



O'Kane, Damian, Finlay, Chris, and Mooney, Anne (2009) *New opportunities for disadvantaged pupils: the step-up programme*. In: Cook, Tony and Rushton, Brian (eds.) *How to Recruit and Retain Higher Education Students: A Handbook of Good Practice*. Routledge, New York, pp. 80-99. ISBN 9780415990899

Copyright © 2009 Routledge

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge

Content must not be changed in any way or reproduced in any format or medium without the formal permission of the copyright holder(s)

When referring to this work, full bibliographic details must be given

<http://eprints.gla.ac.uk/91962/>

Deposited on: 07 March 2014

## Chapter 6

### New Opportunities for Disadvantaged Pupils – The Step-Up Programme

Damian O’Kane, Chris Finlay and Anne Mooney

The University of Ulster, Londonderry, Northern Ireland, BT48 7JL

#### SUMMARY

In the UK, the link between low income and poor educational outcomes has been long established. The Step-Up programme, which was initiated in Northern Ireland in 2000, was conceived and developed as a specific response to the under achievement and non participation in higher education of socially and economically disadvantaged secondary school pupils.

In addition to raising educational aspirations, the programme aims to raise pupil and school performance in science in order to enable pupils to gain entry to and complete programmes of study at higher education institutions.

The programme actively involves the University, schools, industry, the local hospitals and government agencies in the delivery of a highly structured programme of academic and vocational science activities.

The pupils who have participated in the programme have achieved outstanding success with over 97 per cent progressing to universities across the UK. The retention/completion rate for students who have progressed to the University of Ulster stands at 95 per cent, which compares favourably with national and international retention rates.

The authors suggest that this level of success has been achieved through appropriate pre university preparation and post university support and they provide recommendation for the successful replication and implementation of the programme in other institutions.

#### EDUCATIONAL AND SOCIAL CONTEXT

Northern Ireland has operated a dual system of grammar and secondary education for the past 60 years. Traditionally, pupils who progressed to grammar schools followed an academic curriculum, were encouraged to stay in school beyond the school leaving age and were expected to progress to higher education. By contrast, pupils in secondary schools were typically not encouraged to undertake public examinations, were not expected to stay on beyond the school leaving age of 16 and were expected to acquire basic skills so that they could enter employment. Indeed Gallagher and Smith (2000) reported that as late as 1970/71 more than 85 per cent of 16 year old school leavers from secondary schools had less than the equivalent of one GCE O-level (replaced by the General Certificate of Secondary Education , GCSE, in 1988).

While the situation, in terms of the academic achievements of some secondary schools and their pupils, has improved since the 1970s the selective system and the distinction between grammar and secondary schools still clearly remains. Pupils at age eleven still undertake the 'transfer test' that is 'designed' to assess their suitability for a grammar school education. Around 30 per cent of pupils each year are selected to attend the academically orientated grammar schools and the remaining 70 per cent attend the more vocationally orientated secondary schools.

An analysis of 1997/98 transfer test data by Gallagher and Smith (2000) indicated that 95 per cent of grammar school pupils had achieved B grade or above in the transfer test while 89 per cent of secondary school pupils had achieved a grade C or D. In the transfer test, only 3 per cent of pupils in secondary schools achieved an A grade compared to 79 per cent in grammar schools. It is not surprising, therefore, that further analysis revealed that practically all A grade pupils were in grammar schools while practically all D grade or pupils not entered for the test were in secondary schools. In addition, the majority of B grade pupils were in grammar schools while the majority of C grade pupils were in secondary schools

The 'academic' distinction between grammar and secondary schools is also clearly illustrated in an analysis of 2001/02 school leavers produced by the Department of Education (2003a) which showed that the proportion of Year 12 pupils passing five or more GCSEs at grades A\*-C or equivalent in grammar schools was 77 per cent, against a figure of only 24 per cent for secondary school pupils. The trend is also repeated in relation to A

level performance where 74 per cent of grammar school pupils achieved three or more A levels compared to only 10 per cent of secondary school pupils.

Shuttleworth and Daly (2000) suggest that being in a grammar school adds almost 16 GCSE points, equivalent to three GCSEs at grade C, to a pupil's achievement at 16 years.'

Daly and Shuttleworth (2000), having conducted interviews with Year 12 pupils in both secondary and grammar schools, concluded that virtually all grammar school pupils planned to return to school after their GCSEs in order to take A levels and subsequently progress to higher education. In contrast, among pupils in secondary schools a wider range of options was under consideration. Many expressed a desire to leave school either to seek employment, enter employment training, attend another school or to enter further education. A minority aspired to enter higher education and this is reflected in 2001/02 School Leavers Destination data (Department of Education 2003a) that showed that almost 74 per cent of grammar school leavers progressed to higher education compared to only 11 per cent of secondary school leavers.

The apparent poverty of aspiration among secondary school pupils was also reflected in interviews that Smith et al. (2000) conducted with secondary school staff who believed that their schools were seen as having lower status than grammar schools and that this tended to have a negative impact on the views of both pupils and parents. As a consequence they felt that many of the pupils arriving in secondary schools do so with a sense of failure and a key priority for the schools is to seek to re-establish a sense of self-worth.

The 'social' distinction between grammar school pupils and secondary school pupils is as clear as the academic distinction according to Gallagher, McKeown and McKeown (2000) who indicate: that while there is a degree of social heterogeneity in all schools it clear that the majority of pupils in grammar schools are from non-manual backgrounds, while the majority of pupils in secondary schools are from manual backgrounds.'

