

Students' Goal Achievement: Exploring Individual and Situational Factors

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Abstract

Introduction. This paper reports a preliminary investigation of the individual and situational factors affecting goal achievement in a psychology student population. The impact of normative information on goal achievement is considered in relation to goal commitment, optimism, gender and academic setting.

Method. Psychology students (n = 121) from two British universities completed a cognitive task after being told that others had found the task easy (high-performing norm) or difficult to achieve (low-performing norm). A control condition was also used where no normative information was given. Measures of Optimism (Life Orientation Task, Scheier & Carver, 1985) and Goal Commitment (Klein et al., 2001) were taken and comparisons between the goal achievement of groups high/low in each of these was considered, along with differences according to gender and university.

Results. The results show that when given normative information regarding the performance of others participants high in optimism gained higher goal achievement scores than those low in optimism, but only under the low performing norm condition. No other significant differences were found in the experimental conditions. However, in the control group significant differences in goal achievement were seen between high and low goal commitment participants as well as between the participants at the two universities.

Conclusion. The unexpected findings indicate that there may be the potential for pre-existing factors relating to the student that have a greater impact upon goal achievement than the experimental manipulations used here. Further research is being undertaken to investigate these.

Keywords: Goal Achievement, University Students, Goal Commitment, Gender Differences, Normative Information, Goal Setting.

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Metas de Logro de los estudiantes: exploración de los factores individuales y situacionales

Resumen

Introducción. Este trabajo presenta una investigación preliminar de los factores individuales y situacionales que afectan a la consecución de los objetivos, en una población de estudiantes de psicología. El impacto de la información normativa sobre la consecución de los objetivos se estudia en relación con el compromiso de meta, el optimismo, el género y ambiente académico.

Método. Estudiantes de Psicología ($n = 121$) de dos universidades británicas completaron una tarea cognitiva, después de saber que otros habían encontrado la tarea fácil (de alto rendimiento normativo), o difícil de conseguir (de bajo rendimiento normativo). En la información de control no se dio información normativa. Se tomaron medidas de optimismo (orientación a la tarea) y de compromiso con los objetivos, y comparaciones entre el logro de los objetivos, considerando grupos altos / bajos, en cada uno de ellos era considerado, junto con las diferencias de condiciones de género y la universidad.

Resultados. Los resultados muestran que cuando se ofrece información normativa sobre el rendimiento a los participantes con alto optimismo, obtienen altas puntuaciones en rendimiento y meta, que los de bajo optimismo, pero sólo bajo la condición de bajo bajo rendimiento. Ninguna otra diferencia significativa apareció en las condiciones experimentales. Sin embargo, en el grupo control aparecieron diferencias significativas en el logro de los objetivos entre los participantes de alto y bajo compromiso, así como entre los participantes en las dos universidades.

Conclusión. Los resultados inesperados indican que el potencial de los factores pre-existentes de las características de los estudiantes puede tener un mayor impacto en el logro de metas que el las manipulaciones experimentales utilizadas aquí. Se está llevando a cabo investigación adicional para investigar estos resultados.

Palabras clave: Metas de logro, estudiantes universitarios, objetivos de compromiso, diferencias de género, información normativa, ajustes de la meta.

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Introduction

It has been well established that giving someone a goal to aim towards, as opposed to advising them to do their best, improves performance; probably due to reducing ambiguity over what is expected (Locke & Latham, 2002). Research has suggested that goal setting is also applicable in the educational arena and that setting goals for educational purposes can enhance performance (Elliot, McGregor & Gable, 1999; Harackiewicz, Barron, Tauer & Elliot, 2002; Roney, Higgins & Shah, 1995; Roney & Sorrentino, 1995; Schunk, 1996). The present research is a preliminary investigation of the individual and situational factors affecting goal achievement in a student population.

If goal achievement research is to be applicable in an educational setting then it is important to attend to factors that are directly relevant to students. In doing so strategies can be developed which address potential areas of hindrance and encourage student goal achievement. In the current higher education context, the focus on widening participation has resulted in increasing diversity amongst the student population (Sander, 2005). However, such diversity is frequently overlooked in goal achievement research. Given this diversity, to generalise the results of goal achievement studies to the student population as a whole is short-sighted. We should instead consider individual differences amongst students *as well as* giving consideration to factors relating to the wider context in which students study, such as those which are subject, and indeed university, specific. Hence, the present research is a preliminary investigation of the individual and situational factors affecting goal achievement in a specified student population.

