Understanding academic confidence

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This paper draws on the psychological theories of self-efficacy and the self-concept to understand students' self-confidence in academic study in higher education as measured by the Academic Behavioural Confidence scale (ABC). In doing this, expectancy-value theory and self-efficacy theory are considered and contrasted with self-concept and self-esteem. Particular emphasis is placed on the social environment in which students are studying, supported by psychological research from social comparison theory, frames of reference and discourse communities. Against this background, the ABC scale is compared and contrasted with self-efficacy and self-concept measures. It is argued that the ABC scale bridges the gap between these two approaches. In conclusion, it is suggested that the ABC scale can be used to gain a better understanding of students' confidence in themselves as learners, making it a useful survey tool in pedagogical research and practice.

SELF-CONCEPTS are made up of beliefs and attitudes about the self. Self-concepts will differ as a result of different central and peripheral concepts and different hierachical structures arising from different experiences, many of which will be social. The self-concept that students bring to university will guide them in their studies as well as their non-academic lives and will be affected by their academic and social experiences at university. Students' sense of their academic self will have a substantial bearing on how studies are approached.

Closely linked to self-concept are self-esteem, self-confidence and self-efficacy, which come from self-evaluation of how people feel about themselves. It is likely that the university experience will affect self-esteem as academic challenges are faced and met (or not). This paper focuses primarily on the academic self and substantiates our attempts at understanding the academic self psychometrically through the Academic Behavioural Confidence scale (ABC; see Appendix 1 and Sander & Sanders, 2003). The ABC scale is discussed in the theoretical context of self-efficacy and academic self-concept upon which we have drawn to produce a psychometric scale that is beneficial to understanding the learner in higher education (HE). In doing this, a range of empirical studies are considered as well as theoretical material. Because of the diversity of the empirical studies, the key sampling characteristics of each is detailed in Appendix 2. We would not wish to suggest that the role played by national characteristics and different education systems should be ignored. However, there are common theoretical themes which are relevant to Western cultures, and therefore we believe that we are justified in citing work outside the UK. As many of the key empirical studies in this area come from the USA, those that do not will be so denoted in the text.

Theories of academic motivation

Increasingly, the self and self-beliefs are being seen as key indices of achievement motivation. In educational settings, 'the perceptions students create, develop, and hold to be true about themselves and about their academic capabilities are vital forces in their success or failure in school' (Pajares & Schunk, 2006). Two theories of motivation that are central to understanding students' confidence in themselves as learners are expectancy-value theory and self-efficacy theory. The development of the ABC scale was significantly influenced by these theories.

Therefore, to understand ABC, these theories need considering.

Expectancy-value theory

Expectancy-value theory argues that choice, persistence, and performance can be explained by people's beliefs about how well they will do on an activity and the extent to which that activity is valued (Wigfield & Eccles, 2000). Expectancy, in the expectancy-value theory, refers to the beliefs that people have about how they are likely to do on a particular task or activity. The values in the theory are the incentives or reasons for doing an activity and comprise attainment value, intrinsic value, utility value and cost. Achievement-related choices which people make and the performance which people produce depend on both expectancies and values. Expectancies and values themselves are the product of a complex developmental and sociocultural set of influences (Eccles & Wigfield, 2002). Expectancies here relate to confidence about capability to perform a set of actions which, if executed would lead to an outcome. Whether or not the execution of that action is likely depends on the value of the outcome, making this an explicitly motivational theory.

Self-efficacy theory

Efficacy beliefs relate to the conviction that one can successfully execute the behaviour required to produce outcomes (Bandura, 1977). In self-efficacy theory, the confidence is in not just having the capability to do something but in being prepared to do it as well. In this, expectancy beliefs are more possibility oriented (Wigfield & Eccles, 2002). In contrast, efficacy beliefs are feelings about being able and prepared to do something through confidence in current ability. Eccles and Wigfield (2000) acknowledge that their notion of expectancy is more similar to efficacy beliefs than to outcome-expectancy theories. While there is much commonality between the notions of self-efficacy and expectancy, the models differ in two crucial ways. Self-efficacy refers to how competent people feel about successfully engaging in a behaviour, whereas expectancy value predicts the likelihood of their engaging, and that likelihood is determined by the perceived value of that behaviour.

