

Student attributions and performance: problems with unfounded optimism?

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Abstract

The present studies aim to assess whether academic performance and attrition of first year university students may be due to the attributional styles of optimism and pessimism as described by Seligman (1991). Since Seligman argues that attributional styles can be learned, the fiscal and developmental implications of the present research could be considerable. However, contrary to the expectations suggested by Seligman's research, a preliminary pilot study involving a sample of 38 undergraduate students failed to indicate any positive relationships between optimistic explanatory styles and student performance. Indeed, there was some evidence to suggest that poor performance might in fact be associated with overly optimistic attributions based on past successes. The second study, involving a sample of 209 students enrolled in a first year business course, also failed to indicate any correlations between raw marks and any of the eleven attributional style combinations. However, there again was some support for the notion that students who fail might be overly optimistic about their ability to perform academically, and hence of greater interest in this research endeavour than those who pass. To that end it is suggested that future research should aim to validate these results by replicating the methodology employed in the present study using much larger sample frames.

Keywords: optimism, pessimism, attributions, student, performance

Introduction

One of the most important considerations from an academic management perspective is the nature of individual differences which may play a part in protecting students from the impact of negative experiences during their introduction to university study. There is a considerable psychological literature relevant to this issue, but the present study focuses on what is termed 'learned optimism' (Seligman, 1991).

The concept of optimism derives from research designed to determine the role which individual attributions of causality play in the ontogeny of depression. Attributions refer to the way in which individuals explain the causes of positive and negative events in their lives (Ickes & Laydon, 1976). Seligman (1975) proposed that exposure to uncontrollable aversive events may produce a state which he described as 'helplessness', and that this state was a precursor to the development of depressive illnesses in humans. However, it became clear that individuals differ considerably in their response to uncontrollable aversive events, leading to Abramson, Seligman and Teasdale (1978) to contend that there are three fundamental dimensions relevant to individuals' causal attributions and that these are likely to strongly influence their adaptation to aversive events. If individuals' attributional styles lead them to believe that the underlying causes of uncontrollable events are likely to persist (a *stable* attribution), influence many other aspects of their lives (a *global* attribution), or are due to themselves rather than some aspect of the situation (an *internal* attribution), then they are more likely to suffer from chronic and pervasive adaptational deficits and loss of self-esteem respectively. Hence, such individuals are more likely to experience depressive illnesses than if they had made a different set of attributions.

Seligman (1991) has extended the notion of learned helplessness to incorporate an attributional style which might be described as an 'optimistic' outlook. This could result from an explanatory style which interprets an aversive event as a *temporary* issue, arising from a *specific* problem, which was due to *external* circumstances and not their own fault. Seligman claims that learned optimism contributes strongly to an individual's persistence in the face of adversity, and that there is evidence from a number of private and public sector organisations indicating that employees with an optimistic style perform better and survive longer in challenging situations than do those with a pessimistic style. Hence, it is proposed that the effects of an individuals' attributional style extend beyond depression and self esteem style and include achievement motivation. For example, optimistic sales agents reportedly sell substantially more life insurance than their pessimistic counterparts, while optimistic tertiary students in the USA score better in their studies than predicted by SATs, while pessimists perform worse.

Study 1

The present research aims to evaluate the utility of Seligman's ideas in a first-year tertiary educational context. The central question is to determine whether students' attributional style, as measured by Seligman's (1984) 'Attributional Style Questionnaire', is a predictor of academic survival and, in terms of the following pilot study, overall subject performance. Since Seligman argues that optimism can be learned, the implications of these data for the design of first year university programs would be considerable. Perhaps the most obvious outcome of such a program would be the evaluation and design of the feedback mechanisms incorporated in academic

studies. In the context of Seligman's work, it is not only the content of feedback which might be of importance, but the manner and style in which it is delivered.

Method

Participants

38 first year undergraduate students (11 female, 27 male; range 18-33yrs; mean 19.4yrs) enrolled in an introductory computer course at a mid-sized Australian university situated on the east coast.

