Abstract

Background. There is evidence that learners may adopt different kinds of achievement goal: mastery approach, mastery avoidance, performance approach, and performance avoidance. In higher education, this evidence has mainly come from young people who have recently gone straight from secondary education to higher education. However, higher education is increasingly populated by older students, and it has been theorized that the relationship between goals and achievement might be very different for adult learners.

Aims. The study examined whether the relationships between achievement, drop-out rate, and goal orientation observed for non-adult populations are mirrored in adult learners.

Method. The Achievement Goal Questionnaire (AGQ) was administered to adult learners taking courses by distance learning.

Sample. Respondents were 195 men and 586 women between the ages of 19 and 87.

Results. The results confirmed the reliability of the 2 × 2 version of the AGQ for this distinctive population. As in previous studies of younger students, mastery-approach goals were unrelated to attainment, performance-approach goals tended to facilitate attainment, and performance-avoidance goals tended to impair attainment. In addition, mastery-avoidance goals tended to impair students' attainment and also increased the likelihood that they would drop out of their course altogether.

Conclusion. The achievement-goal framework is as appropriate for understanding influences on attainment in adult learners as it is in younger students. Adult learners may be more sensitive to the deleterious effects of adopting mastery-avoidance achievement goals.

Keywords: academic attainment, achievement goals, adult learners, higher education

In the UK and worldwide, populations labelled "adult learners" are increasingly prevalent. In the UK, for example, data from the Higher Education Statistics Agency (2009) show that 102,585 (or 22.3%) of the 459,395 first-year full-time undergraduates in 2007/08 were aged 21 or over. In the US, Merriam and Caffarella (1991, chap. 1) noted that institutions of higher education had over the previous 50 years recruited roughly as many students who were over the age of 22 at the time of their admission as they had recruited students aged between 18 and 22. The rise of adult learners as a significant population in higher education is ubiquitous.

Although a review by Richardson and King (1998) suggested that claims about the specialness of adult learners might be over-stated, there are features of the population of adult learners that might lead them to adopt goals that are different from those of younger learners. The current study outlines what some of these features might be and examines the types of goals that adult learners adopt. The study relates these goals to outcomes such as interest, enjoyment, academic performance, and a measure that is particularly relevant to distance learning, drop-out rate. Analyses of relationships between goals and outcomes also consider the effects of gender and age.

Achievement goals

Dweck and Elliott (1983; Dweck, 1986) suggested that achievement motivation involved two broad kinds of goal: learning goals (seeking to increase one's competence, understanding, or mastery) and performance goals (seeking favourable judgements or avoiding negative judgements of one's competence from others). Both kinds of goal could promote mastery-oriented behaviour. However, if confidence in one's ability was low, performance goals increased helpless behaviour and lowered motivation. Ames and Archer (1988; Ames, 1992) offered a similar account but referred to learning goals as "mastery goals". Grant and Dweck (2003) summarized the findings of subsequent research on this topic as showing that "those

who adopt learning goals are found to engage in deeper, more self-regulated learning strategies, have higher intrinsic motivation, and perform better, particularly in the face of challenges or setbacks" (p. 543).

Most of the original research into this topic was carried out with children in compulsory education, but subsequent studies were often carried out with college students. Harackiewicz and Elliot (1993) suggested that the relationship between different kinds of goal and an individual's intrinsic motivation and enjoyment would be moderated by their characteristic orientation towards competence or achievement. That is, individuals who had a high level of achievement orientation would show enhanced intrinsic motivation in response to performance goals, whereas individuals who had a low level of achievement motivation would show enhanced intrinsic motivation in response to mastery goals. These predictions were confirmed in two studies in which students were tested on a pinball game and their intrinsic motivation was measured both behaviourally (in terms of the time spent freely playing pinball) and subjectively (in terms of rated enjoyment).

Elliot and Harackiewicz (1996) divided performance goals according to whether they were oriented towards the attainment of success or the avoidance of failure. This yielded three achievement orientations: mastery goals focused on the development of competence and task mastery; performance-approach goals directed towards the attainment of favourable judgements of competence; and performance-avoidance goals focused on avoiding unfavourable judgements of competence. When students were tested on word puzzles, Elliot and Harackiewicz found that performance-avoidance goals were associated with lower intrinsic motivation than the other two kinds of goal. Elliot and Sheldon (1997) found a similar pattern of results when college students were asked about their academic goals and activities over the course of a semester.

Subsequent studies found that mastery goals tend to facilitate intrinsic motivation but

not academic attainment, that performance-approach goals tend to facilitate academic attainment but not intrinsic motivation, and that performance-avoidance goals tend to impair both intrinsic motivation and academic attainment (see, e.g., Church, Elliot, & Gable, 2001; Elliot & Church, 1997; Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2002; Harackiewicz, Barron, Tauer, & Elliot, 2002). Elliot, McGregor, and Gable (1999) investigated the relationships between students' achievement goals, their study strategies, and their performance in examinations. Their results suggested that the association between students' achievement goals and academic attainment was mediated by their persistence, effort, and organization in their studies.

Elliot and McGregor (2001) pointed out that the approach–avoidance distinction could be applied to mastery goals as well as to performance goals. They developed an Achievement Goal Questionnaire (AGQ) measuring mastery-approach goals ("I want to learn as much as possible from this class"), mastery-avoidance goals ("I worry that I may not learn all that I possibly could in this class"), performance-approach goals ("It is important for me to do better than other students"), and performance-avoidance goals ("I just want to avoid doing poorly in this class"). Conceptually, mastery-approach goals represent the development of competence and task mastery; mastery-avoidance goals represent a desire to avoid negative outcomes such as not completing a task fully; performance-approach goals represent a desire to attain competence relative to others; and performance-avoidance goals represent a desire to avoid demonstrating poor performance relative to others. Elliot and McGregor found that students who adopted mastery-approach goals were more likely to adopt deep processing in their studies, whereas students who adopted performance-avoidance goals were more likely to adopt surface processing. (Neither mastery-avoidance goals nor performance-approach goals were significantly related to study behaviour.) Performance-approach goals appeared to facilitate attainment, performance-avoidance goals appeared to impair attainment, but neither

mastery-approach goals nor mastery-avoidance goals were significantly related to attainment.

