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SELF-EFFICACY, SELF-ESTEEM AND THEIR IMPACT ON ACADEMIC PERFORMANCE

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This study investigated relationships between self-efficacy, self-esteem, previous performance accomplishments, and academic performance among a sample of 205 postgraduate students. Participants completed measures of past performance accomplishments, self-esteem, and self-efficacy at the start of a 15-week course. Each student's average grade from modules studied was used as the performance measure. Correlation results indicated significant relationships between self-efficacy and self-esteem. Multiple regression results indicated that self-efficacy mediated the relationship between performance accomplishments and academic performance. Findings lend support to the predictive effectiveness of self-efficacy measures in academic settings.

Keywords: self-confidence, performance, attribution, academia, self-belief.

Self-efficacy can be defined as *the levels of confidence individuals have in their ability to execute certain courses of action, or achieve specific outcomes* (Bandura, 1977, 1982, 1997). Efficacy expectations are said to influence initiating behaviors, and the degree of persistence applied in overcoming difficulties encountered in the pursuit of accomplishing a task or tasks (Bandura, 1997).

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The positive links between self-efficacy and performance are widely reported and much research has been carried out in a range of different settings (Manstead & Van-Eekelen, 1998; Newby-Fraser & Schlebusch, 1997; Pajares, 1996; Sadri & Robertson, 1993; Stajkovic & Luthans, 1998; Vrugt, Langereis, & Hoogstraten, 1997; Wolters & Pintrich, 1998) although a number of conditions appear to influence the effect size.

According to Bandura (1997), the conditions that tend to maximize the size effect include: the knowledge of the task to be performed, a short time lag between self-efficacy ratings and task performance and self-efficacy measures and performance that lie in the same behavioral domain (see Pajares, 1996). Specific tasks rather than general tasks also produce greater size of effect. Task complexity and complex tasks involving heavy demands on knowledge, cognitive ability and persistence present particular challenges for accurate self-efficacy estimates (Bandura, 1997), and therefore tend to lead to a weaker effect size (see Lane & Lane, 2001).

The ideal conditions that maximize the self-efficacy and performance relationship are unlikely to exist in real-world settings where many decisions are made about complex issues, with relatively unclear knowledge of the tasks to be performed (Lent & Hackett, 1987). In academic settings where students are asked to provide self-efficacy judgments about their performance in subjects that are new to them (i.e., at the start of a module or a new course), efficacy expectations would seem to be based on the ability to learn, or on other competences generalized from past educational performance (Schunk, Hanson, & Cox, 1987; Zimmerman, Bandura, & Martinez-Pons, 1992), rather than on knowledge of the task. In their meta-analysis of 36 studies, Multon, Brown, and Lent (1991) found significant relationships in studies where self-efficacy measures were domain specific rather than task specific.

Recent research further supports such relationships. For example, in a study involving 76 postgraduate students, Lane and Lane (2001) found that self- efficacy to cope with the "intellectual demands of the program" predicted 11.5% of the variance in performance in what was a complex task some 13 weeks after self-efficacy measures were taken. In a similar study, Lane, Lane and Cockerton (2003) found that self-efficacy to "pass exams/assignments first time" significantly correlated (r = .24) with mean performance over 12 modules with a 24-week time period between when self-efficacy measures were assessed and performance.

Given the predictive effectiveness of self-efficacy in real-world settings, knowledge of the sources of self-efficacy could facilitate the design of interventions to raise performance through increasing self-efficacy. Self-efficacy beliefs are constructed from four sources of information (Bandura 1977, 1982, 1997). These sources are *enactive mastery experience,* the experience from performing similar

tasks; *vicarious experiences; verbal persuasion;* and *physiological states.* Evidence suggests that previous performance accomplishments are the most powerful source of self-efficacy (Bandura, 1982). Successful performance tends to raise efficacy expectations, and failures tend to lower it. Information from these sources does not automatically influence levels of self-efficacy; rather, efficacy is influenced by how information is cognitively appraised.

Factors that should influence the cognitive appraisal of information include self-esteem and attribution. *Self-esteem* refers to *an individual's sense of value or self-worth, or the extent to which people value, appreciate or like themselves*. Self-esteem and self-efficacy appear to be very different constructs. Self-efficacy questions are concerned with capabilities to execute specific tasks, or courses of action, the outcomes of which may or may not have any bearing on self-esteem. Thus if a person has high levels of self-efficacy on tasks within an occupation in which he/she has invested much self-worth then there is likely to be a positive correlation between self-esteem and self-efficacy (Bandura 1997). Where there is little investment of self-worth such associations are unlikely to exist (Bandura 1997). As Bandura (1997) points out "self liking does not necessarily beget performance attainments". Research findings demonstrate that self-esteem predicts neither the choice of personal goals, nor performance accomplishments (Mone, Baker, & Jeffries, 1995).

