RELATIONSHIPS AMONG HELP-SEEKING, SELF-ESTEEM, WORK AVOIDANCE AND

LOCUS OF CONTROL: A PATH ANALYSIS

by

Wenxin Zhang

_____

A Thesis Submitted to the Faculty of the

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

In Partial Fulfillment of the Requirements

For the Degree of

MASTER OF ARTS

In the Graduate College

THE UNIVERSITY OF ARIZONA

2018

STATEMENT BY AUTHOR

The thesis titled *RELATIONSHIPS AMONG HELP-SEEKING, SELF-ESTEEM, WORK AVOIDANCE AND LOCUS OF CONTROL: A PATH ANALYSIS* prepared by *WENXIN ZHANG* has been submitted in partial fulfillment of requirements for a master's degree at the University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this thesis are allowable without special permission, provided that an accurate acknowledgement of the source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the head of the major department or the Dean of the Graduate College when in his or her judgment the proposed use of the material is in the interests of scholarship. In all other instances, however, permission must be obtained from the author.

SIGNED: Wenxin Zhang
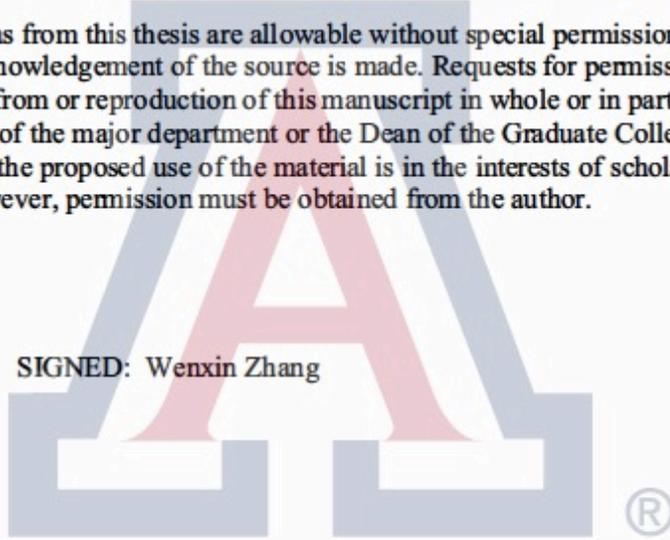
APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

_____
Monica K. Erbacher
Assistant Professor of Educational Psychology

5/7/2018
Date

Table of Contents

Abstract

This current research tests the hypothesized structural model to explore the relationships among help-seeking goals (instrumental help-seeking and executive help-seeking), help-seeking attitude (help-seeking threat), help-seeking behavior (academic help-seeking resource use), self-esteem, locus of control, work-avoidance and academic performance (GPA) in a big model using path analysis method. Data were collected from a large Southwestern University in the U.S. All participants filled out an online survey in Spring 2016 or Fall 2017. Path analyses were used to choose a final model which in which relationships among help-seeking, self-regulated learning, and academic achievement variables were tested. Self-esteem, locus of control, and work avoidance all predicted to help-seeking attitude and goals. Those three self-regulated learning related factors also have an indirect relationship with GPA through instrumental help-seeking. This study also shows that subscribing to the instrumental help-seeking goal is a better predictor of student academic performance than actual help-seeking behavior. This study has several implications on how to form adaptive help-seeking goals and attitudes through adjusting self-esteem, locus of control, and work-avoidance. Interventions targeting these factors would not only improve help-seeking attitudes, goals, and behavior, but academic performance as well.

RELATIONSHIPS AMONG HELP-SEEKING, SELF-ESTEEM, WORK AVOIDANCE

AND LOCUS OF CONTROL: A PATH ANALYSIS

Overview and Purpose

Help-seeking behavior is an important strategy which reflects how students solve problems when they meet difficulties in learning (Karabenick, 2003; 2004; Newman, 2008). To explain or complement help-seeking behavior, researchers have also defined goals and attitudes related to help-seeking. For example, Gall (1985) developed the concepts of two help-seeking goals: instrumental help-seeking and executive help-seeking. Instrumental help-seeking occurs when students seek help from others to master content or learn material; while executive help-seeking occurs when assistance is sought to avoid work. In addition, help-seeking threat refers to feelings of threat or stigma that lead to the avoidance of seeking help from resources (Gall, 1985). Extant research has found help-seeking threat is maladaptive and decreases the likelihood of seeking help (e.g., Karabenick & Knapp, 1991; Newman & Schwager, 1993). In extant literature, explorations of help-seeking behavior, attitudes, goals, and their relationships with academic success are largely piecemeal, with researchers exploring only behaviors (e.g., Eisenberg, Down, & Zivin, 2009) or only attitudes and goals (e.g., Pyburn, Horst, & Erbacher, 2016). In this thesis, I use self-report measures of student help-seeking goals, attitudes, and behaviors to explore relationships between these constructs and achievement (i.e., GPA). Specifically, academic resource use will be explored, measured as the frequency with which students seek academic assistance from available resources on campus (e.g., office hours, writing center).

Many scholars have discussed the relationships between help-seeking with self-regulated learning and motivation (e.g., Zusho, Karabenick, Bonney, & Sims, 2007). Thus, I will also test

the relationships among help-seeking attitudes and behaviors and factors related to self-regulated learning and motivation, including self-esteem, locus of control, and work-avoidance. Students who are self-regulated and seek appropriate assistance from others tend to have higher learning motivation and academic achievement (Gall, 1985).

The purpose of this thesis is to explore the big picture of relationships among help-seeking attitudes, goals, behaviors, factors related to self-regulated learning and motivation, and GPA. In the following subsections, I review empirical evidence of these relationships. Finally, in each section, I state how these findings impact my hypotheses and predictions for the current work. Thus far, these relationships have only been explored a few at a time. The goal of this thesis to synthesize these relationships into a larger representation of academic help-seeking in college students.

Help-seeking Goals and Attitudes and Academic Success

Students tend to face challenges during the learning process (Ryan, Pintrich & Midgley, 2001). Seeking help from others is an important strategy in solving problems during the learning process and achieving academic success. The process by which students seek help during learning can be defined as academic help-seeking behavior. Academic help-seeking can be either adaptive or maladaptive (Newman, 2008). For adaptive help-seeking, seekers aim to master the content rather than getting the direct answers. They also seek help from appropriate resources. Conversely, one of the most commonly researched forms of maladaptive help-seeking is seeking help to get answers and avoid work rather than to learn. Additionally, feelings about help-seeking can lead to maladaptive behaviors: feeling threatened by the need for help may prevent students from seeking help (Karabenick, 2003). Help seekers will also evaluate the cost and benefits when asking for assistance (Rossel, Elliot, & Feltman, 2011). The goal of asking a hint

or an indirect answer to master content is called instrumental help-seeking, which is adaptive (e.g., Gall, 1985). Pursuing a correct answer to reduce the amount of work required on an academic task is called executive help-seeking, which is not adaptive (e.g., Gall, 1985).

Karabenick and Knapp (1991) found instrumental help-seekers are more motivated and strategic in learning. In a sample of 386 undergraduates, students with higher levels of instrumental help-seeking used significantly more learning strategies, including rehearsal and elaboration.

Help-seeking goals have been connected with learning goal theory in prior literature (e.g., Karabenick 2003; 2004). In learning goal theory, instrumental and performance goals were proposed as two different ways students use to approach tasks (Karabenick 2003). In the 2x2 achievement goal framework, Elliot and McGregor (2001) state four goals include mastery approach, mastery avoidance, performance approach, and performance avoidance goals. Overall, mastery goals focus on learning and mastering content. On the other side, performance goals contribute to motivation through comparisons of one's own performance to the performance of others. Using a mastery approach goal is ideal, since mastery avoidance and performance goals induce stress and other detrimental emotional effects (Elliot & McGregor, 2001). Evidence shows mastery approach goals positively correlate with cumulative GPA, but performance approach and avoidance goals negatively correlate with GPA (Durik, Lovejoy, & Johnson, 2009). Karabenick (2003) found that instrumental help-seeking also positively correlates with Mastery approach goals. Thus, I hypothesize instrumental help-seeking positively predicts academic performance in the current research. I will also explore the relationship between instrumental help-seeking goals and academic resource use.

