were more prevalent in the responses of the exit group than in those of the entry group. What is again striking, however, is the virtual absence of comment in both entry and exit questionnaires on the use of ICT (13 comments i.e. less than 2%) and the infrequent mentions of discussion as part of science education. As table 7.22 indicates, there were also differences across the two exit cohorts, with students from the Republic more likely to mention experiments and other approaches to scientific investigation, apart from fieldwork, than their NI counterparts.

**Table 7.22: Methods in science, on exit (%) (Source: exit questionnaire)**

<b>Methods: Exit</b>	<b>NI (n=173)</b>	<b>RoI (n=651)</b>	<b>All (n=1114)</b>
Active Learning*	69	75	74
Scientific Investigation (overall)**	32	57	52
Experiments	23	39	35
Fieldwork	4	< 1	2
Investigations	13	24	21

\*this includes all students who made general and specific comments about active learning

\*\*this includes all students who made general and specific comments about geographical investigation

**Table 7.23: Methods in science, on entry/exit (%) (Source: entry and exit questionnaire)**

<b>Methods: Entry/Exit</b>	<b>Entry (n=1114)</b>	<b>Exit (n=824)</b>
Active Learning*	59	74
Scientific Investigation (overall)**	40	52
Experiments	36	35
Fieldwork	3	2
Investigations	4	21

\*this includes all students who made general and specific comments about active learning

\*\*this includes all students who made general and specific comments about geographical investigation

The percentage of respondents who indicated what the good teacher of science should not do also declined from 6% to 4% and, more interestingly, in view of the increased focus on child initiated and child led learning mentioned earlier, the focus of those comments changed from concerns with complexity and text book domination to concerns about overly didactic and directive teaching and some concern with textbooks.

*A teacher who allows the children to learn scientific concepts through experimentation and not just the teacher telling the children everything.*

RoI, exit questionnaire

*A teacher who allows children to explore and investigate scientific concepts independently rather than simply telling them how it is.*

NI, exit questionnaire

### Summary

On entry to initial teacher education, students' concepts of the good teacher of science prioritised professional qualities such as knowledge, organisational ability and preparation. As well as providing an organised and safe environment for experiments, good teachers of science needed to be good at explaining a subject that was seen as difficult and complex. The good teacher was seen as a creative and resourceful person who was enthusiastic about science and was positively disposed towards doing experiments with children. The idea of the teacher as risk-taker was very evident and associated with being prepared to do experiments and to accommodate the level of potential noise and 'mess' that that entailed. The exit cohort also prioritised teacher knowledge and placed an even greater emphasis on preparation and organisation which was seen as the key to good science teaching by many. The idea of the teacher as risk-taker was more evident in the exit data where again it was associated with doing experiments with children.

The idea of active learning and participatory approaches was strongly present in the concepts of the entry cohort, where emerging ideas around constructivism and child agency were also evident. Good teachers tried to make science accessible to children and used practical activities to make it enjoyable and fun. However, practical activities were also seen to contribute to

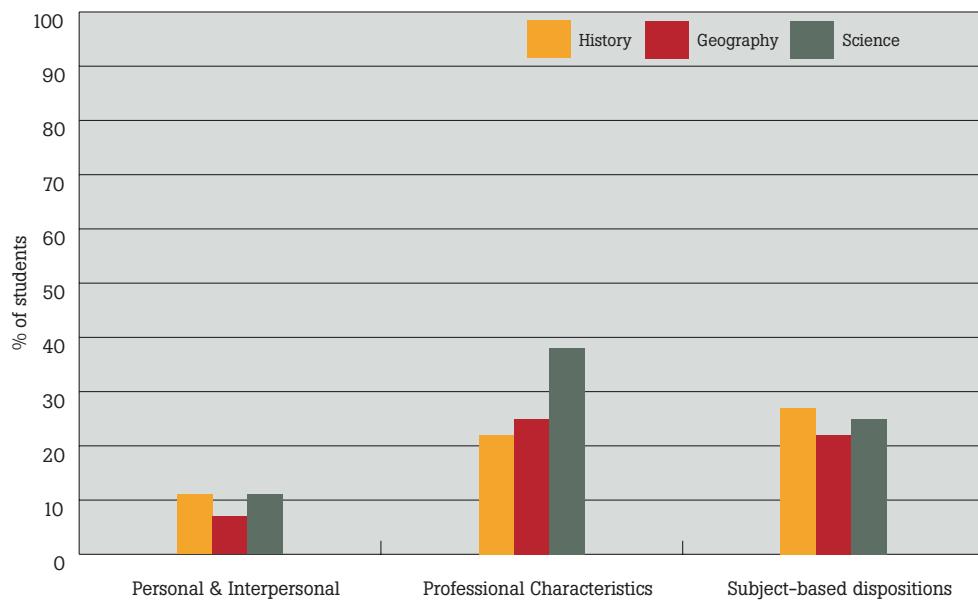
children's learning and to make science more easily understood. The concepts of the good teacher constructed by the exit cohort placed an even greater emphasis on active learning and on scientific investigation. Concern with accessibility was less apparent while constructivist approaches and child-initiated learning were very evident. Like in history and geography there was little explicit reference to children talking about science and virtually no mention of ICT.