A second factor that should influence the relationship between performance and self-efficacy is how information is attributed. Attribution theorists (Weiner, 1986) maintain that judgments about past performance have motivational implications for future efforts. Attributions for failure made to lack of effort, rather than to lack of ability, are unlikely to have significant impact on the choice of future actions. Thus the same level of performance attainment may raise, lower or have no impact on individuals' self-efficacy levels, depending how these personal and situational factors surrounding the performance are weighted and interpreted by those individuals involved (Bandura, 1982).

The primary aim of the present study was to investigate how self-efficacy might be used as a means of enhancing performance in adult postgraduate students in an ecologically valid field setting. To achieve this aim, an objective of the study was to identify and to provide operational definitions of the sources of self-efficacy within this research domain. Although this represents a conceptual replication, reinvestigation of theoretical models in different research contexts can serve to enhance knowledge of the generalizability of that theory. Clearly, if these sources are known and understood then interventions made with the intentions of changing students' efficacy expectations are likely to be more effective, with implications for performance improvement. A second aim was to explore the antecedents and correlates of self-efficacy.

METHOD

PARTICIPANTS

Participants were 205 (male; *n* = 82 males; female *n* =123) postgraduate Management students enrolled in their first year of study at a UK university business school. Participants' average age was 27.5 years (*SD* = 5.6 yrs.). The 75 part-time students were currently employed in management positions in UK companies. To complete their program of study, participants needed to arrange time and resources from their employers, as well as coping with the demands of high-level study. The vast majority of the 130 full-time students had left paid employment to return to higher education and gain a career-advancing qualification at their own expense. It would seem reasonable to assume that students had invested much of their self-worth in their further education, although an acknowledged limitation was that perceptions of self-worth attached to completion of the degree were not assessed.

MEASURES

Self-efficacy was assessed toward three factors. The first two factors were measures of competence, and the third factor was a measure of performance or outcome.

a) Coping with the intellectual demands of the program;
b) Maintaining motivation in the light of difficulties you might meet;
c) At least a pass in the end-of-semester assessments.

The rationale for selecting these measures was based on previous research undertaken among postgraduate students (Lane & Lane 2001; Lane et al., 2003) where these measures were significant predictors. The measure self-efficacy *'to at least gain a pass in the end-of-semester assessments',* although a relatively general measure, was felt to be sufficiently specific given students' likely knowledge of the program.

Participants expressed estimates of confidence on a percentage rating scale of 1-100 as recommended by Bandura (1997).

MEASURES OF PREVIOUS PERFORMANCE ACCOMPLISHMENTS

Performance accomplishments were assessed both objectively and subjectively. The objective measure used students' first-degree classification. It should be noted that all participants had a first degree. *'Class of degree'* was scaled as: First Class Honors = 5, Second Class Honors Upper Division = 4, Second Class Honors Lower Division = 3, Third Class Honors = 2, and, a Pass Degree = 1.

Perceived academic success was assessed by asking participants to rate the extent to which they felt they had been successful in their educational

attainments to date in the light of all personal circumstances, situational and personal. Participants rated this on a 1-100 percentage scale. Perceived success is proposed to influence efficacy expectations when success is attributed to internal factors such as ability and effort rather than to external factors such as luck (Bandura, 1997). In the light of this, participants were asked to apportion their success among ability, effort and chance/situational factors, and the sum equaling 100%.

SELF-ESTEEM

Rosenberg's Self-esteem Scale (Rosenberg, 1965) was used to assess self-esteem. Respondents completed the scale by indicating their agreement with each of the 10 items (e.g., "On the whole I am satisfied with myself", "I certainly feel useless at times") on a 4-point scale (4 = *strongly agree* through to 1 = *strongly disagree*). After reversing the scoring for 5 negatively worded items, a total *Self-esteem* score was obtained by summing the 10 responses. The range of scores using this procedure was 10-40 with higher scores indicating higher self-esteem. In the present study, the alpha coefficient was .82, hence indicating an internally reliable scale.