Again, this is, perhaps, not surprising as there is a marked relationship between social disadvantage and achievement in the transfer test. As the proportion of pupils entitled to free school meals increases the proportion of pupils achieving grade A decreases. Of those who sat the test in 2001/02, pupils at schools in the lowest free school meal band were more than two and a half times as likely to achieve a grade A as those at schools in the highest free school meal band (Department of Education 2003b). Across Northern Ireland, pupils from the poorest electoral wards have significantly lower educational attainment levels than pupils from the most affluent electoral wards (NIERC 1999). Children entitled to free school meals are only about half as likely to get five GCSEs at grades A\* to C as other children (Anderson 2001) and only 18 per cent of pupils entitled to free school meals achieve three or more A levels (Department for Education 2007). Consequently, young people from the lowest socio-economic groups in Northern Ireland are seriously underrepresented in higher education (NI Expert Working Group on Widening Participation 2004).

Similar educational outcomes are reported for socially and economically disadvantaged pupils across the rest of the UK where a more egalitarian system of comprehensive education is provided (Blanden and Gregg 2004, Clark-Kauffman *et al.* 2003, Forsyth and Furlong 2003, Glennerster 1995, Gregg and Machin 2001, Hobcraft 1998, Johnston and Raab 1999, Machin *et al.* 2005, Webber and Butler 2005). Atkinson *et al.* (2006), for example, while analysing the educational performance of pupils within the 19 local authorities in England that have retained the '11 plus', found that poorer children are only half as likely as richer ones to get into grammar school, even when independent tests show they are of equally high ability. In addition, only 6 per cent of pupils eligible for free school meals attended grammar school compared to 26 per cent of other children. The disadvantage also applied to pupils with the highest test scores at age 11 with only 32 per cent of those who were entitled to free school meals attending grammar school compared with 60 per cent of pupils who were not entitled to free school meals.

In 2004, the National Statistics Office reported that 77 per cent of children in year 11 in England and Wales in 2002 with parents in higher professional occupations gained five or more A\* to C grade GCSEs compared to 32 per cent of children with parents in routine occupations. Likewise, in 2002, 87 per cent of 16 year olds with parents in higher professional occupations were in full-time education compared to 60 per cent of those with parents in routine occupations. At higher education level this is also repeated with more than three quarters of students from professional backgrounds studying for a degree compared to just 14 per cent from unskilled backgrounds (HEFCE 2005).

The link between social disadvantage and educational underachievement is well documented. It is clear that social class-origins remain the greatest predictor of academic success and failure (Clancy and Wall 2000, Drudy and Lynch 1993, Lynch 1999, Power 2000) and also of future location in the labour market (Mac an Ghail 1996).

The social consequences of low educational attainment are also well documented. Many young people suffer the effects of multiple disadvantages, which often manifest themselves in substance or alcohol abuse, truancy, violence, poor diet and nutrition and untimely pregnancy (Department of Education Inspectorate Report 2000). Of the 17 identified risk factors for youth crime, 15 correlate with school failure (Civic Forum 2002).

Long-term under achievement at school also has a knock-on effect for adults in the workforce. There is a clear link between childhood poverty, teenage parenthood, early school leaving and criminality, low wages and unemployment (Moser 1999). If young people are allowed to drift into unemployment and inactivity at the ages of 16 or 17, then their chances of ending up long-term unemployed as young adults is significantly higher (NIERC 2000). The NIERC report also confirmed that, for many individuals in Northern Ireland, the origin of long-term unemployment and economic inactivity can be traced to a variety of negative experiences during their schooling and as they moved into the crucial transition phase at the ages of 16 and 17:

‘Failure to tackle disaffection, marginalization and exclusion through effective educational policies and practices is reflected in reduced quality of life, severe



disaffection with society in general, crime and alcohol and substance abuse and attempts at costly and often ineffective rehabilitation.’

(Civic Forum, 2002)

‘The cost of educational underachievement greatly extends beyond the loss of opportunity and the unfulfilled potential to even more serious consequences. For a disaffected young person who turns to crime, society bears the cost of placing that person in a detention centre at a cost of £100,000 per year and the rehabilitation of a substance abuser for heroin addiction is £115,000 per year.’

(Misspent Youth, Audit Commission 1996, as cited in Civic Forum (2002): 22).

It was against this background of educational/social disadvantage and underachievement among secondary pupils that the Step-Up programme was conceived, developed and initiated in 2000. Step-Up was, and still remains, a specific response to the underachievement and non participation in higher education of socially and economically disadvantaged secondary school pupils.

## AIMS AND OBJECTIVES OF THE STEP-UP PROGRAMME

The development of the aims and objectives of the programme were influenced by a number of guiding principles.

1. The programme should be pupil centered and seek to contribute to the personal growth of each and every pupil. All decisions, developments and the future direction of the programme should be in the best interest of the pupils.

2. Raising aspirations alone is not enough to ensure that young people from the lowest socio-economic groups will participate in higher education. The programme should raise educational performance and attainment through direct intervention and thereby ensure student participation and success in higher education. To do so, the programme must utilise the expertise that is available across a wide range of partner organisations.

3. The progression of pupils between school and higher education should be a natural and seamless transition.

4. Facilitating entry to higher education is not the end point but rather the mid-point of the process. It is essential that a network of support is created for 'at risk' students that addresses their academic and personal needs enabling them to persist and succeed in university.

5. The programme must actively engage pupils in academic work that they perceive as meaningful, relevant and motivating while also assisting them to achieve the necessary qualification and skills that will guarantee progression and success.

6. The chosen curriculum area at school level should provide the widest possible subject choice at university and pupils should be supported to make informed course and career choices.

7. The programme should provide pupils with the opportunity to undertake study in an academic discipline that has strong graduate employment rates.

The decision to base the programme in science, as opposed to any other discipline, was largely influenced by these guiding principles and by the following considerations.