Achievement goals in adult learners

Subsequent research has provided extensive confirmation of the achievement goal framework (for reviews, see Elliot, 2005, 2008; Pintrich, 2003; Senko, Hulleman, & Harackiewicz, 2011). Hulleman, Schrager, Bodmann, and Harackiewicz (2010) noted that in the previous 25 years there had been over 1,000 studies concerned with achievement goal theory. However, a major limitation of this research is that it has predominantly been carried out with samples consisting of young people who had recently gone straight from secondary education to higher education. The paucity of research with older participants is curious given the prevalence of adult learners in higher education that was noted earlier. The generalizability of findings from goal research demands a study of older students to foster confidence that the consistency of research findings is indeed applicable to the broader population of students attending higher education.

In the few studies been carried out using adult populations to examine achievement goals, key aspects of achievement goals have been omitted. For example, Eppler and Harju (1997) compared traditional (younger) and non-traditional (older) students in their adoption of mastery and performance goals. They found that non-traditional students obtained higher scores than traditional students on mastery goals, but the two groups did not differ in their adoption of performance goals. Unfortunately, the inventory employed in this study did not measure mastery-avoidance or performance-avoidance goals, and the participants included only 45 adult learners. Sachs (2001) found that mastery goals seemed to facilitate intrinsic motivation but not academic attainment among part-time students aged between 25 and 40 at the University of Hong Kong. However, Sachs argued that performance goals were often irrelevant for adult learners, and so he did not measure the adoption of performance goals in

his sample. Studies by Ng (2006, 2008) examined the relationship between goals and a range of outcomes among adult learners in Hong Kong. However, neither of Ng's studies measured mastery-avoidance or performance-avoidance goals.

Some predictions

The paucity of research using avoidance constructs with adult learner populations is curious, especially since several writers have suggested that the experiences of adult learners in higher education are inherently problematic (e.g., Lunneborg, 1987, 1988; Schlossberg, Lynch, & Chickering, 1989; Ware et al., 1993). These authors have focused on adult learners' supposed lack of self-confidence and, in particular, a need for initial and ongoing academic support. If this were the case, one might expect this poor self-confidence to lead adult learners to adopt performance-avoidance goals. Several theorists have posited a link between low confidence and the adoption of performance-avoidance goals (Bong, 2005; Brophy, 2005; Kaplan & Maehr, 2007; Midgley, Kaplan, & Middleton, 2001).

Nevertheless, others have suggested that adult learners are more likely to be studying for intrinsic reasons rather than for instrumental reasons (Beinart & Smith, 1998, p. 176; Taylor, Morgan, & Gibbs, 1981) and that as a consequence they are more likely to focus on understanding their course materials (Harper & Kember, 1986; Richardson & King, 1998). On that argument, one might expect adult learners to be more likely than younger learners to adopt mastery-approach goals, which is indeed what Eppler and Harju (1997) found.

With regard to performance-approach goals, we have already noted that Sachs (2001) argued that performance goals were often irrelevant for adult learners. Intuitively, this claim seems logical because the idea that adult learners would be seeking to demonstrate their ability to others is at odds with the apparent mastery-oriented nature of the adult population. However, we have also observed that Eppler and Harju (1997) found no difference between

traditional and non-traditional students in their adoption of performance goals. In the current study, it is possible to assess the prevalence of all forms of approach and avoidance goals.

As well as examining the types of goals that students adopt, there are also potential differences in the patterns of relationships between goals and outcomes. There are competing arguments for a positive relationship and a negative relationship between mastery-approach goals and achievement. The positive argument follows the logic that the students in the present study were taking courses by distance learning, and so the lack of additional sources of peer distraction might facilitate the maintenance of a tight focus on their studies, resulting in a positive relationship between mastery-approach goals and achievement.

By the same token, however, adult students with mastery-approach goals have to juggle busy personal and professional lives and might have less time to dedicate to their studies. In addition, the students in this sample would have had less access to informal study groups and academic conversations with their peers. Both considerations suggest that the relationship between mastery-approach goals and achievement would be null or even negative.

With regards to interest and enjoyment, despite competing claims about the relationship between mastery-approach and achievement, it is unlikely that the generally positive relationship between mastery-approach goals and students' interest or enjoyment found for non-adult-learner populations would be different for the population examined in this study.

With regard to performance-approach goals and performance-avoidance goals, we did not expect major differences in the observed relationships between goals and outcomes. We expected negative relationships between the adoption of performance-avoidance goals and achievement, interest, and enjoyment, and we expected students with performance-avoidance goals to be more likely to drop out of their course. In contrast, we expected a positive

relationship between the adoption of performance-approach goals and achievement and null relationships with interest and enjoyment.

Adult learners and mastery-avoidance goals

The mastery-avoidance construct in the 2 × 2 framework is a relatively new addition to the goal family. What is striking about this construct is its relevance for adult learners. For example, a goal "to avoid learning less than it is possible to learn" (to paraphrase an item in the present study) seems particularly appropriate, given adult learners' desire to learn but their supposed worry about not learning enough. On the other hand, some authors have suggested that mastery-avoidance goals are too rare to be considered an important construct. In the case of students in an athletic setting, Sideridis and Mouratidis (2008) found that fewer than 8% were primarily focused on mastery avoidance. Contrariwise, Van Yperen, Elliot, and Anseel (2009) reported the prevalence of mastery-avoidance goals to be as high as 33% in academic settings and nearly 49% in work-based settings. Debates about the validity of the items in question have led to recent revisions of the construct in a revised version of the AGQ (Elliot & Murayama, 2008) and in a sporting context by Ciani and Sheldon (2010). Clearly, the general prevalence of mastery-avoidance goals needs to be assessed, and, in the absence of previous research on the relationship between mastery-avoidance goals and outcomes for adult learners, the current study permits an investigation of this construct.

In terms of the relationship between mastery-avoidance goals and outcomes, much of the evidence has yielded null effects (e.g., Cury, Elliot, Da Fonseca, & Moller, 2006; Elliot & McGregor, 2001; Finney, Pieper, & Barron, 2004; Malka & Covington, 2005). Nevertheless, Van Yperen et al. (2009) found that experimentally induced mastery-avoidance orientations reduced the level of performance from Time 1 to Time 2 relative to other goals. In short, and in keeping with the findings for other avoidance constructs, we expected a negative

relationship between mastery-avoidance goals and the outcomes measures in this study.

