

Do Pre-entry Interventions such as 'Aimhigher' Impact on Student Retention and Success? A Review of the Literature

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Abstract

This paper reviews the potential impact of pre-entry widening access interventions on student retention and success in higher education. It thus addresses two contemporary policy concerns: What is the impact of pre-entry widening access interventions; and how can we improve student retention and success? A review of academic and practitioner literature finds limited research about the impact of pre-entry interventions in general and very little on the impact of pre-entry interventions on students' retention and success in higher education. A review of the research, however, identifies the importance of factors which pre-entry interventions address: pre-entry decision making, expectations about higher education and academic preparation. To date, however, the impact of pre-entry interventions on retention in higher education has been largely ignored. Thus pre-entry activities, such as Aimhigher, should be evaluated for their impact on student retention. The paper offers an outline evaluation framework, including evaluation topics and suggested key performance indicators to bridge this gap.

The English context

Widening participation (WP) policy tools have been used in England to address inequalities in participation rates in higher education, particularly by lower socio-economic groups (SEGs). This is driven by concern about social justice and recognition of the needs of the knowledge economy. There has been significant investment in WP: approximately £400 million over the last 6 years (Cabinet Office, 2009). Much of this emphasis has been on stimulating demand for university places among students from lower SEGs. This has been undertaken by Aimhigher partnerships and directly by higher education institutions.

The Aimhigher programme

Aimhigher is a national collaborative programme which aims to widen participation in higher education in England by raising awareness, aspirations and attainment among young people from under-represented groups (particularly lower SEGs and the disabled). It is organised into 43 local partnerships, usually consisting of higher education institutions, further education colleges, local education authorities, schools and other stakeholders such as providers of information, advice and guidance (IAG). The partners work together towards the shared objective of increasing the number of young people from target groups who consider higher education as a realistic option and subsequently enter higher education (HEFCE, 2004).

The partnership approach is intended to remove competition between higher education institutions as the overarching focus is not intended to be on recruitment to a specific institution, but rather to promote higher education in a more general way. Robinson *et al.* (2000) differentiate between competition, collaboration and co-ordination as alternative approaches to inter-organisational relations. Within Aimhigher one sees collaborative activity, such as jointly delivered interventions, and co-ordinated activity, particularly partner higher education institutions being allocated specific schools or colleges to work with.

Aimhigher includes some universal elements, such as summer schools (residential higher education experiences, which often have a subject focus) and mentoring of school/college students by higher education students, called Aimhigher Associates. Other activity is developed at the local level, although a range of common approaches has evolved, including higher education students and staff visiting schools and colleges to deliver a range of activities: non-residential visits by school/college students; subject enrichment programmes; master classes or revision courses; and IAG publications and events. These activities may be linked together through the Learner Progression Framework, to offer targeted students a planned, integrated, sequential and progressive programme of activities and support over a period of years, particularly at key decision-making and transition points, to assist them on their journey towards higher education (Action on Access, 2008). Thus the Aimhigher programme aims to stimulate demand by raising awareness of the opportunities to continue in education and encouraging and supporting potential students to apply for higher education.

The remit of Aimhigher does not extend to enhancing the experience of targeted students in higher education. This paper argues, however,

that pre-entry interventions have the potential to impact on students' retention, progression and attainment in higher education, as well as influencing their initial decisions about entering higher education. As the following discussion demonstrates, there is very little direct evidence about the impact of Aimhigher and similar pre-entry interventions on students' experience in higher education. The literature about student transition, retention and success in higher education, however, identifies pre-entry issues (such as higher education choices, expectations and academic preparation) as significant. This implies that pre-entry initiatives such as Aimhigher *could* have an impact on student retention and success in higher education. This is an unrecognised—and un-researched—potential outcome of Aimhigher. This paper builds the case for evaluating the impact of Aimhigher on student retention and success in higher education, and offers an outline evaluation framework for this purpose.