Goal Achievement

Assessing students' goal achievement allows us to gain a valuable insight into the variety of ways in which students engage, evaluate, and perform within the educational system (Roebken, 2007). For instance, academic outcome (goal achievement) is suggested to be affected by students' beliefs. Their beliefs about ability, effort, goal setting, and task difficulty can potentially play an important roll in determining their overall academic performance (Elliot & McGregor, 2002; McCollum, 2005; Weiner, 1985).

Optimism

Optimism (the belief in the ability to succeed) can be considered a personality trait which leads people to expect positive outcomes (Lounsbury, Welsh, Gibson & Sundstrom, 2005). The link between optimism and performance has been the subject of research considering which personality factors influence achievement in education and work.

Cognitive ability (measured as performance on verbal and numerical reasoning tests) has also been linked to optimism in the educational setting (Lounsbury et al., 2005). The authors suggest this may be because the demonstration of pro-social attributes such as optimism may result in greater positive attention and reinforcement from teachers/lecturers, leading to greater achievement. It is also possible however, that one effect of optimism lies in its positive expectancies. Positive expectancies have been shown to be an important factor in determination to reach a goal (Ingledeu et al., 2005; Locke & Latham, 2002; Wofford et al., 1992). It may therefore be this more general expectation of success that is motivating and results in achievement.

Goal Commitment

If a goal is set that is hard to reach, commitment to that goal is necessary to achieve it (Erez & Zidon, 1984; Klein, Wesson, Hollenbeck & Alge, 1999; Wofford, Goodwin & Premack, 1992). Goal commitment can be defined as an individual's "intention to extend effort toward goal attainment" (Klein, Wesson, Hollenbeck, Wright & DeShon, 2001, p.34). Students' commitment to achieving goals has been investigated and support is offered for the impact that goal commitment has on performance in this population (Hollenbeck, Klein, O'Leary & Wright, 1989; Klein & Mulvey, 1995)

Probability of success has been found to be an important predictor of goal commitment (Ingledeu, Wray, Markland & Hardy, 2005; Locke & Latham, 2002; Wofford et al., 1992); if an individual feels they are likely to reach a goal, the more committed they will be to trying to achieve it. One issue that arises out of this is that whilst expectation of success predicts goal commitment, hard goals, in which likelihood of success is low, create the best performance.

Many studies utilising goal-setting allow participants to undertake a practice trial of the task before measuring their goal commitment, thereby allowing participants an opportu-

nity to judge task difficulty and probability of success. An alternative method is to provide information on how others have performed, or normative information (Weingart & Weldon, 1991). This also provides participants with an expectation of success which influences their level of goal commitment. The effect of normative information occurs because most individuals feel that they are at least as able as similar others (Weingart & Weldon, 1991).

Normative Information

As well as influencing performance via its effect on goal commitment levels, normative information can also have a direct effect on performance. Social Comparison theory (Festinger, 1954) suggests that we compare ourselves to individuals we perceive to be similar to ourselves. Such self-evaluation is motivating (Harkins, 2001), thus normative information can positively affect performance. This does then raise the question of the possible impact that normative information from unknown individuals could have on goal commitment and achievement.

Self-evaluation may also occur when exposed to normative information indicating poor task performance in others. In the absence of other information, such as task experience, an individual will base their performance goals on normative information gained from the achievements of other people, whether those are high or low (Rakestraw & Weiss, 1981). However, if an individual has had experience on the task, they will use this to set their own experience-based goals, rather than the normative information.

Earley and Kanfer (1985) found that if able to set personal goals, participants set these high, even after having observed another individual demonstrating high or low performance on the same task. However, participants performed better in the high-performing norm condition than in the low-performing norm condition. Therefore normative information did not influence personal goal-setting but did influence performance towards that goal (goal achievement), indicating that the goal-setting effect can be overridden by normative information. That is, that the benefits to performance usually associated with having a goal can be cancelled out if they are exposed to another person's poor performance on the same task.

Meyer and Gellatly (1988) concluded from their study that the harder the goal that the participants were given, the better they did on the task. In this instance, the assigned goal itself is used as an indicator of what level of performance is expected and perceived to be

achievable. Thus, as with Earley and Kanfer (1985), normative information can override the effect that a goal alone has on performance. What this suggests is that if an individual believes a goal to be unrealistic and unattainable (as a low-achieving norm would suggest), the beneficial effect of goal-setting could be lost.

