THE ROLE OF SELF-THEORIES OF INTELLIGENCE AND SELF-EFFICACY IN ADAPTIVE HELP-SEEKING BY COLLEGE STUDENTS

by

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Abstract

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Advisor: Distinguished Professor Barry J. Zimmerman, Ph.D.

In this study the role of self-theories of intelligence and self-efficacy on adaptive help-seeking behavior was examined. One-hundred, first-year college students were asked to complete a highly difficult vocabulary task that would ensure universal failure. Performance attributions were assessed in order to determine the students' view of intelligence as either fixed or malleable. To obtain a measure for self-efficacy, a subsequent task was administered whereas participants were asked to indicate their confidence for the use of help-seeking to improve learning. During this task students were permitted to seek help in the form of a hint or direct answer. The students' bids for help were later coded as either maladaptive or adaptive forms of help. A final vocabulary posttest was administered immediately following to assess learning.

Results from a multivariate analysis of variance yielded a main effect for self-theory of intelligence on all predicted variables. Post hoc tests revealed significant differences between the groups such that the students who attributed their performance to ability pursued less adaptive forms of help, did worse on the posttest, and had lower self-efficacy posttest ratings than those students who attributed performance to effort. Since no main effects were observed for self-efficacy, a bias score was calculated for each participant to control for calibration errors and used

as a covariate in a subsequent analysis of covariance. With the inclusion of the covariate, bias score, significant effects for all predicted variables were obtained. Students in low self-efficacy group as compared to the high self-efficacy group pursued less adaptive forms of help, did worse on the posttest, and had lower self-efficacy posttest ratings. Overall findings from this study showed that view of intelligence directly impacts help-seeking behavior, which indirectly affects learning and performance.

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To my husband, David, for the circuitous and sometimes endless conversations he endured, for his anthems of encouragement, and for the gleam of pride in his eyes, I am eternally blessed to have him by my side.

Dedication

This body of work is dedicated to “the man I admire most”, my Father. It is sometimes the case that parents live vicariously though the lives of their children—deriving great pride from the accomplishments they may have never gotten the chance to realize. As children we internalize their dreams, and hope that someday we can offer a symbolic gesture of love that demonstrates our true appreciation for the things they value most. So Daddy, this is my tribute to you. And I thank God for the blessing of having you here to receive it.

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CHAPTER 1

INTRODUCTION

The U.S. Department of Education National Center for Educational Statistics (2007) reports post-secondary enrollments by degree-granting institutions have risen 16% between 1985 and 1995 and 23% from 1995 and 2005. Despite the increasing enrollment trends, nationwide graduation rates from colleges and universities have been less impressive. It is reported that less than 50 percent of all students who begin their studies at 2- or 4-year post-secondary schools actually persist to graduation (Noel, 1985). More alarming are the first- to second-year statistics, which document more than 25% of students leaving college after just one year (ACT Institutional Data File, 2007).

Given the imperative to remain competitive world-wide, our nation's workforce must be prepared to meet the changing demands of a global economy through the utilization of post-secondary training and education. Thus, this places the burden on professionals working in higher education to help students develop the academic and self-regulatory skills necessary to navigate through "college life" and ultimately persist to graduation. Although a majority of universities and colleges nationwide have zealously responded by instituting programmatic solutions, these initiatives are only effective if students are willing to avail themselves to the academic resources provided by such institutions. *Unfortunately, research indicates that those learners who can benefit most from academic assistance are also the most unlikely to ask for it* (Ames & Lau, 1982; Karabenick & Knapp, 1988). Due to this and other similar findings, researchers have been motivated to investigate the underlying causes for why some students avoid help when it is clearly necessary while others seek it rather strategically.

One possible reason for this disparity might, in part, be related to students' beliefs about their intelligence and their self-efficacy beliefs regarding help-seeking. These two self-beliefs are expected to influence the quality and quantity of students' help-seeking behavior, which, in turn, is presumed to affect students' academic learning. The present study sought to test this assumption so to further contribute to the existing body of literature regarding help-seeking, and to assess the resulting implications for college teaching, student learning and future directions for research in this area. To date, minimal research has been conducted on help-seeking using college populations, and no studies have examined the effects of self-theories of intelligence and self-efficacy beliefs on help-seeking.

