

Running head: OPTIMISM AND HOPE

The Relationship Among Hope, Optimism, Gender, and Academic Achievement

Lisa M. McCulloch

University of British Columbia Okanagan

### Abstract

The relationship among hope, optimism, gender, and academic achievement was investigated. One hundred and six first and second year university students (80 women and 26 men) participated in the research. The participants were given 3 questionnaires assessing optimism, hope, and motivation. The data collected were evaluated using participants' GPA at the end of the semester. Hierarchical regression analyses showed that motivation accounted for a significant amount of variance in academic achievement, while optimism, hope, and gender did not. A second analysis was run examining the relationship between the individual components of hope and academic achievement. All data were analyzed using an alpha of .05.

### The Relationship Among Optimism, Hope, Gender, and Academic Achievement

Recently there has been a shift in psychological research from investigations of pathology to examination of the positive aspects about human nature. The shift has been seen by many as providing a more complete conceptualization of psychology: According to Seligman (1998), psychology should be as focused on strength as on weakness, and as concerned with promoting well-being as with resolving pathology. Looking at characteristics displayed by people who do not suffer any pathology allows a more complete picture of the way human nature functions. Characteristics such as optimism and hope are variables considered beneficial to physical and psychological well-being and are characteristics usually associated with positive psychology (Scheier, Carver, & Bridges, 1992).

*Optimism* can be defined as the tendency to believe that one will generally experience good versus bad outcomes in life. It is generally accepted that this belief is a stable individual characteristic (Scheier & Carver, 1985). According to this view, optimists are people who expect future outcomes to be positive. Conversely, pessimists are those who display more negative expectations for the future (Scheier et al., 1992). Optimism has been shown to play a role in positive mood, perseverance, good problem solving, and academic and occupational success (Peterson, 2000).

*Optimism* was developed from the model of self-regulation (Scheier et al., 1992). The model assumes that people are continually engaged in efforts to overcome obstacles to their goals as long as their expectancies for success are favourable. When doubts become too severe, people are more likely to abandon their threatened goals. People who are considered optimists are more likely than pessimists to persist in their pursuit of goals

when faced with a difficult situation (Wrosch & Sheier, 2003). Optimistic people tend to spontaneously use stable coping mechanisms, such as problem-focused coping, which help them to face their challenges (Sheier et al., 1992). The theory of optimism that Sheier and Carver (1985) developed led them to predict that optimists would display better task performance in various domains than would pessimists (Robbins, Spence, & Clark, 1991). Shepperd, Maroto, and Pbert (1996) pointed out that optimism shows a positive relationship with individuals' success in many tasks they carry out, including academic achievement.

There has been some evidence to suggest that there are many other variables besides ability and intelligence that explain a large amount of the variability in students' academic performance (Nonis & Wright, 2003). Optimism increases people's ability to tolerate situations and to solve problems which may have an effect on academic achievement (El-Anzi, 2005). In fact, optimistic people have been found to display lower mood disturbance when responding to a wide range of situations, such as the adjustment to the start of university study (Segerstrom, Taylor, & Kemeny, 1998). Another construct that is related to academic achievement is *hope*. Research on grade school, high school, and college students has shown that hope correlates highly with strong academic performance.

Hope has been shown to relate to higher GPAs and lower attrition rates in college students (Snyder, 2002). According to Snyder, hope can be defined as a combination of (a) the thoughts individuals have about their ability to develop pathways to their goals and (b) a sense of personal agency about reaching their goals. In his research, Snyder found that people tend to think in terms of goals and are usually trying to find routes to

those goals. In other words, people are continually thinking about how they can link their present to their imagined futures. People appear to have thoughts about their abilities to produce routes to goals and their capacities to find the motivation to pursue their goals (Snyder, 2002).