Bandura's influential work on self-efficacy theory (Bandura, 1977, 1986, 1993), provides important insights into understanding students' confidence in themselves as learners, in that it focuses on context specific, malleable judgements, which are oriented towards the future (Bong & Skaalvik, 2003). Self-efficacy theory argues that people's confidence about being able to perform a specific action comes from four sources of information: mastery experience, verbal persuasion, vicarious feedback and physiological feedback. Bandura (1986) argues that the most important of these is mastery experience. There is no reason to believe that mastery experience would not predominate in an educational context.

The role of mastery experience means that outcomes interpreted as successful bring about an increase in self-efficacy, whereas those that are interpreted as failures tend to reduce self-efficacy beliefs. Thus the term mastery experience implies that individuals will reflect on and evaluate their own performance.

The other three sources of self-efficacy beliefs show how self-efficacy is in a complex dynamic relationship with the environment. As a result, self-efficacy is likely to be subject to change as experience impinges upon expectation and it may be that the extent of a student's academic self-efficacy will predict the nature of that experience. In an Australian study, McKenzie and Schweitzer (2001) found that the best predictor of academic performance was previous academic performance with a smaller, although significant, link between self-efficacy and academic performance, which suggests that students' beliefs about their abilities are not always in line with their abilities. Self-efficacy is best seen as a mediating variable between individuals' inherent abilities, their learning styles and the opportunities afforded by the

academic environment of higher education, which does have some predictive ability to academic performance (Multon *et al.*, 1991).

Motivational theories focus on why a person chooses to engage or not to engage in specific activities (Eccles & Wigfield, 2002), which is central to measurement of academic confidence. In addition to the different foci of expectancy-value theory and self-efficacy theory, self-efficacy beliefs operate at a micro-level of analysis which offers more task and situation specificity (Pajares, 1996b), which is important in relation to the ABC scale.

The social element to ABC

While self-efficacy research stresses the predominance of mastery experience in the development and maintenance of efficacy beliefs it may mask the importance of social factors in students' conceptions of themselves as learners. That self-efficacy theory does not completely ignore the social element, though, is shown in a Spanish study by Escartí and Guzman (1999) when they note that vicarious experience is a process mediated by social comparison processes. The suggestion here is that more emphasis needs to be given to social processes in academic confidence.

Further, the theories considered so far tend to be individualistic and typical of western European and North American cultures in that explanations are sought within the person rather than within a larger social group. As Markus and Kitayama (1991, p.24) say, we work with the

> *Western view of the individual as an independent, self-contained, autonomous entity who (a) comprises a unique configuration of internal attributes (e.g. traits, abilities, motives and values) and (b) behaves primarily as a consequence of these internal attributes.*

While Bandura's conception of self-efficacy sees people in dynamic relationships with their environment, it perhaps does not have a sufficiently specific focus on the social environment, which is integral to the interdependent cultural perspective that is usually contrasted with the independent perspective (Markus & Kitayama, 1991). Without trying to deny the importance of mastery beliefs in any cultural context, the larger social environment is worthy of further consideration in the development and maintenance of academic confidence beliefs.

Understanding of the social element in the learning experience has developed greatly. Northedge (2003a, 2003b), taking a sociocultural stance, locates knowledge in a 'discourse community' (2003a, p.19). The goal of the student is 'to become an effective participant in an unfamiliar knowledge community' (2003a, p. 21). It is the teacher's role to help the student become 'a user of various specialist discourses' and 'a participant within the relevant knowledge communities' (2003a, p.22). Thus, teachers are engaging with students to enable them to engage with discourse communities. However these are not the only communities that mark the student experience. Students themselves operate within a social community and, among other things, assess themselves as students against the performance of their peers. Social comparison theory provides an understanding of this process.

Social comparison

People try to make sense of themselves and others in their personal and social worlds (Stapel & Tesser, 2001). Many of the day-to-day situations in which students find themselves activate self-constructs as education, by its nature, constantly challenges students. The activation of self-constructs increases the likelihood of social comparisons, suggesting that students are frequently using an external frame of reference. Social comparison is an intrinsic part of the self, and some situations make people's interest in others through social comparisons more likely (Stapel & Tesser, 2001). The complex, social nature of the self and how that can influence the social comparison process is explored by Gardiner *et al.*(2002).