Instrument

Attributional Style Questionnaire (ASQ: Seligman, 1984): comprises twelve hypothetical situations consisting of six positive and six negative events. Each situation is followed by four questions, to which respondents are firstly required to provide a major cause of the situation. The following three questions evaluate the three fundamental attribution dimensions and hence measure the degree to which the subject's response is *internal* or *external* (i.e., *locus*), *stable* or *unstable*, and *global* or *specific*. These latter three questions always appear in the same order and use a seven-point Likert scale response format with a polar opposite description at each end. For eg, the second question after each scenario always measures the *internal – external* dimension and is labelled “Totally due to other people or circumstances” at one end of the Likert scale, and “Totally due to me” at the other. Positive and negative events are reverse scored and thus a score of seven is the highest for a good event, but the lowest for a bad event. There are eleven possible score combinations: responses can be summed to provide positive and negative total scores for each individual dimension, or combined to provide *Hopelessness* (i.e., *stable* negative plus *global* negative), *Hopefulness* (stable positive plus global positive) as well as a *Composite Negative Attributional Style* (sum of all bad event scores) *Composite Positive Attributional Style* (sum of all good event scores) and finally a *Compositive Positive minus Negative* score.

Procedure

The ASQ was completed by participants during class time as part of a course experience questionnaire.

Results

Correlations were calculated between each of the 11 possible ASQ score combinations and age, gender, and final marks achieved in the subject. While gender was not significantly correlated with any of the ASQ dimensions, age was correlated with ‘Global Positive’, and ‘Stable Positive’ was significantly correlated with Marks: $r = -.33$; $p < .05$. This relationship is plotted in fig. 1 below:

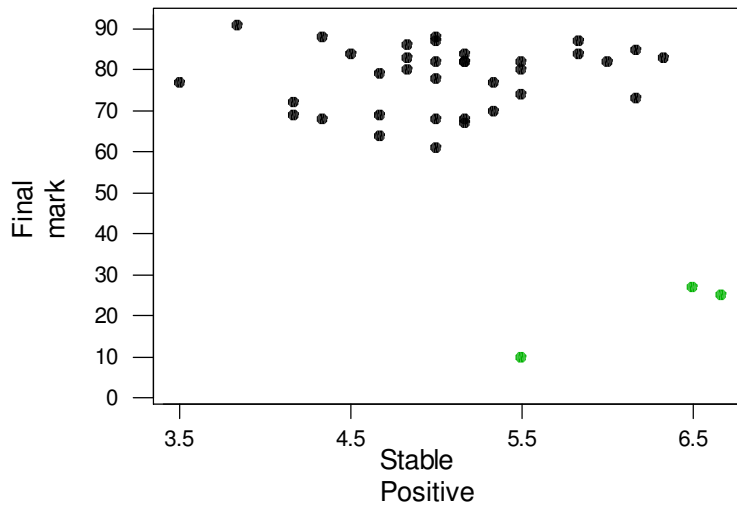


Figure 1. ‘Final Mark’ versus the ‘Stable Positive’ ASQ dimension.

In Fig. 1, it would appear that the correlation between the two variables might be influenced by the effect of outliers (due to Cook’s distance), and this was confirmed by a simple linear regression analysis. Once these outliers in the bottom right corner (shaded green) are removed, the correlation between these variables is no longer significant.

Further, a cluster analysis of the variables plotted above (using standardized variables, and a Euclidean Distance, Single Linkage approach) suggested that the three shaded variables identified above as outliers might represent a discrete cluster of observations wherein students who scored relatively highly on Stable Positive also scored quite low on final marks. Further examination of these participants’ course results revealed that they did not complete all set assessments in the subject. One of the three scores in this cluster resulting from the student only completing the first two of the five set assessments (and passing each), another student completed four of the five assessments, but only passed two of them (including the exam, which was passed), with the third only attempting – and passing – the final exam. Hence, all three passed at least one assessment.

Discussion

Contrary to the expectations suggested by Seligman’s research, the present results failed to indicate any positive relationships between optimistic explanatory styles and student performance. Indeed there was some evidence to suggest that poor performance might in fact be associated with overly optimistic attributions based on past successes. Further, while none of the three students in the identified cluster completed all of the five set assessments, each of these students passed at least one of the assessments they completed, which provides some evidence (over and above university enrolment requirements) to suggest that although these students might well have possessed the *ability* required by the course, for some reason they chose not to

attempt all the required assessments. However, in view of the limited numbers in this pilot research, more data needs to be collected from a wider variety of courses in order to make better sense of this phenomena and perhaps discern a common attributional pattern, if indeed one does exist amongst such students.