In hope theory all human action is goal oriented; the goal is therefore the cognitive component that anchors the theory. Goals provide the structure that helps to define and give purpose to people's lives (Wrosch & Sheier, 2003). The agency aspect of hope theory represents the ways in which people perceive their ability to use the pathways that they develop to reach their desired goals. People who are high in hope develop a plausible route and show a sense of confidence in that route. They are also very good at producing alternate routes to achieving their goals. In contrast, low-hope people are not good at producing additional routes (Snyder, 2002). For low-hope people, their pathways thinking is more uncertain and so the routes they do develop are not well articulated (Snyder, 2002). Snyder's theory states that hope is primarily a way of thinking. Emotions are a product of hopefulness, albeit an important product. A high-hope person should display enduring positive emotions while a low-hope person should display negative emotions (Snyder, 2002).

The constructs of optimism and hope appear at first glance to be synonymous. The theories are similar in that both optimism and hope are goal-oriented cognitive processes that influence the outcomes of events. However, the theory of optimism emphasizes agency-like thought, whereas hope theory emphasizes agency and pathways thinking equally (Snyder, Cheavens, & Michael, 1999, as cited in Snyder, 2002). Optimism and hope are part of the regulation of personally important situations and goals

(Wrosch & Sheier, 2003). Being successful in challenging situations, particularly in academic domains, requires being able to generate multiple pathways to goals, as well as the belief that one is capable of using those pathways (Snyder et al., 2002). Researchers have proposed that optimism and hope are related to agency thought, but that hope goes over and above with its addition of the pathways aspect of goal achievement (Peterson, 2000). In fact, the Hope Scale, when compared to the Life Orientation Test Revised (LOT-R), accounts for additional variance in predicting several variables (Snyder, 2002).

One area of hope and optimism that has not been extensively examined is how gender relates to these constructs. The research that has been done has shown conflicting results (El-Anzi, 2005). While gender in relation to hope, optimism, and academic achievement has not been widely studied, gender and how it affects academic achievement is an area of research that has been studied thoroughly. According to Pomerantz, Altermatt, and Saxon (2002), women see themselves more negatively than do men when it comes to global self-worth. Women are also more prone than men to internal distress. They are more likely to evaluate themselves negatively and to experience symptoms such as anxiety and depression in academic settings (Pomerantz et al., 2002).

Researchers who have studied men and women in college settings have found significant differences between the two genders in their college experiences and outcomes. Women show lower levels of confidence than men, yet tend to outperform men when looking at final grades (Whitt, Pascarella, Elkins-Nesheim, Marth, & Pierson, 2003). The gender differences that are found in academic achievement may be because women and men approach achievement situations differently. Women may be more likely to view their performance in academic settings as a direct display of their abilities.

Conversely, men approach achievement situations as a challenge and do not view these situations as a reflection of their abilities (Pomerantz et al., 2002). Beyer (1999) showed that there were also gender differences in grade prediction. Men were more likely than women to overestimate their predicted grades.

The current study has been designed to examine optimism, hope, and gender, and the nature of their relationships to academic achievement. By determining the nature of these relationships, researchers may be able to more clearly understand how students approach their university experience. The research may show that students' needs vary and that variation may in turn influence how successful they are in their academic careers. If the research identifies significant relationships between the variables, institutions of higher learning may be able to use the information to implement programs that are better aimed at addressing the needs of students. Our research will focus on four hypotheses. The first hypothesis is that optimism will show a positive relationship with academic achievement. Second, hope is expected to display a positive relationship to academic achievement over and above that of optimism. Third, we expect a positive relationship between gender and academic achievement. Finally, gender, hope, and optimism should be positively correlated with each other.

### Methods

The research design used 106 participants. Of these participants, 80 were women and 26 were men. The sample size was chosen based on a power estimation of 5 participants per predictor for a regression analysis to ensure the research results would be valid and that the sample would accurately reflect the population being investigated (university students). Students who were in first and second year at the University of

British Columbia (UBCO) were asked to participate in the study. Participants who had completed no more than 48 credits were considered to have first or second year status. The selected group was chosen to help ensure the validity of the study as these students were new to the university experience and may not have had an accurate view of their academic performance at this level. Third and fourth year students were thought to have a more realistic idea of their performance in university. Participants were also required to have English as a first language so as to avoid any misunderstandings during the test phase of the study.