Institutional approaches to widening access

Simultaneously and in addition to participating in Aimhigher, higher education institutions have been encouraged to widen access to their programmes and have been rewarded for their achievements through a range of policy tools and financial incentives, including widening access funding (see Jones, 2008a for summary details). In June 2009, higher education institutions were required to submit a 'WP Strategic Assessment' (WPSA) to the Higher Education Funding Council for England (HEFCE), detailing their strategic approach to WP, and an overview of activities and spending on WP. WPSAs require institutions to set themselves milestones and targets and report annually on their achievements (HEFCE, 2009). In addition, higher education institutions that charge tuition fees are required to spend some of their additional fee income on outreach activities and to provide bursaries to encourage and enable students from low income families to access higher education (DfES, 2003). This institutional requirement is regulated by the Office for Fair Access (OFFA) and monitored annually with the WPSA. The pre-entry activities undertaken by higher education institutions are often similar to those undertaken through Aimhigher (see Action on Access, 2010), but with a stronger recruitment focus and therefore in some institutions they are focused more on 'nearer' markets (e.g. students currently making decisions about progression to higher education and those who have the necessary entry qualifications).

Effectiveness of WP and retention interventions

In light of the investment in WP, there is growing pressure on initiatives to collect evaluative evidence about the impact of their activities. The National Audit Office report on widening participation (NAO, 2008) expressed concern about the lack of accountability of spending on WP and the higher education press have run numerous articles querying the effectiveness of WP spending. Indeed, it was this concern about how WP money allocated to higher education institutions is spent—and thus how effective it is—which led to the introduction of WPSAs in 2009 (HEFCE, 2009).

A second area of higher education policy concern is student retention, which has also been the subject of two National Audit Office reviews (NAO, 2002; 2007). Student retention is quite narrowly defined in the UK. The ‘completion rate’ is the ‘proportion of starters in a year who continue their studies until they obtain their qualification, with no more than one consecutive year out of higher education’ (NAO, 2007, p. 5). Although retention is defined differently in other nation states, it is a common higher education policy concern internationally (Thomas and Quinn, 2006; van Stolk *et al.*, 2007). The NAO (2007) report and the associated Public Accounts Committee report (House of Commons PAC, 2008) asserted that there is a lack of evidence about what works to improve student retention.

The HEFCE-funded review of WP (Gorard *et al.*, 2006) found that there is relatively little research focusing on the impact of both access and retention initiatives. This lack of evidence about the impact or effectiveness of interventions is confirmed in subsequent national publications, notably HEFCE (2006) and NAO (2007), and in the literature review informing this paper. Furthermore, Gorard *et al.* identify a number of weaknesses in relation to existing research: it is often small-scale, undertaken in the researcher’s own institution, does not provide sufficient details of methods used, and does not use a comparator group - thus focusing on participants to the exclusion of non-participants. The report also notes the lack of longitudinal studies and experimental research designs. In response to this, the HEFCE (2006) advocates using mixed methods to collect data aimed at assessing widening participation interventions; they recognise that experimental designs will not be suitable (or ethical) for measuring the effectiveness of most WP-related interventions. Instead, they claim the objective is not to establish the strength of the association between interventions and outcomes, but rather ‘... the *likelihood that the outcome was influenced to a*

significant degree by the intervention; and that this is real and valuable knowledge'. (HEFCE, 2006, p. 16, emphasis added) This paper reviews the available literature and indicates a strong *likelihood* that Aimhigher and other pre-entry interventions are contributing to improving the retention and success of students from lower SEGs in higher education by providing IAG to inform pre-entry decisions, shaping students' expectations and preparing them academically to make the transition into higher education.

Methods and approach

Identifying and selecting the literature

The aim of this review is to identify literature making an explicit link between pre-entry interventions and student retention and success in higher education. It was anticipated that there might be limited literature addressing this topic directly, so the second aim was to identify research about the impact of pre-entry interventions, and in particular to consider whether the relationship between pre-entry interventions and student experience and/or success is considered.