Gender, age, and drop-out rate

Most studies on achievement goals have included both male and female participants. Even when significant differences have been found (e.g., Barron & Harackiewicz, 2001; Elliot & Church, 1997; Elliot & McGregor, 2001, Study 1; Elliot & Thrash, 2002, Studies 4 & 5), however, researchers have chosen not to comment on these findings, presumably because gender was an incidental variable rather than the focus of inquiry. Hyde and Durik (2005) reviewed previous studies that had examined gender differences in achievement goals. They specifically highlighted the lack of reporting of results and noted that "gender was rarely the focus of these studies" (p. 385). When significant differences were found, girls and women had generally reported higher levels of mastery achievement than boys and men in domains such as language, arts, and psychology but not in science or mathematics. Nevertheless, the general picture is that gender does not play an important role in goal adoption. Accordingly, for adult learners we had no expectation that there would be gender differences either in the goals adopted or in the relationship between goals and outcomes.

An interesting variable in the present research was that of age. To study achievement goals in compulsory education, researchers have generally used the Patterns of Adaptive Learning Styles (Midgley et al., 2000). In contrast, researchers who have used the AGQ or its various derivatives (Elliot & Church, 1997; Elliot & McGregor, 2001; Elliot & Murayama, 2008; Elliot, Murayama, & Pekrun, 2011) have tended to study undergraduate students. The differences in instrumentation and their implications for theory development were outlined by Hulleman et al. (2010), but interestingly the issue of age as a variable has not been addressed. In a study of adults over the age of 50, Waller (2006) suggested that "mature students are a diverse and heterogeneous group, with the 'reality' of their experience(s) being too complex,

too individually situated, for meaningful representation otherwise" (p. 120). It follows that treating adult learners as a single population would be problematic. In the present study, we classified respondents into five age bands: under 30, 30–39, 40–49, 50–59, and 60 and over. We could therefore examine the role of age as a predictor variable, but given the absence of previous evidence we did not put forward specific hypotheses in advance.

Measures such as interest, enjoyment, and academic achievement are fairly standard in goal research, especially given the counterintuitive finding that mastery-approach goals often do not predict achievement whereas performance-approach goals typically do (see Senko et al., 2011). One purpose of our study was to examine whether such relationships were true in the case of adult learners and in particular in the case of distance learners. A key feature of distance education, however, is the relatively high drop-out rate. For instance, in the case of the students involved in the present study, the drop-out rate is around 30% at the course level and markedly higher at the programme level. Previous research on achievement goals has not examined this measure because the drop-out rates in compulsory education and in campus-based universities are fairly low (around 20% at the programme level in the UK).

Persistence has been used as an operational indicator of intrinsic motivation since the formal introduction of this concept (for reviews, see Cameron & Pierce, 1994; Deci & Ryan, 1985), and so a lack of intrinsic motivation should be a good predictor of drop-out rate. As noted earlier, mastery-approach goals predict intrinsic motivation, and so students who hold such goals would not be expected to drop out of their course. Performance-avoidance goals tend to be negatively related to intrinsic motivation, and hence students who hold these goals might be at greater risk of dropping out. Performance-approach goals are usually unrelated to intrinsic motivation, and so our predictions here are uncertain. On the one hand, students who aim to advertise their competence might be more likely to stay on their course so they can continue to demonstrate that ability. On the other hand, in distance education there are only

limited opportunities to demonstrate one's competence to others, and so students who adopt performance-approach goals might see little reason to continue with their course.

Mastery-avoidance goals have been linked to low self-efficacy and to disengagement (see Hulleman et al., 2010). Adult learners who hold such goals may worry about whether they can achieve the level of mastery they have in mind. If they fall behind or fail to achieve what is expected of them (perhaps because of time limitations or competing commitments), they may give up altogether. On this basis, one would expect mastery-avoidance goals to be associated with an increased drop-out rate.

Aims of this research

The present study was carried out to evaluate Elliot and McGregor's (2001) framework in adult learners using a large sample of students who were taking courses by distance learning. An extensive review by Richardson (2000) concluded that distance learners were similar in their motives, study behaviour and learning outcomes to older students taking programmes in campus-based institutions. However, the interactions among distance learners are markedly reduced in comparison with face-to-face learners (Keegan, 1990; Moore, 1980), and so they have fewer opportunities to demonstrate their abilities to other students. It follows that they should be less likely to adopt performance-approach goals than are campus-based students. Another important difference is that previous research on achievement goals in campus-based programmes has tended to focus on students who have satisfactorily completed their courses, whereas in distance education students exhibit significant levels of drop-out.

Our main interests were therefore as follows. First, we aimed to examine whether adults would adopt mastery-approach or mastery-avoidance goals. Second, we also aimed to assess whether adults' AGQ scores predicted their attainment in a similar way to that found in previous studies with younger learners (see Hulleman et al., 2010, for a meta-analytic

review). In particular, because mastery avoidance had not been examined in this population, it was anticipated that some of the relationships between mastery-avoidance goals and outcomes such as achievement and persistence might be negative rather than null. Third, because our sample of students was not only older but also more heterogeneous in age than the samples used in previous studies, there was an opportunity to consider whether the adoption of different achievement goals varied across the adult life span. Fourth, the sample also provided an opportunity to examine the effects of gender. Finally, the study examined whether achievement goals predicted variations in drop-out rate in distance education.

Method

Context

The Open University was established in 1969 to provide degree programmes by distance education across the UK. It accepts all applicants over the normal minimum age of 16 without imposing any formal entrance requirements, subject only to limitations of numbers on specific courses. At the time of writing, the University has around 150,000 students taking undergraduate courses and more than 30,000 students taking postgraduate courses. Students vary in age from their teens to their 90s, and their average age is around 40.