### 7.5 Discussion and conclusion

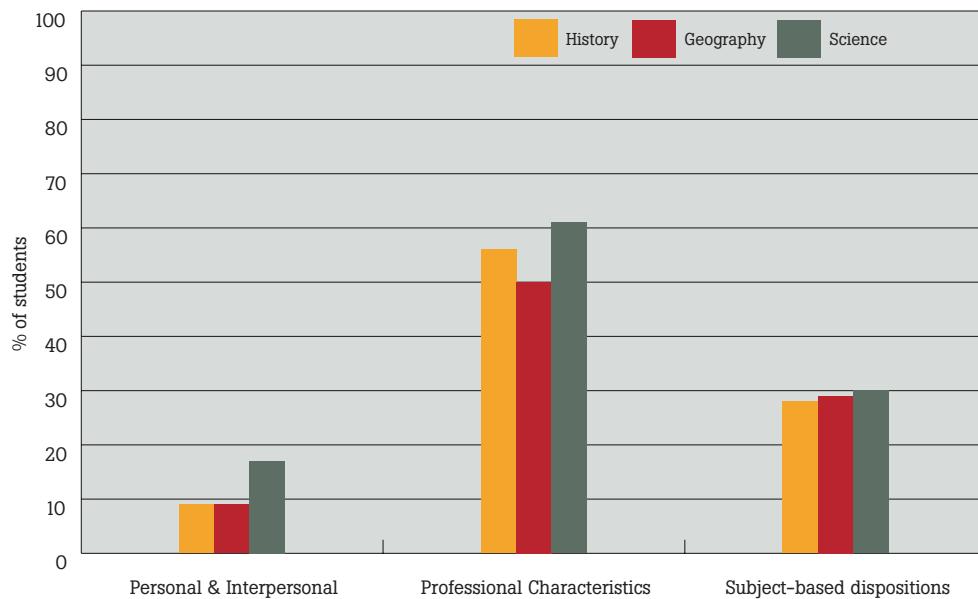
This study confirms the view that when student teachers begin their programmes in initial teacher education they bring with them strong images and beliefs about teaching and teachers. As was outlined in chapter 2, many studies have found those constructs to be remarkably robust and stable, giving rise to the view that teacher education itself has a relatively low impact on teacher identity in the medium to long term, and perhaps even in the short term (Fung, 2002; Virta, 2002). Even though, for reasons discussed earlier, this analysis of student teachers' constructs of the good teacher on entry to and exit from initial teacher education is constrained in its ability to show change over time, it does suggest a range of areas in which their constructs of the good teacher of history, geography and science show evidence of both continuity and change. It is also the case that, while the concepts for each subject are similar in many respects, there are variations between the subjects in the constructs of both the entry and exit cohorts that are revealing.

There are differences also between the students from NI and RoI in their constructions on entry and exit. Some of those differences have their roots in the contrasting experiences they bring with them to initial teacher education which were presented in chapter 5. Others, such as the greater number of NI students commenting on creativity in relation to science and on teacher knowledge generally, and the greater emphasis on preparation, planning and methodologies in the concepts of students from the RoI, may also be indicative of different emphases in teacher education courses in the NI and the RoI. Others still may be an artifact of the different settings in terms of time and place in which the student groups completed the questionnaires. In any case, their concepts have more in common than not, and the differences that have been suggested require further research.

As with the data on experiences, the majority of the comments focused on teaching and learning. The picture of what the good teacher was like in terms of teacher characteristics or qualities was fairly consistent across all three subjects in the entry questionnaire, though there were interesting differences that suggested the influence of their own experiences as learners (graph 7.21). Regardless of subject, student teachers on entry saw the good teacher as an interesting and fun person who was enthusiastic about the subject and enjoyed teaching it. She/he was knowledgeable and well prepared, organised and competent in a range of teaching skills. The good teacher would also be a risk taker, prepared to try new and innovative teaching methods, to be creative and 'think outside the box', and would not be afraid to bring children on fieldtrips or do experiments with them. Teacher enthusiasm and interest was given most weight in the case of history, whereas for science it was important that the teacher was organised and knowledgeable.

**Graph 7.21: Teacher characteristics, on entry, by subject (%) (Source: entry questionnaire)**

For the exit cohort, while it was still seen as important for the good teacher to be positively disposed towards the subject, the idea of professional competence was significantly more present in all three subjects. Good teachers needed to be knowledgeable and prepared to put time into planning, gathering and creating resources and organising. In the case of science, the creativity of the teacher was a significant factor, while the ability to organise groupwork, fieldwork and experiments was also important (graph 7.22).

**Graph 7.22: Teacher characteristics, on exit, by subject (%) (source: exit questionnaire)**

Risk taking has been recognized as an essential element of changing practice (Fullan & Hargreaves, 1991) and the idea of teacher as risk taker was evident in both the entry and exit questionnaires. The idea of risk taker in the students' concepts, however, is multi faceted.

While it includes the idea of creative and innovative practice, and a preparedness to embrace new ideas, it also implies that activities such as taking children on fieldtrips and organising experiments are inherently risky. This, in turn, suggests that such activities may be seen by some as discretionary and extraordinary practice, rather than as integral to good teaching across the three subjects.