Frames of reference

Skaalvik and Skaalvik (2002) detail both internal and external frames of reference that students can use as part of the sense-making process, basing their argument on social comparison theory that originated with Festinger half a century ago. In this, frames of reference theory addresses and develops the social element to the way students see themselves as learners and does so in a way that sees students in learning contexts in a far more interdependent way. It does this by suggesting that students understand their own level of academic functioning, in part, through comparison with other learners in the same situation. Other students provide an external frame of reference.

Specifically, there may be at least five sources of information for external comparisons: (1) direct observation of achievement of students in the class; (2) teachers' responses and comments in the classroom; (3) responses from classmates; (4) responses from others outside the classroom; and (5) grades.

The social comparison process is instrumental in the construction of students' ABC in that students gain confidence in their academic skills not just from mastery experiences *per se*, but through being able to master tasks that other respected individuals in their class are able to master. As made clear by Skaalvik and Skaalvik (2002, p. 234):

> *External comparison is a process by which a student compares his or her performance with the perceived performance of another, which may be a comparison group or a comparison person. The comparison group and the comparison person may differ.*

One of the best documented comparisons is the 'better than average' effect, which describes the tendency that people have to rate themselves as better than average (Suls *et al.*, 2002). These authors showed that the better than average effect worked differently for students with high self-esteem, in comparison with other students. Specifically, low self-esteem students perhaps too readily acknowledge their negative attributes.

Alongside the external frame of reference is an internal frame of reference. Internal frames of reference are when students compare their performance in one area of academic study with their performance in another area of academic study, regardless of how these self-perceived abilities compare with those of other students (Skaalvik & Skaalvik, 2002). Thus, students may compare their progress on one module with their progress on another, which re-engages with the important issue of specificity. It might be that this is averaged out in the more global and retrospective concept of academic confidence/self-esteem/self-concept.

Self-concept and self-esteem

The self-concept is a person's perception of himself or herself, formed through experience with the environment, especially significant others and reinforcements. The self-concept is thought to be a construct that may be useful in predicting and explaining how people behave, but it is not an entity and should not be reified. Nor is it stable. For instance, with increasing age, a person's self-concept becomes more multifaceted (Shavelson *et al.*, 1976).

The academic self-concept involves a self-description and a self-evaluation of perceived academic abilities, along with global beliefs of self-worth associated with perceived academic competence (McCoach & Siegle, 2003). Self-concepts in specific subject areas may be expected to affect students' level of intrinsic motivation, the effort they will expend, their degree of persistence and their anxiety levels (Skaalvik & Rankin, 1995).

With specific reference to schoolchildren, Shavelson *et al.* (1976) argue that the self-concept comprises two components, an academic component and a non-academic component, with the academic self-concept having causal predominance over academic achievement (Shavelson & Bolus, 1982). However, the academic component appears not to be a unitary concept (Marsh *et al.*,

1988). Indeed, the recognition that the academic self-concept was multifaceted, with differing self-concepts for different areas of academic study (Shavelson & Bolus, 1982) was instrumental in the development of the internal/external frames of reference model.

Academic self-concept research

Social comparison theory predicts that when students compare themselves favourably to other students around them, in a particular subject area, they are more likely to have a high self-concept in that academic area (McCoach & Siegle, 2003). The low correlations in academic self-concept between different areas of study are thought to arise from an internal frame of reference, where students compare their confidence and performance in one area of study with another area of study (Marsh *et al.*, 1988).

Gender differences in general academic self-esteem are unclear (Skaalvik, 1990), although there is evidence that females have more negative academic self-concepts than males (Michie *et al.*, 2001), especially if they are in male-dominated programmes (Uelkue-Steiner *et al.*, 2000).

There are exceptions to the specificity argument in the research literature. Schraw (1997) found evidence for the domain-general hypothesis, which predicted that confidence judgements would be related not only to performance on a particular test but also to confidence judgements and performance on unrelated tests. The complexity of the relationship between self-variables and performance is discussed by Lent *et al.* (1997).

The multifaceted nature of academic self-concept suggests that the micro-level of analysis is preferable, along with task and situation specificity, which is central in the measurement of self-efficacy. That is not to say that concepts of the self are not important in understanding the learner. On the contrary, self-beliefs are a critical component of human striving (Pajares & Schunk, 2006). Pietsch *et al.* (2003) found in their Australian study that, at least in the area of mathematics for teenage schoolchildren, there was probably some overlap in the constructs of self-concept and self-efficacy.