Initially, most of the University's courses were delivered by correspondence materials, combined with television and radio broadcasts, video and audio recordings, tutorial support offered at a local level, and (in some cases) week-long residential schools. In recent years, the University has made increasing use of computer-based support, most especially CD-ROMs, dedicated websites, and computer-mediated conferencing. Nowadays, many students are recruited from other European countries, and on some courses they are recruited from around the world.

The majority of the University's courses are worth either 30 or 60 credit points, on the

basis that full-time study would consist of courses worth 120 credit points in any calendar year. Students are permitted to register for two or more courses up to a maximum load of 120 credit points, but the majority register for one course at a time. Courses contributing to the University's undergraduate programme are categorized as introductory, intermediate, or honours, and students qualify for a Bachelor's degree when they have gained the appropriate number of credit points at either intermediate or honours level.

Sample

Stratified samples were drawn from students about to embark on three intermediate-level courses in October 2005 who were available to be surveyed under the University's regulations (which among other things precluded any student being asked to take part in more than two surveys in a given calendar year). The courses were:

- A207 From Enlightenment to Romanticism c. 1780–1830
- A210 Approaching Literature
- U210 The English Language: Past, Present and Future

Each course was worth 60 credit points (that is, equivalent to half of full-time study). Each was assessed by means of a series of written assignments (marked by each student's tutor) and a final unseen examination (taken at a regional centre and marked by independent examiners).

On each course, the sampling strategy was to draw at random 250 students from those who had previously achieved fewer than 120 credit points, 150 students from those who had previously achieved 120 credit points but fewer than 240 credit points, and 50 students from

those who had previously achieved 240 credit points but fewer than 360 credit points. (The varying sample sizes roughly reflect the relevant total numbers of students.) Because of a short-fall in the number of students to be surveyed in each course in each stratum, the questionnaire was administered to just 1,140 students in total rather than the 1,350 students originally planned. Of the 1,140 students, 289 were male and 851 were female.

Instrument

The 12 items in the AGQ are shown in Table 1 below. In Elliot and McGregor's (2001) original study, most of the items referred to "this class", which implies face-to-face teaching. For this study, the items were reworded to refer to "this course" or "my courses" (so that they were neutral between face-to-face and distance education). Nevertheless, the students responded on the original 7-point Likert-type scale from "not at all true of me" (coded 1) to "very true of me" (coded 7).

It was only possible to distribute the questionnaire at one time point, namely, at the start of the course. This meant that it was only possible to assess interest and enjoyment as pre-course expectation measures. Following Lieberman and Remedios (2007), the items used were "On the whole, I expect this course to be very interesting" and "On the whole, I expect this course to be very enjoyable". Participants responded on the same 7-point Likert-type scale. The measures therefore captured students' pre-study expectations, not their actual interest and enjoyment in the course once they had taken it. The aim here was to assess the relationship between pre-course goal orientation and anticipated interest and enjoyment.

Procedure

The questionnaire was distributed in a postal survey that was mailed to the participants at the beginning of September 2005. A reminder was mailed to those who had not replied 2 weeks

later. The survey was closed 6 weeks after the original mailing when the courses had just started so that the students' responses would not be influenced by their actual experience of the courses.

Results

Respondents

Of the 1,140 students surveyed, 781 (or 68.5%) had returned the questionnaire by the close of the survey. This would be considered a good response for a postal survey (Babbie, 1990, p. 182; Kidder, 1981, pp. 150–151). Indeed, 17 other students returned their questionnaires after the cut-off date, and therefore the final response rate was exactly 70%. However, the latter students were not included in the data analysis. In previous studies of achievement goals in younger, campus-based students, response rates have typically not been reported.

The respondents consisted of 195 men and 586 women who varied in age from 19 to 87 years. The mean age of the respondents was significantly higher (41.42 years) than that of the nonrespondents (35.98 years), $F(1, 1138) = 47.80$, $p < .001$, partial $\eta^2 = .04$. However, the response rate was similar for men (67.5%) and for women (68.9%), $\chi^2(1, N = 1140) = 0.19$, $p = .66$, and similar across the students taking the three courses, $\chi^2(2, N = 1140) = 3.46$, $p = .18$.

Principal components analysis

Of the 781 students who returned the questionnaire by the cut-off date, 41 had failed to give a response to one or more of the 12 items in the AGQ, and so the subsequent analysis was based on the 740 students who had provided complete data on those items. They consisted of 190 men and 550 women whose ages varied from 19 to 85 with a mean of 41.18 years. The data analysis followed that adopted by Elliot and McGregor (2001) in their original Study 1.

A principal components analysis identified four components with eigenvalues greater

than 1 that explained 73.88% of the total variance. The idea that four components should be extracted was confirmed by the results of a parallel analysis of 1,000 random correlation matrices using the program produced by O'Connor (2000). Accordingly, four principal components were extracted and then submitted to varimax rotation. Table 1 shows the matrix of pattern/structure coefficients sorted within each component. The extracted components correspond exactly to the performance approach, mastery avoidance, mastery approach, and performance avoidance scales.

(Insert Table 1 about here)

Psychometric properties of the questionnaire

The respondents were assigned scores on each of the four scales by taking the means of their responses to the relevant items. Descriptive statistics for the students' scale scores are presented in Table 2. In general, the students obtained very high scores on mastery approach and high scores on mastery avoidance and performance avoidance; however, they obtained low scores on performance approach, both in absolute terms and in comparison with the younger learners studied by Elliot and McGregor (2001). A multivariate analysis of variance found no significant difference among the scale scores obtained by the students who were taking the three different courses, $F(8, 1468) = 1.34$, $p = .22$, partial $\eta^2 = .01$.

(Insert Table 2 about here)

The internal consistency of each of the four scale scores as measured by Cronbach's (1951) coefficient alpha would be regarded as satisfactory on conventional research-based criteria (Nunnally, 1978, pp. 245–246; Robinson, Shaver, & Wrightsman, 1991). Despite the fact that orthogonal rotation was used, Table 2 shows that the correlation coefficients among the four scale scores were all positive and statistically significant. This is consistent with the widely accepted assumption that students may pursue different kinds of achievement goal at

the same time (Barron & Harackiewicz, 2001; Elliot & McGregor, 2001; Pintrich, 2000).