The idea of the teacher as competent professional attracted substantially more comment from the exit cohort by comparison with the entry group. That the experience of teacher education should influence such ideas is, perhaps, to be expected. It had a notable presence also in the entry questionnaire, suggesting that student teachers had already formed views on the need for teachers to be prepared based on their own experiences. However the amount, range and the depth of comment was significantly greater in the exit concepts, supporting findings elsewhere that teacher education is the main source of beliefs in this area (Levin and He, 2008).

The construct of 'disposition' in teacher education in terms of its role, meaning and value is a contested one (Borko, Liston and Whitcomb, 2007; Diez, 2007). The student teachers in this study showed concern with dispositions such as interest, enthusiasm and concern for child understanding to varying degrees across the subjects in the entry and exit questionnaires and also in terms of their own experiences (see chapter 5). Concern with the dispositions of teachers has also been identified as a factor in children's experiences of schooling (Smyth, Dunne, McCoy and Darmody, 2006, p119). As indicated throughout this chapter, however, the relationship between students' ideas around dispositions, motivation and interest and child learning is sometimes tenuous.

The tendency for student teachers to equate 'interest' with learning has been noted (Holt-Reynolds, 1992), and the influence of ideas such as 'interest' and 'fun' on teaching approach and methodology has been noted elsewhere in this chapter. There is strong evidence, however, of a greater concern with child learning in the exit questionnaire and a move away from the idea of 'fun' and 'interest' as the dominant criteria in choice of methodology and approach. Dispositions such as a concern with the environment and cultural diversity fare less well, and while they were evident in the entry questionnaire as emergent concepts, there is scant evidence of them in the concepts of the exit group. The idea that the teacher should be knowledgeable about global issues was somewhat more present and several students mentioned the connection between the local and the global in relation to geography.

The majority of the comments made by students concerned aspects of teaching and learning. One of the most striking aspects of the study is the extent to which students came to college already predisposed towards active and participatory methods. As was evident also in the experiences, they have already decided in favour of active learning. Similarly, as discussed in chapter two, Skamp and Mueller (2001) found that on entry into teacher education programmes student teachers' constructs of good science teaching were premised on the ideas of 'hands-on' science and active learning. Their 'nagging inclination' that the students' exit constructs were no more elaborated than their initial ones is challenged to some extent by the findings of this study. Despite the absence of an explicit reference to constructivist principles in most of the concepts across all three subjects, it was strongly there in a significant minority. Even where constructivist thinking was not explicitly addressed, there was considerable evidence that the concept of 'active learning' and the idea of generic 'hands-on' activities had been replaced in a substantial number of concepts by disciplinary-based investigation – using evidence in the case of history, experimentation and scientific investigations in case of science, field trips and geographical investigations in the case of geography. In addition, terms such as enquiry-based learning and concepts such as child-initiated activities and children asking questions were visibly present in many concepts. There was a visible shift between the entry and exit questionnaires towards discipline-based enquiry, which suggests the impact of methodology courses premised on the ideas of the child as historian, geographer and scientist.

The dearth of comments relating to the use of ICT across the three subjects noted in chapter 5 was also a feature of the entry and exit concepts. Given the emphasis that colleges place on digital learning, this is a surprising finding and suggests some failure to integrate the use of ICT into specific subject areas. Relatively absent also was the idea of providing children with dialogic spaces within which to discuss their ideas in history, geography and science. While there was some evidence of this in the exit questionnaire, it was not very visible.

What was noticeable also, however, was a shift away from issues of relevance, except in the case of geography. The impact of the past on the present, the relationship between science and everyday life, society and culture had less presence in the exit questionnaire than in the entry one. Taken together with the relative absence of dispositions relating to cultural competence, environmental awareness and, except in a handful of cases, global justice, these silences suggest that college programmes have been more successful in developing students' pedagogical content knowledge (PCK) than they have in developing their sense of purpose. Yet a sense of purpose has been identified as a key determinant in whether or not a student teacher's PCK survives the transition from college to classroom (Barton and Levstik, 2004, p260). Enabling student teachers to develop and articulate a strong sense of purpose around their teaching in each of the areas, which will allow them to connect their pedagogical content knowledge with their goals, is one of the recommendations that emanates from this study. To a greater or lesser extent, teacher education courses already address issues relating to purpose. What this study suggests is that it would benefit from being addressed more explicitly in methodology courses in the future.

**About Shaun****Male student at a small college in the Republic of Ireland (Phase 2)**

Shaun was a male student in one of the smaller colleges in the Republic of Ireland. While he was not doing an academic subject in college as part of his BEd degree, he had courses in history, geography and science education in each year of his ITE programme. Shaun had decided to do the BEd degree in order to open doors to various opportunities. He was interested in teaching but he was also interested in working for a development agency and in living and working in places such as America, Canada and Tanzania.