In order to solicit participants, the researcher sought permission from professors to enter into first and second year psychology classes. Students in the classes were told that research was being conducted on gender differences in academic achievement and how optimism and hope were related to those differences. The researcher then explained that participation in the study required them to answer three questionnaires and a demographic sheet that would take no more than 45 min of their time. Participants were then told that if they chose to participate, consent would be needed to access their grades at the end of the semester which would require them to provide their student numbers. It was explained that only the Senior Psychology Program Advisor, would have access to their student numbers and grades. The researcher told the students that participation in the research was completely voluntary, but that if they did choose to participate, they would receive extra credit provided their professor had subscribed to the system.

Participants were given the option of taking a pencil and paper format of the questionnaires from the researcher at the time of invitation, but were also told about an online version of the questionnaires that they could use if they preferred. The students



were reassured that their responses, should they wish to participate, would be held in the strictest of confidence.

The consent form that was included in the package gave an explanation of what the research was about (gender differences in academic achievement and the effects of hope and optimism) and also clarified that access to the student's grades at the end of the semester would be required. The consent form again stated that participation was voluntary and that participants could withdraw from the study at any time, without repercussions. An identical consent form was used at the beginning of the online format of the study.

Participants who completed the online format had to enter a code word at the end of the surveys. They were then required to email the code word and their student number to the researcher's email address. Once the email was received, the researcher awarded the bonus credit for participating. A demographic sheet that asked for the student's gender, credits completed, student number, and whether they were eligible for bonus marks was included in the packages.

Upon completion of the semester, the end of semester grades of each student was used as the measure of academic achievement. When the grades were recovered and the data had been cleaned, the demographic sheets containing the student numbers of the participants were destroyed.

#### *Apparatus/Material*

The Life Orientation Test Revised (LOT-R) was used to assess participants' levels of optimism which can be defined as the tendency to believe that one will experience good rather than bad outcomes in life (Sheier & Carver, 1985). The test was

designed to measure individual differences in dispositional optimism versus pessimism. The LOT-R is widely used and was designed by Sheier, Carver, and Bridges (1994). Internal reliability of the LOT-R is good with a Cronbach's alpha of .78. Test-retest reliability is  $r = .68$  after 4 weeks and  $r = .56$  after 2 years. The LOT-R consists of 10 statements that participants are asked to answer using a letter A (*I agree a lot*) through E (*I disagree a lot*). The test takes no more than 10 min to complete and has no subscales. To score the LOT-R, high values from the responses are to be considered high optimism. Items two, five, six, and eight are filler items and were not included in the scoring procedure.

The Adult State Hope Scale is a test that was used to measure an individual's levels of hope. Hope is defined as a combination of (a) the thoughts individuals have about their ability to develop pathways to their goals and (b) a sense of personal agency about reaching their goals (Snyder et al., 2000). The test has six items which participants are asked to respond to using an 8-point Likert-type scale ranging from 1 (*definitely false*) to 8 (*definitely true*). The two subscales of the Adult State Hope Scale are the agency subscale which is scored by summing the three even numbered items and the pathways subscale which is scored by summing the three odd numbered items. The scores for the test can range from a low of 6 to a high of 48. The internal consistency of the Adult State Hope Scale shows a Cronbach's alpha of .95. The test-retest reliability is  $r = .82$ .

The Motivated Strategies for Learning Questionnaire (MSLQ) was administered to assess participants' level of motivation. The test was used in order to control for the potential influence of motivation during the analyses. The MSLQ has 31 items that measure motivation. There are six subscales to the test: (a) intrinsic goal orientation, (b)

extrinsic goal orientation, (c) task value, (d) control of learning beliefs, (e) self-efficacy for learning, and (f) test anxiety. All items are scored on a 7-point Likert-type scale ranging from 1 (*not at all true of me*) to 7 (*very true of me*). Scores on the MSLQ are derived by taking the mean of the items in each subscale. To obtain an overall measure of motivation each subscale mean is added together for a total number. The scores represent positive wording and higher scores indicate greater levels of motivation.

