Qualifications and Curriculum Authority

National Foundation for Educational Research

INCA International Review of Curriculum and Assessment Frameworks Internet Archive

Dips in performance and motivation: a purely English perception?

dip *verb* **dips, dipping, dipped.**
1. to undergo a slight decline, especially temporarily
2. to slope downwards
3. to lower or be lowered briefly
4. a momentary sinking down.

Thematic Probe

September 2006

Whitby, K. and Lord, P.

With O'Donnell, S. and Grayson, H.

Contents

Executive Summary **1**
1. Introduction **3**
1.1 Methodology 4
1.1.1 Questionnaire 4
1.1.2 Document analysis and commentary 6
1.2 Monitoring of changes in performance 7
1.2.1 National assessment 7
1.2.2 International comparative tests 10
1.2.3 Specific academic studies 11
2. Findings from the questionnaire **12**
2.1 Dips in other countries 12
2.1.1 Countries/states where a dip occurs 12
2.1.2 Countries/states unsure whether a dip occurs 12
2.1.3 Countries where a dip does not occur 13
2.2 Stages when dips occur 15
2.2.1 Length of dip 15
2.2.2 Dips in the first year after transfer 16
2.2.3 Delayed dips after transfer 17
2.3 Students affected 18
2.3.1 Ethnic or social group 18
2.3.2 Gender 19
2.4 Subjects affected 19
2.4.1 Academic subjects 20
2.4.2 Languages 20
2.5 Factors causing dips 21
2.5.1 The effects of transfer from primary to secondary school 21
2.5.2 Teenage maturation issues 22
2.5.3 Examinations 23
2.5.4 Family background 23
2.5.5 School organisation 23
3. Document analysis and commentary on 'dips' in student performance **24**
3.1 Data collection and analysis 24
3.1.1 Analysis framework 25
3.2 The literature and research 25
3.2.1 Country 26
3.2.2 Type of literature/research 26
3.2.3 Foci and aims 27
3.3 Commentary on the documents 27
3.3.1 Supplementary themes to the dip phenomenon 28
3.4 Evidence for a dip in student performance 30
3.4.1 How much dip? 30
3.4.2 Monitoring of changes in performance 30
3.4.3 Stages when dips occur 32
3.4.4 Students affected 32
3.4.5 Subjects affected 33
3.5 Factors causing dips 34

3.5.1 The effect of transfer from primary to secondary school 34
3.5.2 Teenage maturation issues 35
3.5.3 Examinations 35
3.5.4 Family background 35
3.6 Solutions and recommendations to address the dip 35
3.6.1 Support from schools 36
3.6.2 Appropriate courses and curriculum 37
3.6.3 Teaching and learning 37
3.6.4 Support from parents 38
4. Conclusions 39
References 41
Appendix 1 Questionnaire 46
Appendix 2 Example framework 54

Front cover: definition of 'dip' adapted from *Collins English Dictionary & Thesaurus*, (1999). Harper Collins Publishers, Glasgow.

Acknowledgements

We would like to acknowledge the many people who helped with this study and express our particular thanks for the contributions of representatives from the 14 countries that responded to the questionnaire. We are also grateful to QCA for their support of this study, in particular: Dave Downes, Sue Horner, Tina Isaacs, Tom May, Kate Moorse, Tim Oates and David Pepper.

Executive Summary

This report looks at potential 'dips' in achievement and motivation at key stages of education in a range of countries, as identified by policy documentation, research reports, and responses to a questionnaire issued to contacts in a range of countries. Of the 14 countries/states responding to the questionnaire, nine suggested that there was a dip. Only in one country did the respondent state that dips did not occur at all. However none of the 14 were able to identify clear supportive evidence of the existence of a dip in performance in their country/state. This lack of evidence was specifically cited by four respondents, who went on to state that they were not sure whether a dip occurred in their country or not.

In both policy and research documentation, the dip phenomenon appears to cut across the international arena, although it is not described in all countries studied. What does seem to be consistent is that the middle years in general (after primary school; age 11-14) appear to constitute a phase in education where least progress is made by students. This middle year phase is also characterised by the period of transfer from primary to secondary education. Students go through a number of transfers and transitions during their education and each of these points appears to hold the potential for a dip in performance, particularly in relation to the traditional academic subjects.

The research analysed suggests that the risk of a dip following transfer to secondary school may be due to young people's experience of change, including teaching and learning styles, curriculum experiences, school organisation, and friendship and social circumstances. With these changes appears a decline in students' attitudes towards school and learning. The discontinuity between the primary and secondary phase of schooling might be associated with their declining attitudes, but also the mismatch between young people's expectations and what they actually experience in the next phase of schooling. A period of adjustment to these changes might be required at this time, when young people need to call on a range of new skills. However, it appears that the specific study of dips in achievement occurs less frequently than research into the broader issues of transfer, transition and motivation; subsequently more research is needed in this area.

1. Introduction

The Qualifications and Curriculum Authority (QCA) in England funds the International Review of Curriculum and Assessment Frameworks (INCA) Internet Archive (www.inca.org.uk), which is managed and updated by the Eurydice Unit at the National Foundation for Educational Research (NFER)[1]. QCA also funds the periodic production of linked thematic probes and thematic studies as additional services to the INCA contract.

QCA commissioned the NFER to conduct an international survey into the claimed phenomenon of the 'key stage 3 dip', that is a decrease in student performance during one specific phase of the education system in England.

Compulsory education in England is organised in four 'key stages' as shown in Figure 1 below.

Figure 1. Organisation of compulsory education (England)

Key stage	School years	Age range	Phase
Key stage 1	Years 1 and 2	Four/five*- to seven-year-olds	Primary
Key stage 2	Years 3, 4, 5 and 6	Seven- to 11-year-olds	Primary
Key stage 3	Years 7, 8 and 9	11- to 14-year-olds	Secondary
Key stage 4	Years 10 and 11	14- to 16-year-olds	Secondary

* Education is compulsory from the term after a child reaches the age of five. However, most children begin school in the reception class at age four.

Key stage 3 (11- to 14-year-olds) is the first stage of compulsory secondary education, with children leaving primary school at age 11 to enter secondary school.

[1] Eurydice is the information network on education in Europe. The Eurydice Unit at the NFER is the national Eurydice Unit for England, Wales and Northern Ireland. INCA provides descriptions of government policy on education in Australia, Canada, England, France, Germany, Hungary, Ireland, Italy, Japan, Korea, the Netherlands, New Zealand, Northern Ireland (forthcoming), Scotland, Singapore, Spain, Sweden, Switzerland, the USA and Wales.

Although there is no overall agreement on what may cause the key stage 3 dip in England, possible contributory factors are considered to be:

- the effects of transfer from primary to secondary school
- the new social and class groupings in which children find themselves
- teenage maturation issues
- curriculum change
- the perceived distance of the compulsory secondary school leaving examinations at age 16.

This report is split into four main parts. In this section the methodology is explained and the context of the education systems in the reported countries is briefly described in terms of the way they monitor changes in performance. In Section 2, findings from a questionnaire survey on dips in performance are reported. Section 3 provides analysis and commentary on literature related to dips, whilst Section 4 presents a summary of the key findings and a recommendation for further research into dips in performance at key stages of education.

1.1 Methodology

QCA were interested to learn if a phenomenon similar to the key stage 3 dip in England exists in other countries, either for children of a similar age range, at a similar place in the system, or at other stages in the system of education. To investigate this, questionnaires were sent to educational specialists in 29 countries and states. The questionnaire responses were supplemented by a rapid response document analysis of literature relevant to the field.

1.1.1 Questionnaire

In March 2006, NFER sent questionnaires to educational specialists in all countries represented on the INCA Internet Archive. The specialists were chosen because QCA (who fund INCA) and/or NFER (who manage and update INCA) have links with them (see also O'Donnell et al., 2006).

In those countries with a federal system of government (Australia, Canada, Germany and the USA), with the exception of Germany, the questionnaires were sent to specialists in individual states or provinces. Questionnaires were sent by email and responses were received from the following 14 countries/states:

- England
- Germany
- Ireland
- Italy
- Japan
- Kentucky (USA)*
- Queensland (Australia)*
- Saskatchewan (Canada)
- Scotland
- Spain
- Sweden
- Tasmania (Australia)
- Victoria (Australia)
- Wales.

The questionnaire requested information in relation to five main questions. Firstly, at what stage similar dips might have been identified, secondly how such changes in performance are monitored, thirdly if such dips affect some groups of students more than others, fourthly whether some school subjects are affected more than others, and finally whether specific factors in education systems have been identified as adversely affecting performance. Respondents were also asked to provide references to any literature published electronically in their country and in English which describes potentially similar phenomena. A full copy of the questionnaire is provided in Appendix 1.

* Although respondents in Kentucky (USA) and Queensland (Australia) were unable to complete the questionnaire, they have been included in this probe on the basis of additional data provided by email.

The responses were analysed using a computer assisted qualitative data analysis package and the results circulated to the participating countries/states for validation.

1.1.2 Document analysis and commentary

In order to inform and extend the questionnaire responses, an analysis and commentary on the documents identified by the country responses was conducted. This was further supplemented by a rapid response literature review, carried out by the NFER library. A rapid response review is a small scale literature review which, whilst striving to be systematic, is constrained by factors such as time and budget leading the finished review to be more of a scoping paper picking up key issues than a thorough and systematic review of the literature.

Search strategies were developed by using terms from relevant thesauri, in combination with free-text searching. The keywords used in the searches, together with brief descriptions of the databases searched, are outlined below, with (ft) used to denote free-text search terms. The retrieved results were limited only to those items published in or since 2000.

British Education Index (BEI)

BEI provides bibliographic references to 350 British and selected European English-language periodicals in the field of education and training, plus developing coverage of national report and conference literature.

#1 Performance Factors

#2 Developmental Continuity

#3 Student Adjustment

#4 Transfer Students

#5 Underachievement

#6 'key stage 3 dip' (ft).

Educational Resources Information Center (ERIC)

ERIC is the largest education database in the world, with records from 1966 and over one million abstracts on educational research and practice. ERIC indexes over 775

journals, mostly American, and provides good coverage of fugitive and grey literature, such as conference proceedings, speeches, theses and technical reports.