During the interview Shaun talked a lot about the process of becoming a teacher. He felt that subject knowledge was important for primary teachers to a certain degree but he was not too worried about it. He felt that even achieving at Junior Certificate level gave a teacher '*the process of how to go about learning it, and the things you need to have to get that information across, to understand it in-depth.*'

He felt that once a teacher had studied a subject at this level then he or she could take the subject further as necessary. As he said: '*the fact that you know how, how it works, how you get the information yourself. Once you get an understanding of that, then I don't think it matters how much knowledge you have for specific things but that will come easily.*' Shaun wasn't too concerned about being caught out by the children. In any case, he thought that children loved it when they knew something that the teacher did not.

Although Shaun felt that teacher subject content knowledge was an issue, he felt confident that he would be able to work on it. He also felt that it was more important for ITE colleges to teach student teachers about different methodologies, especially as they had not experienced them at school themselves, by and large. He was happy about the way the college did this: '*We learn methodologies through using little bits of content. There's no sense in trying to do one without the other.*'

Shaun felt school placement undermined students teachers' confidence. This was for a number of reasons, but mainly because as a student teacher, he felt not '*qualified*' to teach. He also noted that not being in '*your own classroom*' was an issue, and that things would be different once he was.

Shaun felt that sometimes teaching subjects you did not like improved your attitude to them and he found that he liked teaching some of the subjects that he hadn't liked as a learner in school. He thought this might be because of the children's reactions and also because he was teaching them in different ways to what he had experienced in school. He thought that the school placements were too short and that this restricted the opportunities for children's learning. He looked forward to being able to do more thematic work over longer periods once he was teaching himself. He thought he would like to base a year's work on ecosystems as '*year-long projects can be used so effectively, as you can have one thing running through the whole year based around the three subjects.*'

Shaun reflected a number of times on how learning in schools had changed. When talking about his own experience he recalled that '*everything was based around rote learning, and that who was the cleverest class was the child that could rattle off the 32 counties ... in alphabetical order.*' He thought that today it was better as '*now you'd ask the kids the 32 counties and some of them won't be able to give them to you but they'd be more aware of what they're actually talking about.*' As he said, today there is '*all sorts of learning*'.

**Chapter 8****CONCLUSION AND RECOMMENDATIONS****8.1 Conclusion**

The idea that teacher educators should research their own practice is well established. Frequently conceptualised as 'self-study', and part of a wider conceptualisation of teacher education as reflective practice (Dinkelman, 2003), it has characteristically taken the form of small-scale qualitative enquiry into individual practice or into the practice of small groups of teacher educators. While self-study has been criticised for a perceived reluctance to engage with broader empirical research and public theory, its capacity to generate insight into the 'complex nature of teaching and learning about teaching' has been recognised (Loughran, 2007, p18). The research on which this report is based does not sit easily within the genre of self-study, yet it shares its focus on reflective practice and its commitment to promoting the dialectical relationship between research and practice which is part of what it means to be a teacher educator (Cochrane-Smith, 2005).

The limitations of this study were indicated in chapter 3. Mostly they revolved around the change in sample size over time which was inherent in the original decision that all colleges would participate in the study and that all students in the targeted population would be surveyed. Yet that decision has also been a great strength of the project, providing a wealth of data which is invaluable at college and course level and providing a collaborative and collegiate structure for engagement between teacher educators in history, geography and science in all of the ITE colleges in Ireland. The decision to include all three subjects in the research was also a fruitful one. While it increased the complexity and the demands of both data collection and analysis, it has allowed for a rich tapestry of experiences to emerge which revealed the synergies and connections between the three areas while allowing for particular subject-based issues to surface. While this report focused on the public theory of the study, there were also strong evaluative and reflective elements to the study on a college by college and course by course basis which have informed and will continue to inform planning and teaching within individual colleges. It is also the case, then, that this study shared the limitations of more small-scale practitioner research in that the research was conducted by teacher educators about their own practice (Borko, Whitcomb & Byrnes, 2008, p1029) with the intent of completing the cycle of planning, execution, fact-finding and reflection leading to social action and change envisaged by Lewin (1948).

Students' voices have been identified as offering alternative views to the 'taken-for-granted assumptions about practice' of teacher educators (Loughran, 2007, p17). In the design of this study, priority was given to providing opportunities for students to share their ideas, views and feelings about the process of ITE. This was done through a range of open-ended questions on the two questionnaires and by a series of focus group interviews with students at mid-programme stage. In seeking to gain greater understanding of how students were interacting with their history, geography and science courses in ITE, research into their prior experiences as learners and the perceptions of the subjects and of teachers that they were bringing with them to their courses seemed an obvious and essential step. While, as reported in chapter 4, quantitative data was collected relating to students' attitudes towards the subjects which revealed some interesting findings, opportunities were also given for hearing students' own voices through open-ended questions. What emerged was a complex and interrelated web of relationships between prior experience, school placement and ITE courses which was characterised by both stability and change (Nettle, 1998).