Literature was identified through two key approaches: first, by reviewing the published academic literature; and second, by examining practitioner research and evaluation. Academic research was identified by using academic search databases, in particular Academic Search Premier which is a large database covering 5,000 peer-reviewed journals and over 10,000 other publications in relevant fields (e.g. education, social policy, sociology and psychology). Three key groups of search terms were generated to search the literature in various combinations. The first set of terms referred to activities taking place prior to entry to higher education to encourage, support, inform and prepare students for progression to higher education. Terms included pre-entry, Aimhigher, widening access, widening participation, IAG and academic preparation. These terms were used in conjunction with two other groups of search terms, in different permutations. The second group of terms related to the experience of students in higher education, in particular, success, retention, achievement, withdrawal, persistence and drop-out. The third group of terms related to evaluating the impact or effectiveness of pre-entry interventions, and included evaluation, assessment, success, impact, effectiveness and outcomes. This group of terms was used in conjunction with the pre-entry terms, but not with the student retention terms, as this would extend the search beyond the scope of this paper (as discussed below).

The searches were performed on abstracts, keywords and full text. An initial on-line review was necessary to identify relevant papers, and 22 papers were selected as worthy of further review. Closer study reduced the number of papers considered relevant to ten. Papers were rejected if they did not provide research evidence about the impact of pre-entry interventions or about the link between pre-entry interventions and improved retention and success. Two papers were excluded from the review as they focused on the impact of interventions for disabled students, which is not the primary focus of this paper. Six papers were identified that report on the impact of pre-entry interventions, including Aimhigher. The majority (four) of these papers do not examine the impact of pre-entry interventions on student retention and success in higher education (Baxter *et al.*, 2007; Hatt *et al.*, 2007, 2008; Maras, 2007). Maras (2007) reports only on the impact of interventions on attitudes towards higher education and is therefore not drawn on in the remainder of this paper. Two papers (Blicharski, 1999 and Walker *et al.*, 2004) report directly on the impact of pre-entry interventions on student retention and achievement in higher education. Interestingly both of these papers are from Scotland, and the focus of these interventions is academic preparation, rather than the provision of IAG. Two other papers were identified that do not examine the impact of pre-entry interventions on retention, but make an explicit link between the two. The first, Trotter and Roberts (2006), examines different practices between courses with high rates of retention and courses with low rates of retention in the context of widening participation and has key findings relating to pre-entry interventions. The second, Bingham and O'Hara (2007), examines the experiences of students who transfer from a higher education course delivered in a further education college to a top-up degree in a higher education institution; this paper provides evidence about the pre-entry experience, albeit a higher education qualification delivered in the further education sector.

In addition to these academic papers two relevant research reports were identified (Passy *et al.*, 2009; Sutton Trust, 2008). The first of these in fact focuses on methodological issues only, and the second provides evidence about the impact of pre-entry summer schools on students' decisions to progress to higher education and the impact of the intervention on their higher education experiences.

The second strand of literature reviewed is 'practitioner' or 'grey' literature. This is material which is in the public domain, but is not formally published and catalogued and thus is not captured by most search databases. Many Aimhigher partnerships have undertaken or

commissioned research and evaluation about their interventions. This work has often informed the on-going development of their work, but has not been synthesised and used at an aggregate level to inform national policy or practice or to assess impact at this level. One reason for this is the challenge of locating the literature, which is dispersed across partnerships and may or may not still be in the public domain. The HEFCE-funded WP literature review experienced difficulties in identifying grey literature, despite invitations to the sector to submit relevant material to the review team (Gorard *et al.*, 2006).

This paper draws on research, evaluation and data either commissioned by or generated by Aimhigher Greater Merseyside and its partners. The region has commissioned research and evaluation relating to its pre-entry activities, and has supported young researchers (school students) to undertake research about progression to higher education. This is the region in which the author is based, and provides a useful sample of practitioner literature. The literature was accessed via the Aimhigher Greater Merseyside website. All the research reports on the site were reviewed, and 12 were selected initially as potentially relevant to the study; six are cited in this paper for the evidence they present about the need for pre-entry interventions and/or for the impact of pre-entry interventions. None of these studies directly addresses the issue of the impact of pre-entry interventions on student retention and success in higher education.