CRITERION MEASURE OF POSTGRADUATE ACADEMIC SUCCESS

All participants were formally assessed on the modules they studied (mean = 3 modules) at the end of the 15-week semester on a 20-point scale where a mark of 1 indicated the best performance and a mark of 20 the worst optimum performance. The criterion measure was the mean mark of all modules assessed.

The class tutor marked all work with some 20-25% being second marked within the business school, then a similar proportion was checked for validity and reliability by an external examiner. It was felt that this was an ecologically valid indication of performance, although it is recognized and acknowledged that there are no measures of internal consistency or intermarker reliability.

PROCEDURE

During the first two weeks of their enrolment, students were asked if they would participate in research into motivation and academic performance. It was stressed that involvement was voluntary, and complete confidentiality was assured. Before questionnaires were completed, all students had attended an induction program, and been given both program and module handbooks. These handbooks contain detailed information on learning objectives, syllabi, lecture/seminar topics and reading lists. Additionally module handbooks would include examples of previous examination papers and coursework assignments. Given this information, plus the fact that as graduates they had some awareness of higher education processes, it was felt that they would be able to make reasonable estimates of their self-efficacy on the measures earlier described.

RESULTS

Descriptive statistics and a correlation matrix among measures are contained in Table 1. As Table 1 indicates, results revealed that class of degree correlated significantly with perceived academic success, all three self-efficacy measures, and academic performance. The direction of relationships indicated that a good class of degree was associated with a perception that academic achievement to date was successful, feeling confident to maintain motivation, cope with intellectual demands, and pass assessments.

Perceived academic success correlated significantly with the attributions to ability, effort, all three self-efficacy measures and self-esteem. The direction of relationships indicated that a positive perception of academic success was associated with high self-esteem, and high self-efficacy. Self-esteem and all three self-efficacy measures showed positive significant intercorrelations.

Performance was associated with class of degree, attribution to other factors, and self-efficacy to gain at least a pass in the end-of-semester assessments. Good academic performance was associated with having a good degree and high self-efficacy scores.

TABLE 1
DESCRIPTIVE STATISTICS AND CORRELATION MATRIX FOR CLASS OF DEGREE, PERCEIVED SUCCESS, SELF-ESTEEM, SELF-EFFICACY AND ACADEMIC PERFORMANCE AMONG POSTGRADUATE STUDENTS (N = 205)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Class of undergraduate degree	3.2	1.0									
2. Perceived academic success	7.5	1.5	.26*								
3. Attribution to Effort	4.8	1.4	.07	.17*							
4. Attribution to Ability	4.2	1.5	.05	.13*	-.68*						
5. Attribution to Other Factors	1.0	1.1	-.16*	-.29*	-.14	-.13					
6. Self-esteem	31.7	4.0	.13	.39*	.11	.02	-.14*				
7. Self-efficacy to maintain motivation in the light of difficulties you might meet	7.2	1.8	.20*	.24*	.01	.09	-.22*	28*			
8. Self-efficacy to cope with the intellectual demands of the program	7.1	1.7	.16*	.37*	-.07	.27*	.10	.31*	.53*		
9. Self-efficacy to gain at least a pass in the end-of-semester assessments	8.6	1.4	.30*	.25*	-.08	.25*	.10	.37*	.22*	.32*	
10. Postgraduate Performance Criterion	8.1	2.9	-.17*	-.07	-.02	-.12	-.26*	-.08	.01	-.05	-.33*

* $p < .05$. (Note: data collected in % form have been divided by 10).

PREDICTING PERFORMANCE ON THE CRITERION MEASURE

Hierarchical multiple regression was used to predict performance scores using a linear combination of self-efficacy, self-esteem and the sources of self-efficacy. In the first step, the sources of self-efficacy were entered: class of degree, perceived success, attribution to ability and attribution to effort. The three self-efficacy measures and self-esteem were entered in the second step. Results of the first step indicated that class of degree (*Beta* = -.17, $p < .05$) and attribution of success to ability (*Beta* = -.22, $p < .05$) significantly accounted for 4.7% of the variance in performance (*Multiple R* = .22, $p < .05$). The second step in the hierarchical model saw the introduction of self-efficacy measures and self- esteem as predictors of performance. Regression results revealed that only self- efficacy to gain at least a pass in the end-of-semester assessments was a significant predictor of performance (*Beta* = -30, $p < .001$). Self-efficacy to gain at least a pass in the end-of-semester assessment significantly accounted for 10.4% of performance variance (*Multiple R* = .35, $p < .05$). This finding shows self-efficacy to gain at least a pass in the end-of-semester assessments mediated the performance relationships for class of degree and the attribution of success to ability as relationships between these variables and performance became nonsignificant with the introduction of self-efficacy.