1. Discussions with employers across Northern Ireland in 1999 indicated that there was a clear skills shortage in science and related areas at both the graduate and technical levels. Employers, particularly in Londonderry, indicated that if the Step-Up programme could generate 'home-grown' science graduates they would be prepared to support the programme and also provide future employment opportunities.

2. The science curriculum can be delivered in ways that will engage pupils in academic activities that they consider to be meaningful, relevant and motivating. Science lends itself to practical hands-on exploration and experimentation and, as such, can be particularly attractive to pupils who have already indicated that they are not motivated by a science curriculum that is delivered using more traditional methods.

3. Pupils who obtain qualifications in science are able to apply to a wider range of university level courses compared to those who obtain qualifications in non-science subjects.

The overall aim of the Step-Up programme is the provision of new learning opportunities in science for disadvantaged pupils who traditionally have low attainment levels and low expectations of their educational abilities. In addition to raising educational aspirations, Step-Up aims to raise pupil and school performance in science in order to enable pupils to gain entry to, and complete programmes of study at, higher education institutions. It challenges the notion that selection at age 11 usefully divides pupils into those most likely to enter higher education and those who are not.

The specific aims of the programme are to:

- Raise pupil and school performance in science subjects.
- Encourage participation in higher education by young people who would not otherwise have regarded this as an educational option.
- Develop subject specific and generally transferable study skills to facilitate the transition from school to higher education.

- Provide students with ongoing support to ensure successful completion of degree level programmes of study.

## IDENTIFICATION OF ORIGINAL 'TARGET' SCHOOLS

The programme, from its inception, has had a highly structured approach to the targeting of schools and young people to ensure that all pupils irrespective of their social class can benefit from the opportunities that higher education can provide.

The programme started in 2000 in Londonderry, the second largest city in Northern Ireland with a population approaching 85,000. Londonderry was specifically chosen as the location for the inception of the programme because of its exceptionally high levels of social and economic disadvantage and educational underachievement. Nearly 50 per cent of the population live in disadvantaged wards and unemployment is significantly higher than the Northern Ireland average. In Londonderry, 44 per cent of the population have no educational qualifications and performance in the General Certificate of Secondary Education (GCSE) and General Certificate in Education – Advanced (GCE A levels) qualifications is well below the Northern Ireland average.

The areas in which the target schools are located have consistently been identified by the Townsend Deprivation Index (Townsend *et al.* 1988) (a composite index of area based material deprivation, which uses unemployment, home ownership, car ownership and overcrowding census data), as being among the most disadvantaged areas in Northern

Ireland. As a result, all the Step-Up schools have benefited from additional educational funding under the Department of Education for Northern Ireland (DENI) funded initiative 'Targeting Social Need'. In addition, the percentage of pupils from the Step-Up schools entitled to free school meals (which is the criterion normally used as a measure of social disadvantage) is significantly higher than the Northern Ireland average of 20 per cent and ranges from 34 per cent to 76 per cent.

Educational indicators such as GCSE examination results and higher education participation were also examined and revealed that only a small number of pupils who entered the 'target' schools, subsequently progressed to undertake General Certificate of Education Advanced Level or General National Vocational Qualification (GNVQ) qualifications. Prior to the introduction of the Step-Up programme, the level of academic performance in the 'target' schools was significantly lower than the Northern Ireland average and progression to higher education was negligible. For example:

- The average A level or equivalent UCAS points score for students across all target schools in 2000 was less than eight (120 tariff points). The average UCAS points requirement for entry to programmes in Northern Ireland universities was eighteen points (240 tariff points).

- Less than 5 per cent of the target schools intake progressed to higher education compared to a 36 per cent average across all schools, including grammar schools, in Northern Ireland

## IDENTIFICATION OF 'TARGET' PUPILS

Pupils who are identified by their schools as being disadvantaged and at risk of educational exclusion/underachievement are specifically targeted. Pupils, following consultation with their parents/guardians, are invited to submit an application and are interviewed. Acceptance onto the programme is dependent upon performance at interview, application details and information from school staff in relation to the following indicators:

- Little or no parental experience of higher education.
- Limited family income.
- Unskilled, semi-skilled or unemployed parent(s) or guardian(s).
- Living in a neighbourhood or other circumstances not conducive to study.
- Living in an environment that has been seriously affected by political unrest.

The Step-up programme has recently recruited the ninth cohort of pupils and an analysis of those who have been accepted to participate in the Londonderry programme (N = 563) reveals that:

- 85 per cent have parents or guardians who are long-term unemployed.
- 94 per cent live in rented accommodation.

- 30 per cent come from single parent families.
- 98 per cent of parents or guardians who are in employment are unskilled or semi-skilled.
- 13 single teenage mothers have progressed through the programme.
- Three parents have had experience of higher education.
- 98 per cent of young people on entry to the programme expressed no desire to participate in higher education.

This analysis clearly indicates that the targeting, recruitment and selection process is successfully reaching those who are among the most socially and economically disadvantaged in Northern Ireland.

## DELIVERY OF THE STEP-UP PROGRAMME

The Londonderry Step-Up programme offers 70 places per year to pupils across five secondary schools and is funded by the Department for Employment and Learning under its Widening Participation in Higher Education Strategy. The annual budget of £174,000 provides the funding to deliver the complete programme, as detailed below, to two simultaneous cohorts of year 13 and year 14 pupils (N =140) and to employ two Development Officers to coordinate activities. The University of Ulster provides access to lecture theatres, laboratories, computer rooms and staff accommodation as part of its ‘in-kind’ contribution. Partner organisations also provide free access to their facilities and staff



and local sponsors also support the programme with donations in the region of £25,000 - £30,000 per year.

The University of Ulster and partner organisations deliver the specific aims of the programme through five sequential and cumulative stages that are outlined below.