Individual Factors in Goal Achievement

As previously outlined, individuals do however differ in their levels of goal commitment, and harder to reach goals may be perceived to be more attainable for some people than for others. Supporting this notion, Martin and Manning Jr. (1995) found that normative information affected individuals differently depending on their level of goal commitment, but only when a high-achieving norm was used; those high in goal commitment outperformed those low in goal commitment on a difficult to achieve goal, regardless of whether the task itself was simple or complex. Thus it seems that goal commitment is an important mediator of the usually positive effect of exposure to high-achievement norms if a difficult goal is also set. Potentially, when the task is difficult both task and low-achieving normative information suggest a low possibility of success at the task which affects motivation.

One's level of optimism can clearly be a motivating factor in achievement. For example, a positive relationship has been found between optimism and students' grade point averages (Lounsbury, Sundstrom, Loveland & Gibson, 2003). The continued effect of optimism on performance beyond being a student has also been demonstrated, with optimism being one of a number of consistent personality traits predicting good performance in high school students and manufacturing plant workers alike (Lounsbury, Gibson, Sundstrom, Wilburn & Loveland, 2004). From this Lounsbury et al suggest that optimists are likely to persevere in their pursuit of goals.

Hypothesis 1a: Participants high in goal commitment will score higher on goal achievement than participants low in goal commitment when given information indicating that a task is difficult to achieve (low-performance normative information); there will be no difference in goal achievement between the two groups when given information indicating that a task is easy to achieve (high-performance normative information).

Goal commitment is partly a function of expectations of success (Ingledeu et al., 2005) and optimism is described as a disposition towards positive outcome expectancies. Therefore, normative information may affect high and low optimists in the same way as it affects high and low goal committed individuals. Hence, hypothesis 1b expects that same pattern of results in relation to optimism as hypothesis 1a in relation to goal commitment.

Hypothesis 1b: Participants high in optimism will score higher on goal achievement than participants low in optimism when given information indicating that a task is difficult to achieve (low-performance normative information); there will be no difference in goal achievement between the two groups when given information indicating that a task is easy to achieve (high-performance normative information).

Goal Achievement & Gender

There has been much research suggesting that males and females differ in their approaches to education, through the choices of subject areas (Turpin & Fensom, 2004), their performance, and their attitude towards their studies (Sander & Sanders, 2006). Sander and Sanders (2006) also noted that male students seemed to show the extreme of either very high or very low commitment to their studies.

The BPS has acknowledged that Psychology has a small minority of male students: currently on average about 21% (Turpin & Fensom, 2004). The population under investigation within the current study reflects the BPS statistics with 94 females (78%) and 27 males (22%) participating.

When establishing a specific difference in performance (achievement) in male students, Woodfield, Jessop and McMillan (2006) concluded from their study of 650 undergraduate students that males overall percentage scores and degree performance was lower than females.

De la Fuente (2004) evaluates the perspectives on students' motivation and approaches to goals and achievement. Within the discussion gender differences are highlighted as playing an important role in the type of goals males and females are associated with. Males are more achievement goal orientated whereas females are more learning/social goal orientated

(Wentzel, 1998). This variation could have a potential impact on goal achievement between genders.

Hypothesis 2: There will be a difference in goal achievement scores between male and female students in the normative information conditions.

Goal Achievement & University

Sander, Stevenson, King & Coates (2000) suggest that the recruitment policies and students success at A level or equivalent may well have an impact on their confidence and commitment when completing tasks/goals. Students with more successful academic histories have been shown to have higher academic confidence than those with less successful academic histories (Sanders & Sander, 2007). This has direct implications for goal achievement and the two student populations within the present study.

Sander (2005) also highlights that the culture of the University can affect students ability to achieve, as the environment they find themselves in may be quite contrasting to their previous educational experiences. This could have implications for student goal commitment and achievement.

According to Harackiewicz, Barron, Pintrich, Elliot & Thrash (2002) different universities encourage students to develop an array of differing strategies for achieving their goals. They concede that this pattern may not be found consistently within this population, such as with younger students or older students who are usually more diverse with regard to their knowledge, skills and achievement levels.