DISCUSSION

The present study extended recent research that has investigated self-efficacy and performance research in field settings (Lane & Lane, 2001; Lane et al., 2003). Extension to this line of research was done by investigation of the antecedents and correlates of self-efficacy. In the present study, three dimensions of self-efficacy were assessed, one labeled *self-efficacy to maintain motivation in the light of difficulties you might meet,* and second, *self-efficacy to cope with the intellectual demands of the program,* and thirdly, *self-efficacy to gain at least a pass in the end-of-semester assessments.* It is argued that these self-efficacy measures were directed toward confidence to achieve outcomes and behaviors related to general course matters, rather than to behaviors that were specific to each module. Although it is argued that researchers should seek concordance between self-efficacy measures and the behaviors that underpin success, students at the start of a course will tend to be unclear on the specific behaviors needed (Bandura, 1997; Pajares, 1996).

The findings are essentially supportive of the position that self-efficacy derives from the cognitive appraisal of previous performance (Bandura, 1997), although objective performance as indicated by class of degree related to all three self-efficacy measures (see Table 1). Previous research has found that the cognitive

appraisal of performance has a stronger influence on self-efficacy than do objective measures of performance (Lane, 2002).

As can be seen from Table 1, there were significant correlation coefficients between self-esteem and self-efficacy measures. The direction of relationships between self-efficacy and self-esteem is a contentious issue. Bandura (1997) argued that efficacy expectations to perform a given task could influence perceptions of self-esteem when the success/failure is heavily tied in with self-worth. By contrast, research has found that self-esteem is associated with changes in self-efficacy (Dodgson & Wood, 1998; Lane, Jones, & Stevens, 2002). The direction of any causality is arguable, and the proof, if any, lies outside the scope of this current field research. The pursuit of higher educational qualifications by mature students who give up paid work - and who are often self-financing their studies - we would argue, is an activity in which much self- worth is invested (Gecas & Seff, 1990; Lane et al., 2002). Therefore, given the likely importance of the educational activity to students, we believe that self- esteem is likely to flow from perceived efficacy expectations, rather than the reverse, although self-esteem did not significantly relate with performance, a result consistent with earlier research findings (Bandura 1997, Mone et al., 1995).

Hierarchical multiple regression results indicated self-efficacy to *at least gain a pass* was the only variable to significantly predict performance. Although class of degree and attribution of success to ability significantly predicted self-efficacy in the first step of the hierarchical model, this was reduced to nonsignificant levels with the introduction of self-efficacy, a finding that shows that self- efficacy mediated the influence of previous performance accomplishments on subsequent performance. Results that show self-efficacy significantly related with academic performance are consistent with the findings of Lane and Lane (2001). It should be emphasized that the present study investigated self-efficacy and performance relationships in a field setting - where strict control of variables is difficult - and consequently, previous research has tended to find low to moderate self-efficacy and performance relationships (Multon et al., 1991).

It is argued that self-efficacy to *at least gain a pass* was more specific and objective - but as it required students to predict their performance on unseen assessment criteria some 15 weeks thence, they were presented with conditions which were far from ideal (Bandura, 1997; Lent & Hackett, 1987). In these circumstances, it would seem that students looked principally to what they considered as their best evidence, for example, class of first or undergraduate degree, on which to base their prediction (see Table 1). However, it should be noted that efficacy to gain at least a pass was associated with self-efficacy to maintain motivation in the light of difficulties and to cope with the intellectual demands. Thus even though participants had little knowledge of task difficulties,

they had knowledge of their likely coping efforts. However, it is speculated that more knowledge of the factors that influence individuals' efficacy expectations would perhaps be better pursued by research into individual differences using qualitative and psychometric methodologies; emotional intelligence factors (Goleman, 1997), for example, may be significant variables in understanding how people arrive at self-efficacy ratings.

With regard to interventions to raise self-efficacy and thus student performance, a prerequisite is the predictive validity of self-efficacy and academic criteria, a condition that has been met (Manstead & Van-Eekelen, 1998; Newby-Fraser & Schlebusch, 1997; Vrugt et al., 1997; Wolters & Pintrich, 1998). The findings suggest that shifting attributions from effort to ability following success is likely to raise self-efficacy, however research on the effectiveness of such strategies is inconclusive (Bandura, 1997), although it seems worthy of further research.