#1 Performance Factors

#2 Developmental Continuity

#3 Student Adjustment

#4 Transfer Students

#5 Underachievement.

Australian Education Index (AEI)

AEI indexes materials at all levels of education and related fields, dating from 1978 onwards. Source documents include journal articles, monographs, research reports, theses, conference papers, legislation, parliamentary debates and newspaper articles.

#1 Performance Factors

#2 Developmental Continuity

#3 Student Adjustment

#4 Transfer Students

#5 Underachievement.

1.2 Monitoring of changes in performance

When asked how changes in performance are monitored in their country/state, respondents from Queensland (Australia) and Wales stated that student performance is not monitored in a way that would identify changes. Of the respondents from countries/states confirming the existence of such monitoring, however, three main methods were identified: national assessment; international comparative tests; and specific academic studies.

1.2.1 National assessment

In England, dips in performance at key stage 3 can be measured by the statutory system of assessment. Children are tested towards the end of key stage 2 (primary education, aged around 11) by statutory external national tests in English, mathematics and science and by teacher assessment in these subjects. At this time children are expected to reach level 4 on the National Curriculum eight-level scale. The next compulsory statutory tests in English, mathematics and science take place

towards the end of key stage 3 (students aged around 14), when it is also a statutory requirement for teachers to assess students in all compulsory subjects of the National Curriculum. Students are then expected to be performing at levels 5 and 6.

National assessment in other countries does not currently appear to be as systematic or as rigorous as in England. Although systems of national assessment were identified as being used to monitor changes in performance in seven other countries/states – Germany, Ireland, Japan, Spain, Sweden, Tasmania and Victoria (Australia) – this was often in a subtly different way to the situation in England. Additionally, in a number of cases this assessment is undergoing reform.

In Australia, all State and Territory school authorities conduct their own annual literacy and numeracy tests. The main purpose and function of such testing is to monitor student performance against the State or Territory curriculum and across the full range of student ability. National benchmark achievement data is later derived from these results. Students are tested in Years 3, 5 and 7 (ages eight-nine, 10-11, and 12-13 respectively). There are also tests in Year 9 (age 14-15) in Tasmania and Victoria. The benchmarks enable States and Territories to report aggregate student achievement data against common standards (Australian Government, 2006). Literacy and numeracy benchmark results are published by State, Territory and Australian Government Education Ministers in the annual National Report on Schooling in Australia which is available from the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) website http://www.mceetya.edu.au/mceetya/.

Tasmania (Australia) has recently introduced assessment for students in Kindergarten (four-year-olds) to Year 10 (15-16-year-olds), using the same calibrated assessment framework. All students in (publicly funded) government schools have their assessment results entered into a central database enabling analysis of achievement with a view to assisting planning and resourcing. These assessment results are entered twice each year for the compulsory years of schooling. However, the system has only been in place since the start of the 2005 academic year (January) and is currently in a transfer phase – only three areas were required to be reported on in 2005: 'being

literate', 'being numerate' and 'maintaining wellbeing'. Further key elements will be added in 2006 and in the following years, until full reporting is achieved by 2009.

In Ireland, national assessments focus on English (reading), Irish (reading and oral language), and mathematics, although the Educational Research Centre (ERC) – the body responsible for monitoring the outcomes of education in the Republic of Ireland – plans to extend the range of assessments to include other areas of the curriculum in future years. There are also plans to make the standardised testing of students a requirement from September 2006 (Department of Education and Science, 2004).

In Italy, the national evaluation service is currently piloting a national survey of learning, an assessment which will enable comparisons of student performance at particular stages of schooling. The survey will take place in Italian, mathematics and science, in Years 2 (ages seven-eight), 4 (ages nine-10), 6 (ages 11-12), 9 (ages 14-15) and 11 (ages 16-17), where Year 6 is the first year of lower secondary education and Year 9 the first year of upper secondary education. However, initially the assessment will be compulsory only in the primary and middle phase (Years 2, 4 and 6).

1.2.1.1 National assessment based on samples

In some countries, although national assessment exists per se, such testing is based only on a sample of students. This is the case in Germany, Japan, Scotland and Spain.

In Germany, national performance comparisons include the German-English Student Performance International (*Deutsch-Englisch-Schülerleistungen-International* – DESI), which was carried out on behalf of the Standing Conference of the Ministers of Education and Cultural Affairs during the period 2001-2005 by a consortium coordinated by the German Institute for International Education Research (*Deutsches Institut für Internationale Pädagogische Forschung* – DIPF). The aim of this evaluation was to make available basic information regarding the performance of students in Grade 9 (aged 14-15) in English and German (Eurybase, 2004).

In Japan there is a system of nationwide scholastic achievement tests (*Kyoikukatei-jishijoukyochosa*), taken by a sample of students, which evaluate performance by grade/year. *Kyoikukatei-jishijoukyochosa* assesses students in Years 5 to 9 (ages 10-15) in five subjects: Japanese, English (Years 7 to 9), mathematics, science and social studies. The assessment also includes questionnaires to students and to teachers. The most recent *Kyoikukatei-jishijoukyochosa* was conducted in 2004; around 450,000 students participated.

In Scotland, the Scottish Survey of Achievement (SSA) was introduced in 2005. The SSA monitors attainment of a representative sample of school students in the 3rd, 5th and 7th Year of primary school (ages seven-eight, nine-10 and 11-12 respectively) and the 2nd Year of secondary school (age 13-14). Currently SSA covers the English language (2005) and social subjects (enquiry skills) (2006). It will also cover science (2007) and mathematics (2008). The core skills of literacy, numeracy, ICT, problem solving and working with others are also assessed in these subject contexts.

In Spain, the *Instituto de Evaluación*, which is part of the Ministry of Education, carries out periodic national assessments of the Spanish education system. Based on samples, data from this assessment is published every two years. There are also plans to introduce general diagnostic evaluations with a view to obtaining representative data both on students and on educational establishments. These evaluations will focus on basic competencies and will be conducted at the end of the second cycle of primary education (Year 4, 10-year-olds) and at the end of the second year of lower secondary education (Year 8, 14-year-olds).

1.2.2 International comparative tests

A number of respondents identified that their country/state uses international comparative tests to monitor changes in student performance. This included Germany, Italy, Saskatchewan (Canada), Scotland, Spain and Sweden. The tests most frequently referred to were the OECD Programme for International Student Assessment (PISA), and the IEA studies Progress in International Reading Literacy Study (PIRLS) and the Third International Mathematics and Science Study (TIMSS). These are used in various ways to monitor change. For example, in Germany, the results are used for the

purpose of internal comparison between the federal states (*Länder*) and for the possible revision of educational standards; whilst in Italy they are used to identify the 'critical points' within the Italian school system.

1.2.3 Specific academic studies

In two countries, respondents provided information about specific academic studies to monitor changes in student performance. In England, research has made use of results from optional tests and tasks set by QCA. Other research has administered commercial tests or specially developed tests to measure performance at several points across the course of a sample of students' school careers. Methods involving psychometric questionnaires, interviews and ethnographic observation have also been employed in research studies on transition and transfer. Whilst in Ireland, the National Council for Curriculum and Assessment (NCCA) commissioned the Economic and Social Research Institute (ESRI) to carry out a longitudinal study of 900 students from 12 schools in the junior cycle (early secondary) stage of post-primary education (12- to 15-year-olds).

2. Findings from the questionnaire

2.1 Dips in other countries

In nine countries/states, respondents suggested that there was a dip. Only in one country did the respondent state that dips did not occur at all. Yet none of the questionnaire respondents from the fourteen countries/states were able to identify clear supportive evidence of the existence of a dip in performance at key stages of education in their country/state. This lack of evidence was specifically cited by four of the respondents who went on to state that they were not sure whether a dip occurred in their country or not.

2.1.1 Countries/states where a dip occurs

England, Germany, Ireland, Italy, Kentucky (USA), Scotland, Spain, Tasmania (Australia) and Wales all identified a dip or decrease in student performance during specific phases of the education system. The details of this dip are discussed further below. However, it is worth emphasising at this point that, within these countries/states, there was some concern demonstrated by respondents about the nature of the dip. In Kentucky (USA), for example, the respondent stated:

> *I think there is general agreement that performance does dip in what we call the middle level (Grades 6, 7, 8. ages 11 through 14). I even experienced that with all three of my own daughters. I, like most, have no support for my beliefs other than personal experience.*

Whilst the respondent from Tasmania highlighted that, although a dip has been identified, this is still an under-researched area and an initial analysis on a dip in performance has only recently been completed.

2.1.2 Countries/states unsure whether a dip occurs

In four countries, respondents to the questionnaire felt either that they personally did not have enough information in evidence of a dip, or that data was not collected in a way to support the identification of a dip in performance at key stages of education

(see Section 1.2). These respondents therefore declined to opine whether a dip existed in their country/state. Respondents from Queensland (Australia), Saskatchewan (Canada), Sweden and Victoria (Australia) were all unsure whether a dip occurred in their education system. Queensland and Victoria (Australia) felt that there was not enough data to identify the existence of a dip. Similarly, the respondent from Saskatchewan (Canada) felt that there was insufficient information to identify dips in performance, stating that there are '*no obvious findings to suggest that one particular grade level is not performing as well as a different grade level*'. The questionnaire response from Sweden also reported a lack of appropriate data to identify a dip. However the respondent did report a dip in performance between TIMSS 1995 and 2003 (see Section 1.2.2).