This study has provided insight into student teachers' knowledge base in history, geography and science on entry into teacher education as indicated by their level of terminal examination in each subject area. In general, student teachers who took part in the research entered ITE with a relatively high knowledge base in the three subject areas. Science fared best, with a

substantial majority of students beginning their BEd programmes with a qualification in at least one science subject at aged 17/18. History had the lowest proportion with just over one in five students taking history to this level. For geography, one in two students had studied it at post 15/16 level. As stated in chapter 4, the variations between the two cohorts (NI and RoI) are the inevitable consequence of the different requirements of two different education systems which means that RoI students take a wider range of subjects throughout their second level education. This has consequences in terms of the relative knowledge bases they bring with them into ITE, particularly in the areas of history and geography. It could also help explain the differences in attitudes towards the subjects which were evident from the questionnaire data. What is most significant in the data on attitudes, however, is the evidence that the majority of students were positively disposed towards history, geography and science on entry into ITE. Moreover, the attitudes of the exit cohort towards the subjects were even more positive than those of the entry cohort, while students themselves considered that their attitudes had grown more positive over the course of their programmes.

Student teachers enter ITE with a decade and a half of experience of the education system behind them – their ‘apprenticeship of observation’ so memorably conceptualised by Lortie (1975) – and with very definite views on what contributes to a positive learning environment and what does not. Consistent with research findings in other contexts (Smyth *et al*, 2004), for the students in this study, interested teachers and active and collaborative learning environments were at the base of most of their positive experiences, while boring, uninterested and authoritarian teachers coupled with passive book-based learning environments and / or pressure to ‘learn off’ vast amounts of content were generally at the root of their negative experiences. Having said that, there were differences between cohorts and across subjects that were revealing. While both NI and RoI students were critical of passive textbook-based learning environments, this was predominantly a characteristic of the negative experiences of the RoI cohort. Conversely, concern about the subjects themselves in terms of their boring or complex and difficult nature was more strongly a feature of the NI experiences. Both cohorts were critical of the amount of memorisation and rote learning associated with preparing for examinations, particularly in science. However, in general, such comments were more prevalent in the RoI cohort.

Perceptions of the subjects were influenced by the nature of the learning environment, the level of engagement of the teacher, their perceived complexity and interest, and the learning demands associated with them. Science as a subject attracted the highest level of positive and negative comment. Its association with active and participatory learning experiences, largely through experiments, and its capacity to explain the world, made it an attractive subject for many students. These positive aspects, however, were balanced by concern about its level of difficulty and the amount of memorisation involved. For some students, the unpredictability of experiments and their capacity to ‘go wrong’ was a source of worry in relation to the subject; for others it was the lack of opportunities to engage in experiments in the first place. This latter point was predominantly a characteristic of the RoI experiences.

The ambiguities in the attitudes of the NI entry cohort towards the subject of history identified in chapter 4 were echoed in their experiences. While overall their positive comments outweighed their negative ones and they emerged as marginally more positive and marginally less negative than the RoI cohort on a global level, when the data was broken down it became evident that there was an issue relating to subject perception. Negative comments relating to the subject of history were found in both sets of data but were more prevalent in the comments of the NI students, where the idea of history as boring and irrelevant was evident. It must be reiterated, however, that this was within a body of comments that were predominantly positive. However it does suggest that for a minority of NI students on entry to ITE the subject of history per se can be problematic. It was also the case that history attracted the highest level of negative comment relating to methods. This, however, was more evident in the RoI data, where

comments relating to overuse of textbooks and rote learning were common and the experience of learning history was frequently characterised as passive and boring.

Geography evidenced the highest number of students with only positive experiences, with almost one in three students indicating that they had no negative experiences as learners of geography. For both cohorts of students positive experiences of geography were generally associated with field trips and with enthusiastic and interesting teachers. Negative experiences, on the other hand, were more sensitive to location and echoed the patterns noted in both science and history. In the RoI, students were more likely to focus on how they were taught, citing once again such experiences as textbook-based classes and rote learning. A particular feature was the ‘learning off’ of physical features which was seen as characteristic of primary geography for a substantial number of RoI students. Students from the NI, on the other hand, were more likely to find the subject boring and/or difficult. Once again, however, there was significant overlap between the experiences of the two cohorts.

As outlined in chapter 6, students had a range of experiences on school placement. While students recorded both positive and negative experiences, the data suggests that school placement works well in providing students with the opportunity to build on and develop their pedagogical content knowledge, to experiment with methods and to gain experience in planning engaging and challenging learning experiences for children. The extent to which student teachers’ experiences on school placement were influenced positively by the satisfaction, enjoyment and affirmation they received from their interactions with children in the classroom is evident from the data. In some cases, this was because lessons they had planned and resourced resulted in obvious learning on the part of their classes; in other cases it was because they had managed to engage children in new ways of learning in an environment characterised by fun, enjoyment and interest. The positive experiences were almost wholly centred on the intimate relationship between teacher and class and between teacher and child.

The influence of others on students’ experiences was generally negative and revolved largely around their varied and sometimes contradictory expectations of the student. Where classroom experiences gave rise to negative experiences they were generally focused on problematic behaviour, inadequate resources and student teachers’ feelings of inadequacy in relation to their knowledge and expertise. These findings echo recent research into the motivation of early-career teachers in the Republic of Ireland, where student engagement in learning activities and student learning were found to be the main source of positive experiences for early-career teachers, while student behaviour and ‘third-party involvement’ contributed to their negative experiences [Kitching, Morgan & O’Leary, 2009].