#### Stage 1 – engagement

The Engagement Stage aims to persuade and encourage pupils to participate in the Step-Up programme beyond age 16. A series of general information and advice evenings for larger groups of parents/pupils are delivered at the University, in schools and in the local community to encourage pupils in the final year of secondary education to apply to the programme. Meetings with parents and pupils in their own homes are also arranged to encourage participation from other ‘at risk’ pupils who do not attend the information events.

In addition, a range of practical scientific activities have been developed and are specifically targeted at year 8 to year 12 pupils to encourage them to consider Step-Up as an educational option in years 13 and 14. Activities include a Guest Lecture Series, science competitions and practical laboratory based experimentation work. During the 2007/08 academic year, the programme of activities actively engaged with over 6,500 students from the most disadvantaged schools in Northern Ireland. Feedback from teachers suggests that this early intervention is having a significant impact on pupils within their schools, helping

to improve motivation, self-esteem and application to study. This has led to a significant increase in the number of 'self-referral' applications from 'at risk' pupils who wish to participate in the programme.

## Stage 2 – The Tutoring Programme

The two year Tutoring Programme aims to raise pupil and school performance in science subjects, assist in the development of pupils' general and subject specific skills and provide pupils with direct experience of university teaching, research and assessment methods.

The programme actively involves the University, schools, industry, local hospitals and government agencies in a collaborative partnership. The partner organisations contribute to the teaching of the twelve-unit GCE Applied Science qualification, which is equivalent to two traditional General Certificate of Education Advanced level qualifications, within a highly structured programme of academic and vocational activities. The major advantage of the vocational qualification compared to traditional A levels is that it is flexible enough to allow the academic and vocational content to be delivered in much more relevant, interesting and practical ways. Pupils are also supported to undertake, within their own schools, an additional A level or GCE Applied six-unit award.

The delivery of the Applied GCE qualifications is achieved through a highly structured and organised programme of academic and practical activities. Highly interactive formal and informal staff-student contact sessions (lectures, seminars, tutorials and practicals) are

delivered by a wide range of staff from across the University, schools and other science related organisations which reflect nationally and internationally recognised expertise in teaching and learning and research. Step-Up pupils work closely with leading UK experts in many science related areas which include Cancer and Ageing, Diabetes, Human Nutrition, Nursing, Physiotherapy, Biotechnology, Biomedical Science, Biological Science, Optometry, Radiography and Sport Science.

Postgraduate and undergraduate ‘mentors’ are also recruited and trained through the Step-Up programme to offer academic support to pupils within the school environment across a wide range of GCE Applied Science modules. Pupils are largely taught within the University, participating schools, industrial companies, government organisations and the local hospitals. In addition to scheduled sessions, Step-Up pupils are also able to make use of University facilities that includes access to laboratory equipment, computers and library resources.

As well as being exposed to a wide range of academic and work related disciplines during the programme, pupils participate in a series of programme and careers information events during their two years. An ‘Applying to University Clinic’ is also organised to assist pupils prepare their applications when applying to universities across the UK.

Stage 3 – The Residential Summer School

The Summer School, at the end of the first year, is based on the Coleraine Campus of the University that is approximately 65 km from Londonderry. The eight day residential programme builds upon the experiences of the Tutoring Programme and is based on a combination of formal timetabled lectures, seminars, tutorials and practical classes which are delivered by academic staff and more informal project based work which is supported by Postgraduate Mentors.

The Postgraduate Mentors are selected from a broad range of science and related areas within the University and undergo extensive training and vetting procedures prior to working with the pupils. The Postgraduate Mentors assist pupils in working both collaboratively and independently as they undertake laboratory based scientific investigations. Fifteen Postgraduate Mentors are employed for the full duration of the Summer School and they earn £400 each.

All academic work undertaken during the Summer School aims to further enhance pupils' performance in the Applied GCE Science qualification and to assist in the development of additional general and specific science skills, to improve self-esteem and motivation. For many pupils the Residential Summer School represents the first time that they have been away from their own home environment. The opportunity to experience university as an 'associate undergraduate student' helps to remove some of the fears that they may have about being able to cope away from home.

As an added incentive ‘Step-Up’ pupils who successfully complete assessments (a portfolio of project work and written examinations) associated with the Tutoring Programme and the Residential Summer School can earn between 20 and 60 additional tariff points. The University of Ulster, in line with normal practice, has appointed an external examiner to assure the quality and standard of the assessment and award. Additional tariff points that have been earned can be added to UCAS tariff points for entry to the University of Ulster.

#### Stage 4 – The University Induction Programme

The University Induction Programme is delivered as a three-day residential course and is aimed at Step-Up pupils who have applied and been accepted to undertake a programme of study at the University of Ulster.

The University Induction Programme largely consists of a ‘Personal Transferable Skills Course’ that includes planning and writing reports, time management, study skills, presentation skills, money management and activities leading to familiarisation with staff from the various student support departments within the University. The Induction Programme is delivered by Step-Up staff and other University staff from the Department for Student Support who have particular expertise in identifying and dealing with undergraduate issues and problems.

#### Stage 5 – The Mentoring Programme

All Step-Up students who embark on a programme of study at the University of Ulster are assigned a Student Mentor who is normally a current postgraduate student at the University. The Student Mentor will normally have successfully completed the same undergraduate degree as the Step-Up student. Postgraduate students who wish to become Student Mentors are interviewed to determine their suitability for the role. Student Mentors undergo extensive training, which is delivered by the Step-Up staff with input from the University's Staff Development Unit, prior to meeting the Step-Up students.