In summary there is very little literature about the impact of Aimhigher interventions, or other pre-entry interventions and only two academic papers and one report focus on the impact of pre-entry access interventions on student retention and success in higher education. It was therefore necessary to look at the broader literature about the factors which improve student retention and success. This is a very large body of research, particularly in the US, UK and Australia. It is beyond the scope of this paper to review all the literature on student retention and success, and perhaps more importantly, there are existing literature reviews which can be drawn upon. This paper therefore draws upon the HEFCE-funded review of WP literature (Gorard *et al.*, 2006), the review of the first year experience commissioned by the Higher Education Academy (Harvey and Drew, 2006), and the Higher Education Academy's synthesis on student retention and success (Jones, 2008b).

Reviewing and analysing the literature

Literature can be analysed in a range of different ways. The review methodology will be influenced by the purpose of the review (Torrance

and Sebba, 2007), the nature of the topic, the size and quality of the literature base and the preferences of researcher(s) (Rickinson and May, 2009). This review is primarily being undertaken to inform policy, or rather to inform the evaluation of practice and subsequently to inform policy. It is therefore inappropriate simply to present a narrative review of the literature without attempting a synthesis or consideration of the implications of the evidence. The limited number of relevant papers identified, however, mitigates against methodologies that could be broadly defined as positivist or 'systematic reviews' (vote counting, meta-analysis or best evidence reviews) which tend towards quantifying and assessing the evidence. This review is more qualitatively oriented, combining a meta-ethnographic approach to construct interpretations and a realist synthesis approach to test out the potential relationship between pre-entry interventions and improved student retention and success.

Rickinson and May (2009, p. 6) note that 'it is critical to recognise that review methodologies (including established approaches) need to be adapted and developed for the specific features of individual review projects'. In this review a systematic search strategy has been used to identify literature about the impact of pre-entry interventions on student retention and success in higher education. This has been supplemented by literature examining the impact *per se* of pre-entry interventions, and the wider literature on the factors that improve student retention and success in higher education. The evidence about student retention and success is used to indicate 'the likelihood that the outcome [improved retention] was influenced to a significant degree by the intervention [pre-entry interventions designed to widen access]', which HEFCE have suggested is 'real and valuable knowledge' (HEFCE, 2006, p. 16).

An analytical framework was developed to organise and analyse the literature reviewed. This was based on the key research issues to be addressed, and the associated sub-themes:

1. Pre-entry decision making about progressing to higher education.
 - i. Decision to apply to higher education.
 - ii. Choice of higher education institution.
 - iii. Choice of subject.
 - iv. Choice of course.
2. Transition into and experience in higher education.
 - i. Expectations of higher education.
 - ii. Transition into higher education.
 - iii. Experiences in higher education.
 - iv. Retention and success in higher education.

3. Impact of pre-entry interventions.
 - i. Impact on pre-entry decision making.
 - ii. Impact on preparation for higher education (e.g. skills, expectations, learning).
 - iii. Impact on adjustment and integration into higher education.

Each item was read and evidence in relation to these issues was recorded in tabular form. Additional references were followed up if they occurred in the papers, but had not been identified by the search. It was not always possible to verify the quality of the evidence because many papers provided limited methodological details; this is particularly true of the data collected by student researchers. However, it is significant to note that the papers do not present contradictory evidence, which would require a judgement about the relative merits of the studies making opposing claims.

Review and discussion

The following discussion, based on a review of the literature as described above, examines the actual or potential contribution of pre-entry interventions to improved student retention and success. It does not provide a narrative about what each paper says, nor does it seek to assess the weight of evidence in favour of alternative arguments (or interventions) but rather it constructs an evidence-informed interpretation of how pre-entry interventions can and could contribute to improved student retention and success in higher education.

Research exploring the reasons for student withdrawal tends to conclude that there is rarely a single reason responsible for a student leaving. In most cases, the picture is complex and students leave as a result of a combination of inter-related factors. Jones (2008b) identifies the following categories of reasons why students withdraw from higher education: poor preparation for higher education; weak institutional and/or course match, resulting in poor fit and lack of commitment; unsatisfactory academic experience; lack of social integration; financial issues; and personal circumstances. It is the first three of these, in particular, that it is reasonable to expect that pre-entry interventions could contribute to improving. This paper therefore considers: decision making about progression to higher education; and expectations, academic preparation and experiences in higher education. For each of these topics a review of the retention literature is presented to identify the ways in which pre-entry interventions may be expected to contribute to improved retention

and success in higher education. This is followed by an examination of evidence about the impact of pre-entry interventions in relation to this issue.