Hypothesis 3: There will be a difference in goal achievement scores between university student populations in the normative information conditions.

Method

Participants

A total of 121 psychology students participated in this study, drawn from two British universities. 94 of the participants were female and 27 were male. Ages ranged from 18 to 45 years, with a mean age of 21.26 (standard deviation = 4.99).

Statistical Analysis

Measures of optimism and goal commitment were taken for this study in order to establish if these factors affected goal achievement in high and low performing normative information conditions.

Measuring optimism. This was accomplished using the Life Orientation Test (LOT, Scheier & Carver, 1985). The LOT assesses individual differences in general optimism versus pessimism and has good internal consistency (Cronbach's alpha = 0.76) and test-retest reliability ($r = 0.79$). Scores on the LOT are based on 12 items; four positively-oriented, four negatively-oriented which are reversed for scoring, and four filler items that are not included in the scoring.

Participants completed the scale by indicating their agreement to each item on a 5-point Likert scale, anchored by the response options "I agree a lot" and "I disagree a lot". Responses were totalled with a high score indicating high optimism. The presentation order of the Life Orientation Test was counterbalanced with the experimental task to avoid any effects of this upon performance, so that half of the participants completed the LOT first, whilst half completed this after the experimental task.

For purposes of analysis, a median split was performed on the calculated LOT scores to create two groups; high optimism (consisting of participants whose LOT scores fell above the median score) and low optimism (consisting of participants whose LOT scores fell below the median score).

Measuring goal commitment. This was accomplished using the goal commitment scale of Klein, et al. (2001). This 5-item scale has good internal consistency (Cronbach's alpha =

0.74). Participants complete the scale by indicating their agreement to each item on a 5-point Likert scale, anchored by the response options “I agree a lot” and “I disagree a lot”. A high total score indicates high goal commitment. After completing measures of optimism and goal commitment participants began the goal achievement task.

For purposes of analysis, a median split was performed on the calculated goal commitment scores to create two groups; high commitment and low commitment.

Goal achievement task. A cognitive task of difficult single solution anagrams was used to assess participants' performance on a set goal (goal achievement). The anagrams were five letter words taken from the 1000 most frequently used English words (Harris, 2003 not referenced; reference now added). They were presented with letters in the orders 32145, 51432 and 53124 as these are the most difficult to solve (Bathurst & Kee, 1994 not referenced reference now added) and the most frequently used in studies (Hatfield & Soames Job, 1998 not referenced reference now added).

The goal was established by a pilot study in which 28 participants (20 female, 8 male, mean age 22.15, SD = 5.72) completed as many of the anagrams as possible within three minutes. To ensure its difficulty, the goal for the main study was set as one standard deviation above the mean score from this group. Thus participants in the main study were instructed that their goal was to complete 20 anagrams in three minutes, derived from the mean score in the pilot study of 11.82 anagrams solved (SD = 8.44).

Experimental manipulation

To determine the effect upon goal achievement of normative information, information was provided to participants regarding the performance of (hypothetical) others upon the cognitive task. Using a between subjects design students were told either that others had found the goal difficult to achieve (low-performing norm), or that others had previously found the goal achievable (high-performing norm). In the control condition students received no normative information prior to the task regarding the performance of others. The same anagrams and goal were given in all three normative information conditions. The percentage of set goal achieved was the dependent variable. In accordance with the stated hypotheses testing for differences between the two normative information conditions, control group data was analysed separately and is included for reference only.

Results

Goal achievement, normative information and goal commitment

A 2 (goal commitment: high, low) \times 2 (normative information: high-performing, low performing) between subjects Analysis of Variance (Anova) tested for differences in goal achievement. No significant effects of goal commitment, $F(1, 77) = 1.37, p > .05$, normative information, $F(1, 77) = 1.37, p > .05$, or goal commitment \times normative information, $F(1, 77) = 1.02, p > .05$, were observed. Table 1 shows the mean goal achievement scores in each experimental condition.

An independent t-test upon the control group data, where no normative information had been given, indicated a significant difference in goal achievement between students high in goal commitment ($M = 57.73, SD = 37.21$) and low in goal commitment ($M = 91.11, SD = 45.33$), $t(38) = 2.56, p < .05$. Hence, individual levels of goal commitment did not influence goal achievement when a goal had been set, but did in the absence of goals (normative information).