2.1.3 Countries where a dip does not occur

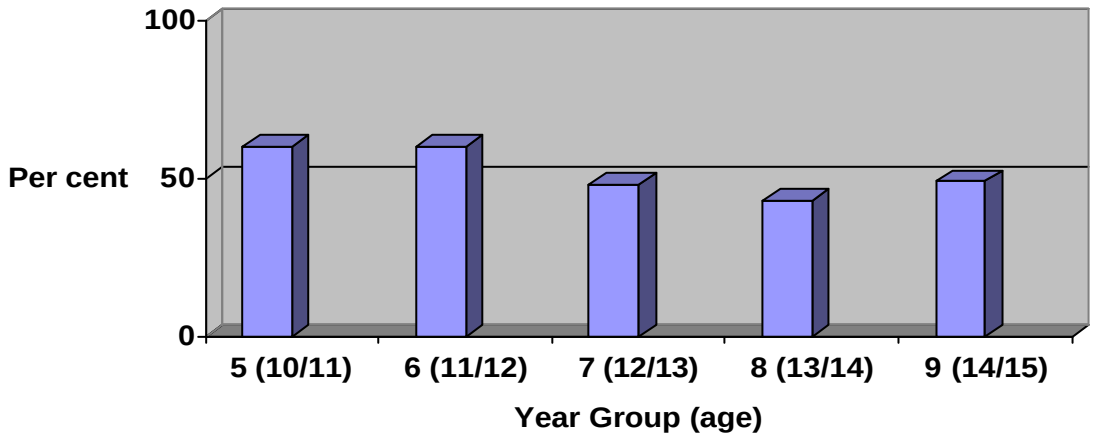
Japan was the only country which reported that dips in performance do not occur in the education system. Although there is no formal national system of assessment during compulsory education in Japan, there is a nationwide scholastic achievement test (*Kyoikukatei-jishijoukyochosa*). Whilst it appeared on first sight that the data hinted at dips, the Japanese expert who responded to the questionnaire identified that the most recent *Kyoikukatei-jishijoukyochosa* (conducted in 2004) did not reveal any dips in performance. For each subject, exam papers are graded 'beyond expected level', 'expected level' and 'below expected level'. As shown in Figure 2, the 2004 results revealed a variation between the year groups achieving the most 'below expected level' results, suggesting that there is no identifiable dip in performance. It is interesting to note however, that Year 7 (the first year after transfer) achieved most 'below expected level' results in mathematics and science – subjects commonly associated with a dip in performance (see Section 2.4.1).

Figure 2: Year group receiving most 'below expected level' results by subject (Japan)

Subject	Year Group (age)
Japanese	Year 6 (10/11)
Social Studies	Year 9 (11/12)
Mathematics	Year 7 (12/13)
Science	Year 7 (12/13)
English	Year 9 (14/15)

As part of *Kyoikukatei-jishijoukyochosa*, students were also asked how confident they felt in class, a subjective measure unique among the countries responding to the questionnaire. Responses to this question were further cited as evidence of there not being an identifiable dip in performance in Japan. Students were asked to rate their levels of understanding on a five point scale, and in all year groups a high proportion of students said they had a good or very good level of understanding; specifically around 60 per cent in Years 5 and 6 (age 10-12 years), 48.1 per cent for Year 7 students (aged 12-13 years), 43.4 per cent for Year 8 and 49.4 per cent for Year 9 (14-15 years) (Figure 3).

Figure 3: Percentage of students who believed they had a good level of understanding in class (Japan)



Source: Summary of 2004 Scholastic Achievement Tests, April 2005

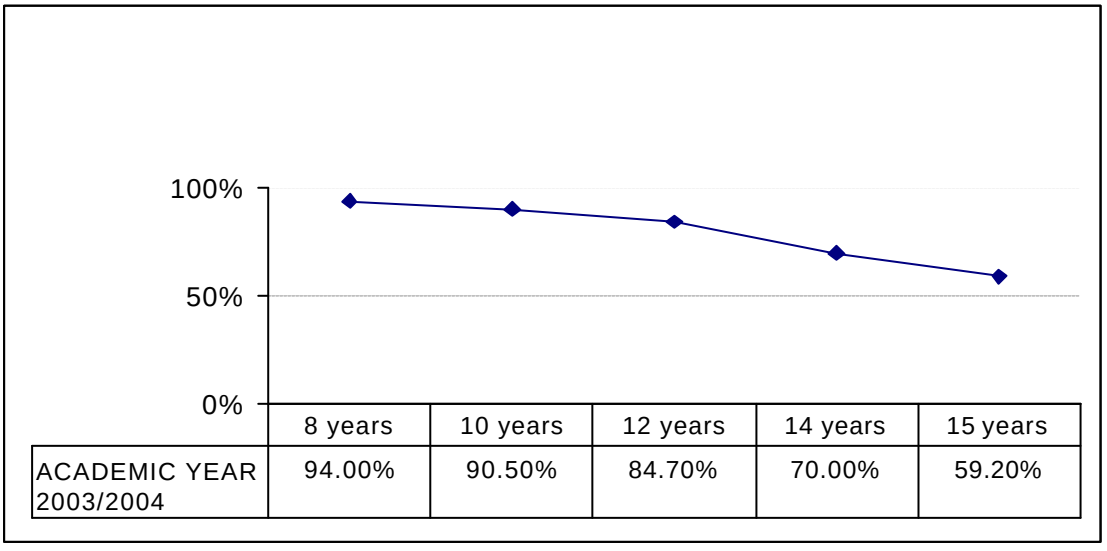
2.2 Stages when dips occur

In countries/states where a dip was identified, respondents were asked the stages at which a dip may occur. A number of stages were identified, in particular the first, and/or third year after transfer to secondary school. Respondents also indicated that, where a dip occurred, the impact was felt for a number of years subsequently.

2.2.1 Length of dip

In England, it is suggested that there is a dip in student performance in key stage 3 which lasts for the first two years of this phase of compulsory education (Years 7 and 8, ages 11-13). Other countries/states identifying a dip in performance also suggested that the phenomenon lasts a number of years. In Tasmania (Australia), data suggested that students did not regain their expected level of performance until three years after an initial dip occurred. Whilst in Spain and Italy a continuous decrease was identified in student performance and in the age adequacy rate[2] throughout compulsory education. Figure 4 (below) shows the continuous decrease in the age adequacy rate throughout the educational grades in Spain.

Figure 4: Age adequacy rate (Spain Academic year 2003/2004)



	8 years	10 years	12 years	14 years	15 years
ACADEMIC YEAR 2003/2004	94.00%	90.50%	84.70%	70.00%	59.20%

Source: Office of Statistics (Ministry of Education and Science)

[2] The age adequacy rate provides an indirect indication of the evolution of pupil performance throughout the different grades of compulsory education. This indicator is defined as the percentage of pupils that are in the school year they theoretically should be, taking account of their age.

2.2.2 Dips in the first year after transfer

Students often go through a number of transfers (between school phases) and transitions (between year groups and classes) during their education, depending on the organisation of the education system. Each of these points of transfer or transition appears to hold potential for a dip in student performance. In England, for example, research has suggested that a dip may occur in primary level education at the transition from key stage 1 to key stage 2 (age seven-eight). Whilst in Italy, the transfer from lower to upper secondary education was identified as being critical.

More commonly, dips were thought to occur in the first year after transfer from primary to secondary education. It was suggested that this phenomenon occurred in Ireland, Italy, Scotland, Spain, and Tasmania (Australia). Dips were also suggested following the transfer from lower to upper secondary education in Germany, Italy and Spain. This phenomenon of a dip following a transfer is evident in Figure 5, which shows the percentage of students who are identified as behind with their studies at different stages of education in Italy.

Figure 5: Percentage of students who are behind with their studies (Italy)

Year	Age	Per cent
	Primary	
2	7-8	2
3	8-9	
4	9-10	3
5	10-11	
	Lower Secondary	
6	11-12	8
7	12-13	
8	13-14	
	Upper Secondary[3]	
9	14-15	13
10	15-16	
11	16-17	19

Source: data from the last survey by Invalsi – the national evaluation service

[3] Only the first year of upper secondary education is currently compulsory.

2.2.3 Delayed dips after transfer

In some countries/states data suggested that the dip actually 'peaked' a year or more after transfer had occurred. For example, in Germany and Spain, dips appear to occur in the third year after transfer as well as in the first.

In England, although the dip covered two years of education (see Section 2.2.1), it was generally believed to be most pronounced in the second year after transfer (Year 8, age 12-13). It was suggested that this is because, in the first year after transfer (Year 7, age 11-12), students may be enjoying the 'newness' of secondary education, and, by the third year after transfer (Year 9, age 13-14), they are not only preparing for the statutory tests at the end of the year, but also selecting the subjects they will study for the courses leading towards the schooling leaving examinations in Year 11 (age 16).

In Ireland, although the majority of students generally do not appear to make progress in the first year after transfer (age 12-13) (dips in performance), the decline in positive attitudes towards school, teachers and the curriculum was found to become more pronounced in the second year (age 13-14) (dips in motivation).

Data from *5-14 Attainment Levels of Pupils from Publicly Funded Schools in Scotland* (Scottish Executive, 2004) shows that, in primary school, upwards of 80 per cent of pupils are gaining the expected levels of attainment for their year group. In the early years of secondary schooling, this figure falls to around 60 per cent (Figure 6).

Figure 6: Pupil Achievement (Scotland)

Year	Age	Achievement
Primary 3-5	7-10	The majority of pupils have achieved, or are working at, the expected levels in literacy and numeracy, with many achieving the levels expected of those one or two years older.
Primary 7	11-12	Two thirds of pupils have well established numeracy skills at the level expected for their stage. Many of the others had made a good start at this level. Around half of pupils showed well-established reading skills at the expected level. Just over a quarter of pupils had well established skills in numeracy and literacy above the level expected for their age.
Secondary 2	13-14	In S2 just under half of pupils have well-established skills at expected levels in literacy and numeracy, with around 15 per cent reaching levels above their age.

Source: Scottish Survey of Achievement

2.3 Students affected

Asked whether dips in performance, where these occur, affect all students in a year group, or particular groups or types of students, respondents identified two main factors: ethnic or social group, and gender.

2.3.1 Ethnic or social group

Five countries/states – England, Germany, Ireland, Italy and Saskatchewan (Canada) –suggested that a student's ethnic or social group was related to a potential dip in performance. Specific groups identified were:

- ethnic minorities such as aboriginal students or travellers (Ireland and Saskatchewan).
- students from families in lower socio-economic brackets / disadvantaged background (England, Ireland and Italy)
- foreign students from newly-arrived families / students who are not native speakers (Germany and Ireland).

2.3.2 Gender

Respondents from Germany, Ireland, Saskatchewan (Canada), Scotland and Spain indicated that there was evidence to suggest some differences between boys and girls in terms of a dip in student performance in their country/state.