In executive help-seeking, learners aim to spend less effort on academic tasks, increasing their dependency on others in problem solving. Pyburn, et al., (2016) have found that international college students who had a specific profile of characteristics that included high executive help-seeking goals and high work avoidance had low GPA. Given the purpose of executive help-seeking is to avoid work rather than to learn, I hypothesize executive help-seeking negatively predicts GPA in the sample of undergraduates explored in this thesis. The relationship between executive help-seeking and help-seeking resource use will also be tested.

Importantly, the process of help-seeking also contains social interaction (Ryan et al., 2001), which allows threat and stigma to enter the picture. Individuals may perceive help-seeking as a threat (i.e., as a sign of weakness or as a source of stigma), this may hinder individuals from seeking help from others. In research with a large college student sample, Karabenick (2003) found students higher on help-seeking threat not only sought less help, but were also more likely to seek executive help rather than instrumental help. Thus, I predict help-seeking goals and attitudes will be related to one another, specifically help-seeking threat will be negatively related to instrumental help-seeking and positively related to executive help-seeking. Moreover, help-seeking threat should be negatively related to frequency of resource (help-seeking behavior). Additionally, students with higher levels of help-seeking threat are predicted to have worse academic performance (i.e., lower GPA).

Relationships Among Help-seeking Goals, Attitudes, and Behaviors

In this research, the actual help-seeking behavior was measured by the frequency of using academic help-seeking resources (e.g., seeking help from the instructor or TA). I will determine whether instrumental help-seeking, executive help-seeking and help-seeking threat are accurate predictors of resource use.

To explore the relationships among help-seeking threat, instrumental help-seeking, and executive help-seeking. Former research found that help-seeking threat negatively related to instrumental help-seeking (Karabenick & Knapp, 1991; Karabenick, 2003) and positively related to executive help-seeking (Karabenick, 2003). However, in Karabenick and Knapp (1991), no relationships were found between executive help-seeking and instrumental help-seeking in a college student population. Both help-seeking threat and executive help-seeking were positively related to help-seeking avoidance (Karabenick, 2003); but instrumental help-seeking was negatively related to help-seeking avoidance. From these findings, I expect to find a positive correlation between instrumental help-seeking and help-seeking resources use; negative relations between help-seeking resources use and executive help-seeking and help-seeking threat are also expected. I also hypothesize there will be negative relationships between instrumental help-seeking and executive help-seeking and between instrumental help-seeking and help-seeking threat.

Self-esteem and Help-seeking Factors

Self-esteem is a general sense of self-worth, or feeling good about one self. An example of a statement measuring self-esteem is "I am able to do things as well as most other people" (Rosenberg, 1965). Self-esteem has been linked to aspects of help-seeking, specifically, high self-esteem reduces help-seeking threat (Karabenick & Knapp, 1991; Nelson, 1985). In the current study, I aim to confirm these results.

A similar concept "self-efficacy", which measures individual's confidence in specific fields, has also been explored in some help-seeking literature. An example of a statement measuring self-efficacy is "I am confident I can understand the basic concepts taught in this course" (Karabenick, 2003). In Karabenick (2003), self-efficacy positively related to

instrumental help-seeking. In this thesis, since cumulative GPA is serving as the measurement of academic performance rather than course grades, I will use self-esteem to measure general self-concept instead of one's feeling in specific classes. I predict that students with higher self-esteem will be more likely to seek instrumental help and less likely to seek executive help.

Locus of Control and Help-seeking Factors

Locus of control is embedded in attribution theory (Weiner, 2010). It is linked to learning, motivation, and to academic achievement (Ames & Lau, 1982). This term was first used by Julian Rotter in 1966 (Weiner, 2010). Locus of control explains how students attribute their success and failure, either internally (e.g., effort, ability) or externally (e.g., luck, the difficulty of tasks), and to either controllable (e.g., effort, choices) or uncontrollable (e.g., ability level, luck) factors. External locus of control and attributions to uncontrollable factors might affect individual's academic performance and reduce the rate of seeking help, by decreasing one's motivation to learn (Ames & Lau, 1982). For example, when failure was attributed to low ability (uncontrollable, internal factor) and luck (uncontrollable, external factor), motivation decreased. When failure was attributed to lack of effort (internal, controllable factor), motivation increased (demonstrated as preparation for the next test or exam). Ames and Lau (1982) also point out that internal attributions positively relate to help-seeking. Based on Ames and Lau (1982)'s argument, I believe locus of control will be a good predictor of the frequency of seeking help (i.e., resource use). Specifically, I hypothesize that students with internal and controllable attributions will use more academic help-seeking resources, since they may believe they can control the things that influence academic outcomes. Within the author's knowledge, there are no extant studies exploring the relationships among locus of control, instrumental help-seeking and executive help-seeking. I expect that instrumental help-seeking positively relates to internal and

controllable attribution on success and failure, while executive help-seeking negatively relates to internal and controllable causes. Importantly, the locus of control subscale used in this thesis (Paulhus, 1983) was only designed to capture internal (high scores) versus external (low scores) locus of control. Thus, I hypothesize internal locus of control will positively predict instrumental help-seeking and negatively predict executive help-seeking.

Work Avoidance and Help-seeking Factors

Work avoidance (e.g., students avoid putting effort into academic tasks) is one kind of learning goal orientation (Harackiewicz, Barron, Carter & Lehto, 1997), which researchers claim hinders academic achievement and learning interests (Barron & Harackiewicz, 2003). Zusho and colleagues (2007), claim that work avoidance motivates students to seek executive help. In prior research, work avoidance statistically significantly negatively predicted class grades (e.g., Barron & Harackiewicz, 2003; Harackiewicz, Barron, Tauer, & Elliot, 2002), but not GPA. However, no indirect influences on GPA through other attitudes and behaviors were explored. In this project, I will explore whether work-avoidance indirectly predicts GPA through help-seeking factors. Also, Harackiewicz, et al., (2002) found students with higher levels of work-avoidance goals reported lower interest in psychology class. Instrumental help-seeking relates to higher class interest while executive help-seeking has no relationship with class interest (Karabenick, 2003). Thus, I hypothesize instrumental help-seeking will be negatively predicted by work-avoidance, whereas executive help-seeking and help-seeking threat would be positively predicted by work-avoidance. I will not make predictions about the relationship between the frequency of seeking help and work avoidance, as this relationship could be negative (i.e., seeking help takes effort), or, this relationship could be positive if work avoidant students are high on executive help-seeking and thus seek help to avoid additional effort.

Self-esteem, Locus of Control and Work Avoidance are also Related

Self-esteem, locus of control and work avoidance may covary with one another as well. Self-esteem and locus of control are both related to self-concept. Evidence indicates students who attribute success to internal causes have higher self-efficacy (Weiner, 2010). Thus, those two factors may positively relate to each other. Locus of control may also covary with learning motivation. As mentioned before, external attribution should reduce an individual's motivation of learning. This might lead to work avoidance goals as well. Thus, in addition to exploring the direct relationship between locus of control and academic performance (GPA); I will also explore the indirect relationships of work avoidance, self-esteem and locus control with academic performance (GPA), through help-seeking goals and attitudes (instrumental help-seeking, executive help-seeking and help-seeking threat). Moreover, as I hypothesize a positive relationship between locus of control and help-seeking resource use, the indirect relationship between locus of control and academic performance through help-seeking resource use will be tested as well. Last, the direct relationship between work avoidance and academic performance will be tested.

Purpose of the Current Study

This thesis aims to fulfill three main purposes. First, there has been much research about academic help-seeking in college populations. However, findings regarding the constructs reviewed in this thesis remain piecemeal or conflicting. The current project aims to confirm some of these findings and bring others together into one model. Second, this thesis not only explores help-seeking in a cognitive and social cognitive perspective (goals --- instrumental help-seeking and executive help-seeking; and attitude--- help-seeking threat), but a behavioral component, resource use, is also examined in this research. This allows me to explore two more

novel aims empirically: 1) the relationships between help-seeking attitude, goals, and actual resource use, and 2) the relationships between learning related factors with help-seeking behavior, attitude, and goals. Last, this thesis aims to synthesize prior findings into a single model, in which relationships can be tested simultaneously. These relationships include direct and indirect relationships between learning related factors (self-esteem, locus of control and work avoidance) and GPA through help-seeking attitude (help-seeking threat), goals (instrumental and executive help-seeking), and help-seeking behavior (academic help-seeking resource use). From the literature reviewed here, I will test the following research hypotheses:

H1: Self esteem positively correlates with locus of control.