Table 1. Mean goal achievement scores across normative information conditions for high and low goal commitment (GC) students (standard deviation in parentheses)

	High-performing norm		Low-performing norm		Total	
	Mean	SD	Mean	SD	Mean	SD
High GC	60.48	(48.53)	68.04	(41.44)	64.43	(44.59)
Low GC	59.00	(32.55)	48.24	(37.12)	54.05	(34.66)
Total	59.76	(41.00)	59.63	(40.40)	59.69	(40.45)

Goal achievement, normative information and optimism

A 2 (optimism: high, low) \times 2 (normative information: high-performing, low performing) between subjects Anova tested for differences in goal achievement. The analysis revealed a significant main effect for optimism, $F(1, 77) = 5.71, p < .05$, but not for normative infor-

mation, $F(1, 77) = .23, p > .05$. The analysis also revealed a significant interaction between optimism and normative information, $F(1, 77) = 4.08, p < .05$.

High optimism students gained higher goal achievement scores than low optimism students overall (see Table 2). However, the goal achievement scores of high optimism students did not differ from those of low optimism students under the high-performing norm condition, $t(39) = -.245, p > .05$, only under the low-performing norm condition, where it can be seen that high optimism students gained higher goal achievement scores than low optimism students did, $t(38) = -3.38, p < .05$.

An independent t-test upon control group data in which no normative information was given indicated no significant difference in goal achievement between students high and low in optimism, $t(38) = -.96, p > .05$.

Table 2. Mean goal achievement scores across normative information conditions for high and low optimism students (standard deviation in parentheses)

	High-performing norm		Low-performing norm		Total	
	Mean	SD	Mean	SD	Mean	SD
High Optimism	60.96	(44.43)	83.13	(45.05)	69.40	(45.44)
Low Optimism	57.67	(35.56)	43.96	(28.36)	49.23	(31.63)
Total	59.76	(41.00)	59.63	(40.40)	59.69	(40.45)

Goal achievement and gender

22% of the participants who took part in the study were male. Given that this proportionate gender split is representative of the discipline of psychology at undergraduate study, further analysis was conducted using a 2 (gender: male, female) \times 2 (normative information: high-performing, low-performing) between subjects Anova to explore gender differences in goal achievement. The analysis revealed no significant results in either the experimental or control conditions (all $p > .05$). Hence, male and female students scored equivalently on goal achievement regardless of the presence or absence of normative information.

Goal achievement and university

The data in the present study was collected from psychology students at two diverse British universities in terms of entry requirements: a higher entrance university and a lower entrance university, based on A-level points. The latter is very much a widening participation institution, providing opportunities for individuals less traditionally associated with higher education to gain access to this. Such differences in academic backgrounds may impact upon goal achievement (Sander et al., 2000; Sanders & Sander, 2007). To explore this possibility a 2 (university: higher entrance points, lower entrance points) \times 2 (normative information: high-performing, low-performing) between subjects Anova tested for differences in goal achievement. Students from the two universities did not differ in their goal achievement scores overall or within the two normative information conditions (all $p > .05$). Hence, being provided with normative information regarding the goal achievement of others did not influence students' own goal achievement regardless of whether the student was from a higher or lower entry points university.

It is of note however that comparisons between the two universities made on the control group did differ significantly in terms of goal achievement, $t(38) = -3.06$, $p < .05$. When provided with *no* normative information regarding the goal achievement scores of others', students at the higher entrance points university ($M = 92.00$, $SD = 49.45$) significantly outperformed students at the lower entrance points university on goal achievement ($M = 53.50$, $SD = 26.91$).

Discussion

The results described above indicate a number of individual and situational factors affecting goal achievement in a student population. Specifically, optimistic students performed better than students low in optimism overall, with optimism being found to be important when given normative information indicating that the goal was difficult to attain. Goal commitment, gender, or university did not have an effect upon goal achievement when given normative information, regardless of whether that information indicated high or low performance in others (i.e. that the task was easy or difficult to achieve). However, when normative information

was not provided differences in goal achievement were seen between the high and low goal commitment students as well as between the students at the different universities.