In response to the statements "On the whole, I expect this course to be very interesting" and "On the whole, I expect this course to be very enjoyable", the 740 students produced mean ratings of 6.43 (*SD* = 0.81) and 6.19 (*SD* = 0.94), respectively, on a scale from 1 to 7. In short, the majority of students expected their course to be both interesting and enjoyable. These ratings are even higher than those obtained by Lieberman and Remedios (2007) from a large sample of younger students at a campus-based university. Multiple regression analyses were carried out to determine whether the students' scale scores predicted these ratings. The standardized regression coefficients are shown in Table 3. Students who obtained higher scores on mastery approach expected their course to be more interesting and enjoyable. Students who obtained higher scores on mastery avoidance expected their course to be less enjoyable.

(Insert Table 3 about here)

Effects of age and gender

The students were classified into the five age bands shown in Table 4, which shows the mean scale scores related to age and gender. A multivariate analysis of variance showed that there was a significant gender difference in the students' scale scores, $F(4, 727) = 5.16$, $p < .001$, partial $\eta^2 = .03$. Univariate analyses found that women obtained significantly higher scores than men on both mastery avoidance, $F(1, 730) = 14.31$, $p < .001$, partial $\eta^2 = .02$, and performance avoidance, $F(1, 730) = 11.31$, $p = .001$, partial $\eta^2 = .02$. However, there was no significant gender difference on mastery approach, $F(1, 730) = 1.98$, $p = 0.16$, partial $\eta^2 = .00$, or performance approach, $F(1, 730) = 0.35$, $p = .55$, partial $\eta^2 = .00$. Moreover, there was no significant variation in the students' scale scores across the five age bands, $F(16, 2222) =$

1.09, p = .36, partial η^2 = .01, and no significant interaction between the effects of age and gender, $F(16, 2222) = 0.85$, p = .62, partial η^2 = .00.

(Insert Table 4 about here)

Table 4 also shows the mean course ratings related to age and gender. A multivariate analysis of variance showed that there was significant variation across the five age bands, $F(12, 1916) = 2.14$, p = .01, partial η^2 = .01. Univariate analyses showed that older students expected their course to be more enjoyable than did younger students, $F(4, 730) = 2.45$, p = .04, partial η^2 = .01. However, the variation in how interesting students in different age bands expected their course to be was not significant, $F(4, 730) = 1.43$, p = .22, partial η^2 = .01.

There was also a significant gender difference in the students' course ratings, $F(2, 729) = 5.29$, p = .005, partial η^2 = .01. Women expected their course to be more interesting than did men, $F(1, 730) = 10.45$, p = .001, partial η^2 = .01, and they expected their course to be more enjoyable than did men, $F(1, 730) = 4.54$, p = .03, partial η^2 = .01. However, there was no significant interaction between the effects of age and gender on the students' course ratings, $F(12, 1916) = 1.14$, p = .32, partial η^2 = .01.

Academic outcomes

A year later, results had been formally recorded for 1,123 of the 1,140 student surveyed: 785 had completed their course, 306 had withdrawn at some point during the course, and 32 had deferred their assessment until a subsequent presentation of the course. (The overall completion rate of 69.9% is typical for undergraduate courses at the Open University.) The completion rate was similar across the three courses, $\chi^2(2, N = 1123) = 1.90$, p = .39, similar in men and women, $\chi^2(1, N = 1123) = 3.65$, p = .06, and similar across the five age bands, $\chi^2(4, N = 1123) = 1.98$, p = .74. Nevertheless, it was significantly higher in the students who

had responded to the survey (74.5%) than in those who had not (59.7%), $\chi^2(1, N = 1123) = 25.07$, $p < .001$.

Table 5 shows the scale scores obtained by the 547 survey respondents who had been recorded as having completed their course and the 189 respondents who had been recorded as having withdrawn from their course. Hierarchical logistic regression analysis was employed to relate course completion to the scale scores: the first stage evaluated age and gender as predictor variables, and the second stage evaluated the scale scores as predictor variables while statistically controlling for any possible effects of age and gender. The results are shown in Table 6. Completion of the relevant course was significantly predicted only by the scores on mastery avoidance; the odds ratio was 0.86, implying that an increase of one point in the score on this scale reduced the odds of completing the course by 14%.

(Insert Tables 5 and 6 about here)

Of the 785 students who had completed their course, 625 (or 79.6%) had passed, but 160 had failed. The pass rate was similar across the three courses, $\chi^2(2, N = 785) = 1.34$, $p = .51$. Nevertheless, it was significantly higher in women (82.2%) than in men (72.6%), $\chi^2(1, N = 785) = 8.71$, $p = .003$, lower in younger students than in older students, $\chi^2(4, N = 785) = 9.74$, $p = .04$, and higher in the students who had responded to the survey (81.3%) than in those who had not (74.9%), $\chi^2(1, N = 785) = 3.89$, $p = .05$. Of the 547 survey respondents who had completed their course, 444 had passed, but 103 had failed. Hierarchical logistic regression analysis found that none of the four scale scores significantly predicted passing versus failing in students who had completed the relevant course when the effects of age and gender had been statistically controlled ($p > .33$ in each case).

Students were marked on their performance in their coursework and the examination, in both cases using a percentage scale with a pass mark of 40%. These were averaged to yield an overall mark, and marks were recorded for the 625 students who had passed the relevant

course. The mean coursework mark was 72.23 (*SD* = 9.73), the mean examination mark was 65.21 (*SD* = 13.21), and the mean overall mark was 68.72 (*SD* = 10.22). An analysis of variance showed that students who had taken U210 achieved significantly lower coursework marks (*M* = 70.55) than students who had taken A207 (*M* = 72.86) or A210 (*M* = 73.15), $F(2, 622) = 4.49$, $p = .01$, partial $\eta^2 = .01$. However, there was no significant variation across the three courses in the students' examination marks, $F(2, 622) = 2.15$, $p = .18$, partial $\eta^2 = .01$.