Seligman (1991) asserts that optimists explain positive events in the opposite way to negative events, and hence view the former as being a *permanent* state of affairs, effecting other parts of their lives (i.e., *global*), and being due to their own efforts (*internal*). However, for some students, it appeared that adopting a belief that previous determinants of success will always be present might be overly optimistic and unrealistic, given that they failed to perform adequately – or complete all the set assessments - in the first year course on which the present study was based.

Study 2

By sampling from a considerably larger sample frame, the second study aimed to overcome the major shortcoming of the original pilot study discussed above. The central question remains the same: can students' attributional styles, as measured by Seligman's (1984) 'Attributional Style Questionnaire', predict academic performance as measured by final raw marks in a first year business course? Note that whilst the course chosen differs from the original (dictated by the quest for a larger sample), the study was undertaken at the same campus of the same university as visited in the pilot study. The reason for this is simple: as Seligman argues that attributional styles can be learned, then one must also consider the possibility that the overall or average attributional styles actually manifested may differ between student (and other) populations due to social and cultural differences. Hence, even if the following study does find relationships between attributional styles and performance, it could be reasonably argued that similar studies would need to be undertaken in order to diagnose or map the overall attributional styles reported by student populations at different learning institutions and at different geographic locations.

Method

Participants

209 first year undergraduate students (111 male, 98 female) enrolled in an introductory business course at a mid-sized Australian university situated on the east coast. (Due to a change in administrative policy, no specific information was available regarding age distribution.)

Instrument

Attributional Style Questionnaire (ASQ: Seligman, 1984): as described above.

Procedure

The ASQ was completed by participants during class time as part of a student evaluation of course questionnaire.

Results

Correlations were calculated between each of the 11 possible ASQ score combinations and final (raw) marks achieved in the subject. None of these correlations, however, even approached significance. Gender was also not significantly correlated with any of the ASQ dimensions.

Out of the 209 participants, ten failed to achieve a pass (50%) in the course, and, with the results from the first study in mind, correlations between the 11 possible ASQ score combinations and final marks were also calculated for this small sub-sample. Although there were no significant correlations (due to the small size of the sample), there were positive midrange correlations between Marks and 'Internal Positive' (IP: $r = .530$), 'Stable Positive' (SP: $r = .542$), 'Global Positive' (GP: $r = .517$), 'Composite Positive' (CoPos: $r = .609$; $p = 0.062$), 'Composite Positive minus Composite Negative' (CPCN: $r = .560$) and 'Hopefulness' ($r = .576$), and a negative mid-range correlation with 'Hopelessness' ($r = -.452$). None of the students in this sub-sample completed all of the set assignments. However, all completed and passed at least one assignment (including the first, a multiple-choice quiz).

While the difference in sample sizes precluded any parametric comparisons between 'pass' and 'fail' sub-samples on mean scores on each of the ASQ score combinations, a cursory examination failed to reveal any obvious differences in such.

Discussion

Once again, the present results failed to indicate any positive relationships between optimistic explanatory styles and student performance, and once again there were no significant correlations between gender and any of the ASQ dimensions. In the 'Attributional Style Questionnaire Scoring Key' Seligman recommends that 'Composite Positive minus Composite Negative' (CPCN), 'Composite Negative' (CoNeg) and, to a lesser degree, 'Composite Positive' (CoPos) scores are those which should be the most reliable when depicting depression and other outcomes. However, when the sample was considered as a whole, there were no correlations between raw marks and any of the eleven attributional style combinations. While Seligman (1991) reports that optimistic tertiary students in the USA score better in their studies than pessimists, the current results, considered as a whole, do not support that.

However, in the first study, there was some (very) limited evidence to suggest that failure in a course might in fact be associated with overly optimistic attributions based on past successes. With this in mind, the present sample was subdivided and correlations between final raw marks and the eleven attributional score combinations were conducted for the ten students who failed in the course (i.e., scored less than 50% overall). For these students, there were midrange correlations between Marks and the positive attribution scores 'Internal Positive' ($r = .530$), 'Stable Positive' ($r = .542$), 'Global Positive' ($r = .517$), 'Composite Positive' ($r = .609$; $p = 0.062$), 'Composite Positive minus Composite Negative' ($r = .560$) and 'Hopefulness' ($r = .576$), and a negative mid-range correlation with the negative attribution score 'Hopelessness' ($r = -.452$). Thus, the more positive these students were in their attributions, the higher they scored. In short, these were the type of results expected of the entire sample, not the 'fails' when considered in isolation. Unfortunately for the students in this sub-sample, however, none completed all of the set assignments in the course, although given that all passed at least one assessment (the first scheduled: a multiple-choice quiz conducted under exam conditions), there is evidence that they