In the majority of countries/states identifying this as an issue, and in the majority of instances (Ireland, Saskatchewan, Scotland and Spain), boys were identified as being more prone to a dip in performance. For example, in Spain, analysis revealed that the age adequacy rate by gender is always better for girls than for boys, and becomes more pronounced as students progress through the education system (Figure 7).

Figure 7: Age adequacy rate by age and gender (academic years 1993/1994 and 2003/2004, Spain)

Age	Percentage of boys		Percentage of girls	
	1993/1994	2003/2004	1993/1994	2003/2004
8 years of age	93.3	93.4	95.6	95.4
10 years of age	87.7	89.3	91.7	92.5
12 years of age	75.3	82.1	82.9	88.0
14 years of age	63.3	64.3	73.4	76.2
15 years of age	53.8	53.0	63.3	66.0

Source: Office of Statistics (Ministry of Education and Science)

The respondent from Germany provided some interesting data suggesting that a dip in performance may occur at different times for boys than for girls. In Germany, boys are more affected at age 12-13 (Year 7, the third year after transfer to secondary education), whilst girls are more affected at age 14-15 (Year 9, five years after transfer to secondary education).

2.4 Subjects affected

QCA was also interested in whether, where dips in performance occur, these affect particular subjects, all subjects equally, or whether they affect particular aspects of learning, particular skills or particular elements of understanding. Most respondents identified the more traditional 'academic' subjects as being most affected, although some also identified language subjects in particular. Only the Italian respondent felt that data showed the same trend in all subjects.

2.4.1 Academic subjects

Data from a longitudinal study in Ireland (see Section 1.2.3) found noticeable differences in students' interest in, and preference for, subjects dependent on their perceived level of difficulty. The students in the study demonstrated a strong preference for subjects with a practical orientation where learning is organised in an active, project-like way, such as art, technology subjects, music, and home economics; they perceived the latter as easier than the more academic subjects, such as languages, history, geography, mathematics or business studies, which they were more likely to dislike.

Academic subjects such as the mother tongue, mathematics and science were also identified as being most affected by dips in performance in England, Germany, Italy, Saskatchewan (Canada), Scotland and Sweden. However, it is important to note that academic subjects are often the areas most commonly assessed, in international surveys such as PISA and TIMSS for example, (see Section 1.2.2). Consequently, there is more data available on student performance in these subjects, which may make the identification of a dip in these subjects easier than in others.

2.4.2 Languages

Respondents in Germany, Ireland and Wales identified specifically that languages were affected by a dip in performance. In Germany, this included both foreign languages and German, particularly in Grade 7 (in most federal states, this is the third year after transfer to secondary school, age 12-13). In Ireland, a recent study (Smyth et al 2006) revealed that languages are the least liked subjects. They were seen by students as least interesting and featured prominently among the subjects students say they find most difficult and wish they hadn't taken. The report states that:

> *It is of concern to note that of the top six subjects listed by students as subjects they wished they had not taken, three of them were languages. The most frequently mentioned subjects were French (18 per cent), Business Studies (17 per cent), Irish (15 per cent), Science (14 per cent), German (11 per cent) and*

> *History (10 per cent). Students gave a variety of reasons for preferring not to take a subject, such as finding the subject boring, too hard, too much to learn and not being good at the subject…When asked to report the two subjects they liked least in second year, the most frequently mentioned subject was Irish (mentioned by 32 per cent of those taking the subject) followed by foreign languages. Irish and French were also seen as the most difficult subjects, followed by Science and Maths* (ibid).

In Wales, Welsh as a second language was affected, as was Welsh as a first language when students move to English-medium secondary schools in key stage 3 (age 14+).

2.5 Factors causing dips

In response to the evidence from England that, although there is no overall agreement on what may cause the key stage 3 dip, possible contributory factors may be:

- the effects of transfer from primary to secondary school
- curriculum change
- teenage maturation issues
- the perceived distance of the compulsory secondary school leaving examinations at age 16,

a number of countries/states also identified these as potential contributory factors. Additional factors identified included family background, teaching methods, school organisation, and a lack of preventative measures.

2.5.1 The effects of transfer from primary to secondary school

There is evidence that a dip in performance can occur around the time of transfer (see Sections 2.2.2, 2.2.3 and 2.2.4). The effect of transfer was identified as a specific factor related to a dip by six countries/states other than England: Germany, Ireland, Italy, Scotland, Spain and Tasmania (Australia). The transfer period was identified as a time of significant change and explanations of a dip therefore focused on discontinuities in learning that can arise at this stage. For example, data from Ireland suggested that a dip in performance in the first year following transfer is due to this

year representing a period of adjustment for students, during which they are coming to terms with a broader curriculum and with a greater range of knowledge areas (see Section 2.3.1.1.).

2.5.1.1 Curriculum change

Closely related to transfer is the increase and change in the organisation of curriculum subjects following a change of school phase. This was identified as a factor related to a dip by three countries/states – Germany, Spain and Tasmania (Australia) – in addition to England. In Germany, (where languages had been identified as being affected by a dip in performance), a specific dip was suggested at the time of starting lessons in a second foreign language. This particularly affected those students struggling with a first foreign language. This is also the time in Germany when additional subjects are added to the curriculum, including physics and chemistry, which were identified as being particularly challenging to girls (see Section 2.4.1).

2.5.1.2 Teaching methods

Another aspect affecting students following transfer appears to be influenced by the change in qualification of teachers and, consequently, by a change in teaching style from primary to secondary education. Teaching methods were identified by Germany, Spain and Tasmania (Australia) as a factor related to a potential dip in performance. The Tasmanian respondent recorded anecdotal evidence that teachers of students in Year 7 (the first year after transfer, age 12-13) do not build on what students already know, but rather go over a lot of ground that has already been taught in primary school. Similarly in Spain, differences in qualification and training of teachers in primary (more pedagogy-oriented) and secondary education (more content-oriented) were identified.

2.5.2 Teenage maturation issues

Teenage maturation was identified as a factor related to a dip in performance in four countries/states – Germany, Ireland, Spain and Tasmania (Australia) – as well as in England. It was suggested that this period in a student's life may affect:

- physiological or cogitative development (England and Tasmania [Australia])
- pro-social motivation – students' readiness to help each other and lack of challenge stimulated by the better performances of classmates (Germany)

- students' prioritisation of social development over educational achievement (England).

2.5.3 Examinations

The perceived distance of the compulsory secondary school leaving examinations at age 16 was identified as a factor related to a dip in both England and Ireland.

2.5.4 Family background

Respondents from Germany and Spain specifically identified family background as a factor contributing towards a dip in performance. England, Germany, Ireland, Italy and Saskatchewan (Canada) in addition all identified students from particular ethnic or social groups as being affected by a dip in performance (see Section 2.3.1).

2.5.5 School organisation

School organisation was identified as a factor contributing towards a dip in Germany, Ireland and Spain. In these countries students can repeat years (Germany and Spain), are 'streamed' (Ireland) and, in the case of Germany, are selected for a particular type of secondary school (*Gymnasium, Gesamtschule, Hauptschule,* or *Realschule*) at age 10. A further reason may also be the depth of accumulative knowledge: if students have transferred deficits from former grades, they may no longer be able to catch up.

3. Document analysis and commentary on 'dips' in student performance

In addition to the analysis of questionnaire responses, a study of documentation relating to the 'dip' phenomenon was carried out in order to inform and extend the view of the evidence.

This section of the report considers the evidence for 'dips' in student performance across the INCA countries, with reference to documentation cited in the questionnaire responses, and literature identified through a rapid response exercise undertaken by the NFER library.

The discussion provides an analysis of the documents identified and a commentary on the findings; it does not constitute a detailed literature review. It focuses on the broad themes and issues that supplement and accompany the dip phenomenon; the evidence for a dip in achievement; the factors that might contribute to a dip in performance; and the possible solutions and recommendations for improving achievement where a dip might occur.

3.1 Data collection and analysis

The questionnaire asked respondents to provide references to any literature published electronically in their country, and in English, which might describe dips in performance or similar phenomena. The majority of respondents either did not refer to any literature published on this issue in their country, or indicated that they were not aware of literature in this field. Some respondents felt that any evidence of a dip had only recently been established and, as a result, no literature had yet been published on the issue. Where respondents did identify literature, the documentation tended to refer to more general, supplementary themes such as transfer from primary to secondary schooling (e.g. Smyth *et al.*'s (2004) 'Moving Up' project undertaken in Ireland, and Estyn's '*Moving On …*' (2004a, 2004b) documentation relating to Wales); engagement with school and the curriculum (the Northern Ireland Curriculum Cohort Study, Harland *et al.*, 2002, 2003); and curriculum reform, especially in the middle years (Queensland Government, 2003a).

Consequently, in order to uncover further literature, database searches were undertaken by the NFER library. Rapid availability of relevant documents was paramount; and as a result, searches concentrated on web-based documents, and readily available books and articles.

3.1.1 Analysis framework

For the analysis, data extracted from the literature were organised around a similar framework to that used to gather information from questionnaire respondents (see Appendix 2). For example, what evidence is there for a dip in student performance? How is this measured? When does this occur? What subjects are affected? And what factors are associated with this dip in performance?

As the questionnaire responses suggested that the phenomenon of a dip might prove a highly specific area of literature, additional and related themes were also explored in the analysis of the literature. By considering the documentation against this broader framework, it was hoped to uncover the issue more widely, in particular:

- to explore supplementary themes such as transfer, middle years, motivation and boys' (under)-achievement
- to consider accompanying themes relating to achievement, including 'lack of progress', 'decline' in achievement and 'underachievement'
- to consider the factors and possible solutions which these themes might offer for the dip phenomenon.

Most of the documentation related to these additional themes, rather than specifically to the dip in performance.

3.2 The literature and research

The literature and research identified was summarised according to: the country to which it pertained; type of literature or research; and the foci and aims of the literature or research. In total around 30 documents were considered in this analysis.

3.2.1 Country

Most of the documents pertained to issues of 'achievement' in the country contexts of the UK, Australia, New Zealand and the USA. In addition, some research into international comparisons marks out the progress made by students in different countries (although these studies do not necessarily highlight dips). Examples include international comparative data such as that provided for the TIMSS and PIRLS studies; and studies which also include qualitative data, such as the QUEST project. The latter explored the learning culture, identities and learning outcomes of students at the end of primary school in England and in France (Broadfoot *et al.*, 2000). A key rationale for the project was to make more contextualised country comparisons of student achievement than is perhaps possible in large-scale international surveys.