Decision making and progression to higher education

National research in the UK and Australia (McInnis *et al.*, 2000; Yorke, 2000; Krause *et al.*, 2005; Harvey and Drew, 2006) reports that students often have poor information pre-entry, which results in poor decision making, inappropriate choices and early withdrawal. Students can feel that they have insufficient information to make an informed decision about entry to higher education in general and choice of institution, subject and course.

Local research in Merseyside suggests that young people in Aimhigher cohorts (from lower SEGs) do not feel that they have sufficient information about higher education in general. Young researchers from St Aelred's Catholic School, St Helens (2007) undertook a survey of 25 Year 10 students. The majority of respondents reported that they didn't feel they had enough information about higher education; this echoes other local research:

'Young people felt that they were not always given the appropriate information at the right time; there was confusion surrounding requirements to pursue different options or post-16 pathways and some young people and key influencers expressed the need for further information about vocational routes' (Doherty *et al.*, 2007).

Institutional choice is a key decision relating to progression to higher education, and poor institutional choice is a reason why students leave early (Yorke, 2000; Jones, 2008b). One facet of this relates to *institutional match*: the extent to which students fit in and feel like they belong in a particular higher education institution (Thomas, 2002; Leathwood and O'Connell, 2003; Read *et al.*, 2003); and the extent to which students believe the institution they have selected will enable them to achieve their future aspirations (such as gaining a particular type of employment) (adapted from Berger and Braxton, 1998).

Subject knowledge, interest and motivation also contribute to student retention and success in higher education (Entwistle and Ramsden, 1984; Abouserie, 1995; Booth, 1997), while inappropriate subject choice may result in early withdrawal (Yorke, 2000; Quinn *et al.*, 2005). This is particularly true in the UK as students have little or no opportunity to change disciplines once they are in higher education.

Even when students are relatively certain about their subject choices, Booth's (1997) research in the UK found that when students arrive at their chosen higher education institution they often have very little knowledge about the academic department or course that they will be participating in, including the ways in which they will be expected to learn. In a survey of 201 first year students he found that the university's general 'reputation' was often the most important factor (77 per cent of respondents) in students' choices about which course to apply for; the second most important factor being the campus environment (69 per cent). The nature of the particular course itself was only rated third in importance (55 per cent). In another survey of 4,000 students (not specifically from WP target groups) most felt well informed when making their higher education choices, except in relation to courses or programmes of study, in particular less was known about course structures, costs and employment prospects of graduates (Conner *et al.*, 2001). Other research suggests that many students base their understanding of the nature of the course upon a cursory reading of the prospectus (Keen and Higgins, 1990), which often only provides skeletal information. Young researchers at Mosslands School, Wirral (2007) found that although university students had often selected their institution to attend on the basis of subject, they could be disappointed by their courses. Research in Scotland found that a poor match between students' expectations of a course and the reality is often the reason for withdrawal (Musselbrook and Dean, 2003).

Krause *et al.* (2005) report that about 30 per cent of students who *had* progressed to higher education felt ill-prepared to choose a university course on leaving school. Baxter *et al.* (2007) found that there is a 'strong self-reliance' or expectation of independence with regard to amassing information about higher education opportunities, students are expected to do their own research about institutions, subjects and courses. This is in keeping with a study of Scottish working-class students (Musselbrook and Dean, 2003) in which students indicated that they felt they had received insufficient help with choosing subjects at critical stages. The young researchers at St Aelred's Catholic School (2007) acknowledged this problem and recommended that lesson time should be allocated to research on the internet about higher education. Yorke (2000) found that poor choices about institutions and courses were, in part, related to the quality of advice given by careers services. More recently (and following the reduction in availability of careers services) Baxter *et al.* (2007) found that support came from individual teachers, rather than being provided more systematically by the school, which could result in variable quality IAG.