There is a danger evident in the literature that when teacher educators address students’ perceptions, prior experiences and lay theories that they do so from a deficit perspective, seeing them as inherently problematic with little to offer to the students’ developing identities. However there was evidence in the concepts of the good teacher that student teachers began their ITE programmes with strong dispositions towards active and participatory learning approaches and stimulating learning environments and clearly articulated views on the characteristics of a good teacher. Many of these views were evident also in the concepts of the exit group, suggesting the stability of these constructs over time. Yet differences between the two sets of concepts were evident across the subjects, indicating, to a greater or lesser extent, the impact of ITE courses and school placement, and pointing towards possible areas of concern for future research and course development.

It is not surprising, perhaps, that the exit cohort emphasised the idea of the professionally competent teacher significantly more than the entry group. As indicated in chapter 2, the influence of ITE on students’ conceptions around planning and preparation has been found by others (Levin & He, 2008). The idea that the good teacher of history, geography and science

should be knowledgeable, well-prepared, organised and highly competent in key teaching skills was strongly represented in the exit concepts of the students. The concept of the good teacher as 'risk taker', which had been evident as an emergent concept in the entry cohort, was also more evident in the exit data, though this idea took a variety of forms. The association of fieldtrips and experiments with risk taking, for example, may be more symptomatic of their relative inexperience as student teachers in managing such approaches and their prior experiences as learners than indicative of a disposition towards curriculum innovation. Yet there is also evidence of a broader commitment to creativity, resourcefulness and an openness to new ways of teaching that suggests that the idea of risk taking might survive as part of their emerging identities as teachers.

The findings indicate that student teachers in the RoI and NI who participated in this study entered ITE with a strong commitment to active learning in general and towards participative and interactive learning environments. The concepts of the exit cohort evidence an even greater commitment to active and participatory approaches. More importantly, the idea of active learning itself was more elaborated than it had been on entry. There is evidence of a greater awareness of constructivist principles and of concern with child learning and differentiation.

The most obvious shift was in terms of the increased emphasis on discipline-based enquiry. Given that the students had participated in a range of courses focusing on methodology in each of the subject areas, this was, to some extent, predictable. Again this is consistent with findings elsewhere in relation to the relative impact of ITE courses on ideas about child learning and methodology (Levin & He, 2008). It was also accompanied by some interesting shifts in emphasis between the entry and the exit concepts that could be linked with changing attitudes towards the subjects noted earlier. Exit concepts showed a decreased concern with accessibility as an issue for children in relation to their understanding of history, geography and science; this was accompanied, however, by some evidence of concern with differentiation. There was also a decline in the proportion of students who commented on relevance (with the exception of geography) and on the need for motivation. In addition, there were fewer comments recounting what the good teacher should not do, although it remained a focus in a small number of concepts. The idea of integration as a means of making the subjects more interesting to children was also visibly less present, particularly in history.

All of these together suggest that as students became more familiar with different methods of teaching history, geography and science and with the primary curriculum in the three areas, they became less concerned with their difficulty, irrelevance or inherent boredom. The evidence also suggests a move away from a simplistic association between successful teaching and creating a 'fun' environment towards a more complex construction of the nature of child learning and its relationship with context, method and content.

Issues have emerged that indicate both the need for action on the part of teacher educators and the need for more research. First, the virtual absence of references to the role of ICT in teaching and learning across the three subjects and across the different data sets is worrying. It suggests in the first place that ICT did not form a memorable part of their experiences as learners of history, geography and science. More ominously, to the extent that only a handful mentioned it as part of their concepts of the good teacher on exit from ITE, it suggests that student teachers may not have viewed ICT as having a significant role to play in the teaching of the three subjects at primary level. Second, there was little mention of the role of discussion in promoting child learning in the three areas. Yet the provision of activity without a concurrent space for dialogue can descend into activity for activity's sake. While the idea of children talking about history, geography and science may have been implicit in their concepts of active and participatory approaches, the role of discussion in the development of children's thinking needs a more explicit focus.

Third, there was little evidence in their exit concepts to suggest that dispositions associated with cultural competence and environmental awareness were seen as relevant to good teaching in geography for the majority of participating students. Moreover there was even less evidence that ideas around citizenship, social justice and diversity are seen as relevant to the teaching of history and science. This suggests at the very least that teacher educators need to be more explicit in developing these ideas within their courses. It also suggests the absence of an underlying sense of purpose in relation to the three areas over and above the development of historical, geographical and scientific understanding in children. While not everyone may agree that such a sense of purpose is necessary, recent emphases on concepts such as intercultural education, development education, education for mutual understanding, citizenship education and human rights education in both jurisdictions would suggest otherwise.

There is also a need for further research into student teachers' understandings of key concepts such as integration, constructivism and on ideas such as child initiated learning and children's voice. Research is also needed into the impact of school setting on student teachers' capacities to draw on the pedagogical content knowledge (PCK) that they have encountered in courses when they are on school placement and on entry into the teaching profession at the end of their ITE. Teacher educators who are familiar with what newly qualified teachers have encountered in their ITE courses need to take the next step and see what happens to this PCK when graduates are faced with the realities of classroom life. What are the factors that support or inhibit newly qualified teachers in putting into practice the PCK they have acquired in their ITE? What can teacher educators do that they are not already doing to prepare their students for classroom practice? This study would also suggest that teacher educators in all the colleges have much to learn from each other, and that a programme of smaller qualitative enquiries into practice across and within colleges in the areas of history, geography and science would be a logical and fitting outcome of this current study.