3.2.2 Type of literature/research

The sources were categorised according to the type of literature identified. About two-thirds of the documents reported empirical research – mainly quantitative, but some qualitative in addition. A small number of longitudinal studies were identified. These included studies based on the 'Competent Children Project', which tracked students from age five to 16 in New Zealand (Wylie, 2004 and Rivers, 2006); findings from the 'Moving Up' project, which looked at the transfer of children from primary to secondary school in Ireland (Smyth *et al.*, 2004); and research into academic intrinsic motivation by Gottfried *et al* (2001).

Some existing related literature reviews were also identified, for example: on transfer and transfers in England (Galton *et al.*, 1999, 2000); on learner motivation (Lord, 2005 and Lord *et al.*, 2005; Smith *et al.*, 2005); on the impact of assessment on motivation (Harlen and Deakin Crick, 2002); and on gender gaps or differences in achievement (Sukhnandan, 1999).

The remainder referred to curriculum reform and implementation of new policies and strategies, for example on: transfer (Estyn, 2004a, Estyn, 2004b); the middle years (Queensland Government, 2003a and Kentucky State Department of Education, 1999); and improving teaching and learning to engage students (Queensland's School Reform Longitudinal Study, Queensland Government, 2003b).

3.2.3 Foci and aims

The key focus or purpose of the identified literature and research covered the following themes (in order of frequency):

- transfer from primary to secondary school
- factors affecting achievement
- decline in achievement, lack of progress, low achievement and under-achievement
- teaching and learning in the middle years (especially documents referring to Australia and the USA)
- motivation and engagement with school and learning
- dips in achievement.

It would consequently appear that the specific study of dips in achievement occurs less frequently than research into areas such as transfer, motivation or progress more broadly.

The literature suggested a range of underlying rationales, including the need to consider childhood experiences earlier than the point of dip, so as to explore factors which might contribute to subsequent levels of achievement (Wylie, 2004, Rivers, 2006). Gottfried *et al*. (2001) suggested the need to recognise that young people's levels of motivation and achievement change over time and that, as a result, research is required at different time points. Whilst Hall and Kennedy (2006), highlighting the need to respond to acts or bills, so as to produce guidelines, recommendations and solutions for raising achievement, cite the example of a study of achievement patterns and gaps between different groups of children across the USA, undertaken in response to the No Child Left Behind Act (2001).

3.3 Commentary on the documents

This section discusses some themes and issues associated with dips in student performance arising from the documents analysed. The commentary:

- identifies the broad themes and issues that supplement and accompany the dip phenomenon (such as transfer from primary to secondary education, motivation, gender gaps in achievement, boys' achievement)
- considers the evidence for a dip in achievement, and the accompanying discussion on decline in achievement, low achievement and underachievement
- explores the factors that might contribute to a dip in performance
- discusses the possible solutions as put forward in the literature, or as actioned in government policy and initiatives across the INCA countries.

3.3.1 Supplementary themes to the dip phenomenon

A number of broad themes and issues supplement the dip phenomenon, including transfer from primary to secondary school, teaching and learning in the middle years, and motivation and boys' (under)-achievement. All these supplementary themes can be found across the international literature (see for example Galton (2000), a special edition of the *International Journal of Educational Research* on 'School Transition and Transfers', which contains papers from the UK, USA, New Zealand, Finland and Norway, including Kvalsund (2000) and Pietarinen (2000)); and include existing reviews of the research.

Findings from these broader themes do suggest dips or declines, for example in motivation or engagement with the curriculum, around the 11–14 age range. In Northern Ireland, for example, Harland *et al*. (2002) found a notable decline in students' engagement with the curriculum across key stage 3. In addition, a review of the literature on young people's experiences of the curriculum found a body of evidence on a decline in students' motivation and enjoyment of the curriculum as they journey through secondary education in the UK (Lord and Johnson, 2005; Lord and Jones, 2006, forthcoming). A specific dip in young people's motivation in Year 8 – the second year after transfer – has especially been noted in the UK literature:

- Year 8 lacks identity for students – an educational limbo (Demetriou *et al*., 2000 and Sharp, 1998)
- there are no national tests as incentives for motivation

- it is the last year in which students feel they can safely '*have a bit of a laugh*' (Demetriou *et al*., 2000)
- they (students) feel it is presented as less important than other years – perhaps because their teachers are focusing on 'important' work with other year groups (Demetriou *et al*., 2000; Galton *et al*., 2000, 2003).

The transfer research further identifies areas in which young people experience change, including teaching and learning styles, curriculum experiences, school organisation, and friendship and social circumstances (Galton, 2000). With these changes appears a decline in students' attitudes towards school and learning. The discontinuity between the primary and secondary phases of schooling might be associated with these declining attitudes. Also mismatch between children's expectations and what they actually experience in the next phase of schooling, and associated perceptions of lack of challenge and repetition, has also been reported (Lord and Jones, forthcoming). In addition, a time of adjustment to these changes might be required. As the middle years documentation from Australia suggests, this is a time when young people need to call on '*all sorts of new skills*' (Queensland Government, 2003a).

The gender gap in achievement also receives international attention in the research literature. The New Zealand Government, Education Review Office (1999) report, for example, identifies a general gender gap throughout secondary education.

But, do these supplementary themes necessarily explain dips in performance? In some cases in this broader research literature, explicit links are put forward showing corresponding declines in performance. Gottfried *et al*. (2001), for example, demonstrated links between academic intrinsic motivation and achievement levels; whilst Galton *et al*. (1999) evidenced both dips in motivation and in performance.

On the whole, however, links between the broader issues of motivation, engagement and transfer, and dips in performance are more implicit than explicit. The research does, however, put forward possible factors as to why students' performance might wane post-transfer (see Section 3.5).

3.4 Evidence for a dip in student performance

The evidence for a dip in student performance was explored in the documents, by seeking answers to questions including: how much dip? how is it measured? when does it occur? which students are affected? and in which subjects?.

3.4.1 How much dip?

The extent to which a dip in performance was evidenced in the literature was considered. This identified a dip to varying degrees, including:

- a 'dip' (Hayes and Clay, 2004, Pollitt, 2002 – England)
- a 'lack of progress' (Smyth *et al*., 2004 – Ireland; Kentucky State Deparment of Education, 1999 – Kentucky (USA); and Queensland Government, 2003a – Queensland (Australia))
- a 'decline in achievement' (Smith, 2001, 2003 – England)
- a 'gap' such as a gender gap (Cortis and Newmarch, 2000 – Australia) or differences by ethnicity (Hall and Kennedy, 2006 – USA)
- other related dips or declines, including motivation (McDermott *et al*., 2001 – USA); and engagement with the curriculum (Harland *et al*., 2002 – England).

Whilst 'dips' and 'declines' in achievement were considered, evidenced and described in different ways across the literature, what does seem to be consistent is that the middle years in general (that is after primary school and around 11–14 years of age) seem to be a phase in education where least progress is being made by students.

3.4.2 Monitoring of changes in performance

Section 1.2 explained how changes in performance are measured and monitored by the INCA countries, for example, via national assessment and international comparative tests. Overall however, there seemed to be little systematic monitoring by INCA countries of dips in achievement. Likewise, the research literature revealed a range of performance and achievement measures but no one systematic measure. Examples included:

- national assessments

- international comparative tests (e.g. TIMSS, PIRLS, PISA)
- known standardised tests (used in research and measurement, such as the learning behaviour test, used in McDermott *et al*., 2001)
- classroom / teacher records
- other research instruments, tests or tasks, such as those devised for particular research projects. For example, Pollitt (2002) designed tests to explore progress in English. Punctuation and spelling tests required identification of 'right/wrong' answers, whilst for grammar and reading students had to supply a word to fill a gap. Writing was assessed in terms of appropriateness and style on a 'letter writing' exercise.

As noted in the research, however, the first two of the above have a tendency to decontextualise students' achievements and progress from their school and classroom context (Broadfoot *et al*., 2000). One way of understanding students' performance in context is to examine national assessment data at a more regional level; by state in the USA (Hall and Kennedy, 2006); by *Länder* in Germany; or by local authority in England. Indeed, in England, most local authorities monitor schools' and students' performance as part of self-evaluation and review.

Examining regional and school level performance data is one way of the research helping to explore the national data in greater context. However, it should be noted that regional data might not always reflect the national picture. In Hall and Kennedy's (2006) state-by-state look at student achievement patterns in the USA, it was generally felt that states reported higher proficiency levels on their own assessments than when using the National Assessment of Education Progress (NAEP) records.

It has also been noted that standardised tests used in research might be removed from students' daily classroom experience, and therefore a different set of skills may be measured (McDermott *et al*., 2001, Pollitt, 2002). Consequently, an additional way of understanding students' performance in context may be to collect qualitative data and perceptions regarding the possible factors which contribute to students' underachievement or lack of progress (these are reported in Section 3.5).

3.4.3 Stages when dips occur

From the research identified, there was no clear consensus as to exactly when dips occur. However, lack of progress and declines in achievement were identified between key stages 2 and 3 (ages seven to 14 years) in England and in Wales (Hayes and Clay, 2004, Hayes, 2001, Smith, 2001); in the 'middle years' (age 11-14) in Australia (Queensland Government, 2003a); in Years 7 and 8 (age 11-13) in English in England (Pollitt, 2002); and in the first year of secondary school (aged 12+ years) in Ireland, where test scores in reading and mathematics did not improve over the first year (Smyth *et al*., 2004).

Other research into achievement more broadly suggests a concern regarding a decline in achievement overall throughout secondary education (or in the USA from elementary through middle to high school, Gottfried *et al*., 2001).