H2: Locus of control negatively predicts work avoidance.

H3: Locus of control positively predicts help-seeking resource use.

H4: Work avoidance negatively predicts GPA.

H5: Self-esteem, locus of control and work avoidance predict Help-seeking attitude, goals and resource use.

H6: Help-seeking attitude, goals and resource use predict GPA.

H7: Self-esteem, locus of control and work avoidance indirectly predict GPA through help-seeking attitude and goals.

H8: Help-seeking goals (instrumental, executive), attitude (threat), and behavior (academic resource use) correlate with each other.

Methods

Participants

One hundred and ninety-one students from a public, Southwestern university participated. All participants were enrolled in at least one of two introductory level educational psychology

courses during the Spring 2016 or Fall 2017 semesters. Students had to fulfill a research engagement requirement in these courses, and could choose from attending a campus event and writing a reflection, critiquing a published research article, or participating in any of several research studies. This online survey was one of the studies available. All processes were IRB approved. The survey was completed online and participants were informed the survey should take at most one hour to complete.

Demographic information and self-reported GPA were collected through the survey, along with several measures of attitudes and behaviors. Measures are described below and in Table 1, followed by descriptive statistics and demographic characteristics in Table 2.

Measures

I selected seven scales to explore in this project: self-esteem, work avoidance, instrumental help-seeking, executive help-seeking, help-seeking threat, and resource use as a measure of help-seeking behavior. Mean scores were calculated on each scale. Some scales included reverse-scored items. Items were reverse-scored before calculating mean scores. More details about the scales administered are provided in Table 1, along with example items. For help-seeking behavior, measured as resource use, only academic resource use was explored in this thesis, although additional information was collected about non-academic resource use (e.g., counseling center, diversity offices, etc.). Academic resources consisted of professor office hours, TA office hours, Think Tank and Writing Center, Writing Skills Program, library, and academic advisor.

Table 1

Characteristics of Measures Used

Measures & Citation	Example Item	Response Scale	N Items, Alpha
Self-esteem (SE; Rosenberg, 1956)	On the whole, I am satisfied with myself.	1 (Strongly agree) to 4 (Strongly disagree)	9, .840
Locus of Control (LOC; Paulhus, 1983)	I can learn almost anything if I set my mind to it.	1 (Disagree) to 7 (Agree)	10, .670
Work Avoidance (WAV; Pieper, 2003)	I want to do as little work as possible this semester.	1 (Not at all true of me) to 7 (Very true of me)	4, .830
Instrumental help-seeking (Karabenick, 2013)	Getting help would be one of the first things I would do if I were having trouble in this class.	1 (Not at all true) to 5 (Completely true)	2, .740
Executive help-seeking (Karabenick, 2013)	Getting help in this class would be a way of avoiding doing some of the work.	1 (Not at all true) to 5 (Completely true)	2, .570
Help-seeking threat (Karabenick, 2013)	I would not want anyone to find out that I need help in this class.	1 (Not at all true) to 5 (Completely true)	3, .790
Help-seeking resource use (Created for this study)	Office hours of a TA	1 (Never) to 5 (Two or more times a week); 6 = DK = I don't know this resource	6, .640

Note. For help-seeking resource use, a score of 6 was replaced by a missing value before calculating mean scores.

Analyses

Data Screening. The path analyses (see Data Analysis subsection) used in this thesis require several statistical assumptions, including multivariate normality, no outliers, and linear relationships among variables. Multivariate normality was checked using Mardia's tests of multivariate skew and kurtosis. Data were statistically significantly skewed (*skew* = 6.186, *p* <.001), but were not statistically significantly kurtotic (*kurtosis* = 78.733, *p* =.490). Skew was compared with 0, and kurtosis was compared with 80 (calculated as $q(q+2)$, where q = number of

variables in the analysis). Thus, I used robust Maximum Likelihood estimation in the data

analyses. The Yuan-Bentler chi-square statistic is most appropriate for nonnormal data (Savaleri

& Bentler, 2005), and thus was used as the fit statistic for each model.

There were no outliers in the data set. The cut-off value $\chi^2(8) = 26.12$ was used to detect

multivariate outliers on the eight variables (seven self-report measures and self-reported GPA).

Only one individual had missing data, this individual only completed 1 of the 8 measures being

analyzed in this thesis. This person was removed from the data set, with 190 individuals

contributing complete data to the final analyses. Scatterplots indicated all relationships were

linear, illustrated in Figure 1. All of the data analysis was conducted in the statistical program R,

version 3.31 (R Core Development Team, 2017). Descriptive statistics on each scale are

available in Table 2.

Table 2

Descriptive Statistics of Scale Mean Scores, GPA, and Demographics (N = 191)

Variable	Mean	SD	Possible Range	Observed Range	Skew	Kurtosis
Instrumental Help-seeking	3.74	1.03	1 to 5	1 to 5	-0.50	-0.61
Executive Help-seeking	1.74	0.76	1 to 5	1 to 4	1.08	0.60
Help-seeking Threat	2.09	1.03	1 to 5	1 to 5	0.70	-0.50
Work Avoidance	2.93	1.36	1 to 7	1 to 7	0.66	-0.13
Self-esteem	2.13	0.56	1 to 4	1 to 4	0.37	0.41
Help-seeking Resource Use	2.01	0.59	1 to 5	1.11 to 5	1.40	5.06
Locus of Control	5.22	0.75	1 to 7	2.80 to 7	-0.22	-0.25
Cumulative GPA	3.13	0.65	0 to 4	1.2 to 4	-0.83	0.07

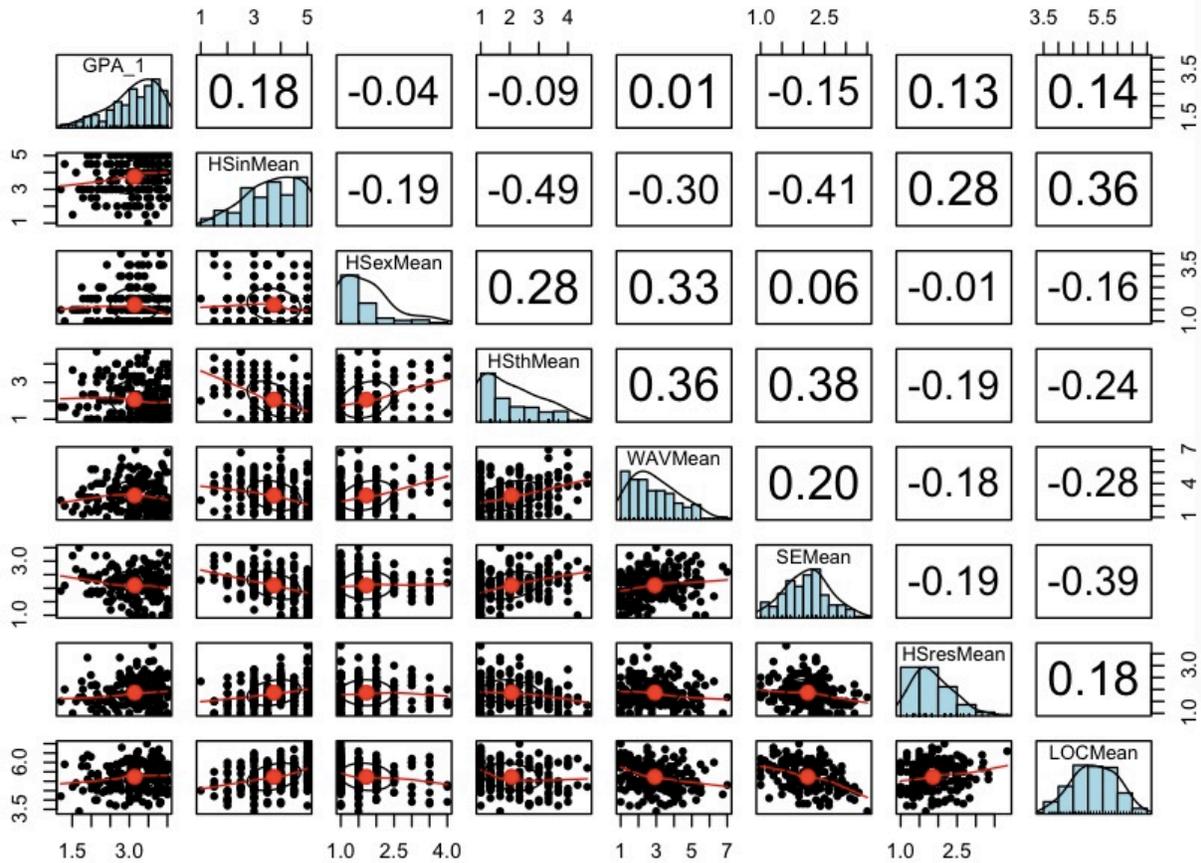| Demographics	Percentages
Gender	25.7% males; 73.3% females; 0.5% of non-binary; 0.5% of unknown.
Ethnicity	61.1% White; 21.7% Hispanic/Lantinx; 5.6% of black/African American; 6.6% of Asian/Asian American; 5% of none of above.
Year in School	30.8% freshmen; 40.5% sophomores; 18.5% juniors; 9.7% seniors.