There is also concern that higher education institutions either provide insufficient information about their programmes, or more worryingly, incorrect information (Yorke, 2000; Musselbrook and Dean, 2003; Quinn *et al.*, 2005). Furthermore, young researchers from Childwall Comprehensive School (2007) reported that ‘information that was provided was sometimes too complicated to understand’, and for families for whom English is not the first language this problem is magnified.

It is not surprising that Hatt *et al.* (2007, p. 302) found that parental educational background is a significant factor with regard to the level of information different students have about higher education: ‘... compared with their peers whose parents have higher education experience, these first-generation entrants were less well informed about higher education’. This points to the importance of cultural capital—in other words having the ‘insider knowledge’ to know where and how to access relevant information, and having the social capital—or connections to and confidence to ask the people who possess the information which is relevant (Thomas and Quinn, 2006). Thus, first-generation entrants, especially from lower SEGs, may be particularly disadvantaged with regard to pre-entry information and decision making and so be vulnerable to early withdrawal. Thus the value of targeted pre-entry interventions providing IAG to improve choices and subsequently retention in higher education may be magnified.

Impact of pre-entry interventions on pre-entry decision making and retention in higher education

A primary objective of Aimhigher is to provide IAG to inform decision making about progression to higher education. Research about the impact of Aimhigher (Baxter *et al.*, 2007) reports that most students found a range of Aimhigher interventions to be ‘helpful’ (63.9 per cent). Many pre-entry activities provide students with exposure to a specific higher education institution, which either intentionally or unintentionally shapes their preference about which institution(s) to apply to, and a positive first impression is related to improved retention (Allen, 1999). There is, however, little or no consensus about which interventions are the most effective.

Baxter *et al.* (2007) report that, according to the students, the most helpful intervention is a visit to a higher education institution (70.8 per cent); this finding, however, does not differentiate between different types of visits. Residential schools may be particularly influential in relation to institutional choices (Sutton Trust, 2008; Aimhigher survey http://www.aimhigher.ac.uk/practitioner/programme_information/

summer_schools.cfm#impact). For example, selection and participation in the Sutton Trust summer schools often boosted the confidence of young people from schools and families with little or no experience of higher education to apply to a prestigious and highly selective institution. Furthermore, staying on campus challenged the views of some students who had intended to study locally and live at home (Sutton Trust, 2008).

Subject-based residential schools can also play an important role for students' choices about subject and course, either reinforcing or overturning an existing preference (Blicharski, 1999; Sutton Trust, 2008). Having a taste of studying a particular subject through sample lectures and similar activities served to reinforce or challenge their pre-existing discipline preferences, and engaging with students and lecturers who were enthusiastic about their subject could also be significant in encouraging students to pursue a particular discipline (Sutton Trust, 2008).

It is often, however, personal relations which shape potential students' views about institutions, subjects and courses. The Sutton Trust (2008) found that relations with academic members of staff, current students and peers at the summer school were all influential. Doherty *et al.* (2007) indicates the importance of one-to-one, or personalised, support provided by support workers over a period of time: '*Aimhigher* initiatives achieved more impact on decision making when they provided one-to-one ongoing support' and were able to provide 'in-depth information about post-compulsory education'.

It is pertinent to note Trotter and Roberts' (2006, p. 378) finding that in programmes with a high rate of retention (continuation into the second year) programme managers were more actively involved in recruitment and admissions than in comparable programmes with lower rates of retention. Programmes with high rates of retention were more likely to have school and college links, offer 'enrichment days' (where students are introduced to the facilities and courses available), and attach greater importance to open days to ensure that all students were provided with relevant information.

Expectations, academic preparation and experiences in higher education

Making the transition into higher education is challenging (Booth, 1997; McInnis *et al.*, 2000), and students who fail to adjust and integrate to the higher education expectations and context are more likely to withdraw (Harvey and Drew, 2006, see also Quinn *et al.*, 2005; Jones, 2008b). There is often a gap between students' expectations of higher education and their experiences in higher education (Richardson, 2003; Forrester *et al.*, 2004; Long and Tricker, 2004; Quinn *et al.*, 2005), especially for

young people from lower socio-economic backgrounds who have less prior knowledge of what student life involves (Forsyth and Furlong, 2003). Pancer *et al.* (2000) suggest that students with more complex expectations about higher education tend to adjust better than students who have simpler expectations. This reinforces the likelihood that students with little or no knowledge of higher education are most likely to struggle to adapt to the higher education experience.