3.4.4 Students affected

In Section 2.3, it was reported that questionnaire respondents identified two key student groups affected by dips or declines in achievement, namely: ethnic or social groups; and boys, but in some cases girls. The research also highlights these areas, including:

- students from families in lower socio-economic brackets including students from disadvantaged backgrounds or low income families (Hayes and Clay, 2004, Smith, 2003 – England; Hall and Kennedy, 2006 – USA; and Smyth *et al*., 2004 – Ireland)
- ethnic groups (Hall and Kennedy, 2006 – USA; Wylie, 2004 – Maori students in New Zealand)
- gender (Hayes and Clay, 2004 and Pollitt, 2002 – England; and Wylie, 2004 – New Zealand).

However, key additions identified from the research are students' prior levels of achievement, attendance and engagement and motivation. Smith (2003), for example, found prior attainment and attendance to be the two strongest predictors of key stage 3 performance in England. Whilst Gottfried *et al*. (2001) found that, at an early age, those with low academic intrinsic motivation (that is, motivated by the pleasure

derived from school learning itself) were most at risk of decline in this motivation over time. Additionally, the longitudinal Competent Children project in New Zealand found that early high performers are likely to have high performance later on, and early low performers are likely to have low performance later on (Rivers, 2006).

In this regard, setting/streaming or mixed ability teaching may be an important consideration. In Ireland, for example, Smyth *et al*. (2004) found that students in the lowest ability sets made least progress overall, and even declined in progress, over their first year of secondary school. In schools where mixed ability teaching occurred, more progress appeared to be made by students.

3.4.5 Subjects affected

From the documentation considered, it would appear that research into dips in performance and achievement chiefly examines the subjects of literacy (reading, writing), mathematics and science (one, two or all three of these areas), but not others. Although it should be noted that much of the available literature on this subject comes from England; other pertinent studies look at motivation and competencies across the whole curriculum.

3.4.5.1 Literacy

Both Hayes (2001) and Smith (2001) found that students make no progress between key stages 2 and 3 in England. Whilst Hayes and Clay (2004) even suggested that students may regress.

3.4.5.2 Mathematics

Mathematics was identified as the subject area where New Zealand students in the lowest quartile of achievers appeared least likely to make improvements (Wylie, 2004). Similarly, in England, Hayes and Clay (2004) found that students with the lowest levels of achievement in mathematics at key stage 2 did not progress in key stage 3.

3.4.5.3 Science

In England, Hayes and Clay (2004) found the results for science at key stage 2 were at risk of standing still or regressing at key stage 3.

3.5 Factors causing dips

Many of the sources considered put forward factors associated with dips in achievement, with underachievement, with lack of progress, or with a wane in performance post-transfer. These factors were mainly found in researchers' inferences. However they were also present in quantitative data mapping factors against performance (Smith, 2003; Gottfried *et al*., 2001) and in teachers' and other interviewees' perceptions (Hayes and Clay, 2004; McDermott *et al*., 2001). Interestingly, little of this research involves students' perceptions.

Many of the factors further reflect those identified by the questionnaire respondents across the INCA countries, including the effects of transfer, teenage maturation; family background; and gender and ethnic groups. The literature also drew specific attention to the impact of students' earlier performance and engagement with learning, and continuing difficulties with literacy and numeracy, particularly for lower ability students' (Queensland Government, 2003a and Smyth *et al*., 2004).

3.5.1 The effect of transfer from primary to secondary school

As with the questionnaire data, a significant amount of literature is available relating to the effect of transfer from primary to secondary school, including change in the curriculum and in teaching and learning styles.

Queensland Government (2003a), for example, explained that this can be a time when '*school calls for more sophisticated learning skills, especially in literacy, and greater engagement with abstract knowledge*', (p. 4). Students also face new cognitive demands of using language for new purpose, which might contribute to an apparent dip in their literacy abilities (Pollitt, 2002).

There are also differences in relation to the level of change students experience. In England, some literature reports a lack of challenge was identified by students across many areas of the curriculum (Lord and Jones, forthcoming), whilst other literature suggests there is too much challenge (Hayes and Clay, 2004 and Smyth *et al*., 2004).

3.5.2 Teenage maturation issues

Pollitt (2002) suggested that girls' and boys' physical, emotional and cognitive development might affect their different interests and abilities in different aspects of literacy at different times. This direct identification of teenage maturation and development was also identified by questionnaire respondents. Research also included peer interaction and behaviour at this age, with some findings particularly focused on young people's involvement with bullying (either as the bully or the bullied) (Smyth *et al*., 2004, Wylie, 2004).

Closely related to teenage maturation is the issue of learners' motivation, particularly their '*intrinsic academic motivation*' (Gottfried *et al*., 2001) and their '*learning-to-lear*n' or '*keystone skills for classroom learning*' as described by McDermott *et al*., 2001.

3.5.3 Examinations

The impact of national assessment and examinations was also identified as a factor both in the literature reviewed and by the questionnaire respondents. Gottfried *et al*. (2001) reported that exams are a source of '*academic anxiety*', and this might impinge negatively on learners' motivation.

3.5.4 Family background

Similarly, family background was identified as a factor in the literature and by questionnaire respondents. Aspects mentioned included family income levels, level of family support, and family values regarding education. Gottfried *et al*. (2001) found that the extrinsic goal emphasis placed by parents on their children negatively affected students' intrinsic motivations for learning.

3.6 Solutions and recommendations to address the dip

A number of the documents considered for this probe put forward solutions and recommendations to address students' progress and levels of achievement. Strategies specifically focusing on the dip in performance at primary-secondary transfer and around ages 11–14 were exemplified in some cases.

The solutions and recommendations are organised according to where the issue might be addressed. The strategies specifically targeted at those who dip in their achievement are identified below.

3.6.1 Support from schools

Both Wylie (2004) and Gottfried *et al.* (2001) suggest that improving quality in early childhood education and recognising the importance of early foundations for learning could reduce a dip:

> *if one is to intervene to enhance academic intrinsic motivation, it had better be early in a child's schooling. Not only do children remain relatively stable in their peer group as they develop, but this stability increases in adolescence, and the entire group also experiences a downward shift across almost all subject areas… children who begin this sequence with lower motivation during childhood are likely to be at a greater disadvantage over the age span*' (Gottfried *et al*., 2001 p. 10).

More generally, a number of reports identify the importance of a supportive school ethos. This includes pastoral support, for example to stop bullying or to support students at points of transfer (Wylie, 2004; Hall and Kennedy, 2006; and Smyth *et al*., 2004). It also includes academic support, in terms of the provision of extended time for example (Hall and Kennedy, 2006 and Smyth *et al*., 2004), or encouraging students to understand the importance of individual effort and perseverance (McDermott *et al*., 2001). Furthermore, a supportive school ethos could include teacher support and the provision of continuing professional development for school staff (Hall and Kennedy, 2006; Smyth *et al*., 2004).

Research also suggested that schools could reduce the occurrence of dips in performance by careful monitoring and identification of students who might be at risk (Hall and Kennedy, 2006; Gottfried *et al*., 2001).

3.6.2 Appropriate courses and curriculum

Research further suggests that courses and curricula should be relevant and meaningful to students' interests (Gottfried *et al.*, 2001). The literature identified that the occurrence of a dip might be addressed by providing courses and curricula that are rigorous and have high expectations:

> *The one chance in school practices that has the greatest impact on achievement is to give every student the opportunity to complete a challenging academic core* (Hall and Kennedy, 2006, p. 4).

It is important to note that these levels of challenge must be appropriate however, as both too much and too little challenge are factors associated with a dip.

The literature also suggested that increased attention to reading and literacy is important. '*If literacy is a stumbling block for many struggling students, then it follows that attention to literacy will raise student achievement across the curriculum*' (Hall and Kennedy, 2006, p. 5). Consequently encouraging enjoyment of reading could be crucial (Rivers, 2006).

3.6.3 Teaching and learning

In addition to encouraging a supportive culture in school and providing appropriate courses and curricula, the research suggests that certain pedagogies may help alleviate a dip. Data from a longitudinal study in Ireland (see Section 1.2.3) suggested that the type of interaction students have with teachers and the school is one of the strongest influences on how they get on in their second year of secondary education (age 13-14). Students who have experienced positive interaction with teachers have a more positive self-image, both academic and social. The opposite is the case for students who have experienced negative interaction with their teachers, who are also more likely to become disengaged from learning and from school life; have lower academic aspirations; miss more school; and are more likely to leave school before or after the Junior Certificate (the compulsory school leaving certificate). Other literature suggests encouraging student-centred teaching that meets the needs of all students. This may encompass teaching and learning that is challenging, involves novelty and

encourages autonomy (Gottfried *et al*., 2001; Hall and Kennedy, 2006). Pedagogies which encourage providing feedback (Rivers, 2006) and recognising students' learning, progress and achievements may also guard against a dip in performance, particularly where there are year groups without tests or markers of progress, such as in Year 8 in England. This may be achieved through recognising students' learning in ways other than through extrinsic markers (Queensland Government, 2003a; Gottfried *et al*., 2001).

3.6.4 Support from parents

In addition, the literature seems to identify that parents may be able to address any potential dip in performance by encouraging reading, providing a stimulating home environment, and emphasising non-extrinsic motivational goals.

4. Conclusions

The findings from the questionnaire and the rapid review literature analysis highlight that some, but not all, research suggests a dip in performance at a phase roughly equivalent to key stage 3 in England. The literature also describes how, for some students, performance 'bounces back' two or three years after transfer (Hayes and Clay, 2004; Pollitt, 2002). Where this 'bounce back' occurs it appears to be related to maturation; getting used to new skills and ways of teaching and learning; greater choice; and greater availability of vocational courses later in secondary school.

The 'dip' phenomenon appears to cut across the international arena – both in policy and in research – although it is not described everywhere. Responses from INCA contacts in 14 countries/states indicate that dips in student performance may be experienced in many countries, with the exception of Japan. Students' achievement and progress is an international concern – in policy, practice and research fields. However, few countries specifically recognise, label or research a dip. In fact, few countries/states are able to track student performance as systematically or as rigorously as in England.

When a dip does occur, this is frequently linked to transfer, although a general decrease in student performance is commonly observed as students progress through education. Literature also confirms that, for some students, their dip is not just a dip but continual underachievement or decline in their performance throughout their secondary education. Whilst some students bounce back, development of strategies targeting such underperforming students might warrant particular attention.