### Results

A hierarchical regression analysis was run using a sample of 106 students to assess the degree to which motivation ( $M = 31.53$ ,  $SD = 3.55$ ), optimism ( $M = 21.17$ ,  $SD = 4.92$ ), and hope ( $M = 35.92$ ,  $SD = 7.46$ ) predicted overall end of semester GPA ( $M = 74.49$ ,  $SD = 10.48$ ). Gender was also included in the analysis to explore its relationship to the predictors as well as GPA. The three predictors were all moderately and positively correlated with GPA (see Table 1 for zero-order correlations). Gender did not correlate with any of the other variables. Motivation was entered into the regression first as previous research indicated that it accounted for significant variance in academic achievement. As such we wanted to statistically control for the effects of motivation. Based on Snyder's (2002) hope theory, optimism was entered into the analysis second followed by hope. This order was used to assess the unique variance accountable to each variable. An alpha level of .05 was used for all of the statistical analyses. The overall regression was significant,  $R = .37$ ,  $F(4, 101) = 3.97$ ,  $p < .01$ . The results indicated that the four predictors accounted for approximately 16% of the variance in academic achievement.

Looking at the hierarchical regression in detail, motivation accounted for 10% of the unique variance in academic achievement,  $R = .32$ ,  $F(1, 104) = 12.01$ ,  $p < .01$ . Optimism accounted for 2% of the variance over and above motivation,  $\Delta R^2 = .02$ ,  $F(1, 103) = 2.67$ ,  $p = .10$ . Hope accounted for 3% of the total variance in academic achievement over and above the previous predictors,  $\Delta R^2 = .03$ ,  $F(1, 102) = 3.70$ ,  $p = .06$ . Gender did not significantly account for any additional variance in the analysis,  $\Delta R^2 = .00$ ,  $F(1, 101) = .10$ ,  $p = .75$ . The results indicate that hope, optimism, and gender are not factors that significantly influence participants' end of semester GPAs.

In the analysis a high zero-order correlation was apparent between optimism and hope indicating a large degree of statistical overlap between the two constructs. A second analysis was run which included the hope subscales – agency and pathways to assess this overlap. Table 1 shows that the agency subscale of the hope measurement was moderately positively correlated with end of term GPA, while the pathways subscale was a weak correlation, which approached significance. A hierarchical regression similar to the one above was run substituting the subscales of agency and pathways for the overall measure of hope. The combination of agency and pathways contributed significantly to the analysis,  $\Delta R^2 = .13$ ,  $F(2, 101) = 8.39$ ,  $p < .01$ .

In order to assess the influence of the individual predictors, the beta-weights were examined (See Table 2). The agency subscale significantly predicted GPA,  $t(104) = 4.09$ ,  $p < .01$ . Interestingly, pathways also significantly predicted GPA, however, in a negative direction,  $t(104) = -2.19$ ,  $p = .03$ . Recall from Table 1 that the zero-order correlation between pathways and GPA was small and not significant. The semi-partial correlation

was larger and in the negative direction as compared to the zero-order correlation, therefore, indicating that pathways is acting as a suppressor variable,  $sr = -.19$ .

### Discussion

The analyses revealed that *optimism* and *hope* are both moderately positively correlated with academic achievement. The variance in GPA that was accountable to optimism and hope was, however, not significant. The results indicate that, aside from motivation, hope was the largest contributing factor, but not statistically significant. However, in looking at the relationship between optimism and hope a high correlation was apparent. Previous research indicates that the relationship between optimism and hope is strong. Scheier and Carver (1992) found that optimism was a factor in people's psychological well-being. The current study's results lend support to the self-regulation model on which Scheier and Carver (1985) based their theory of dispositional optimism. The model suggests that people who expect favourable outcomes to their goals will continually try to achieve those goals (Scheier et al., 1992). Hope is very similar to optimism in that people who are high in hope have high agency (belief that they can attain their goals) and high pathways (ability to find numerous routes to those goals), (Snyder, 2002). Snyder's hope theory posits that optimism and hope are separate constructs because of the addition of the pathways aspect.