The men and the women obtained similar coursework marks, $F(1, 615) = 0.17$, $p = .68$, partial $\eta^2 = .00$, and similar examination marks, $F(1, 615) = 0.05$, $p = .82$, partial $\eta^2 = .00$. Students aged under 30 achieved significantly lower coursework marks than older students, $F(4, 615) = 2.57$, $p = .04$, partial $\eta^2 = .02$, but there was no significant variation in examination marks across the five age bands, $F(4, 615) = 1.21$, $p = .31$, partial $\eta^2 = .01$. The students who had responded to the survey achieved significantly higher coursework marks (*M* = 72.78) than the students who had not (*M* = 70.57), $F(1, 623) = 6.07$, $p = .01$, partial $\eta^2 = .01$, but there was no significant difference between the two groups in terms of their examination marks, $F(1, 623) = .01$, $p = .94$, partial $\eta^2 = .00$.

Analyses of covariance were employed to relate the marks to the scale scores in the 444 survey respondents who had passed the relevant course. The scale scores were used as covariates while statistically controlling for the independent variables of age and gender. The respondents' scale scores predicted their coursework marks, $F(4, 430) = 6.57$, $p < .001$, partial $\eta^2 = .06$, their examination marks, $F(4, 430) = 7.95$, $p < .001$, partial $\eta^2 = .07$, and their overall marks, $F(4, 430) = 9.30$, $p < .001$, partial $\eta^2 = .08$. The standardized regression coefficients are shown in Table 7. There was no significant relationship between the students' scores on mastery approach and their marks. Students who obtained higher scores on mastery avoidance achieved significantly lower marks; students who obtained higher scores on

performance approach achieved significantly higher marks; and students who obtained higher scores on performance avoidance achieved significantly lower marks. Similar patterns of results were obtained for the coursework marks, the examination marks, and the overall marks.

(Insert Table 7 about here)

Discussion

Given the prevalence of adult learners in higher education, it is curious that previous research into achievement goals has focused almost exclusively upon young people who have recently gone straight from secondary education to higher education. The key feature of the present study was that it was concerned with an academic population that has rarely been subjected to systematic scrutiny. Moreover, as we explained in the introduction, one might expect adult learners to demonstrate different patterns of relationships between achievement goals and learning outcomes. The present study involved a postal survey of adult learners about to embark on distance-learning courses with the UK Open University. The size of the sample and the high response rate ensure the robustness of the findings, which provide interesting and unique comparisons with those of previous investigations.

The participants were asked to complete Elliot and McGregor's (2001) AGQ with minor changes of wording to ensure that it was appropriate for a distance-learning context. A principal components analysis identified the four original scales of the AGQ, thus confirming its construct validity in this distinctive population. The four scales also showed satisfactory levels of internal consistency according to Cronbach's (1951) coefficient alpha. In short, the AGQ appears to be as psychometrically sound in British adult learners as it is in traditional-age US college students. Recent evidence obtained by Sun and Hernandez (2010) has shown factor invariance for the AGQ across Dutch, Chinese, and American students, and our data

add to that corpus of evidence (see also Campbell, Barry, Joe, & Finney, 2008; Murayama, Zou, & Nesbit, 2009).

The goals that adult learners adopt

One of the aims of this research was to assess the types of goal that adult learners adopt in comparison with younger learners. Our study followed the same statistical protocols as those in Elliot and McGregor's (2001) study with traditional-age undergraduate students, and so it is legitimate to compare the mean scale scores. These were relatively similar except in the case of Performance Approach. Reporting Elliot and McGregor's results first, the mean scale scores were: mastery approach, 5.52 versus 5.96; mastery avoidance, 3.89 versus 4.19; performance approach, 4.82 versus 2.83; and performance avoidance, 4.49 versus 4.38.

In terms of our predictions, the results support the position that adult learners are just as likely as younger students to adopt mastery-approach and performance-avoidance goals. Whereas Eppler and Harju (1997) found no difference between traditional and non-traditional students in their adoption of performance goals, however, our students were much less likely than Elliot and McGregor's (2001) participants to exhibit performance-approach goals. This is more in line with Sachs' (2001) suggestion that performance goals are often irrelevant for adult learners. On the face of it, then, performance-approach goals may not be as important for adult learners as they are for younger learners.

Nevertheless, a key difference between our study and that of Eppler and Harju (1997) is that our participants were studying by distance learning. As we noted in the introduction, their opportunities to demonstrate their abilities to others in the classroom or other peer-relevant arenas would be markedly reduced in comparison with the non-traditional campus-based learners investigated by Eppler and Harju. This in turn would make it less likely that our participants would adopt performance-approach goals. It would be worth undertaking

further research to see whether and how the mode of course delivery (face-to-face versus distance learning) affects the extent to which students adopt performance-approach goals.

Some researchers have questioned whether mastery-avoidance goals are relevant to students in higher education (Sideridis & Mouratidis, 2008). However, Elliot and McGregor's (2001) results indicate that they are, and the mean score obtained by our own students on mastery avoidance was if anything higher than that obtained by Elliot and McGregor's sample. Mastery-avoidance goals appear to be important for traditional-age students in both academic and work-based settings (Van Yperen et al., 2009), and the present findings imply that they are at least as relevant for adult learners.

Goals and outcomes

We now turn to the different question of how the adoption of mastery-approach goals, mastery-avoidance goals, performance-approach goals and performance-avoidance goals is related to different academic outcomes. There were four main outcome measures in this study: attainment, expected interest, expected enjoyment and course completion.

In line with the findings of previous research (see Senko et al., 2011, for a review), we predicted earlier that adopting performance-approach goals would be positively related to attainment, but that adopting performance-avoidance goals would be negatively related to attainment. These predictions were confirmed: performance-approach goals were positively related to students' coursework and examination marks, whereas performance-avoidance goals were negatively related to their coursework and examination marks (see Table 7). We also predicted that adopting performance-approach goals would be unrelated to interest and enjoyment, whereas adopting performance-avoidance goals would be negatively related to interest and enjoyment. In fact, neither performance-approach nor performance-avoidance goals were significantly related to either students' interest or their enjoyment (see Table 3).

In the introduction, we put forward arguments for expecting the relationship between mastery-approach goals and attainment to be either positive or negative. In fact, again in line with the findings of previous research, the adoption of mastery-approach goals was unrelated to the students' coursework and examination marks (see Table 7) but was positively related to both their interest and their enjoyment (see Table 3). Broadly speaking, these findings are further evidence of the robustness of the relationships between goals and outcomes, at least in the case of mastery approach, performance approach and performance avoidance.