Skaalvik and Rankin (1995) stress that the academic self-concept may be different from self-efficacy in any domain-specific performance because self-efficacy and self-concept operate at different levels of generality. Further, because of the importance of mastery experience, self-efficacy could be thought of as being the result of an interaction between the person and the task, while self-concept is much more a property of the person, which accords with its greater generality (Zorkina & Nalbone, 2003). In Norway, Skaalvik and Valås (1999) present evidence to show that achievement affects subsequent self-concept and none that self-concept affects subsequent achievement. The similarities and differences between academic self-concept and academic self-efficacy are considered in detail by Bong and Skaalvik (2003). This analysis is returned to later in this paper to contrast academic self-confidence, self-esteem and ABC (see Table 1).

Measurement of academic confidence and self-efficacy

Academic confidence is conceptualised as being how students differ in the extent to which they have a 'strong belief, firm trust, or sure expectation' (taken from the *Oxford English Dictionary* definition of confident, second edition, 1989) in their ability to respond to the demands of studying at university. As with self-efficacy (Tait & Entwistle, 1996) academic confidence is likely to be primarily determined by mastery experience (Skaalvik & Skaalvik, 2002) but as has already been argued in relation to self-efficacy, a plethora of social factors within and around the educational process are also likely to be influential.

Confidence in educational settings has been a variable of interest in higher education research. For example, self-perception of intellectual ability has been shown to have a positive influence on adjustment in college (Boulter, 2002). Within an Australian med-

ical context, Bell *et al.* (1998) developed the mental health nursing clinical confidence scale, to assess the impact of mental health clinical placements on undergraduate nurses' attitudes and clinical confidence. The relationship between medical students' confidence and their experience in caring for patients has been explored (Harrell *et al.*, 1993). The results showed high confidence levels for medical students with a mean confidence score of 4 on a five-point Likert scale. The high confidence levels of these medical students is interesting as it was the contrast between medical students and two other student groups in British universities that led to the development of the ABC scale (Sander *et al.*, 2000; Sander & Sanders, 2003).

Zorkina and Nalbone (2003) randomly allocated students to one of two conditions that manipulated self-efficacy. In one, students were told that a test they were asked to do was designed for Ivy League university students, whereas in the other participants were told that the same test was designed for high school students across the nation. That such a manipulation had an effect on subsequent test performance and participants' confidence following the test shows, as Zorkina and Nalbone say, how careful teachers have to be in introducing topics, tasks and tests. It also emphasises the subtlety of environmental manipulations on academic confidence and performance, as predicted by self-efficacy theory. This point is supported in an Israeli study by Alfassi (2003), who, in applying self-efficacy theory to educational practice, showed that an educational programme that fostered both academic competence and confidence was beneficial for students who were at risk of dropping out of school. As this study was undertaken with a very different sample, in a remedial high school, this would indicate the generality of this finding.

In the UK, Cassidy and Eachus (2000) showed a relationship between low academic aptitude, external academic locus of control and a surface approach to learning. In contrast, another British study showed that students whose reason to participate in education was for cognitive interest had positive academic self-concepts (Michie *et al.*, 2001), a point supported by House (2000), who found that self-confidence was significantly correlated to the number of hours students spent talking with teachers outside class, involvement in volunteer work and participation in student clubs or groups.

In a classroom setting, Harrison *et al.* (1993) measured students' confidence, as part of a study on the academic self-concept of undergraduates, specifically focusing on confidence within a classroom and in relations with teachers. In a similarly tightly focused study, Schraw (1997) measured students' confidence in their answers to test items.

The Student Goals Exploration test (Stark *et al.*, 1991) has, as its last set of scales, measures of confidence level and student anxiety. The subscale, though, measures confidence in course success not confidence in behaviours that are likely to lead to course success. Looking at the transition from school into university, Fielstein and Bush (1998) sought to identify non-cognitive variables influencing academic confidence as well as satisfaction with the transition into university and pre-college decision-making by contrasting the attributes and profiles for students undertaking remedial course with those that are not. The authors note the implications of this for students' self-esteem and academic confidence.