The Student Mentors are required to offer the Step-Up students guidance and support, as required, throughout their University programme but must have at least one formally scheduled consultation session each month. The Student Mentors are required to maintain and submit, after every meeting, a progress log on each Step-Up student that serves to alert Step-Up staff to any academic or pastoral difficulties. Remedial action, in conjunction with the student's Adviser of Studies, is taken to resolve problems as they arise. Student Mentors are normally assigned between three and five Step-Up students and are paid, on production of the progress log, £100 per semester. The majority of Student Mentors spend around 6-8 hours per month mentoring students. Increasingly, Student Mentors are former Step-Up students who are in the final years of their undergraduate degrees or who are postgraduate students at the University of Ulster. While payment for mentoring is welcomed, it is not the reason why many Student Mentors get involved. Most mentors, particularly former Step-Up students, appreciate the support they received from the programme and wish in their own words 'to give something back'

## IMPACT OF THE PROGRAMME

Since its inception in 2000, the programme has witnessed considerable success against its stated aims and objectives. To date, six cohorts of Step-Up pupils have successfully completed the programme and the outcomes are summarised below.

### Examination Performance

99.9 per cent of pupils have obtained the Applied GCE Double Award Science qualification. Almost 75 per cent of pupils have obtained double A or B grades with the remainder obtaining C grades. To date, almost one third of pupils have achieved straight A grades. These results compare favourably with those across the UK where only 2 per cent of pupils undertaking the Applied GCE Science qualification in 2008 obtained double A grades, 8 per cent achieved double A or B grades and 34 per cent failed to obtain the qualification. The performance of the Step-Up pupils is even more exceptional when a comparison between previous GCSE performance/GCE predictions and actual grades obtained is conducted. This analysis reveals that all pupils without exception achieved at least one grade higher than predicted with over 70 per cent achieving two grades higher than predicted.

### Progression to higher education

At initial interview, 98 per cent of pupils expressed no interest in progressing to higher education. However, this changed dramatically as a result of participation in the programme with 97 per cent of pupils successfully progressing to universities in Northern Ireland or Great Britain, many to high demand courses such as Optometry, Physiotherapy, Forensic Science, Molecular Biosciences, Radiography, Sport Science, Pharmacy and Law. Those not entering university have progressed to higher education courses based in the further education colleges.

#### Retention Rate

The retention/completion rate for six student cohorts who progressed to degree level programmes at the University of Ulster is 95 per cent. This compares favourably with a retention rate of 77.6 per cent for universities across the UK and 79 per cent for the University of Ulster (National Audit Office Report 2007).

#### Completion of Degree Level Programmes

An analysis of the degree classifications of Step-Up students who have graduated from universities across the United Kingdom indicates that 17 per cent have obtained first class honours degrees, 55 per cent received 2:1 honours degrees, 26 per cent have received 2:2 honours degrees and 2 per cent have achieved third class honours degrees.



The success of the programme has also received considerable attention across the education sector and has been identified by Universities UK in two independently commissioned reports in 2002 (*Social Class and Participation*) and 2005 (*From the Margins to the Mainstream – embedding widening participation in higher education*) as an example of best practice in the provision of educational opportunities for students from socially and economically disadvantaged backgrounds. Step-Up has also been identified as an exemplar of best practice in the teaching of GCE Applied Science by the Qualifications and Curriculum Authority (QCA 2006).

As a result of the programme's success, a further £1.6 m was made available by the Department for Employment and Learning and the Renewing Communities Initiative in September 2006 to include an additional 15 disadvantaged schools in Greater Belfast. The first cohort of pupils (N = 100) graduated from the programme in August 2008 with a 97 per cent pass rate in the Applied GCE Science qualification and over 65 per cent achieving double A-C grades.

The impact of pre-entry and post-entry intervention on retention

The programme has clearly been successful over the past eight years in raising pupil performance, encouraging participation in higher education and facilitating the completion of degree level programmes among socially and economically disadvantaged students. The most pleasing and perhaps surprising outcome, particularly when viewed against the persistence and completion rates for university students in the United Kingdom, is the

achievement of a 95 per cent retention rate among Step-Up students who attend the University of Ulster. The retention rate for those who study in other UK universities is somewhat lower at 84 per cent where the levels of post-entry support in terms of induction, mentoring and ongoing contact with Step-Up staff is not part of their university experience. We have no doubt, however, that the positive outcomes for the vast majority of Step-Up students have been achieved through a highly structured programme of pre-entry and post-entry interventions. We would also suggest that this success can be replicated in other institutions if the recommendations we outlined below are adopted.

1. Create the psychological environment for learning to succeed.

The activities associated with the programme are designed to improve self-esteem, competence, motivation and educational expectations. Pupils are supported by school and university staff/postgraduate mentors within a highly structured, competence based learning environment where they experience successful outcomes. As a result, pupils' feelings of self-worth, competence and their motivation improve dramatically. O'Kane *et al.* (2005) report higher levels of self-esteem and self-efficiency in Step-Up pupils compared to fellow secondary school pupils, and almost identical levels to those of grammar school pupils. The authors suggest that in raising pupils' belief in their own ability to the levels associated with grammar school pupils who from the age of 11 are 'groomed' for higher education, Step-Up may be providing the necessary psychological foundation for success.

Indeed Trotman (2003), who carried out an independent evaluation of the programme, also noted that:

‘The increase in self-worth and increased confidence is an absolutely positive outcome which impacts upon participants performance rates and enhances their ability through belief in themselves.’

This view is supported by Hall *et al.* (2001) who reported in their study on persistence in further education that overcoming self-doubt was a major factor in student retention rates.

Dweck (2000) goes further and suggests that students’ views of their abilities can be altered by structuring early learning experience in a new subject by starting with what the students are good at:

‘Those who are led to believe that their intelligence is a malleable quality begin to take on challenging learning tasks and begin to take advantage of the skill- improvement opportunities that come their way.’