This study has opened up a range of areas for development and research for teacher educators across the three subject areas. As noted earlier, there were elements of the study that have not been included in this report and have been used by the colleges to evaluate their own courses. Many of the recommendations arising from this study are specific to particular colleges and courses and therefore it would be inappropriate to include them here. Each partner institution is advised to examine the data from their own college in collaboration with course directors.

While reflective practice, critical review and ongoing development of courses are integral to the work of teacher educators, it is also the case that such development is sometimes dependent on wider structural changes that are outside of their control. With this in mind, and before the general recommendations arising from the study are outlined, the authors of this report would like to call for the implementation of the recommendation of the Republic of Ireland report Preparing Teachers for the 21st Century to extend the BEd programme in the RoI to four years to provide teacher educators with a realistic time frame within which to enable student teachers to engage with the complex and challenging world of children's learning.

## 8.2 Recommendations

These are the recommendations of this report:

### Recommendations for ITE:

- Restructuring of ITE programmes where necessary to ensure adequate time provision for history, science and geography education and to ensure a more balanced provision across the colleges
- Review of courses in each college in light of the findings to ensure the best balance between pedagogical content knowledge and subject knowledge, and between large

group lecture-based sessions and smaller group seminars to facilitate more discussion and activity-based sessions

- More collaboration in the larger colleges between academic departments offering courses in history, geography and science and the corresponding courses in history, geography and science in education.
- The development of a more robust model of integration that focuses on child learning and builds on and supports children's developing historical, geographical and scientific understanding
- The development of a more integrated approach to ICT within initial teacher education courses
- The development of piloted collaborative initiatives between ICT and history, geography and science education in ITE
- The review of courses to evaluate the visibility of ideas around global and local citizenship, diversity, social justice and environmental awareness, and to make closer connections between methodological approaches and wider goals e.g. education for democratic citizenship
- Increased provision of mandatory and elective courses in the areas of environmental education, education for diversity and education for sustainable development
- The development of protocols and practice around school placement that would support the closer alignment of the expectations of the class teachers, the college tutors and the student teachers.

### **Recommendations for Research**

- Development of a research programme of practitioner research across the colleges drawn from the findings of this study in areas such as student teachers' emerging understanding of key concepts and of the relationship between teaching approaches and child learning
- Research into the interaction between PCK and school and classroom setting with a view to identifying the factors that support or inhibit teachers in the implementation and development of the methodologies and approaches introduced during ITE.

### **Wider Recommendations**

- Development of induction programmes that would focus on classroom organisation and management to develop novice teachers' confidence in areas such as fieldwork in history, geography and science, and experiments in science and geography
- Provision of CPD for experienced teachers in curriculum approaches and children's historical, geographical and scientific understanding.

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**Appendix 1**  
**Phase 1: Questionnaire ('Entry questionnaire')**



Questionnaire on Experiences of and Attitudes to Science, History and Geography of BEd Students

Section A: Biographical information

**1. About you. Please circle as appropriate.**

I am...	Female	Male
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I am studying at...	St. Patrick's College, Drumcondra	Stranmillis University College, Belfast	Coláiste Mhuire, Dublin	CICE, Dublin
	Mary Immaculate College, Limerick	St. Mary's University College, Belfast	Froebel College, Dublin	

**2. Please indicate ALL qualifications that you have in Science, History and Geography.**

- Write the exact qualification titles e.g. Junior Certificate Science (Honours); Leaving Certificate Physics (Honours); A Level Human Biology; GCSE Science Double Award.
- If you are not sure that a qualification 'counts' as Science, History or Geography, e.g. Home Economics, write it down anyway.
- Please do not specify grades.
- If you have no qualifications in a subject, please write 'none'.

	Please write ALL LEVELS of qualifications you have.
Science	
History	
Geography	

**3. Your academic subject(s) on the first year of the B.Ed course.**

Students at CICE, Coláiste Mhuire and Froebel College should not answer this question.

My academic subject(s) in the first year is / are...		
--	--	--

Section B: Your experiences of Science, History and Geography as subjects at school.

Please give examples of your most positive and negative experiences.

- **Include experiences from primary and second level school if you can remember.**
- **You do not need to say whether the experiences were at primary or second level.**
- **If you cannot think of any examples, or you never studied the subject at school, please write 'none'.**

<b>Science at school</b>	
<b>Positive experiences</b>	<b>Negative experiences</b>

<b>History at school</b>	
<b>Positive experiences</b>	<b>Negative experiences</b>

Section B: Your experiences of Science, History and Geography as subjects at school (continued)

<b>Geography at school</b>	
<b>Positive experiences</b>	<b>Negative experiences</b>

Section C: Your attitudes towards Science, History and Geography as subjects.

For each statement circle a number that corresponds with how you feel.