Thus, psychological research into the self-concept has led to a number of studies attempting to understand students' confidence in themselves as learners, with confidence either as a part of the self-concept, or as part of the subtly different concept, self-efficacy. Consideration of both the performance and the theoretical basis for self-efficacy measures and self-concept driven measures led to the development of a measure of ABC. ABC and its resultant scale are thought to be importantly different from any of the existing measures of academic

confidence. The scale draws on the research and thinking from both the self-efficacy and self-concept. The resultant scale has significant benefits for understanding university undergraduates as learners.

ABC

Sander and Sanders (2003) developed the Academic Confidence Scale (ACS, now referred to as the ABC scale (Sanders & Sander, in preparation) in order to understand variations in teaching preferences and learning behaviours for different groups of students (Sander *et al.*, 2000).

This study contrasted the expectations of two groups of UK university students; one group comprised medical students in a traditional university and the other psychology students in a new university. One aspect of the results was the striking differences in reasons given by students for not liking role-play and student presentations as methods of teaching. Essentially, the medical students were worried that these were not effective methods, whereas the psychology students were worried about their own competence to do them (Stevenson & Sander 2002). The possibility of academic confidence as an explanation for this difference arose from an examination of the differing entry profiles of the two groups. The medical students had an average A-level point score of 27.8, in contrast to 15.0 for the psychology students (using the standard pre-2002 UCAS formula for assigning A-level points).[1]

Academic confidence is conceptualised as being how students differ in the extent to which they have a 'strong belief, firm trust, or sure expectation' of how they will respond to the demands of studying at university. This is distinct from their aspirations for their own academic performance, although the two may be related. As part of its parent concept, self-efficacy, academic confidence may stem from the same four sources: mastery experience, vicarious experience, verbal persuasion and physiological states. It is likely to be subject to change as experience impinges upon expectation.

The scale was developed through an iterative process with colleagues identifying appropriate academic behaviour that students would face. The scale's psychometric properties were explored in a preliminary study of 102 psychology in a new university, and 182 medical first-year undergraduates in a traditional university (Sander & Sanders 2003). It demonstrated a high level of internal reliability (Cronbach's alpha .88). The overall score was computed as the mean response over the 24 items and the median for all students in the study was 3.83 (minimum 2.54, maximum 4.92). A comparison of the overall ABC scores showed that the medical students, as predicted, scored higher, i.e. were more confident, than the psychology students (medians 3.88 and 3.71 respectively, $Z = 2.07$, $p < .05$ one-tailed), suggesting criterion validity of the scale. Furthermore, statistically significant ABC scores have been found between dyslexic and non-dyslexic students.

The scales concurrent validity was also assessed by asking respondents to estimate their final year degree mark. This correlated significantly ($p < .05$) with their ABC score indicating that those who were confident that they could produce the behaviour required for academic study were those who felt they would do well academically. The factor structure of the scale will be the subject of a future paper.

The ABC scale has been used both at general and more focused levels. In the validation of the ABC scale, students were encouraged to work at a more global perspective on academic behavioural confidence (Sander & Sanders, 2003), in that they were asked about their confidence about their university course, rather than any one module or indeed any part of any one module. In contrast, a more recent study has use-

[1] Pre-2002 UCAS formula for A-level points by grade. A = 10, B = 8, C = 6, D = 4, E = 2 and AS grades assigned half-value points, e.g. an A grade AS level = 5.

Table 1: Comparison of academic self-concept, self-efficacy and behavioural confidence (adapted from Bong & Skaalvik, 2003)

Comparison dimensions	Academic self-concept	Academic self-efficacy	ABC
Working definition	Knowledge and perceptions about oneself in achievement situations	Convictions for successfully performing given academic tasks at designated levels	Confidence in ability to engage in behaviour that might be required during the student's academic career
Central element	Perceived competence	Perceived confidence	Confidence in abilities
Composition	Cognitive and affective appraisal of self	Cognitive appraisal of self	Assessment of potential behavioural repertoire
Nature of competence evaluation	Normative and ipsative	Goal-referenced and normative	Response to situational demands
Judgement specificity	Domain specific	Domain specific and context specific	Domain and narrowly context specific
Dimensionality	Multidimensional	Multidimensional	Multidimensional
Structure	Hierarchical	Loosely hierarchical	Flat and summative
Time orientation	Past-oriented	Future-oriented	Future-oriented
Temporal stability	Stable	Malleable	Malleable
Predictive outcomes	Motivation, emotion and performance	Motivation, emotion, cognition and self-regulatory processes and performance	Motivation, coping, help-seeking and performance

fully used the ABC scale to monitor changes in academic confidence in response to students giving presentations as a module requirement (Sander & Sanders, 2005). We believe that the ABC can be usefully and legitimately used both at global and more specific levels, even to the point of looking at changes in confidence measured through individual statements in the scale rather than at changes in the whole scale scores.