The involvement of parents is also critically important to the success of the Step-Up pupils. Parents are, therefore, encouraged and supported to be involved in every aspect of their children’s learning from the initial engagement stages through to the completion of degree level programmes. Again the importance of this approach is supported by the research literature. Perna and Titus (2005) suggest that ‘aspirations and family support foreshadow student success’. Hamrick and Stage (2004) also report that parental expectations were the strongest predictors of predisposition to college among pupils who attended low-income, high-minority schools in the USA.

This new-found belief and confidence in their own ability and the ongoing support of their parents is carried forward into university. Many pupils and their parents, often for the first time since the transfer test at the age of 11, believe that a university education is achievable and have a newly found determination to succeed.

2. Ensure that pupils are prepared for university life by providing rigorous academic preparation.

The Tutoring Programme and Residential Summer School aim to provide pupils with the necessary academic preparation and exposure to the ‘university environment’ to ensure future success. The academic preparation is both subject specific (science) and general (IT, communication and presentation skills). Pupils are challenged and intensively supported to extend their knowledge and skills. The quality and standard of the work produced by the pupils is well above that normally seen at GCE Advanced level, a point recognised by the programme’s external science examiner, who reported:

‘The work I have seen would not be out of place at first year undergraduate level in other institutions.’

(Cited by Trotman 2003: 53)

Research, largely conducted in the USA among college students, supports the idea that the quality of the academic experience and intensity of the high school curriculum affect almost every dimension of success in post secondary education. It seems consistently to be

the case that students who are better prepared coming out of high school are best positioned to do well in college, regardless of who they are, how much money they have or where they go (Gladieux and Swail 1998, Horn and Kojaku 2001, Martinez and Klopott 2003, Warburton *et al.* 2001). Indeed, a rigorous high school curriculum can narrow the college persistence gap for first generation students especially if they graduate from school in the top quartile (Nuñez and Cuccaro-Alamin 1998, Warburton *et al.* 2001), while Pike and Saupe (2002) report that high school grades in the USA have consistently been a strong predictor of first-year college grades, accounting for 25 per cent to 33 per cent of the variance.

Considering the clear link between the school academic experience and subsequent persistence at university it is incumbent upon universities, if they are serious about improving retention, to meaningfully impact on the school curriculum. There is a real opportunity to prepare pupils, while in school, for the academic and social challenges that university presents and to subsequently reap the rewards in terms of improved student retention.

3. Ensure familiarization with higher education and its teaching, research and assessment methods.

The Step-Up pupils are exposed to the University, its staff and its teaching, research and assessment methods on a weekly basis. The importance of ongoing and sustained contact with the University and its staff cannot be under estimated as outlined by Trotman (2003):

‘The Step-Up programme had prepared them for it [university], they had benefited from already knowing what lectures and practicals would be like. The learning system at university was also known to them.’

(Trotman 2003: 41)

This view was also articulated by a former Step-Up pupil who said:

‘We’ve walked the ground ... having been there before helps when you go there as a student.’

(Trotman 2003: 42)

The university, as a result of pupils’ regular contact, is no longer perceived by them as an alien environment. Pupils are not just familiar with the physical environment but also with the university teaching, research and assessment methods. Consequently, Step-Up students on entering higher education are immediately comfortable with their academic and social surroundings.

4. Provide appropriate ongoing careers advice and exposure to career professionals.

One of the main reasons students cite for dropping out of university is that the programme they choose did not match their expectations. It is clearly important, therefore, that students, before they embark on a programme of study, have an accurate and realistic understanding of what the programme entails and what career opportunities will be available to them following graduation.

Step-Up pupils are exposed throughout the programme to programme and careers information events, e.g. UCAS Clinics, and they have regular contact with industrial scientists, hospital staff, university staff and postgraduate students from a variety of science and related areas. As a result of their experiences pupils regularly change their programme and career aspirations within the first year of the programme before 'fixing' on a programme choice. Among the small number of Step-Up students who fail to complete a degree level programme at the University of Ulster only 1 per cent cite programme choice as the reason for leaving.

It is apparent that access to appropriate programme information and contact with individuals from a wide range of careers allows pupils to make more informed and realistic decisions about the programmes of study and career they will pursue.

5. Provide post entry support to ensure the successful completion of degree level programmes.

It is clear that many students who progress to higher education encounter significant difficulties when trying to make the transition from school to university. This perhaps explains why approximately 10 per cent of students across the UK leave their programme of full-time study within twelve months of enrolling (Yorke 2002). It is not surprising that the first year in university is considered to be the most critical in shaping persistence

decisions (Blythman and Orr 2003, Fitzgibbon and Prior 2003, Pascarella and Terenzini 1991, Tinto 1987).

While the research literature supports the assertion that all students face difficulties in adjusting to the challenges of university life, these difficulties are often more acute for non-traditional students as outlined by Kuh *et al.* (2006) who suggests that:

‘First generation students typically have less well developed time management and other personal skills, less family and social support for attending college, less knowledge about higher education and less experience navigating bureaucratic institutions.’

The Step-Up post entry intervention, namely the University Induction Programme and the Mentoring Programme, builds upon the pre-entry experiences of the pupils and provides additional preparation and support to ensure persistence at university.

The University Induction Programme largely consists of a ‘Personal Transferable Skills Course’ and a programme of activities leading to familiarisation with staff from the various student support departments within the University. Feedback from Step-Up students indicates that the University Induction programme is highly valued and as one student indicated it allows them to ‘... avoid the disasters before they actually happen’.

Students also report that it is reassuring to ‘... know who to turn to if I have a problem ... it is not just a name on a list, it is a face I know, a real person’.



The Mentoring Programme provides ongoing support, academic and pastoral, through Student Mentors. The majority of Step-Up pupils (90 per cent) avail of mentoring support in their first year of university with only 15 per cent requiring mentoring support in the second year of their programme of study. Feedback from Student Mentors indicates that the support they provide to Step-Up students in the early part of each semester is normally related towards general study skills that change towards more specific issues as examinations and assessment deadlines approach.