In the case of mastery-avoidance goals, we predicted that there would be a negative relationship with attainment, interest and enjoyment. Mastery-avoidance goals were indeed negatively related to students' coursework and examination marks (see Table 7), and they were negatively related to their expected enjoyment of their course. The relationship with their expected interest was also negative, but in this case the relevant regression coefficient was small and nonsignificant (see Table 3). Even so, these findings in general indicate that adopting mastery-avoidance goals has negative consequences for adult learners.

This is true especially with regard to the outcome of course completion (see Table 6). Neither mastery-approach goals nor performance-approach goals predicted the likelihood of successful course completion. We had predicted that the adoption of performance-avoidance goals would be increase the likelihood of students' dropping out of their course, but this was not confirmed. Both our own findings and those of previous research (see Senko et al., 2011) show that performance-avoidance goals are associated with reduced interest, enjoyment and attainment, but these negative consequences do not include the reduced likelihood of course completion. Indeed, mastery avoidance was the only significant predictor of drop-out.

The broad pattern of relationships between achievement goals and outcomes is consistent with Elliot and McGregor's (2001) theoretical framework. The adaptiveness of performance-approach goals that some researchers seem to find so counter-intuitive (e.g.,

Brophy, 2005) was once again supported in this study. Performance-approach goals do not appear to be problematic for adult learners. Nevertheless, a key finding from this study was both the prevalence and the impact of mastery-avoidance goals for adult learners. Naturally, more research is needed to replicate and extend our findings, but unequivocally in this study mastery-avoidance goals are both a feature and a concern for this student population.

Gender and age

Gender was not a key variable in this study, but, because the population of adult learners has been relatively neglected, it is of interest to compare the findings of the current research with those of other studies in which data on gender and goal adoption have been reported. For example, in three different studies, Elliot and McGregor (2001) found no consistent gender differences. However, in the present study women were more likely than men to adopt both mastery-avoidance goals and performance-avoidance goals (see Table 4). The women's apparent concern with poor learning (mastery avoidance) and poor attainment (performance avoidance) may reflect the fact that many had to reconcile the demands of their academic studies with domestic and occupational commitments. In previous research, this has been suggested as one factor that leads women taking distance-learning courses to be more likely than men to adopt a surface approach to learning (Richardson, Morgan, & Woodley, 1999). Even so, the women in our sample expected to their courses to be both more interesting and more enjoyable, and they were actually more likely to pass their courses than were the men.

Although our participants varied in age from 19 to 85 years, most of the effects of age were nonsignificant. There was no significant variation either in the students' scale scores or in their ratings of expected interest across the five age bands, although there was a significant trend for older students to expect their course to be more enjoyable than did younger students (see Table 4). Older students were more likely to pass their course than the younger students,

and they also tended to obtain higher coursework marks. However, there was no significant variation across the five age bands in either the completion rate or their examination marks.

More fundamentally, the values of partial η^2 for the effects of gender and age varied between .00 and .02. In terms of the benchmarks that were proposed by Cohen (1969, pp. 278–280), which have been widely adopted in educational and psychological research, they would all be regarded as small effects of little theoretical or practical importance. Within the population of adult learners, therefore, gender and age are not important predictors either of the adoption of different achievement goals or of academic attainment. In contrast, the values of partial η^2 for the regression of achievement goals on students' marks would be regarded as medium effects on Cohen's criteria and hence of both theoretical and practical importance.

Limitations and suggestions for future research

The adult learners in the present study were all taking courses by distance learning, and we have already raised the question whether similar results would be obtained in adult learners who were studying in campus-based institutions, as in the study by Eppler and Harju (1997). Ideally, one would like to compare school-leavers and adult learners taking courses both on campus and by distance learning in order to separate the effects of age and mode of delivery. For example, we suggested earlier that students taking courses by distance learning have less opportunity to compare themselves with each other than campus-based students; this would predict that scores on performance approach and performance avoidance would be related to mode of course delivery rather than age. A practical problem is that it is rare to find all four types of student in a single higher education institution, and so such a study would confound differences in age and mode of delivery with variations in institutional characteristics.

Since our study was carried out, two newer versions of the AGQ have appeared. Elliot

and Murayama (2008) argued that there were various problems with the wording of the items in the original AGQ, leading them to derive a modified instrument, the AGQ-Revised. This focuses on achievement goals as aims rather than on their affective connotation. The findings to date have confirmed rather than contradicted the patterns obtained in the present study and in previous research. It is therefore likely that we would have obtained similar findings if we had used the AGQ-Revised instead of the original AGQ. Subsequently, Elliot, Pekrun, and Murayama (2011) presented a 3 × 2 model that separates achievement goals into three kinds: "task" (purely mastery), "self" (mastery plus self-comparison) and "other" (comparison with others). In each case, approach and avoidance goals are hypothesized. Clearly, this model too warrants investigation in adult learners to identify the kinds of mastery goals that they pursue and to establish whether and how the different kinds of achievement goal predict attainment.

Conclusions

Adult learners are increasingly numerous in higher education, and many researchers have suggested that this group is distinctive in terms of their attitudes and approaches to studying. Despite its popularity in the field of achievement motivation and its potential theoretical relevance for adult learners, goal theory has rarely been examined using adult samples. When it has been so used, key avoidance constructs have not been included in the instrumentation. The current study examined the prevalence of different achievement goals in adult learners using the 2 × 2 framework developed by Elliot and McGregor (2001) and related their goals to several outcome measures.

The findings demonstrate that the achievement-goal framework is as appropriate in adult learners as it is in younger students. The results of a factor analysis revealed that the theoretical constructs were robust. With regard to the prevalence of different goals, adult

learners were less likely to adopt performance-approach goals than previous studies had found in younger students. With regard to outcomes, the same patterns between goals and outcomes were observed in adult learners as had been reported for younger students. This suggests homogeneity rather than heterogeneity between the populations of adult and younger students in higher education. However, a prevalent and key predictor of outcomes was mastery avoidance. This was the only construct to predict students' dropping out of a course. This finding should not be underplayed simply because goal–outcome relationships are usually negative in the case of *performance* avoidance (Senko et al., 2011). In previous literature, evidence for a relationship between mastery avoidance and outcomes is rather equivocal, but this study has clearly shown both that adult learners may endorse such a goal and that, if they do, they achieve lower grades and are more likely to drop out of a course.