Figure 1. Scatterplots demonstrating linear relationships between path analysis variables. Numbers in the upper right corner are Pearson's correlations between variables.

Data Analyses. I used a multivariate technique for analyzing the data. Specifically, path analysis, a form of structure equation modeling (SEM), was used. SEM can be thought of as a combination of CFA (confirmatory factor analyses) and regression (multiple regression) (Schreiber, Nora, Stage, Barlow, & King, 2006). Path analysis is one kind of SEM which does not include latent variables. Path analysis is the most appropriate method for testing these hypotheses for the following reasons: 1) it allows me to explore the structure of the relationships among observed variables, and 2) it allows me to test the complicated relationships specified in my hypotheses simultaneously. Path analysis uses a reduced number of relationships to create a

model-implied covariance matrix, which is compared to the observed covariance matrix from the data. The goal of path analysis is to determine whether this reduced number of relationships represents the data well. Additionally, from estimated parameters, it is possible to calculate the variance in predicted variables explained by predictor variables, as well as evaluate direct and indirect relationships among variables.

The first model tested included all relationships specified in my hypotheses (see Figure 2). After running the first model, I removed all statistically and practically non-significant paths that were not based on prior literature and ran a second model. Then I removed any other non-significant paths and ran a third model. For each model, I also examined global model fit at each step, and global and local model fit for the final model. Global fit indicates how well the model reproduces relationships in the data. The first measure of global fit was root mean square error of approximation (RMSEA), which represents overall error, conceptually average error, across all relationships modeled. Zero indicates no error, and 1 is the highest RMSEA can be. Square root mean residual (SRMR), conceptually like a standardized version of RMSEA also represents overall or average error and ranges from 0 (perfect fit, no error) to 1 (worst fit, lots of error). Comparative Fit Index (CFI) is an incremental fit statistic that represents how much better a model is compared to a null model (a model with all the same variables, but no relationships between variables). Zero indicates our model is not much better than a null model, 1 indicates our model is much better than a null model. Again, these are all global fit statistics. They represent overall fit across the whole model. According to Hu and Bentler (1999), good model fit is indicated by CFI above .90, RMSEA below .06, and SRMR below .08. I will also examine local fit in the final model.

Results

Model 1

In the original hypothesized model (Model 1; shown in Figure 2), all of the paths in the diagram were tested. Overall model fit was good, with $\chi^2(5) = 11.372$, $p = .044$. $CFI = .972$, $RMSEA = .079$, $SRMR = .040$, $AIC = 3384.365$, and $BIC = 3510.793$. However, in Model 1, ten paths were not statistically nor practically significant. It is possible a model without these paths also fitting the data well.
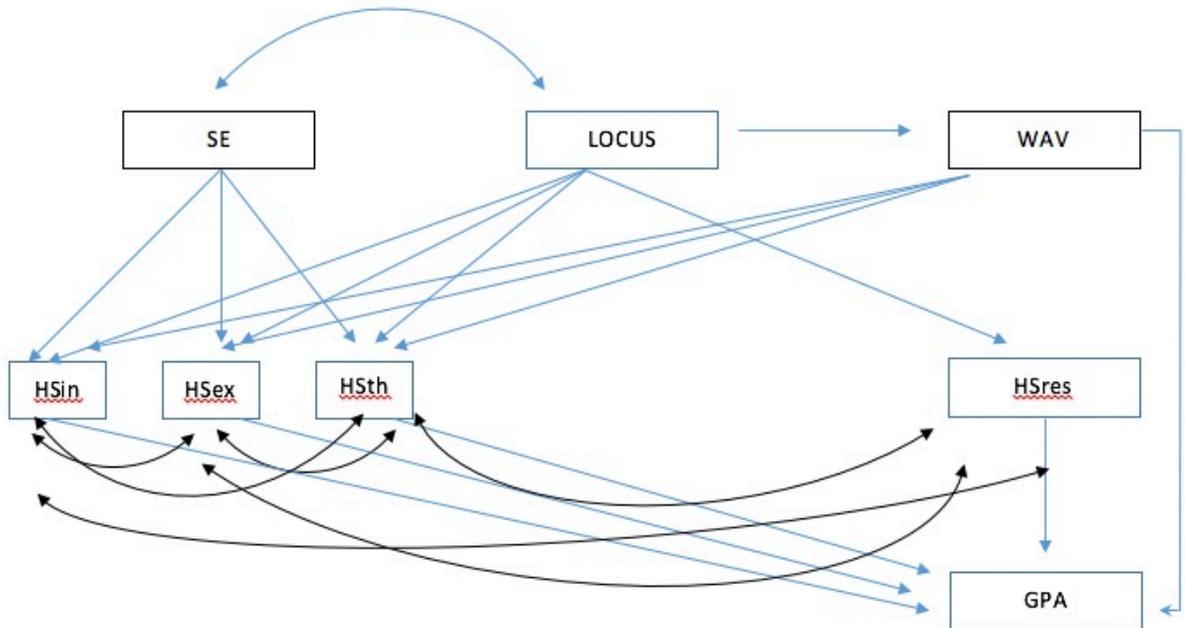
Figure 2. Model 1: the hypothesized model among all variables.
Note. SE = self-esteem, LOCUS = locus of control, WAV = work avoidance, HSin = instrumental help-seeking, HSex = executive help-seeking, HSth = help-seeking threat, HSres = resource use, and GPA = self-reported cumulative GPA.

To deal with the non-significant paths, I decided to explore further models. First, I dropped two paths that were not mentioned in prior literature. These two regression paths were locus of control predicting help-seeking threat (β = -0.053, *p* = .491) and help-seeking resource use predicting GPA (β = 0.100, *p* = .160).

Model 2

After dropping two paths, Model 2 ($\chi^2(7)$ = 13.297, *p* = .065) still fits the data well, with *CFI* = .971, *RMSEA* = .067, *SRMR* = .044, *AIC* = 3382.704, and *BIC* = 3502.649. Comparing Model 1 and Model 2 indicated that the larger model had statistically significantly different model fit from the smaller model ($\chi^2(2)$ = 18.210, *p* < .001). However, the fit statistics from the two models are not practically different.

Then, I dropped all other non-significant paths to conduct a third model. Those paths included: locus of control predicting executive help-seeking (β = -0.075, *p* = .324), executive help-seeking predicting GPA (β = -0.014, *p* = .862), work avoidance predicting GPA(β = 0.078, *p* = .269), help-seeking threat predicting GPA (β = -0.053, *p* = .491), self-esteem predicting executive help-seeking (β = -0.022, *p* = .756), instrumental help-seeking correlation with executive help-seeking (*r* = -.092, *p* = .232), resource use correlation with executive help-seeking (*r* = .057, *p*= .396), and resource use correlation with help-seeking threat (*r* = -.078, *p* = .240).