possessed the required cognitive and analytical ability to do so and pass the course. The requirements for passing this particular course included gaining an overall mark of 50%, but students were not required to attempt each assessment. However, in view of the above discussion and the potential detrimental effects that might result from some students' 'excessive optimism', in future it may be wise to require students to attempt every assessment. It also raises the general question of what might be the most beneficial approach to conducting pre-semester student inductions and information sessions, with the present results possibly suggesting that more emphasis be given to the standards required and the academic rigours a student can expect from their studies. Further, the present results also suggest that assessment feedback might be more beneficial if it is more tightly focussed on constructively addressing how students can improve on their efforts in future assignments, rather than singly praising positive elements in the current one under scrutiny.

Clearly, the above raises the question of why might different relationships exist between the measures employed in the present study for those students who pass and those who fail. Although there were no obvious differences between students who passed and those who failed in mean scores on each of the ASQ score combinations, the above results could again be interpreted as suggesting that, in some instances, students adopting a belief that previous determinants of success will always be present, have positive effects on other life outcomes, and be entirely due to their own efforts might be overly optimistic and unrealistic if those same students do not complete all the set assessments in the courses they are enrolled in. (Indeed, of the ten fails, eight attempted – and failed - the final exam after not submitting earlier assignments. To do so with an expectation of passing the course can be described as optimistic in the least). Whilst this is all predicated upon an extremely small sample size, it does at least serve to suggest that the links between students' attributions, motivations and performance outcomes might be more complicated than at first imagined. Indeed, should such results be further supported in similar studies conducted on even larger samples of 'passes' and 'fails', one might reasonably draw the conclusion that the relationships between optimism and pessimism and performance might not be simple linear ones. Instead, too much optimism might not always be helpful, and a little pessimism might be a useful guard against overconfidence.

Conclusions and Recommendations

In summation, we are left with the following possibilities: either the number of fails was too small for any meaningful analysis (which is a distinct possibility); the underlying theoretical basis for optimism and pessimism is more complicated than expected and might not readily and easily translate into individuals' motivations and real-world outcomes as originally posited; the 'Attributional Style Questionnaire' does not accurately reflect the theory it is based upon; or the present authors have misinterpreted the theoretical underpinnings. There is also one other possibility: that those students who failed did so for reasons clearly independent of and despite their attributions. However, if this was so, there is still the question of why the subset of fails should be distinguished by an apparent relationship between performance and attributions as discussed above.

In view of the above points, and acknowledging the substantial body of research behind the ASQ, it is proposed that future research aim to validate these results by replicating the methodology employed in the present study using even larger sample

frames based on individuals' performance averaged across a number of academic subjects, instead of just one. Ironically, the above results tend to suggest that it is those students who fail who might be of greater interest than those who pass. Ideally, such research should be longitudinal in nature, and consider including a grade point average inclusive of an entire curriculum.

Further, the present research did not attempt to control for past measures of future academic performance. Hence, future research might also more strive to more closely replicate Seligman's (1991) reports of university students in the USA (reported above) by controlling for the Australian equivalents of SATs, such as TERs.

On another note, future versions of the ASQ might benefit from the inclusion of scenarios which have greater universal relevance. For example, scenario eleven, "You go out on a date and it goes badly" would obviously be either less irrelevant or grossly inappropriate to some classes of respondents.

General Discussion

Although specific links between performance and attributional style were not clearly delineated in the present studies, one must also consider the pastoral care of students from a different perspective: in *emotional* terms, what becomes of those students who fail to achieve their academic expectations? Such a line of reasoning deviates from the more obvious achievement motivation implications which have been associated with optimism and pessimism in the present study and returns to the original link between attributional style and depression. For example, Metalsky, Abramson, Seligman, Semmel, and Peterson (1982) found that the locus and globality attributional dimensions for negative events were predictors of increased depression for students whose midterm exam grades were lower than they had expected, but not for those whose achievements were at least as good as hoped for. Hence, the ethical implications and possible benefits of clinical/counselling interventions which might arise from findings from the current research project must also be given their due consideration. Further, pastoral intervention at the conclusion of study (the need for which might be guided by a post-result, course 'reflection' questionnaire) might also help researchers to better understand the attributions which might be associated with students who for some reason do not complete all set assessments, such as those identified in the first study.

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