Clearly, more studies are needed to verify these findings, but this study appears to confirm that, when using achievement goals as a theoretical framework, (a) the AGQ is a robust measure to use with adult learners, (b) adult learners demonstrate similar goals and similar patterns of goal–outcome relationships to younger learners, but (c) that adult learners may adopt mastery-avoidance goals and may suffer negative consequences as a result. We look forward to other researchers employing goal theory with this distinctive population.

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Table 1. Achievement Goal Questionnaire: Principal components analysis with varimax rotation

	Principal components			
Items	1	2	3	4
It is important to me to do better than other students. (PAP)	**.93**	.03	.04	.07
My goal in my courses is to get a better grade than most of the other students. (PAP)	**.91**	.01	.02	.12
It is important to me to do well compared to others in my courses. (PAP)	**.90**	.04	.04	.05
I worry that I may not learn all that I possibly could in my courses. (MAV)	.10	**.87**	.14	.11
I am often concerned that I may not learn all there is to learn in this course. (MAV)	.02	**.85**	.06	.19
Sometimes I'm afraid that I may not understand the content of this course as thoroughly as I'd like. (MAV)	-.04	**.85**	-.02	.16
It is important for me to understand the content of my courses as thoroughly as possible. (MAP)	-.03	.08	**.86**	.02
I want to learn as much as possible from all my courses. (MAP)	-.05	-.01	**.84**	.05
I desire to completely master the material presented in my courses. (MAP)	.22	.11	**.70**	.15
I just want to avoid doing poorly in my courses. (PAV)	.03	.16	.02	**.86**
My goal in this course is to avoid performing poorly. (PAV)	.07	.13	.15	**.83**
My fear of performing poorly is often what motivates me. (PAV)	.32	.33	.07	**.51**

Note. The original scale structure of the questionnaire was as follows: MAP, mastery approach; MAV, mastery avoidance; PAP, performance approach; and PAV, performance avoidance. Pattern/structure coefficients greater than .40 in absolute magnitude are shown in bold.

Table 2. Descriptive statistics of students' scale scores in the Achievement Goal Questionnaire

Scale	*M*	*SD*	Coefficient alpha	MAV	PAP	PAV
Mastery approach	5.96	0.93	.70	.17**	.13**	.23**
Mastery avoidance	4.27	1.57	.85		.09*	.42**
Performance approach	2.85	1.64	.91			.25**
Performance avoidance	4.38	1.57	.69			

Note. $N = 740$. The scale scores vary between a minimum of 1 and a maximum of 7. The last three columns show the correlation coefficients among the four scales: MAV, mastery avoidance; PAP, performance approach; PAV, performance avoidance.

*$p < .05$; **$p < .01$, two-tailed tests.

Table 3. Standardized regression coefficients using students' scale scores to predict course ratings

Scale	Interest	Enjoyable
Mastery approach	.37**	.33**
Mastery avoidance	-.03	-.11**
Performance approach	-.05	-.03
Performance avoidance	.02	.03

Note. $N = 740$. The dependent variables were students' ratings of how interesting they expected their course to be and how enjoyable they expected their course to be.

**$p < .01$, two-tailed tests.

Table 4. Mean scale scores and course ratings by age and gender

	Age					Gender	
	Under 30	30–39	40–49	50–59	Over 59	Male	Female
	(*n* = 157)	(*n* = 206)	(*n* = 192)	(*n* = 110)	(*n* = 75)	(*n* = 190)	(*n* = 550)
Mastery approach	6.11	5.91	5.90	5.98	5.91	5.89	5.99
Mastery avoidance	4.36	4.30	4.35	4.20	3.87	3.91	4.39
Performance approach	3.12	2.90	2.68	2.86	2.54	2.87	2.84
Performance avoidance	4.50	4.49	4.38	4.21	4.08	4.03	4.50
Interest	6.45	6.37	6.42	6.48	6.53	6.27	6.49
Enjoyable	6.18	6.10	6.16	6.28	6.33	6.04	6.23

Note. Scores vary between a minimum of 1 and a maximum of 7. The last two rows show the students' mean ratings of how interesting they expected their course to be and how enjoyable they expected their course to be. The statistically significant findings were as follows: older students expected their course to be more enjoyable than did younger students ($p = .04$); women achieved higher scores than men on mastery avoidance ($p < .001$) and performance avoidance ($p = .001$); women expected their course to be both more interesting ($p = .001$) and more enjoyable ($p = .03$) than did men.

Table 5. Mean scale scores for 547 students who completed their course and 189 students who failed to complete their course

	Completed		Failed to complete	
Scale	*M*	*SD*	*M*	*SD*
Mastery approach	5.96	0.91	5.96	1.00
Mastery avoidance	4.19	1.54	4.49	1.66
Performance approach	2.83	1.62	2.87	1.68
Performance avoidance	4.38	1.57	4.35	1.56

Note. Scores vary between a minimum of 1 and a maximum of 7.

Table 6. Results of logistic regression analysis using scale scores to predict course completion

Scale	*B*	*SE*(*B*)	Wald χ^2	*p*	Odds ratio
Mastery approach	0.02	0.09	0.07	.79	1.03
Mastery avoidance	-0.15	0.06	6.02	.01	0.86
Performance approach	-0.03	0.05	0.35	.55	0.97
Performance avoidance	0.08	0.06	1.81	.18	1.09

Note. $N = 736$. The effects of age and gender as predictor variables were statistically controlled.

Table 7. Standardized regression coefficients using students' scale scores to predict marks

Scale	Coursework	Examination	Overall
Mastery approach	0.01	0.04	0.03
Mastery avoidance	-0.11*	-0.13*	-0.14**
Performance approach	0.15**	0.15**	0.17***
Performance avoidance	-0.14**	-0.16**	-0.17**

Note. $N = 444$. The effects of age and gender as predictor variables were statistically controlled.

*$p < .05$; **$p < .01$, ***$p < .001$, two-tailed tests.