Model 3

Model 3 ($\chi^2(15)$ = 20.565, *p* = .151) fits the data very well, with *CFI* = .975, *RMSEA* = .043, *SRMR* = .052, *AIC* = 3373.02, and *BIC* = 3467.03. There was no statistically significant difference between Model 1 and Model 3 in terms of fit ($\chi^2(10)$ = 9.669, *p* = .470). Thus, Model

3, the simpler model that fits equally well as a larger model, is the final model. Model 2 and
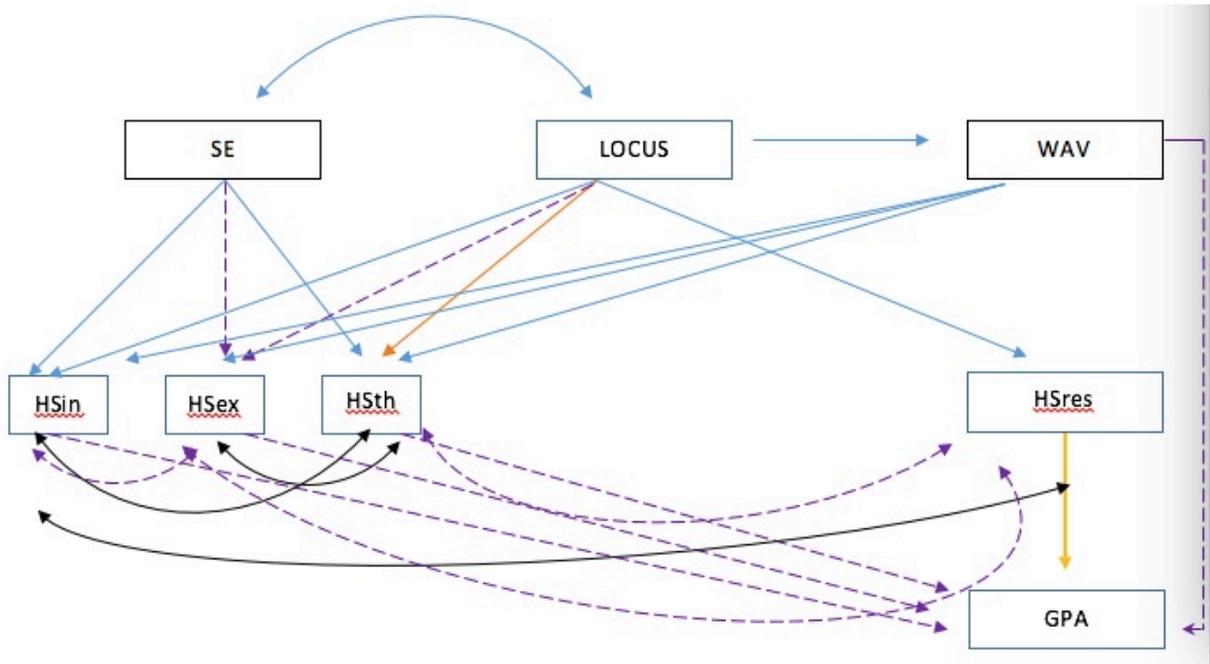
Model 3 are shown in Figure 3.

Figure 3. Model 2 and Model 3
Note. Models 2 (orange paths removed) and Model 3 (orange and purple dashed paths removed).
SE = self-esteem, LOCUS = locus of control, WAV = work avoidance, HSin = instrumental
help-seeking, HSex = executive help-seeking, HSth = help-seeking threat, HSres = resource use,
and GPA = self-reported cumulative GPA.

Results also indicated that Model 3 had reasonable local fit. Only 4 out of 28 correlation

residuals exceeded the acceptable range of -.1 to .1 (see Table 3). It is important to also check

local fit for this final model. Path tracing rule equations are used in the literature to calculate

what the correlation between two variables should be, based only on the paths linking them in

the model. Correlation residuals are the difference between these model-implied correlations and

the actual correlations between variables in the data set. The computer calculates these

correlation residuals as: correlation in data – model-implied correlation. Negative correlation

residuals indicate the correlation in the data is lower (less positive, more negative) than the

model-implied correlation.

Table 3

Residuals Correlation Matrix (Local Model Fit) for Model 3

	HSres	HSin	WAV	HSex	HSth	GPA	LOC	SE
HSres	.000							
HSin	.078	.000						
WAV	**-.127**	-.038	.000					
HSex	.003	**-.101**	.000	.000				
HSth	**-.148**	.039	.024	.033	.000			
GPA	.098	.003	.053	-.026	-.008	.000		
LOC	.000	-.002	.000	-.072	-.034	.073	.000	
SE	**-.122**	.026	.087	.027	.021	-.084	.000	.000

Note. Numbers are out of range (-.1, .1) are highlighted.

Evaluating Hypothesized Relationships

According to Model 3, the results for each hypothesized relationship are offered below.

All parameter values from Model 3 are reported in Tables 4 and 5.

H1: Self-esteem positively correlates with locus of control. Result show that self-

esteem has a strong negative correlation with locus of control ($r = -.392$, $r^2 = 15.4\%$, $p < .001$).

Given the response scale for self-esteem (see Table 1), lower self-esteem scores mean students

have better/higher self-esteem. Higher locus of control scores mean students have more internal

locus of control. Students with stronger self-esteem have more internal locus of control.

H2: Locus of control negatively predicted work avoidance. A moderate relationship

was found between locus of control and work avoidance. For every one-point increase in locus of

control, work avoidance decreased 0.507 points ($\beta = -0.277$, $r^2 = 8.0\%$, $p < .001$).

H3: Locus of control positively predicted resource use. Locus of control positively

predicted help-seeking resource use ($\beta = -0.180$, $R^2 = 3.2\%$; $p = .016$). Students with more

internal locus of control were more likely to use academic help-seeking resources. Specifically,

for every one-point increase in locus of control, resource use increased 0.134 points.

H4: Work avoidance negatively predicted GPA. In Model 1, work avoidance positively

predicted GPA; however, this effect was not statistically nor practically significant ($\beta = 0.043$,

$p= .212$, in Model 1) and thus was not included in Model 3. Results suggest work avoidance and

GPA were not related.

Table 4

Regression Path Coefficients from Model 3

	B	p	β	R^2
Predicting GPA				
Instrumental Help-Seeking	0.117	.010	**0.181**	**.033**
Predicting Help-seeking Resource Use				
Locus of Control	0.134	.016	**0.180**	**.032**
Predicting Instrumental Help-Seeking				
Locus of Control	0.270	.003	**0.199**	**.040**
Work Avoidance	-0.128	.010	**-0.172**	**.030**
Self-Esteem	-0.540	<.001	**-0.283**	**.080**
Predicting Executive Help-Seeking				
Work Avoidance	0.181	<.001	**0.325**	**.106**
Predicting Help-Seeking Threat				
Work Avoidance	0.220	<.001	**0.298**	**.089**
Self-Esteem	0.616	<.001	**0.324**	**.105**

Table 5

Covariance and Variance Parameters in Model 3

Covariances	Estimate	p	Standardized Estimate	R^2
Instrumental Help-Seeking				
Help-Seeking Threat	-0.243	<.001	-0.321	.103
Help-Seeking Resources Use				
Instrumental Help-Seeking	0.075	.014	0.162	.026
Executive Help-Seeking				
Help-Seeking Threat	0.103	.032	0.168	.028
Self-Esteem				
Locus of Control	-0.148	<.001	-0.392	.154
Variances				
GPA	0.392		.967	
Self-Esteem	0.268		1.000	
Locus of Control	0.532		1.000	
Work Avoidance	1.641		.923	
Instrumental Help-Seeking	0.755		.776	
Executive Help-Seeking	0.491		.894	
Help-Seeking Threat	0.760		.785	
Help-seeking Resource Use	0.283		.967	

Note. For any variables predicted by other variables (i.e., all variables except self-esteem and locus of control), standardized variance is the proportion of variance unexplained by Model 3.