Some students do not avail of the mentoring support provided despite the best efforts of the Student Mentors and Step-Up staff. It is clearly the case that students at the University of Ulster who do not participate in the Mentoring Programme are more likely to drop-out or experience academic difficulties. Similarly, as discussed earlier, the drop-out rate among Step-Up students who study in other universities and who, therefore, cannot avail of the Mentoring Programme, is also significantly higher.

The programme does not view the progression of disadvantaged students to higher education as the end of the process. In many ways for universities it should only be the start of the process. The difficulties that many disadvantaged students encounter in the run up to entering higher education do not suddenly disappear when they enrol. If we are in the 'business' of encouraging disadvantaged students to participate in higher education then we have a responsibility to ensure that we provide appropriate levels of post entry support to assist them to complete degree level programmes.

## CONCLUSION

The Step-Up programme has demonstrated over the past eight years that appropriate and targeted intervention can successfully raise the aspirations and educational outcomes of disadvantaged pupils. Direct intervention on the scale described costs less than £2500 per pupil and provides the necessary pre entry preparation and post entry support to ensure retention and success at university. As educational underachievement among disadvantaged pupils is not unique to Northern Ireland, it would appear that the Step-Up programme may have application in other institutions, both within and beyond the UK.

## REFERENCES

- Anderson, J. (2001) cited in *Can do Better. Educational disadvantage in the context of lifelong learning*, Belfast: The Civic Forum.
- Atkinson, A., Gregg, P. and McConnell, B. (2006) *The Results of 11 Plus Selection. An investigation into opportunities and outcomes for pupils in selective LEAs*, Bristol: Personal Finance Research Centre, University of Bristol.
- Blanden, J. and Gregg, P. (2004) *Family Income and Educational Attainment: a review of approaches and evidence for Britain*, London: Centre for the Economics of Education, London School of Economics.
- Blythman, M. and Orr, S. (2003) 'A joined-up policy approach to student support', in M. Pello and T. Wareham (eds) *Failing Students in Higher Education*, 45-55, Buckingham: Open University Press/Society for Research into Higher Education.

- Civic Forum (2002) *Can do Better. Educational disadvantage in the context of lifelong learning*, Belfast: The Civic Forum.
- Clancy, P. and Wall, J. (2000) *Social Background of Higher Education Entrants*, Dublin: Higher Education Authority.
- Clark-Kauffman, E., Duncan, G. and Morris, P. (2003) 'How welfare policies affect child and adolescent achievement', *American Economic Review*, 93: 299-303.
- Daly, P and Shuttleworth, I. (2000) After Post Compulsory Education: First Destination of Northern Ireland year 12 pupils in 1999. Research Paper: SEL 3.2 in Gallagher, T. and Smith, A. (2000) *The Effects of the Selective System of Secondary Education in Northern Ireland*, Bangor: Department of Education.
- Department of Education (2003a) *Qualifications and Destinations of Northern Ireland School Leavers 2001/02*, Bangor: Department of Education.
- (2003b) *Transfer Procedures Test Results 2001/02*, Bangor: Department of Education.
- (2007) *Qualifications and Destinations of Northern Ireland School Leavers 2005/06*, Bangor: Department of Education.
- Department of Education Inspectorate Report (2000) cited in *Can do Better. Educational disadvantage in the context of lifelong learning*. Belfast: The Civic Forum.
- Drudy, S. and Lynch, K. (1993) *Schools and Society in Ireland*, Dublin: Gill and Macmillan.
- Dweck, C.S. (2000) *Self-theories: their role in motivation, personality, and development*, Philadelphia, PA: Psychology Press.

- Fitzgibbon, K. and Prior, D.J. (2003) *Student Expectations and University Interventions – a timeline to aid undergraduate student retention*, LTSN BEST Annual Conference April 2003, Brighton.
- Forsyth, A. and Furlong, A. (2003) ‘Access to higher education and disadvantaged young people’, *British Educational Research Journal*, 29: 205-25.
- Gallagher, T. and Smith, A. (2000) *The Effects of the Selective System of Secondary Education in Northern Ireland*, Bangor: Department of Education.
- Gallagher, T., McKeown, P. and McKeown, E. (2000) Patterns of Participation in Grammar and Secondary Schools. Research paper, SEL 4.2 in Gallagher, T. and Smith, A. (2000) *The Effects of the Selective System of Secondary Education in Northern Ireland*, Bangor: Department of Education.
- Gladieux, L.E. and Swail, W.S. (1998) ‘Financial aid is not enough: improving the odds of college success’, *College Board Review*, 185: 16-21, 30-2.
- Glennerster, H. (1995) *British Social Policy Since 1945*, Oxford: Blackwells.
- Gregg, P. and Machin, S. (2001) ‘The relationship between children experiences, subsequent educational attainment and adult labour market performance’, in K. Vleminckx and T.M. Smeeding (eds) *Child Well Being in Modern Nations: what do we know?* Bristol: Policy Press.
- Hall, J., May, S. and Shaw, J. (2001) ‘Widening participation – what causes students to succeed or fail?’ *Educational Developments*, 2: 5-7.
- Hamrick, F.A. and Stage, F.K. (2004) ‘College predisposition at high-minority enrollment low- income schools’, *The Review of Higher Education*, 27: 151-68.