Contrary to expectations, individual levels of goal commitment were not found to affect performance when provided with normative information about the performance of others, and therefore hypothesis 1a is rejected. However, in the absence of normative information participants low in goal commitment actually performed significantly better than participants high in goal commitment. This could in part be explained by the findings of Hollenbeck and Klein's (1987) research to establish causes and consequences of goal commitment. They claim that the pressure of competitive situations (such as the University environment) can increase goal commitment compared to non-competitive situations. Harkins (2001) and Locke (1996) also claim that concerns over experimenter evaluation can have a similarly motivating effect, as can legitimate authority (such as the lecturer setting the goal/task).

Individual levels of optimism on the other hand did affect performance; not only did optimistic students score more highly on goal achievement than less optimistic students overall, they also scored more highly when given normative information indicating poor performance in others, and therefore hypothesis 1b is supported. Whilst previous research has indicated that being optimistic does have a positive affect upon performance (Lounsbury et al., 2003; 2004), the effect of normative information here also has not been considered. However, these results parallel those of Martin and Manning Jr. (1995) relating to goal commitment. In their study, students with high goal commitment scores outperformed those with low goal commitment scores on a task where the normative information provided had indicated it was difficult to achieve. This suggests that optimism and goal commitment are perhaps both mediated by difficult to achieve normative information.

Male and female students did not differ in their goal achievement in the current study, leading to hypothesis 2 being rejected. It is of interest to note that although a large body of literature identifies key differences between the achievement and approach to education between the genders, Mellanby and Rawlins (1997) suggested that for some subject areas (e.g. Psychology) there was no difference in performance between genders. This offers some possible explanation for the specific outcome witnessed within the population used in the present study.

Sander and Sanders (2006) have suggested that male students show extremes of goal commitment to their studies. Goal commitment/optimism was not explored in relation to gender in the current study due to low numbers of male participants, but this is an issue which warrants further investigation in future studies.

Students from the two Universities did not differ in their goal achievement in the normative information conditions within the present study, therefore hypothesis 3 is rejected. It is of interest to note however, that a significant difference was observed between the two groups in the control condition, where no normative information was given.

The findings of the present study in part could potentially be explained by the different educational experiences the groups had been exposed to (Sander, 2005), the entry requirements and recruitment policies enhancing students confidence in their abilities to achieve (Sander, et al., 2000) and the types of strategies for achieving goals that they have been exposed to during their educational experiences (Harackiewicz, et al., 2002). These factors have perhaps been more influential when no normative information was given to the participants, rather than in the experimental conditions as was first anticipated.

The findings of this preliminary study have identified some interesting outcomes for further investigation. Firstly, that an investigation into a larger sample size is required, both from within Psychology (to substantiate the findings suggested by Mellanby & Rawlins, 1997) and from other more diverse subject areas, to examine further the differences both within Psychology and between other areas.

Secondly, an increase in the gender representation is required, so that a clearer understanding of any potential gender differences can be investigated. This will hopefully aid in supporting previous findings of research (Mellanby & Rawlins, 1997; Sander & Sanders, 2006) highlighting potential similarities or differences with gender. Furthermore, as research by Wentzel (1998) highlights that gender differences are identified when students are approaching different types of goals (social goals and achievement goals), future investigations could consider gender differences in achievement according to goal and task type.

Finally, confidence – defined as having a firm trust in one's ability, having a feeling of reliance or a sense of certainty (Oxford English Dictionary, 1995) - has been identified as a variable that could have an impact on the goal commitment and optimism that a student has about achieving a goal. This has not been investigated within this study and research has suggested that this could potentially have a mediating effect on these interactions.

The level of confidence we hold in our abilities may underpin how we approach problems and tasks. If we lack confidence in our ability to do a task we will not have high expectations for the outcome of that task, whereas we will have higher expectations for the outcome of tasks we feel we can achieve, realistically or otherwise: overconfidence is prevalent in many arenas, including amongst students. Indeed, Kruger and Dunning (1999) found that students who came bottom on certain tests were those most prone to overestimating their abilities on these topics. This indicates that it is important to be able to identify students who are overconfident, as well as those who are underconfident, in their academic beliefs in order to facilitate realistic learning strategies with a view to encouraging improved goal commitment and achievement in such students.

A number of studies have used psychometric scales to identify students' confidence in academic self-concept, finding confidence to be an important factor in students' approaches to study (Sander & Sanders, 2003; Sanders & Sander, 2007), and for students' academic confidence to be further influenced by certain personality traits (Pulford & Sohal, 2006). Future studies should use such scales to explore academic confidence in relation to the variables considered in the present study.

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