H5: Self-esteem, locus of control and work avoidance predict help-seeking attitudes, goals, and resource use. Results show that self-esteem, locus of control and work avoidance all played roles in predicting instrumental help-seeking, executive help-seeking, and help-seeking threat. However, three hypothesizes relationships were not statistically nor practically significant: self-esteem did not predict executive help-seeking (β = -0.026, R^2 = .07%; p = .714), locus of control did not predict help-seeking threat (β = -0.053, R^2 = .28%; p = .491), and locus of control did not predict executive help-seeking (β = -0.086, R^2 = .74%; p = .290).

Self-esteem significantly predicted instrumental help-seeking (β = -.283, R^2 = 8%; p < .001) and help-seeking threat (β = 0.324, R^2 = 10.5%; p < .001), but not executive help-seeking. Students with higher self-esteem had lower help-seeking threat and higher levels of instrumental

help-seeking goals. Locus of control only predicted instrumental help-seeking ($\beta = 0.199$, $R^2 =$ 4%; $p =$.003). Students with more internal of locus of control tended to have higher levels of instrumental help-seeking goals. Work avoidance negatively predicted instrumental help-seeking ($\beta = -0.172$, $R^2 = 3\%$; $p = .010$), positively predicted executive help-seeking ($\beta = 0.325$, $R^2 = 10.1\%$; $p < .001$), and positively predicted help-seeking threat ($\beta = 0.298$, $R^2 = 8.9\%$; $p < .001$). In other words, work avoidance is related to seeking help to avoid work, a feeling of threat or stigma against seeking help, and is negatively related to seeking help to master material. Additionally, locus of control predicted help-seeking resource use ($\beta = 0.18$, $R^2 = 3.2\%$; $p = .011$), such that students with more internal locus of control reported visiting academic resources more frequently.

H6: Help-seeking attitudes, goals, and resource use predict GPA. Only instrumental help-seeking significantly predicted GPA ($\beta = 0.181$, $R^2 = 3.3\%$, $p = .010$). As expected, students with stronger instrumental help-seeking goals had higher reported GPA. Executive help-seeking did not predict GPA ($\beta = -0.035$, $R^2 = .01\%$, $p = .600$), and help-seeking threat did not predict GPA ($\beta = -0.009$, $R^2 = .008\%$, $p = .911$). Surprisingly, more frequent use of academic resources did not influence GPA ($\beta = 0.100$, $R^2 = 1\%$, $p = .160$).

H7: Self-esteem, locus of control and work avoidance indirectly predict GPA through help-seeking attitudes and goals. Since instrumental help-seeking was the only statistically and practically significant predictor of GPA within the help-seeking factors, self-esteem, locus of control, and work avoidance showed indirect relationships to GPA through instrumental help-seeking. Using path tracing rules, one can calculate that 0.3% of the variance in GPA was explained by self-esteem indirectly. Similarly, 0.1% of variance in GPA was explained by the indirect effect of locus of control through instrumental help-seeking; and 0.09%

of the variance in GPA was explained by the indirect effect of work avoidance. In total, 0.74% of the variance in GPA was explained by indirect effects of self-esteem, locus of control, and work avoidance through instrumental help-seeking.

H8: Help-seeking goals, attitudes, and resource use are correlated with each other. Only instrumental help-seeking significantly positive correlated with help-seeking resource Use (β = 0.162, R^2 =2.6%, p = .014). Help-seeking threat was negatively associated with instrumental help-seeking (β = -0.321, R^2 = 10.3%, $p < .001$) and positively associated with executive help-seeking (β = 0.168, R^2 = 2.8%, p=.032). Students who seek help to master content may not perceive as much stigma against help-seeking as students who seek help to avoid work.

Discussion

Summary of Results

In this thesis project, results indicated self-esteem was a strong predictor of both help-seeking threat and instrumental help-seeking. Students with stronger self-esteem tended to have higher levels of instrumental help-seeking and lower levels of help-seeking threat. Work avoidance was the only statistically and practically significant predictor of executive help-seeking, and was also a strong positive predictor of help-seeking threat. Work avoidance had a small negative effect on instrumental help-seeking. Thus, students with low work avoidance and positive self-esteem (here, low self-esteem scores) have the most desirable help-seeking goals and attitude characteristics: high instrumental help-seeking, low executive help-seeking, and low help-seeking threat.

Additionally, I found relationships within each set of variables (self-regulated learning factors and help-seeking factors). Within self-regulated learning related factors, locus of control

strongly negatively predicted work avoidance. Self-esteem also strongly negatively correlated with locus of control. Students with more positive self-esteem were more likely to have stronger internal locus of control. Within help-seeking factors, help-seeking threat had a strong negative association with instrumental help-seeking and a moderate positive correlation with executive help-seeking. Importantly, instrumental help-seeking was positively associated with GPA, and locus of control was a positively related to help-seeking resource use. Evidence shows that self-esteem, locus of control and work avoidance have indirect relationships with GPA.

Linking Results to Previous Literature

I did find relationships between self-regulated learning factors and help-seeking attitude, goals, and behavior. Specifically, students with higher self-esteem tended to have stronger instrumental help-seeking goals. Although no other literature explored the relationship between these two specific variables, Karabenick (2003) found that a similar construct, self-efficacy, had a significant positive correlation with instrumental help-seeking. Results from this confirm Karabenick's results and suggest they may be generalized to self-esteem, a concept similar to but distinct from self-efficacy. Self-esteem represents confidence in general but self-efficacy targets one specific class, area, or context. I also found a strong relationship between self-esteem and help-seeking threat. This finding confirms the conclusion in prior research that students who are higher in self-esteem are tend to have lower help-seeking threat (Karabenick & Knapp, 1991). This makes sense that students with high self-esteem may be more confident about seeking external help.

Additionally, I found that locus of control predicted instrumental help-seeking, but not executive help-seeking nor help-seeking threat. Locus of control is the only predictor of help-seeking resource use out of the three self-regulated factors. Students with internal locus of

control may believe that seeking help from others will allow them to improve their skills and benefit their future learning outcomes. In prior research, Ames and Lau (1988) found that locus of control, representing attribution, influences student attendance in a voluntary a help-seeking class group. Thus, it seems results from this thesis confirm the claim that students with stronger internal locus of control will take more advantage of help-seeking opportunities.

Work avoidance is a strong predictor of all three help-seeking attitude and goals. This may because work avoidance goals motivate students to seek executive help and avoid putting effort into coursework (Zusho et al., 2007). It is surprising that students with higher work avoidance levels actually also have higher help-seeking threat. This suggests that reducing student work avoidance goals may also help to reduce their help-seeking threat. This study confirms that work avoidance does not directly influence GPA. Prior research found that work avoidance significantly negatively predicted class interests and grades, but not GPA (e.g., Barron & Harackiewicz, 2003; Harackiewicz et al., 2002). However, in the current study, I found that work avoidance had an indirect relationship with GPA through instrumental help-seeking. Students who had lower work-avoidance goals tended to have higher instrumental help-seeking goals, and consequently tended to have higher GPA. The ability to explore indirect effects previously neglected in literature is a strength of this thesis.

Help-seeking threat was associated with both instrumental and executive help-seeking, indicating the important role help-seeking threat plays in contributing to help-seeking goals. Reducing one's help-seeking threat may both increase instrumental help-seeking and reduce executive help-seeking. However, some of the results are not consistent with existing literature. In Karabenick (2004), instrumental help-seeking was not significantly correlated with help-seeking threat. However, our findings do agree with two other findings from Karabenick (2004):

help-seeking threat is related to executive help-seeking; and instrumental help-seeking has no association with executive help-seeking (Karabenick, 2004).

To my surprise, instrumental help-seeking was the only help-seeking factor correlated with help-seeking resource use. Resource use was not related to GPA, another unexpected finding. These results show that help-seeking attitudes were more related to academic performance than actual help-seeking behavior. This result confirms the author's finding in another study that academic help-seeking resource use was not related to self-reported cumulative GPA in international students (Zhang & Erbacher, 2018). This may be because students who have good academic performance may not need a lot of assistance from outside, but they still keep instrumental help-seeking goals once they need help (Zusho, 2007).