Quinn *et al.* (2005) report that many students from working class backgrounds who left higher education early experienced 'academic culture shock'; most assumed that learning in higher education would be more or less the same as learning in school or college. In particular, students are unprepared for the move to being more autonomous learners with greater responsibility for organising and structuring their learning time (UCAS, 2002; Forsyth and Furlong, 2003; Quinn *et al.*, 2005; Teesside Retention Team, 2005). In addition, students have reported being challenged by the lecture teaching format, the size of classes and the (perceived) limited opportunities to interact with staff (Quinn *et al.*, 2005; Teesside Retention Team, 2005). Murphy and Fleming (2000) find that students do not know what is expected of them in assignments and exams, and are unsure about how to structure their academic writing (see also Bingham and O'Hara, 2007). Plus, the Teesside study found that students tended to presume that they would have the same level of academic support they received in school or college.

It is not always clear from the research whether the challenges of transition into higher education are common for all students, or just specific groups. Walker *et al.* (2004) compared the academic experiences of students from schools with different levels of participation in higher education. They find a link between attending a school with an extremely low rate of higher education participation and non-completion, despite having directly comparable entry qualifications. This could be due to working part-time or commuting to the university (Hounsell and Hounsell, 2007). For students who have undertaken alternative entry qualifications, the challenges can be greater, as they are constantly expected to have covered certain work at 'A' level (Hounsell and Hounsell, 2007). Furthermore, Hatt and Baxter (2003) report that students who enter university with vocational qualifications¹ often feel that their vocational education and training has not adequately prepared them for the academic work and traditional forms of assessment at university (see also Leathwood and O'Connell, 2003; Hoelscher *et al.*, 2008). Indeed, Booth (1997) argues that teaching staff often have very little knowledge about their students when they enter programmes, including knowledge about

students' previous learning experiences (style or contents), or students' expectations of the course. Furthermore, Hounsell and Hounsell (2007) found that lecturers do not feel obliged to adapt their teaching methods to meet the needs of a more diverse student body, but rather see the issue as a student problem.

Impact of pre-entry interventions on students' expectations, academic preparation and experiences in higher education

The discussion about expectations, academic preparation and experiences in higher education suggests that there is a role for pre-entry initiatives to shape students' expectations about higher education life in general and prepare them for a new academic experience, and in particular to contribute to the improved retention and success in higher education of the targeted students. Indeed, Yorke and Thomas (2003) found that in institutions with a high number of widening participation students and rates of retention above benchmark levels, the institutions were actively engaged in outreach work with potential students to shape expectations of higher education (see also Trotter and Roberts, 2006).

Many pre-entry interventions that bring students to higher education institutions offer a taste of what being a student is like and thus contribute to building more realistic expectations. This is especially true for residential programmes which include staying on campus and experiencing authentic academic and social activities (Walker, 1996; Baxter *et al.*, 2007; Sutton Trust, 2008). This is often complemented by interaction with existing students, or mentors, who help form more realistic expectations of higher education life (Austin and Hatt, 2005). Interacting with academic members of staff has advantages for improving students' confidence, expectations and preparedness for higher education (Sutton Trust, 2008).

Walker *et al.* (2004) and Blicharski (1999) present evidence about the impact of specific pre-entry interventions on academic preparation and experiences in higher education. The Top Up programme provides academic preparation for senior school students over a four month period. 'Through their participation in these activities they are acquiring "essential skills for higher education", such as critical thinking, deep and active learning, conceptual thinking, and a well-developed writing style' (Walker *et al.*, 2004, p. 46). By reviewing academic performance and withdrawal rates, comparing these with other groups of students, and through focus groups, they demonstrate that the pre-entry preparation programme has a positive impact on academic preparedness, achievement and retention. The Access Summer School at the University of

Dundee provides a ten-week course for school leavers who do not have the necessary entry requirements for higher education. Blicharski reports that 'former access students felt around twice as well prepared for their first choice of subject compared to their traditional counterparts' (p. 37). A more qualitatively oriented study by Bingham and O'Hara (2007) examining the progression experiences of students from higher education programmes delivered in the further education sector to honours degree programmes in a higher education institution found that the students felt well prepared for many aspects of the course, and performed as well as other students in terms of degrees awarded.