Perhaps there is more scope to raise efficacy expectations through changing the "success" perception of individuals' past performance - that is, by encouraging students to review their previous attainments in a more positive way. This process may well be subsumed under the "verbal persuasion" source of self-efficacy. Of course there are likely to be limits to what might be achieved through a process of reorientation, for example, it would be difficult to raise success perceptions for someone who had failed every examination sat. In addition, raising success perceptions without someone having the ability is unlikely to make any significant impact on performance.

In conclusion, the findings of the present study show that among postgraduate students, self-efficacy and self-esteem significantly correlate, and that self-efficacy is related to performance accomplishments and performance. The findings concur with the predictive power of self-efficacy in terms of explaining an individual's behaviors and actions. The challenge for research in field settings is to isolate and operationalize the factors and conditions that significantly influence self- efficacy judgments.

REFERENCES

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.

Bandura, A. (1982). Self-efficacy mechanisms in human agency. *American Psychologist,* 37, 122- 147.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: W.H. Freeman.

Dodgson, P. G., & Wood, J. V. (1998). Self-esteem and the cognitive accessibility of strengths and weaknesses after failure. *Journal of Personality and Social Psychology,* 75, 178-197.

Gecas, V., & Seff, M. A. (1990). Social class and self-esteem: Psychological centrality, compensation, and the relative effects of work and home. *Social Psychology Quarterly,* 53, 165-173.

Goleman, D. (1996). *Emotional intelligence: Why it can matter more than IQ.* New York: Bantam Books.

Lane, A. M. (2002). Relationships between performance toward accomplishment and self-efficacy in amateur boxing. *Perceptual and Motor Skills,* 94, 1056.

Lane, A. M., Jones, L., & Stevens, M. (2002). Coping with failure: The effects of self-esteem and coping on changes in self-efficacy. *Journal of Sport Behavior,* 25, 331-345.

Lane, J., & Lane, A. M. (2001). Self-efficacy and academic performance. *Social Behavior and Personality,* 29, 687-694.

Lane, J., Lane, A. M., & Cockerton, T. (2003). Prediction of academic performance from self-efficacy and performance accomplishments among master's degree students. *Journal of Hospitality, Leisure, Sport and Tourism Education,* 2, 113-118.

Lent, R. W., & Hackett, G. (1987). Career self-efficacy: Empirical status and future directions.

Journal of Vocational Behavior, 30, 347-382.

Manstead, A. S. R., & Van-Eekelen, S. A. M. (1998). Distinguishing between perceived behavioral control and self-efficacy in the domain of academic intentions and behaviors. *Journal of Applied Social Psychology,* 28,1375-1392.

Mone, M. A., Baker, D. D., & Jeffries, F. (1995). Predictive validity and time dependency of self-efficacy, self-esteem, personal goals, and academic performance. *Educational & Psychological Measurement,* 55,716-727.

Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology,* 38, 30-38.

Newby-Fraser, E., & Schlebusch, L. (1997). Social support, self-efficacy and assertiveness as mediators of student stress. *Psychology: A Journal of Human Behavior,* 34, 61-69.

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research,* 66, 543-578.

Rosenberg, M. (1965). *Society and the adolescent child.* Princeton, NJ: Princeton University Press.

Sadri, G., & Robertson, I. T. (1993). Self-efficacy and work-related behavior: A review and meta-analysis. *Applied Psychology,* 42, 139-152.

Schunk, D. H., Hanson, A. R., & Cox, P. D. (1987). Peer-model attributes and children's achievement behaviors. *Journal of Educational Psychology,* 79, 54-61.

Stajkovic, A. D., & Luthans, F. (1998). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin,* 124, 240-261.

Vrugt, A. J., Langereis, M. P., & Hoogstraten, J. (1997). Academic self-efficacy and malleability of relevant capabilities as predictors of exam performance. *Journal of Experimental Education,* 66, 61-72.

Weiner, B. (1986). *An attributional theory of motivation and emotion.* New York: Springer-Verlag.

Wolters, C. A., & Pintrich, P. R. (1998). Contextual differences in student motivation and self-regulated learning in mathematics, English, and social studies classrooms. *Instructional Science,* 26, 27-47.

Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Educational Research Journal,* 29, 663-676.