The correlation matrix (see Table 6 in the Appendix) shows evidence that self-esteem, locus of control, and work avoidance do not have direct relationships with GPA; however, our model shows the indirect relationship between these three factors and GPA. Self-esteem, locus of control, and work avoidance do influence student performance, however, this influence is through their effect on instrumental help-seeking.

 In conclusion, to induce instrumental help-seeking goals, it may be beneficial to target raising self-esteem, intervening on locus of control to make it more internal, and lowering work avoidance goal. To reduce executive help-seeking goal, it may be effective to focus on reducing work avoidance. To reduce threat during help-seeking, the results suggest we should target improving self-esteem and lowering work avoidance. Overall, all three self-regulated learning factors – self-esteem, locus of control, and work-avoidance – may be extremely important for optimizing help-seeking goals and attitudes. In turn, instrumental help-seeking appears to be the key to improving GPA. Thus, students can improve their instrumental help-seeking levels by

improving their self-esteem, adopting an internal locus of control, and reducing work avoidance, which should in turn contribute to increasing their GPA.

Implications

This research offers a clear next targets for improving adaptive help-seeking attitudes, goals, and behaviors through three self-regulated learning related factors. Interventions targeting these self-esteem, locus of control, and work avoidance may in turn improve student academic performance, through their effects on adaptive help-seeking.

For educators, potential interventions may be complicated by the fact that help-seeking is not only related to self-regulated learning, but also involves social processes. Help-seeking skills may be improved by training such as learning appropriate conversation style while asking for help (Goldstein & McGinnis, 1997). Karabenick and Berger (2013) mentioned activities such as practicing help-seeking scenario with peers. Those activities may improve student self-esteem and in turn help-seeking goals and attitudes.

The current study shows that self-esteem strongly correlates with locus of control. Helping students to develop more internal locus of control will in turn help them to have stronger instrumental help-seeking goals, and may increases the frequency with which students use academic help-seeking resources. To facilitate internal locus of control, it is essential to help students see that their performance and learning is mainly due to internal factors, like effort expended. It is important for students to monitor what they know and what they do not know. Tobias and Everson (2002) noted that accuracy in metacognition will benefit help-seeking. One intervention suggested by Karabenick and Berger (2013) required teachers to create an outline of content to help students differentiate which content they have mastered and which they have not

mastered. An intervention like this aimed at building internal locus of control could promote student to use help-seeking resources through internal locus of control.

Interests are important factors that influence work avoidance goals (Harackiewicz et al., 2002). Instructors can conduct interventions to boost student interests in learning to decrease their work avoidance goals. Methods of creating a mastery learning environment may be the best next step in decreasing work avoidance goals (Harackiewicz et al., 2002; Karabenick & Berger, 2013).

For students, it is helpful to know that instrumental help-seeking is the key to boosting GPA, reducing help-seeking threat, and engaging more frequently with academic help-seeking resources on campus. Instrumental help-seeking goals encourage students to seek help in order to master content rather than to avoid putting effort into courses. Improving student self-esteem, developing more internal locus of control, and reducing work avoidance goals can help students increase their instrumental help-seeking goals and lead to better academic performance.

Strengths

This study was conducted with a population of students from diverse ethnic backgrounds and academic levels. This study is the first to explore help-seeking attitudes, behavior, three self-regulated learning related factors, and GPA in one model. Thanks to this methodological strength, it is possible to draw the conclusion that help-seeking attitude and goals are stronger predictors of GPA than help-seeking behavior. Also, this study shows how self-regulated factors influence help-seeking and through help-seeking factors indirectly predict GPA.

Limitations and Future Directions

First, this study only explores work avoidance goals. However, other goal orientations should be explored in future studies (e.g., mastery goals and performance goals). Karabenick

(2003) has found that help-seeking goals and attitude have significant correlations with mastery and performance goals. In the current study, the relationship between help-seeking and general GPA was explored. Self-reported GPA may not be accurate. In the future, other learning outcomes like class grades should be explored as well. Additionally, gender may play an important role in help-seeking (Ames & Lau, 1983; Eisenberg, et al., 2009). Future research should also explore whether relationships in current model are influenced by gender.

Conclusion

Research has explored how academic help-seeking plays the role in learning and instruction in recent decades. Help-seeking attitudes and goals embedded in self-regulatory learning theory was mainly explored in many literatures. The relationships between goal orientations and help-seeking have developed well in prior research. However, other self-motivation factors may influence help-seeking were suggested to measure (Karabenick & Berger, 2013) in more studies.

In this study, I explored whether self-esteem, locus of control, and work-avoidance has influence on help-seeking and then indirectly predict a student's GPA. Not only help-seeking attitude and goals were measured, this model also included actual help-seeking behavior. Using the path analyses method, I created a model to test the relationships among self-esteem, locus of control, work-avoidance, help-seeking, and GPA.

According to results, I find indirect relationships between self-regulated factors and GPA through help-seeking goals. Findings reveal the far-reaching impact of instrumental help-seeking on undergraduate success (i.e., GPA and help-seeking behaviors), and suggest modes of intervening on this adaptive attitude through attribution (locus of control) and self-esteem. Educators and parents can use these psychological underpinnings to improve student

instrumental help-seeking goals by increasing self-esteem and facilitating internal attribution to success, in turn promoting the use of academic resources and academic achievement.

Surprisingly, no evidence shows the connection between help seeking resource use and GPA. This may be because students who have good academic performance may not need a lot of help from the outside. The current model shows that what help-seeking goals students have is more related to GPA than the actual frequencies of using academic resources. This study announces the importance of foster student adaptive attitudes and goals in help-seeking.

Overall, this study explains how self-esteem, locus of control, and work-avoidance influence each other and help-seeking factors and then predict GPA. Adjusting self-esteem, locus of control, and work-avoidance can influence instrumental and executive help-seeking goals and help-seeking threat, and then impact GPA.
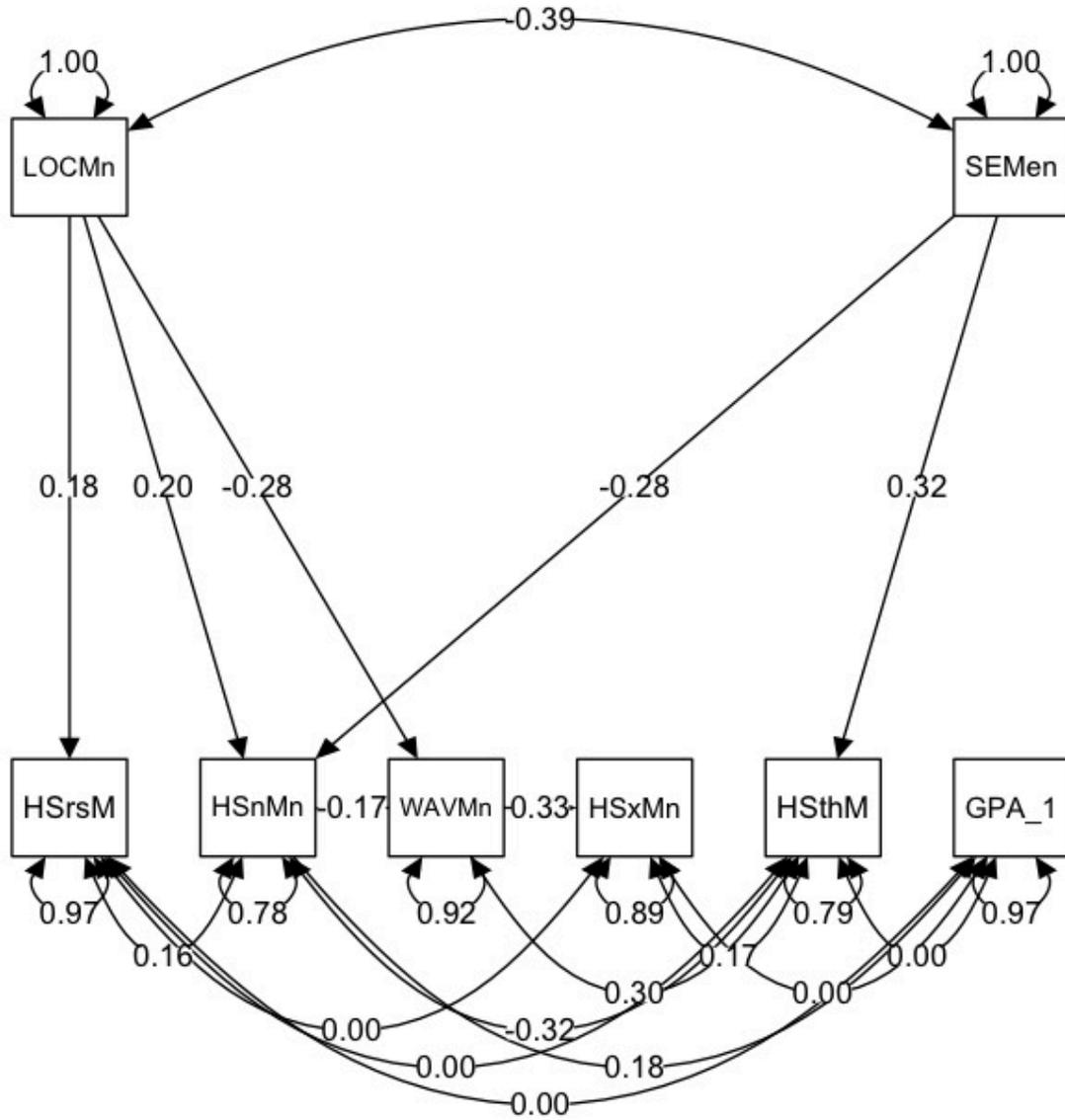
Figure 4. An alternative diagram of Model 3, with standardized parameter estimates.