Conclusion

This paper finds that there is very little research, just two small-scale studies (Blicharski, 1999; Walker *et al.*, 2004), that explicitly examines the impact of pre-entry interventions on student retention and success in higher education. The wider literature on student retention and success strongly suggests, however, that pre-entry activities (such as Aimhigher) *ought* to have an impact on choices and decisions prior to entry, as well as expectations, academic preparation and experiences in higher education, and thus have a positive impact on student retention. In light of HEFCE's perspective that the objective is not to establish the strength of the association, but rather '... the likelihood that the outcome was influenced to a significant degree by the intervention' (HEFCE, 2006, p. 16), this paper makes a claim towards 'real and valuable knowledge' (HEFCE, 2006, p. 16), which should be used by pre-entry interventions programmes such as Aimhigher to demonstrate the value of their work. To date, the link between pre-entry interventions and the student experience in higher education, and especially the impact on retention and success, has been largely ignored. This is a significant omission when effort is currently being directed towards evaluating the effectiveness of pre-entry interventions, and simultaneously to improving student retention and success. To further support and promote this objective, Table 1 offers an evaluation framework, consisting of evaluation topics and suggested key performance indicators (KPIs) which could be adapted to suit the needs of specific pre-entry programmes. Much of the suggested evidence could be collected through interviews, focus groups or surveys with students, and compared with similar students who have not participated in the pre-entry programme. In addition, information could be collected qualitatively from pre-entry teachers or IAG providers, or personal tutors in higher education. Higher education institution data should be used to examine the comparative retention, achievement and

TABLE 1

Evaluation framework for evaluating the impact of pre-entry interventions on student retention and success in HE

Evaluation topic	Suggested KPIs
1. Information, advice and guidance: choice of institution, subject and course	1.1 Students have developed skills to research and inform their higher education decision making. 1.2 Students have knowledge about the higher education sector and specific institutions to enable them to make informed choices about which higher education institution to attend. 1.3 Students have detailed knowledge about a range of subjects and have made an informed decision about which subject to study. 1.4 Students have researched courses at different institutions and selected one that meets their needs.
2. Engaging students and making positive social connections to inform higher education decision making	2.1 Students have developed relations with existing higher education students/academic members of staff/other HE staff/other potential higher education students. 2.2 Students know who to ask to obtain more information about different aspects of their progression to higher education.
3. Institutional expectations and match	3.1 Students have clear, detailed and realistic expectations of studying and belonging in higher education. 3.2 Students can articulate a clear fit between their institution/subject/course choice and what they want to do in the future.
4. Academic skills and preparation (learning in higher education, autonomous learning, academic writing, assessment)	4.1 Students have developed some basic higher education academic skills (e.g. learning through lectures, seminars and labs; organising their own learning time; academic writing etc). 4.2 Students understand the greater need to organise their own time and take greater responsibility for their learning. 4.3 Students are encouraged and taught to make use of formative feedback.
5. Confidence to ask for help	5.1 Students have confidence and knowledge to ask for help pre- and post-entry from peers, academic staff and professional service staff.
6. Retention, achievement and completion in HE	6.1 Students are retained in the first year at the same or higher rate than all students (average retention rate). 6.2 Students achieve better first year grades than students who have not participated in the pre-entry programme. 6.3 Students complete their degrees at the same or higher rate than all students (average completion rate).

completion of students participating in the pre-entry programme and compared to, for example, all students, or a matched group.

Note

1. Working class students, mature students and students from some ethnic minorities are more likely to take vocational routes to higher education than young, white middle class students (Leathwood and O'Connell, 2003; Payne, 2003).

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