N.B. 1 = you strongly AGREE with the statement;  
7 = you strongly DISAGREE with the statement.

	strongly AGREE							strongly DISAGREE	
		←							→
I like Science	<input type="radio"/>	1	2	3	4	5	6	7	<input type="radio"/>
I like History	<input type="radio"/>	1	2	3	4	5	6	7	<input type="radio"/>
I like Geography	<input type="radio"/>	1	2	3	4	5	6	7	<input type="radio"/>
I think Science is an important subject for Primary children	<input type="radio"/>	1	2	3	4	5	6	7	<input type="radio"/>
I think History is an important subject for Primary children	<input type="radio"/>	1	2	3	4	5	6	7	<input type="radio"/>
I think Geography is an important subject for Primary children	<input type="radio"/>	1	2	3	4	5	6	7	<input type="radio"/>

CHECK you have used number scale correctly

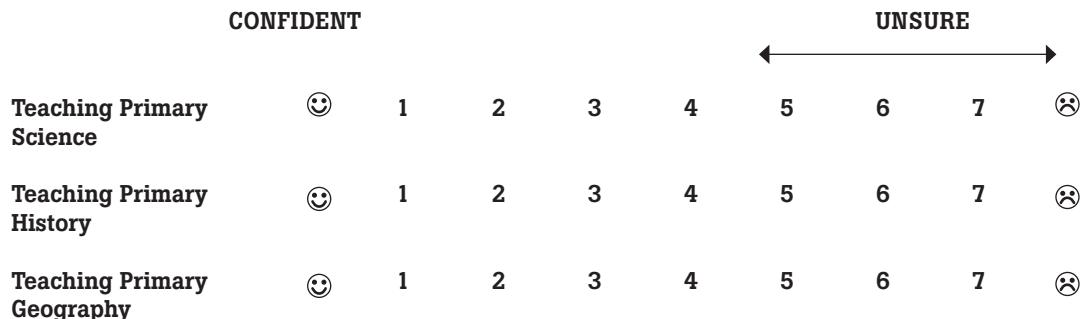
Section D: Your ideas about teaching Primary School Science, History and Geography

What do you think makes a good teacher of Primary Science?	
What do you think makes a good teacher of Primary History?	

What do you think makes  
a good teacher of  
Primary History?

For each subject, circle a number that corresponds to your current level of confidence about teaching the subject at Primary level.

N.B. 1 = you feel CONFIDENT about teaching the subject



CHECK you have used number scale correctly

- If you are willing to be interviewed as part of this research project, please write your name and student number here:

Thank you for taking the time to complete this questionnaire.

**Appendix 2****Phase 2: Interview Questions ('Interviews')**

Why did you decide to become a teacher?

What qualifications do you have in history, geography and science?

How important are qualifications in history, geography, and science for teaching these subjects at primary level?

What were your experiences of learning history, geography, and science at school?

In the survey, approximately 22% of student teachers were not confident about teaching history, 20% of student teachers were not confident about teaching geography, and 26% of student teachers were not confident about teaching science. Would this finding be reflected in your group?

In the survey, 27% of student teachers did not like history, 19% of student teachers did not like geography, and 22% of student teachers did not like science.

Would this finding be reflected in your group?

Do you prefer one subject over the other? Why?

How important is it to have a strong liking for the subject to teach it?

Have your experiences at this college changed your views about teaching history, geography, and science, since you arrived?

What are your experience of learning history, geography, and science at this college?

What have your experiences if teaching history, geography and science been in schools?

What do you think makes a good teacher?

**Appendix 3****Phase 3: Questionnaire ('Exit questionnaire')**

Questionnaire on Experiences of and Attitudes to Science, History and Geography of BEd Students

**About you**

*Please circle as appropriate*

<i>I am...</i>	Female	Male
<i>I am...</i>	A Mature Student	Not a Mature Student

<b>I am studying at...</b>	Mary Immaculate College	St. Mary's University College	<b>Coláiste Mhuire</b>	St. Patrick's College
	Church of Ireland College of Education	Stranmillis University College	Froebel College	

Your qualifications in science, history and geography:

→ ***Please write down your highest qualification in each of the subjects:***

Subject	Level ( <i>e.g. JC, LC, third level</i> )
<b>Science</b>	
<b>History</b>	
<b>Geography</b>	

Your academic subject:

*(Students at CICE, Coláiste Mhuire and Froebel College should not answer this question.)*

My academic subject is:	
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Your ideas about teaching Primary School Science, History and Geography:

→ Please write about what you think makes a good teacher of science, history and geography:

What do you think makes a good teacher of Primary Science?	
What do you think makes a good teacher of Primary History?	
What do you think makes a good teacher of Primary Geography?	

Your subject confidence

For each subject, circle a number that corresponds to your current level of confidence about teaching the subject at Primary level.

N.B. 1 = you feel CONFIDENT about teaching the subject; 7 = you feel UNSURE about teaching the subject.

		CONFIDENT				UNSURE			
Teaching Primary Science	😊	1	2	3	4	5	6	7	😢
Teaching Primary History	😊	1	2	3	4	5	6	7	😢
Teaching Primary Geography	😊	1	2	3	4	5	6	7	😢

What were your experiences of teaching these subjects on teaching practice?

→ ***Please give examples of your experiences of teaching science, history and geography during teaching practice over the past three years:***

Science on teaching practice	
What have been your most positive experiences?	What have been your most negative experiences?