Where specific groups of students are affected, these are often identified as belonging to specific ethnic or socially disadvantaged groups. Boys seem to be more affected by a dip than girls, although there is some evidence to suggest that girls are affected more at the later stages of education or in specific subjects.

The subjects affected are frequently cited as being the more 'academic' subjects although, due to increased testing in these subjects, it is difficult to separate the existence of the dip phenomenon from its identification. In addition, a key finding in the documents analysed is that, whilst for some students the dip is associated with finding the curriculum too challenging, for others it may be related to not enough challenge, or a sense of repetition. Either way, this can be the start of disengagement from the curriculum, from learning and from school for some students. The question is raised, are different strategies needed to tackle different kinds of dip; different kinds of disengagement; and different kinds of underachievement?

Although factors additional to transfer are identified as potential causes of a dip in performance, the most significant factor (considering the stage at which dips occur, the students and subjects affected) does appear to be related to transfer. Students' experiences at primary to secondary transfer in particular have received much attention; and many strategies around transfer aim to tackle the dip agenda. However, with little systematic measuring or monitoring of the dip, it is difficult to demonstrate whether a dip caused by transfer has persisted or been alleviated. Specific research in this area might be considered.

With the array of issues and areas affecting young people's lives, establishing a precise link between the extent of a dip and transfer strategies (or similar) would be a complex task. Indeed, both the questionnaire responses and the document analysis in the INCA probe suggest the dip phenomenon is not a precise science, but that there is clearly the scope and requirement for further research, which might include:

- an international seminar to discuss and explore the phenomenon of dips at key stages of education
- a systematic literature review of the dip phenomenon and related areas (e.g. transfer, achievement, motivation)
- an investigation of which teaching styles or pedagogies (e.g. mixed ability teaching) are most affective at averting any potential dip in performance
- school level research to investigate student and teacher perception of a dip
- the impact of extrinsic and non-extrinsic motivational goals on dips in performance

- a review of strategies targeting students who have 'dipped' and/or 'bounced back'.

References

Australian Government. Department of Education, Science and Training (2006). *National Literacy and Numeracy Benchmarks* [online]. Available: http://www.dest.gov.au/sectors/school_education/policy_initiatives_reviews/key_issues/literacy_numeracy/national_literacy_and_numeracy_benchmarks.htm [24 May 2006]

Braund, M. and Driver, M. (2005). 'Pupils' perceptions of practical science in primary and secondary school: implications for improving progression and continuity of learning', *Educational Research*, **47**, 1, 77–91.

Broadfoot, P., Osborn, M., Planel, C. and Sharpe, K. (2000). *Promoting Quality in Learning: Does England Have the Answer? Findings from the Quest Project.* London: Cassell.

Cortis, N. and Newmarch, E. (2000). 'Boys in schools: what's happening? Paper prepared for Conference on 'Manning the Next Millennium', Queensland University of Technology, Queensland, NSW, 1-2 December [online]. Available: http://www.dest.gov.au/archive/research/docs/Paper%20for%20Manning%20the%20Milllenium.pdf [24 May, 2006].

Demetriou, H., Goalen, P. and Rudduck, J. (2000). 'Academic performance, transfer, transfer and friendship: listening to the student voice', *International Journal of Educational Research*, **33**, 4, 425–42.

Department of Education and Science (2004). *Minister for Education and Science, Noel Dempsey T.D., to Make Standardised Testing of Pupils a Requirement* (Press Release) [online]. Available:http://www.education.ie/robots/view.jsp?pcategory=10861&language=EN&ecategory=11465&link=link001&doc=25584 [24 May 2006].

Estyn (2004a). *Moving On… Effective Transfer from Key Stage 2 to Key Stage 3* [online]. Available: http://www.estyn.gov.uk/publications/Moving_On_Effective_Transfer_sec.pdf [24 May 2006].

Estyn (2004b). *Moving on…Improving Learning: Effective Transfer from Key Stage 2 to Key Stage 3* [online]. Available: http://www.estyn.gov.uk/publications/MovingOn_ImprovingLearning.pdf [24 May, 2006].

Eurybase (2004). 'The Education System in Germany (2002/2003) in *The Information Database on Education on Systems in Europe* [online]. *Available:* http://www.eurydice.org/Eurybase/frameset_eurybase.html [26 May, 2006].

Galton, M. (Ed) (2000). 'School transfers and transfers', *International Journal of Educational Research*, **33**, 4, 321-3.

Galton, M., Gray, J. and Rudduck, J. (1999). *The Impact of School Transfers and Transfers on Pupil Progress and Attainment* (DfEE Research Report 131) [online]. Available: http://www.dfes.gov.uk/research/data/uploadfiles/RR131.doc [24 May, 2006].

Galton, M., Hargreaves, L. and Pell, T. (2003). 'Progress in the middle years of schooling: continuities and discontinuities at transfer', *Education 3-13*, **31**, 2, 9–18.

Galton, M., Morrison, I. and Pell, T. (2000). 'Transfer and transfer in English schools: reviewing the evidence', *International Journal of Educational Research*, **33**, 4, 341–64.

Gottfried, A.E., Fleming, J.S. and Gottfried, A.W. (2001). 'Continuity of academic intrinsic motivation from childhood through late adolescence: a longitudinal study', *Journal of Educational Psychology*, **93**, 1, 3–13.

Hall, D. and Kennedy, S. (2006). *Primary Progress, Secondary Challenge: a State-by-State Look At Student Achievement Patterns* [online]. Available: http://www2.edtrust.org/NR/rdonlyres/15B22876-20C8-47B8-9AF4-FAB148A225AC/0/PPSCreport.pdf [24 May, 2006].

Harland, J., Moor, H., Kinder, K. and Ashworth, M. (2002). *Is the Curriculum Working? The Key Stage 3 Phase of the Northern Ireland Curriculum Cohort Study.* Slough: NFER.

Harland, J., Moor, H., Lord, P., Kinder, K., Kaur, S., Johnson, F. and Dingle, R. (2003). *Talking 4: The Pupil Voice on the Key Stage 4 Curriculum*. Belfast: CCEA.

Harlen, W. and Deakin Crick, R. (2002). *A Systematic Review of the Impact of Summative Assessment and Tests on Students' Motivation for Learning.* London: Institute of Education, Social Science Research Unit, EPPI-Centre [online]. Available: http://eppi.ioe.ac.uk/EPPIWebContent/reel/review_groups/assessment/ass_rv1/ass_rv1.doc [24 May, 2006].

Hayes, S. (2001). Pupils who achieved Level 4 at Key Stage 2 and also at Key Stage 3. Internal Hammersmith and Fulham LEA paper.

Hayes, S.G. and Clay, J. (2004). 'Progression from key stage 2 to 3: understanding the context and nature of performance and underperformance at key stage 3.' Paper presented at the British Educational Research Association Annual Conference,

University of Manchester, 16–18 September [online]. Available: http://www.leeds.ac.uk/educol/documents/00003845.htm [24 May, 2006].

Kvalsund, R. (2000). 'The transfer from primary to secondary level in smaller and larger rural schools in Norway: comparing differences in context and social meaning', *International Journal of Educational Research*, **33**, 4, 401–24.

Lord, P. (2005). *International Review of Curriculum and Assessment Frameworks. Thematic Probe. Learner Motivation 3-19: an International Perspective. Executive Summary* [online]. Available: http://www.inca.org.uk/pdf/LMP_Executive_summary_final_version.pdf [24 May, 2006].

Lord, P. and O'Donnell, S. with Brown, R. and Grayson, H. (2005). *Learner Motivation 3-19: an International Perspective* (The International Review of Curriculum and Assessment Frameworks. Thematic Probe) [online]. Available: http://www.inca.org.uk/pdf/learner%20motivation%20final%20version%20for%20web.pdf [24 May, 2006].

Lord, P. and Johnson, A. (2005). *Pupils' Experiences and Perspectives of the National Curriculum and Assessment: Fifth Update of the Research Review. Research Report* [online]. Available: http://www.qca.org.uk/254_1956.html [24 May, 2006].

Lord, P. and Jones, M. (2006, forthcoming). *Pupils' Experiences and Perspectives of the National Curriculum and Assessment: Final Report of the Research Review.*

Kentucky State Department of Education (1999*). Preliminary Recommendations of the Middle Years Learning Task Force* (Press Release) [online]. Available: http://www.Kentuckypublicschools.org/MSDE/newsroom/special_reports/achive/mid_learning_years.htm [24 May, 2006].

McDermott, P.A., Mordell, M. and Stoltzfus, J.C. (2001). 'The organisation of student performance in American schools: discipline, motivation, verbal learning, and nonverbal learning', *Journal of Education Psychology*, **93**, 1, 65–76.

Moor, H., Bedford, N., Johnson, A., Hall, M. and Harland, J. (2004). *Moving Forward; Thinking Back: Young People's Post-16 Paths and Perspectives on Education, Training and Employment. The Post-16 Phase of the Northern Ireland Curriculum Cohort Study: Full Report* [online]. Available: http://www.rewardinglearning.com/development/qualifications/publications/docs/Post16_Final_Report.pdf [24 May, 2006].

National Council for Curriculum and Assessment (2004). *NCCA Commentary on ESRI Research into Curriculum Provision and School Integration Among First Year Students* [online]. Available: http://www.ncca.ie/uploadedfiles/JuniorCycleReview/ESRIComment.pdf [24 May, 2006].

New Zealand Government. Education Review Office (1999). *The Achievement of Boys* (Education Review Report 3) [online]. Available: http://www.ero.govt.nz/ero/publishing.nsf/Content/E90F9D3CB8C6CDA0CC25704A0010FAD6?Open [24 May, 2006].

O'Donnell, S., Andrews, C., Brown, R. And Sargent, C. (2006). *INCA: The International Review of Curriculum and Assessment Frameworks Internet Archive.* London: Qualifications and Curriculum Authority (QCA) [online]. Available: http://www.inca.org.uk [26 May, 2006].

Pietarinen, J. (2000). 'Transfer to and study at secondary school in Finnish school culture: developing schools on the basis of pupils' experiences', *International Journal of Educational Research,* **33**, 4, 383–400.

Pollitt, A. (2002). *Do Pupils Get Steadily Better at Reading and Writing English as they Progress through School?* [online] Available: http://www.qca.org.uk/2934_1954.html [24 May, 2006].