The current research resulted in a high correlation between optimism and hope which led to a second analysis looking at the individual components of hope – agency and pathways - in order to assess the validity of separating optimism and hope into two different constructs. Snyder's agency aspect of hope and Scheier and Carver's dispositional optimism are overlapping constructs according to the results. The pathways

aspect of hope does seem to be the defining factor that makes optimism and hope separate constructs. When the correlations for agency and pathways were examined, only agency showed any significant correlation. The pathways aspect of the hope scale was not significantly correlated with end of term GPA. The pathways scale acted as a pure negative suppressor variable in the results. A suppressor variable is any variable that has no correlation with the criterion variable, but still contributes to the predictive validity of the regression analysis. In the analysis, the suppressor variable accounts for some of the irrelevant variance in the other predictor variables, thereby indirectly allowing for a more valid interpretation of the nature of the relationship between the predictors and the criterion (Lancaster, 1999). A negative suppressor variable is one whose weight becomes negative when included in a regression equation when all other variables have positive intercorrelations (Lancaster, 1999).

The pathways subscale appears to have a negative effect on the relationship between optimism and academic achievement. According to Snyder (2002), hope has been shown to be strongly correlated with higher GPA and academic performance. The theory he developed claims that people who are high in hope will continually be trying to accomplish their goals and consistently find numerous ways to reach their goals (Snyder, 2002). The results suggest that people who are high in optimism and agency may actually do more poorly in terms of academic achievement when they also display high scores on the pathways subscale.

Students in first and second year university may be high in optimism and agency at the expense of realism. If students are overly optimistic and believe that they can attain their goals through multiple routes (pathways), they may not view their academic

performance realistically. The result may be a lower end of term GPA. In terms of academic achievement, it appears that being optimistic and having more than one route to achieving goals has a negative effect on students' academic performance.

The current study also looked at the relationship gender had with optimism, hope, and academic achievement. The relationship between all of these variables had not been previously investigated. The results indicated that gender did not significantly correlate to hope, optimism, or academic achievement, which runs contrary to what was hypothesized.

There are many reasons as to why the current study did not support the hypothesis that gender differences exist in optimism, hope, and academic achievement. The main concern with this study is the division of men and women. There were far more women than men who participated in the study. The imbalance of gender may have nullified any relationship that may have been present within the variables. The sample that was used may also have produced the current results. The sample was a university population which is considered to be unrepresentative of the general population. The men and women in the university population are a select group of people who tend to have more motivation and higher academic achievement than the majority of people in a population. As a result, the relationship between gender, hope, optimism, and academic achievement in a university population may be truncated and so remain unclear.

Considering optimism and hope when trying to improve academic achievement may have benefits for universities and colleges in North America. Variables other than ability have been shown to affect student performance at university. Attentiveness, persistence, and strategic problem-solving are all variables that have been influential on

student performance (Nonis & Wright, 2003). If variables such as optimism and hope moderate the relationship between ability and performance implications arise for both students and institutes of higher education (Nonis & Wright, 2003).

In recent years, changing demographics and attrition have become a concern for universities and colleges. Focus has been shifted to finding ways of retaining students especially because student performance has become increasingly linked to budgeting processes (Nonis & Wright, 2003). There is a common belief that improving student performance will lead to higher student retention for institutions of higher education. Because variables such as expectation seem to influence performance, calls have been made to conduct more research in the area of student expectations (Nonis & Wright, 2003). Studying the effects of optimism and hope on academic achievement is directly linked to the expectations of students. Information that is discovered through research projects such as this one will allow institutions to develop programs that aim to help students improve their academic performance by making them aware of the variables to consider.