- HEFCE (2005) *Young Participation in Higher Education*, Research Report, January 2005/03, Bristol: Higher Education Funding Council for England.
- Hobcraft, J. (1998) *Intergenerational and Life-course Transmission of Social Exclusion: influences and childhood poverty, family disruption and contact with the police*, CASE Paper 15, London: Centre for Analysis of Social Exclusion, London School of Economics.
- Horn, L.J. and Kojaku, L.K. (2001) 'High school academic curriculum and the persistence path through college: persistence and transfer behavior of undergraduates 3 years after entering 4 year institutions', *Education Statistics Quarterly*, 3: 65-72.
- Johnston, V. and Raab, G. (1999) 'Participation in higher education in Scotland: a geographic and social analysis', *Higher Education Quarterly*, 53: 369-94.
- Kuh, G.D., Kinzie, J., Buckley, J.A., Bridges, B.K. and Hayek, J.C. (2006) *What Matters to Student Success: a review of the literature*, Commissioned Report for the National Symposium on Postsecondary Student Success: Spearheading a Dialog on Student Success, Washington, DC: National Post-Secondary Education Cooperative.
- Lynch, K. (1999) *Equality in Education*, Dublin: Gill and Macmillan.
- Mac an Ghail, M. (1996) 'Sociology of education, state schooling and social class: beyond critiques of the new right hegemony', *British Journal of Sociology of Education*, 17: 163-76.
- Machin, S., McNally, S. and Meghir, C. (2005) *Excellence in Cities: evaluation of an education policy in disadvantaged areas*, London: DfES.
- Martinez, M. and Klopott, S. (2003) *Improving College Access for Minority, Low-Income, and First-Generation Students*, Boston: Pathways to College Network.

Moser, C. (1999) *A Fresh Start: improving literacy and numeracy*, London: Department for Education and Employment.

National Audit Office (2007) *Staying the Course: the retention of students in higher education*, National Audit Office Report, July 2007, London: The Stationery Office.

National Statistics Office (2004) *Focus on Social Inequalities: Chapter 2: Education, Training and Skills: GCSE Attainment*, p8-13 December 2004, London: Office for National Statistics. Online. Available at [http://www.statistics.gov.uk/downloads/theme\\_compendia/fosi2004/SocialInequalities\\_full.pdf](http://www.statistics.gov.uk/downloads/theme_compendia/fosi2004/SocialInequalities_full.pdf) (Accessed October 2008)

NIERC (1999) *Selective Secondary Education and Staying-On*, Belfast: Northern Ireland Economic Research Council.

— (2000) *An Update on Unemployment and Labour Market Inactivity Amongst Young People in Northern Ireland*, Belfast: Northern Ireland Economic Research Council.

NI Expert Working Group on Widening Participation (2004) *Northern Ireland Higher Education Council – Expert Group review report on DEL Strategy and Initiatives to Widening Participation in Higher Education*, Belfast: Department for Employment and Learning.

Núñez, A.M. and Cuccaro-Alamin, S. (1998) *First-Generation Students: undergraduates whose parents never enrolled in postsecondary education*, National Center for Education Statistics 98-082, Washington, DC: U.S. Department of Education.

O’Kane, D., Adamson, G. and Shevlin, M. (2005) ‘Step-Up: an analysis of the longitudinal changes in academically related psychological variables’, *Widening Participation and Lifelong Learning*, 7: 47-51.

- Pascarella, E.T. and Terenzini, P.T. (1991) *How College Affects Students: findings and insights from twenty-years of research*, San Francisco: Jossey-Bass Publishers.
- Perna, L.W. and Titus, M.A. (2005) 'The relationship between parental involvement as social capital and college enrollment: an examination of racial/ethnic group differences', *Journal of Higher Education*, 76: 485-518.
- Pike, G.R. and Saupe, J.L. (2002) 'Does high school matter? An analysis of three methods of predicting first-year grades', *Research in Higher Education*, 43: 187-207.
- Power, S. (2000) 'Educational pathways into the middle class(es)', *British Journal of Sociology of Education*, 21: 133-45.
- QCA (2006) *14-19 Learning*, London: Qualifications and Curriculum Authority. Online. Available HTTP: <[www.qca.org.uk/14-19](http://www.qca.org.uk/14-19)> (accessed 21 July 2008).
- Shuttleworth, I. and Daly, P. (2000) The Pattern of Performance at GCSE. Research Paper SEL3.1 in Gallagher, T. and Smith, A. (2000) *The Effects of the Selective System of Secondary Education in Northern Ireland*, Bangor: Department of Education.
- Smith, A., Birthistle, U., Montgomery, A., & Farrell, S. (2000) Teachers and Selection in Northern Ireland. Research Paper SEL 6.1 in Gallagher, T. and Smith, A. (2000) *The Effects of the Selective System of Secondary Education in Northern Ireland*, Bangor: Department of Education.
- Tinto, V. (1987) *Leaving College: rethinking the causes and cures of student attrition*. Chicago: University of Chicago Press.
- Townsend, P., Phillimore, P. and Beattie, A. (1988) *Health and Deprivation: inequality in the North*, London: Croom Helm.

Trotman, C. (2003) *Evaluation of the Step-Up Programme*, unpublished report, Coleraine: University of Ulster.

Universities UK (2002) *Social Class and Participation*, London: Universities UK.

— (2005) *From the Margins to the Mainstream – embedding widening participation in higher education*, London: Universities UK.

Warburton, E.C., Bugarin, R. and Nuñez, A.M. (2001) ‘Bridging the gap: academic preparation and postsecondary success of first-generation students’, *Education Statistics Quarterly*, 3: 73-7.

Webber, R. and Butler, T. (2005) *Classifying Pupils by Where They Live: how well does this predict variations in their GCSE results?* Working Paper Series no 99. Centre for Advanced Spatial Analysis, London: University College. Online. Available at <http://eprints.ucl.ac.uk/3277/1/3277.pdf> (accessed 7 October 2008).

Yorke, M. (2002) ‘Formative assessment – the key to a richer learning experience in semester one’, *Exchange*, 1: 12-3.