Table 6

Correlation Matrix of the Path Analysis Variables

	GPA	HSin	HSex	HSth	WAV	SE	HSres	LOC
GPA	1							
HSin	.18	1						
HSex	-.04	-.19	1					
HSth	-.09	-.49	.28	1				
WAV	-.01	-.30	.33	.36	1			
SE	-.15	-.41	.06	.38	.20	1		
HSres	.13	.28	-.01	-.19	-.18	-.20	1	
LOC	.14	.36	-.16	-.24	-.28	-.39	.18	1

Note. HSin = mean scores of instrumental help-seeking; HSex = mean scores of executive help-seeking; HSth = mean scores of help seeking threat; WAV = mean scores of work avoidance; SE = mean scores of self esteem; HSres = mean scores of help seeking resources use; LOC = mean score of locus of control.

Appendix

Help-seeking Resource Use Items

Participants rated their frequency of use of each resource listed below, by responding to the

following question and items:

How often do you use the following resources?

1) Counseling and Psychological Services (CAPS)

1	2	3	4	5	6
Never	*Once a semester*	*Once a month*	*Once a week*	*Two or more times a week*	*I don't know this resource*

2) Campus Health

1	2	3	4	5	6
Never	*Once a semester*	*Once a month*	*Once a week*	*Two or more times a week*	*I don't know this resource*

3) Any Library

1	2	3	4	5	6
Never	*Once a semester*	*Once a month*	*Once a week*	*Two or more times a week*	*I don't know this resource*

4) Think Tank

1	2	3	4	5	6
Never	*Once a semester*	*Once a month*	*Once a week*	*Two or more times a week*	*I don't know this resource*

5) Writing Center

1	2	3	4	5	6
Never	*Once a semester*	*Once a month*	*Once a week*	*Two or more times a week*	*I don't know this resource*

6) Office hours of an instructor

1	2	3	4	5	6
Never	*Once a semester*	*Once a month*	*Once a week*	*Two or more times a week*	*I don't know this resource*

7) Office hours of a TA

1	2	3	4	5	6
Never	*Once a semester*	*Once a month*	*Once a week*	*Two or more times a week*	*I don't know this resource*

8) Career Services

1	2	3	4	5	6
Never	*Once a semester*	*Once a month*	*Once a week*	*Two or more times a week*	*I don't know this resource*

9) Diversity Student Offices (ISS, CESL, LGBTQ Affairs, etc.)

1	2	3	4	5	6
Never	*Once a semester*	*Once a month*	*Once a week*	*Two or more times a week*	*I don't know this resource*

References

Ames, R. & Lau, S. (1982). An attributional analysis of student help-seeking in academic settings. *Journal of Educational Psychology, 74*(3), 414-423.

Barron, K. E. & Harackiewicz, J. M. (2003). Revisiting the benefits of performance-approach goals in the college classroom: exploring the role of goals in advanced college courses. *International Journal of Educational Research, 39*, 357-374.

Durik, A. M., Lovejoy, C. M., & Johnson, S. J. (2009). A longitudinal study of achievement goals for college in general: predicting cumulative GPA and diversity in course selection. *Contemporary Educational Psychology, 34*, 113-119.

Eisenberg, D., Downs, M. F., Golberstein, E., & Zivin, K. (2009). Stigma and help-seeking for mental health among college students. *Medical Care Research and Review*, 66(5).

Elliot, A. J. & McGregor, H. A. (2001). A 2X2 achievement goal framework. *Journal of Personality and Social Psychology, 80*(3), 501-519.

Gall, S. N. (1985). Help-seeking behavior in learning. *Review of Research in Education, 12*, 55-90.

Goldstein, A. & McGinnis, E. M. (1997). Skill streaming the adolescent (Revised ed.), Champaign, IL: Research Press.

Harackiewicz, J. M., Barron, K. E., Tauer, J. M., & Elliot, A. J. (2002). Predicting success in college: a longitudinal study of achievement goals and ability measures as predictors of interest and performance from freshman year through graduation. *Journal of Educational Psychology, 94*(3), 562-575.

Harackiewicz, J. M., Barron, K. E., & Elliot, A. J. (1997) Predictors and consequences of achievement goals in the college classroom: Maintaining interest and making the grade. *Journal of Personality and Social Psychology, 73*(6), 1284-1295.

Hu, L.T. & Bentler, P. M. (1999). Cut off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6,* 1-55.

Karabenick, S. A. (2004). Perceived achievement goal structure and college student help seeking. *Journal of Educational Psychology, 96*(3), 569-581.

Karabenick, S. A. & Berger, J. (2013). Help-seeking as a self-regulated learning strategy. Charlotte, NC: IAP.

Karabenick, S. A. & Knapp, J. R. (1991). Relationship of Academic Help Seeking to the use of learning strategies and other instrumental achievement behavior in college students. *Journal of Educational Psychology, 83*(2), 221-230.

Newman, R.S. (2008). Adaptive and nonadaptive help-seeking with pees harassment: An integrative perspective of coping and self-regulation. *Educational Psychologist, 43*(1), 1-15.

Newman, R. S. & Schwager, M. T. (1993). Students' perceptions of the teacher and classmates in relation to reported help seeking in math class. *Elementary School Journal, 94*, 3–17.

Perry R. P., & Smart, J.C. (eds.), The Scholarship of Teaching and Learning in Higher Education: An Evidence-Based Perspective, 611–659.

R Core Team (2016). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL https://www.R-project.org/.

Ryan A. M., Pintrich P. R., & Midgley, C. (2001). Avoiding seeking help in the classroom: who and why? *Educational Psychology Review, 13*(2), 93-114.

Roussel, P., Elliot, A. J., & Feltman, R. (2011). The influence of achievement goals and social

goals on help-seeking from peers in an academic context. *Learning and Instruction, 21,*

394-402.

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton

University Press.

Savalei, V. & Bentler, P. M. (2005). A statistically justified pairwise ML method for incomplete

nonnormal data: a comparison with direct ML and pairwise ADF. *Structural Equation*

Modeling, 12(2), 183-214.

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural

equation modeling and confirmatory factor analysis results: a review. *The Journal of*

Educational Research, 99(6), 323-338.

Tobias, S. & Everson, H. T. (2002). Knowing what you know and what you don't: Further

research on metacognitive knowledge monitoring (College BoardRep. No. 2002-03).

New York, NY: College Board.

Weiner, B. (2010). The development of an attribution-based theory of motivation: A

history of ideas, *Educational Psychologist, 45*(1)*,* 28-36.

Zhang W. & Erbacher, M. K. (April, 2018). Help! I need somebody: help-seeking behaviors

across domains in International students. Round table presentation at the annual meeting

of the American Education Research Association, New York, NY.