The research does warrant further investigation as factors such as the sample used and the division of gender in the sample may have influenced the results. Future research should focus on the relationship that hope, optimism, and gender have with academic achievement, but in the general population. Studying the relationship among the variables and academic achievement in the general population may give more representative and accurate data about how the variables affect academic achievement.

The examination of the pathways subscale of hope as a suppressor variable also warrants further investigation. Previous research has indicated that hope is positively



correlated to high GPAs. The current results suggest that the relationship may be more complicated than previously thought indicating a need for further research on the subject.

## References

- Beyer, S. (1999). Gender differences in the accuracy of grade expectancies and evaluations. *Sex Roles, 41*, 279-296.
- El-Anzi, F. O. (2005). Academic achievement and its relationship with anxiety, self-esteem, optimism and pessimism in Kuwaiti students. *Social Behavior and Personality, 33*, 95-104.
- Lancaster, B. P. (1999, January). *Defining and interpreting suppressor effects: Advantages and limitations*. Paper presented at the annual meeting of the Southwest Educational Research Association, San Antonio, TX.
- Nonis, S. A., & Wright, D. (2003). Moderating effects of achievement striving and situational optimism on the relationship between ability and performance outcomes of college students. *Research in Higher Education, 44*, 327-346.
- Peterson, C. (2000). The future of optimism. *American Psychologist, 55*, 44-55.
- Pomerantz, E. M., Altermatt, E. R., & Saxon, J. L. (2002). Making the grade, but feeling distressed: Gender differences in academic performance and internal distress. *Journal of Educational Psychology, 94*, 396-404.
- Robbins, A. S., Spence, J. T., & Clark, H. (1991). Psychological determinants of health and performance: The tangled web of desirable and undesirable characteristics. *Journal of Personality and Social Psychology, 61*, 755-765.
- Roberts, T. (1991). Gender and the influence of evaluations on self-assessment in achievement settings. *Psychological Bulletin, 109*, 297-308.

- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the life orientation test. *Journal of Personality and Social Psychology, 67*, 1063-1078.
- Scheier, M. F. & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology, 4*, 219-247.
- Segerstrom, S. C., Taylor, S. E., & Kemeny, M. E. (1998). Optimism is associated with mood, coping, and immune change in response to stress. *Journal of Personality and Social Psychology, 74*(4), 1646-1655.
- Seligman, M. E. P. (1998). Positive social science. *APA Monitor, 29*, 2, 5.
- Shepperd, J. A., Maroto, J. J., & Pbert, L. A. (1996). Dispositional optimism as a predictor of health changes among cardiac patients. *Journal of Research in Personality, 30*, 517-534.
- Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry, 13*, 249-275.
- Snyder, C. R., Shorey, H., Cheavens, J., Pulvers, K. M., Adams, V., & Wiklund, C. (2002). Hope and academic success in college. *Journal of Educational Psychology, 94*, 820-826.
- Whitt, E., Pascarella, E., Elkins-Nesheim, B. S., Marth, B. P., & Pierson, C. (2003). Differences between women and men in objectively measured outcomes and the factors that influence those outcomes in the first three years of college. *Journal of College Student Development, 44*, 587-610.

Wrosch, C., & Scheier, M. F. (2003). Personality and quality of life: The importance of optimism and goal adjustment. *Quality of Life Research, 12*, 59-72.

Table 1

*Pearson product-moment correlations and significance values for the predictors and academic achievement*

Predictors	<i>r</i>	<i>p</i>
Motivation	.32	.00
Optimism	.20	.02
Hope	.32	.00
Agency	.40	.00
Pathways	.15	.06*

\* Not significant at  $\alpha = .05$

Table 2

*Summary of Hierarchical Regression Analysis for Variables Predicting Academic Achievement (N = 106)*

Variable	<i>B</i>	<i>SE B</i>	$\beta$
Step 1			
Motivation	.951	.274	.322
Step 2			
Motivation	.874	.276	.296
Optimism	.325	.199	.153
Step 3			
Motivation	.739	.267	.250
Optimism	-.003	.243	-.002
Agency	1.214	.297	.519
Pathways	-.771	.353	-.269