Queensland Government. Department of Education and the Arts (2003a). *See the Future: the Middle Phase of Learning. State School Action Plan* [online]. Available: http://education.qld.gov.au/etrf/middle.html [24 May, 2006].

Queensland Government. Department of Education and the Arts (2003b). *Queensland School Reform Longitudinal Study* [online]. Available: http://education.qld.gov.au/public_media/reports/curriculum-framework/qsrls/ [26 May, 2006].

Rivers, J. (2006). *Growing Independence: A Summary of Key Findings from the Competent Learners @ 14 Project* [online]. Available: http://www.minedu.govt.nz/web/downloadable/dl11105_v1/cl-at-14---summary.pdf [24 May, 2006].

Scottish Executive. 2003. *Assessment, Testing and Reporting 3-14: Consultation On Partnership Commitments.* Edinburgh: Scottish Executive.

Scottish Executive. 2004. *5-14 Attainment In Publicly Funded Schools 2003/04.* Edinburgh: Scottish Executive National Statistics Publication.

Sharp, K. (1998). 'Year 8 – lost at sea', *Managing Schools Today,* **8**, 3, 24–6.

Smith, C., Dakers, J., Dow, W., Head, G., Sutherland, M. and Irwin, R. (2005). *A Systematic Review of What Pupils, Aged 11–16, Believe Impacts on their Motivation to Learn in the Classroom.* London: Institute of Education, Social Science Research Unit, EPPI-Centre [online]. Available: http://eppi.ioe.ac.uk/EPPIWebContent/reel/review_groups/motivation/motivation_rv1/Motivation_rv1.pdf [24 May, 2006].

Smith, E. (2001). Pupils who achieved level 4 at Key Stage 2 and also at Key Stage 3. Cardiff University School of Social Sciences.

Smith, E. (2003). 'Understanding underachievement: an investigation into the differential attainment of secondary school pupils', *British Journal of Sociology of Education*, **24**, 5, 575–86.

Smyth, E., McCoy, S. and Darmody, M. (2004). *Moving Up: The Experiences of First-Year Students in Post-Primary Education.* Dublin: Liffey Press.

Smyth, E., Dunne, A., McCoy, S. and Darmody, M. (2006). *Pathways Through the Junior Cycle: The Experiences of Second Year Students.* Dublin: Liffey Press.

Sukhnandan, L. (1999). *An Investigation into Gender Differences in Achievement. Phase 1: a Review of Recent Research and LEA Information on Provision*. Slough: NFER.

Ward, R. (2000). 'Transfer from middle to secondary school: a New Zealand study', *International Journal of Educational Research*, **33**, 4, 365–74.

Wylie, C. (2004). *Twelve Years Old and Competent: a Summary Report to the Ministry of Education* [online]. Available: http://www.minedu.govt.nz/web/downloadable/dl9828_v1/cc12-summary.pdf [24 May, 2006].

Appendix 1

INCA International Review of Curriculum and Assessment Frameworks Internet Archive

QCA Qualifications and Curriculum Authority

nfer

'Dips' in performance at key stages in education: an international phenomenon?

The Qualifications and Curriculum Authority (QCA) in England has commissioned the National Foundation for Educational Research (NFER) to conduct an international survey into the claimed phenomenon of the 'key stage 3 dip', that is a decrease in student performance during one specific phase of the education system in England.

Compulsory education in England is organised in four 'key stages':

Key stage	School years	Age range	Phase
Key stage 1	Years 1 and 2	Four/five*- to seven-year-olds	Primary
Key stage 2	Years 3, 4, 5 and 6	Seven- to 11-year-olds	Primary
Key stage 3	Years 7, 8 and 9	11- to 14-year-olds	Secondary
Key stage 4	Years 10 and 11	14- to 16-year-olds	Secondary

* Education is compulsory from the term after a child reaches the age of five. However, most children begin school in the reception class at age four.

Key stage 3 (11- to 14-year-olds) is the first stage of compulsory secondary education, with children leaving primary school at age 11 to enter secondary school.

Although there is no overall agreement on what may cause the 'key stage 3 dip' in England, possible contributory factors are considered to be:

- the effects of transfer from primary to secondary school
- the new social and class groupings in which children find themselves

- teenage maturation issues
- curriculum change
- the perceived distance of the compulsory secondary school leaving examinations at age 16.

We are interested to learn if a similar phenomenon exists in your country, either for children of a similar age range, at a similar place in the system, or at other stages in the system of education. We would therefore be grateful for your responses to the attached brief questionnaire. This is being issued to contacts across all countries of the International Review of Curriculum and Assessment Frameworks (INCA) Internet Archive (www.inca.org.uk), and seeks your response to five main questions about 'dips' in performance in the education system in your country/state. Firstly, we would like to know at what stage similar dips might have been identified, secondly how such changes in performance are monitored, thirdly if such dips affect some groups of students more than others, fourthly whether some school subjects are affected more than others, and finally whether specific factors in your system have been identified as adversely affecting performance? Where possible, for each question, we have provided background information on the situation in England. Please write your answers in the text boxes provided.

When you have completed the questionnaire, please return it to **Karen Whitby** (k.whitby@nfer.ac.uk) by **Friday 10 March 2006**. We are also interested to obtain any supporting documentation, and are particularly keen to receive references to articles and documents available electronically, and in English, which highlight similar phenomena in your country/state.

Contact details

Name:

Job title:

Organisation:

Country/state:

E-mail:

Does a similar phenomenon exist in your country?

Q1. Please indicate at what stage or stages in your education system similar dips have been identified. Please provide a brief summary of the structure and nature of the system and the age ranges at which any dips may occur.

Contextual data for England has been provided in the introduction to this questionnaire. In addition, the dip in student performance in key stage 3 (Years 7, 8 and 9 of compulsory education) is generally believed to be most pronounced in Year 8. In Year 7, students may be enjoying the 'newness' of secondary education, and in Year 9, they are looking towards the statutory tests at the end of the year and selecting the subjects they will study for the courses leading towards the schooling leaving examinations in Year 11 (students aged 16).

A1.

How are changes in performance monitored in your country?

Q2. Please provide details of how any changes in performance are monitored in your country.

In England, for example, dips in performance at key stage 3 can be measured by the statutory system of assessment. Children are tested towards the end of key stage 2 (primary education, aged around 11) by statutory external national tests in English, mathematics and science. There is also statutory teacher assessment in all compulsory subjects of the National Curriculum at this time when children are expected to reach level 4 on the National Curriculum 8-level scale. Statutory teacher assessment continues in key stage 3, and the next compulsory statutory tests in English, mathematics and science take place towards the end of key stage 3 (students aged around 14). Students are then expected to be performing at levels 5 and 6.

A2.

Are some students or groups of students affected more than others?

Q3. Where dips in performance do occur, do these affect all students in a year group, or particular groups or types of students? Please provide details.

In England, for example, as mentioned previously (Q1.), the dip in student performance in key stage 3 (Years 7, 8 and 9 of compulsory education) is generally believed to be most pronounced in Year 8 (12- to 13-year-olds).

In addition, a recent analysis of student performance data over a six-year period has identified that students with special educational needs appear generally to perform well during key stage 3. Their performance does, however, seem to dip quite significantly during key stage 4, the final stage of compulsory secondary education (14- to 16-year-olds). Again, there are many theories regarding potential contributory causes, including, for example, the delayed teenage maturation of some students with special educational needs. We would be very interested to learn about similar exceptions in your country.

We would also be interested to learn if dips in performance have been judged to affect students from some particular ethnic or social groups more than others, or if boys are affected more than girls or vice versa.

A3.

Are some subjects affected more than others?

Q4. Where dips in performance do occur, do these affect particular subjects or all subjects equally? Do they affect particular aspects of learning, particular skills or particular elements of understanding? Please provide details.

A4.

Have factors contributing to dips in performance been identified?

Q5. Where dips in performance occur, have specific factors in your system been identified as negatively affecting performance? Please provide details.

In England, for example, although there is no overall agreement on what may cause the key stage 3 dip, some of the possible contributory factors are considered to be the effects of transfer from primary to secondary school; the new social and class groupings in which children find themselves; teenage maturation issues; curriculum change; and the perceived distance of the compulsory secondary school leaving examinations at age 16.

A5.

Is there literature available on 'dips' in student performance?

Q6. Please provide references to any literature published electronically in your country and in English which describes potentially similar phenomena.

A6.

Thank you very much for your help.

A report of our findings will be published on the INCA website in summer 2006. We will, of course, let you know as soon as this is available.

Appendix 2

Example framework

Category	Possible coding
Reference	
Source	
Country	
Type of literature/research (including methodology)	empirical research – quantitative/qualitative; sample size; data collection methods policy document – national, regional/state-level
Focus, aims and underlying rationale	
Useful definitions	
Evidence for dip in student performance (maps to Q1 of the questionnaire); and how do the results link with achievement?	identifies a dip identifies 'lack of progress'/no progress identifies decline in achievement identifies gap (e.g. gender gap) rather than dip does not identify dip in achievement identifies other related dip or decline (e.g. in motivation)
At what age range do dips occur? (maps to Q1 of the questionnaire)	in first year after transfer in second year after transfer in third year after transfer general decline (rather than dip) in middle years
How are changes in performance monitored or measured? (maps to Q2 of the questionnaire)	national assessments international comparative tests (e.g. TIMMS, PIRLS) known standardised tests (used in research and measurement) other research instruments, tests or tasks classroom / teacher records
Which students are affected by dips in performance? (maps to Q3 of the questionnaire)	socio-economically deprived (incl. low income) non nationals (incl. non-native speakers) boys girls ethnic groups low achievers low engaged/low motivated
Which subjects or aspects of learning are affected? (maps to Q4 of the questionnaire)	mathematics literacy (reading and writing) science foreign languages problem-solving skills all subject areas / all areas of learning

Factors associated with dips (maps to Q5 of the questionnaire)	effects of transfer curriculum change teaching/learning styles level of challenge perceptions of subjects impact of (distance from) national assessment and exams learner's motivation teenage maturation earlier performance and engagement with learning family background peer interaction and behaviour (including bullying)
Solutions/recommendations	