The scale was conceived as a general measure of academic confidence in HE, thus flouting the specificity focus of self-efficacy measures, but subsequent consideration of the data suggests that consideration of responses by individual statements can be very useful (Sander, 2004a, 2004b; Sanders & Sander, in preparation). This leaves the scale bridging the perspectives underlying the self-concept/self-esteem approach to students' conceptions of themselves as learners and the contrasting approach from the self-efficacy domain. Rather than being a theoretical dilemma, this could well be an advantageous position to take, rendering the ABC scale a flexible and useful tool. Table 1 contrasts the self-concept/self-esteem, self-efficacy and ABC approaches to understanding students' conceptions of themselves. This comparison confirms that ABC is closer to self-efficacy than self-esteem/self-concept.

Academic confidence as an explanatory variable-future research

The self-efficacy literature is full of reminders that self-efficacy can change from situation to situation, as well as over time and so any attempts to measure self-efficacy should be situation-specific (e.g. Bandura, 2001; Pajares, 1996a, 1997) and perhaps time-specific. None the less, it still seems reasonable to believe that on entering HE students bring not just their expectations of their new course of study, but also a variable degree of confidence in their ability to meet the demands, as they perceive them, of their new course. In Ulster, Lowe and Cook (2003) identified a group of students, 39 per cent of the sample, who were clearly not coping with their transition into the HE environment. Sander and Sanders (2003) also identified a much smaller group of students with low academic confidence, who were also experiencing a wide range of course-related difficulties. These findings add to the growing literature on the problems associated with the transition into HE. Certainly, the transition from school to university places many demands on students (Chemers *et al.*, 2001). With a better understanding of students, in part by understanding their expectations of teaching and learning (Sander *et al.*, 2000), and more pertinently here, their ABC, a learning environment can be created that will engage them (Kember, 2001; Schuell, 1986), and move them forward in their education. Specifically, it is argued that a better understanding of students' confidence in themselves as learners will be gained from the ABC perspective and measured through the ABC scale.

Conclusion

Understanding students' conceptions of themselves as learners is important, not least because it can prevent teachers from being in the position Laurillard (1993) describes, being uncertain of their students' starting positions in the educational process:

> *The lecturer must guide this collection of individuals through territory the students are unfamiliar with, towards a meeting point, but without knowing where they are starting from.*

In developing the ABC scale, this scenario can be avoided because it is possible to find out where students are starting from, even in the current HE climate of high student numbers and poor staff:student ratios. Ideally though, the ABC scale would be one of a number of profile measures (Sander, 2004b).

Both the self-efficacy approach and the self-concept/self-esteem approach to understanding the self were used in developing the ABC scale to give important and helpful insights into students. Consideration of the psychological processes underlying students' conceptions of themselves as learners can help the teacher involve the student in the discourse community.

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Appendix 1: How confident are you that you will be able to:

1. Study effectively on your own in independent /private study.	Not at all confident □ □ □ □ □ Very confident
2. Produce your best work under examination conditions.	Not at all confident □ □ □ □ □ Very confident
3. Respond to questions asked by a lecturer in front of a full lecture theatre.	Not at all confident □ □ □ □ □ Very confident
4. Manage your work load to meet coursework deadlines.	Not at all confident □ □ □ □ □ Very confident
5. Give a presentation to a small group of fellow students.	Not at all confident □ □ □ □ □ Very confident
6. Attend most taught sessions.	Not at all confident □ □ □ □ □ Very confident
7. Attain good grades in your work.	Not at all confident □ □ □ □ □ Very confident
8. Engage in profitable academic debate with your peers.	Not at all confident □ □ □ □ □ Very confident
9. Ask lecturers questions about the material they are teaching, in a one-to-one setting.	Not at all confident □ □ □ □ □ Very confident
10. Ask lecturers questions about the material they are teaching, during a lecture.	Not at all confident □ □ □ □ □ Very confident
11. Understand the material outlined and discussed with you by lecturers.	Not at all confident □ □ □ □ □ Very confident
12. Follow the themes and debates in lectures.	Not at all confident □ □ □ □ □ Very confident
13. Prepare thoroughly for tutorials.	Not at all confident □ □ □ □ □ Very confident
14. Read the recommended background material.	Not at all confident □ □ □ □ □ Very confident
15. Produce coursework at the required standard.	Not at all confident □ □ □ □ □ Very confident
16. Write in an appropriate academic style.	Not at all confident □ □ □ □ □ Very confident
17. Ask for help if you don't understand.	Not at all confident □ □ □ □ □ Very confident
18. Be on time for lectures.	Not at all confident □ □ □ □ □ Very confident
19. Make the most of the opportunity of studying for a degree at university.	Not at all confident □ □ □ □ □ Very confident
20. Pass assessments at the first attempt.	Not at all confident □ □ □ □ □ Very confident
21. Plan appropriate revision schedules.	Not at all confident □ □ □ □ □ Very confident
22. Remain adequately motivated throughout.	Not at all confident □ □ □ □ □ Very confident
23. Produce your best work in coursework assignments.	Not at all confident □ □ □ □ □ Very confident
24. Attend tutorials.	Not at all confident □ □ □ □ □ Very confident

Appendix 2: Sampling details of empirical studies cited

Authors	Place	Sample	Sample size
Alfassi (2003)	Israel	Remedial high school students	3
Bell, Horsfall & Goodwin (1998)	Australia: 4 universities	Undergraduate nursing students	339
Boulter (2002)	Not stated. Presumed USA	First year college students	265
Cassidy & Eachus (2000)	UK: University of Salford	First and second year undergraduate students	130
Chemers, Hu & Garcia (2001)	USA: University of California	First year students	373
Escartí & Guzman (1999)	Spain	Students	69
Fielstein & Bush (1998)	USA: Arkansas State University	Freshmen	196
Gardiner, Gabriel & Hochscild (2002)	USA: Northwestern University	Undergraduates	61/82
Harrell, Kearl, Reed, Grigsby & Caudill (1993)	USA: University of Kentucky	Third year medical students who had completed a required primary care clerkship	60
Harrison, Maples, Testa & Jones (1993)	USA: mid-sized land grant university in the West	Undergraduate students	133
House (2000)	USA	College freshmen	2134
Kember (2001)	Hong Kong: eight universities	Part time students; experienced and novice	53
Lent, Brown & Gore (1997)	USA: large Midwestern university	Introductory psychology students	205
Lowe & Cook (2003)	Ireland: University of Ulster	First year undergraduates	691
Marsh, Byrne & Shavelson, (1988)	Canada	11th and 12th graders from two coeducational schools	991
McCoach & Siegle (2003)	USA	High school (gifted) General school population	210 160
McKenzie & Schweitzer (2001)	Australia	First year undergraduates	197
Michie, Glachan & Bray (2001)	UK	Undergraduate students	112
Pietsch, Walker & Chapman (2003)	Australia: Southwest Sydney	High school students	416
Sander & Sanders (2003)	UK: 2 different universities	First year undergraduates from two courses: psychology and medicine	102/182
Sander & Sanders (in press)	UK: new university in South Wales	Two cohorts: second and third year students	100 / 64
Sander, Stevenson, King & Coates (2000)	UK: 3 universities	Undergraduate students	395

Sanders & Sander (in preparation)	UK: 2 universities, one traditional, one new	First year undergraduates from two courses: psychology and medicine	102 / 182
Schraw (1997)	USA	Introductory educational psychology students	95
Skaalvik (1990)	Norway	Sixth grade students	231
Skaalvik & Rankin (1995)	Norway	Sixth grade students Ninth grade students	348 325
Skaalvik & Valås (1999)	Norway: a large region	Primary and middle school children	1005
Stapel & Tesser (2001)	Holland	Students	34 / 91 / 67 / 77 / 41
Stark, Bentley, Lowther & Shaw (1991)	USA: 6 diverse doctoral and comprehensive universities	Freshmen, sophomores, juniors and seniors	1182
Suls, Lemos & Stewart (2002)	USA: large Midwestern university	Students	98 / 208 / 216
Uelkue-Steiner, Kurtz-Costes & Kinlaw (2000)	USA: Southern state university	Graduate students	341
Zorkina & Nalbone (2003)	USA: highly selective liberal arts college	Students	30