A MODERN PERSPECTIVE ON HELP-SEEKING

Sharon Nelson-Le Gall's pivotal work beginning in the 1980's spawned an enlightened and most innovative view on help-seeking behavior, which has inspired a prolific display of research over the past twenty-five years. The existing body of literature traces an evolving perspective on help-seeking, with former descriptions espousing rather negative connotations as compared to more recent accounts that depict it as a highly adaptive human function.

The current, more functional outlook on help-seeking has had subsequent implications for practitioners, directly influencing educational pedagogy and clinical practice. Emanating from this history, much has been learned about the nature of help-seeking and the variables that influence its utility, particularly within academic settings. As well, researchers have been equipped to posit evidence for its niche within contemporary, theoretical frameworks.

Despite these notable strides, there exists compelling grounds for continued study on academic help-seeking behavior that should include a search for more improved methods to

operationalize and measure this construct, a quest to better understand how academic variables and personal attributes influence its use, and on teaching practices that better support adaptive help-seeking attitudes and behaviors in- and outside of the classroom. The present study sought to contribute to this effort.

It should not be surprising that given the values inherent in Western culture that the notion of help-seeking as an adaptive human function would be seemingly incompatible. Consider that the traditional lexicon associated with help-seeking includes varied descriptors such as dependency, neediness and avoidance. Western societies, on the other hand, promulgate ideas of self-reliance and competition, constructs that are incongruent with the former. In fact, early psychological literature and empirical study regarded help-seeking as a specific measure of dependency, labeling those who relied upon its use as persons who failed to achieve full autonomy and were developmentally and socially stagnant (Nelson-Le Gall, 1986).

In more recent times, Nelson-Le Gall, (1981) has advocated for a reconceptualization of help-seeking behavior that has been particularly relevant to educators and pertinent to achievement-oriented settings. From this pivotal standpoint, help-seeking is viewed as an effective coping mechanism for individuals facing distinct challenges rather than a basis for qualifying someone as immature or reliant. This belief is consistent with the work of some clinical and motivational theorists who have posited help-seeking as a healthy means of maintaining social support throughout the lifespan and a strategy that promotes environmental control (Newman in Schunk & Zimmerman, 1994).

Nelson-Le Gall's work has consequently spawned a series of investigations that have substantiated the redefining of help-seeking as a fundamental learning strategy. Karabenick

(1987) looked at the use of cognitive learning strategies and their relation to perceived need and help-seeking behavior. This researcher argued that if help-seeking is indeed an adaptive strategy, one should observe a direct relationship between *it* and the *frequency* of other cognitive and metacognitive strategy usage. In this study, data were obtained from college students enrolled in biology, English literature, sociology, and psychology courses. The use of 10 cognitive strategies including but not limited to rehearsal, elaboration, memory techniques, and management of one's study environment was assessed. The findings suggested that students who used various cognitive and metacognitive strategies were also more likely to seek help when needed.

In a later, more-detailed analysis, Karabenick (2001) found that learners could be further classified by their help-seeking orientations. In sum, help-seeking behaviors that were characterized as strategic/adaptive were associated with higher levels of student motivation, the usage of more complex cognitive/metacognitive strategies, and better performance in college classes. By contrast, students' classified with lower strategic/adaptive help-seeking orientations reported higher help-seeking avoidance behavior and indicated the lowest levels of self-efficacy, intrinsic interest, use of cognitive strategies and performance.

These samples of findings, among others, have led researchers to reclassify the construct of help-seeking as viable, self-coping behavior. In fact, the research has demonstrated that help-seeking is often a strategy employed by the most gifted learners, which may be contrary to conventional thinking. This is not to argue that all attempts to seek help can *nor* should be considered useful. Clearly if help-seeking behavior seeks to ensure greater autonomy, it is then *adaptive*. This distinction has fueled an *achievement-related* viewpoint of help seeking, which

places emphasis on the consequences of avoiding help, and typifies it as an ongoing process rather than a dichotomous decision. This change in perspective has fostered a fresh breed of research that aims to explain and predict help-seeking behavior as a function of individual and situational characteristics (Nelson Le Gall, 1981). More specifically, how social-cognitive and motivational-affective factors influence help-seeking within learning contexts.

DEFINING HELP-SEEKING AS AN ADAPTIVE, SELF-REGULATORY FUNCTION

Zimmerman (in Schunk & Zimmerman, 1998) describes academic self-regulation not as an innate mental ability or even an academic skill, but rather a "self-directive process through which learners transform their mental abilities into academic skills." (p. 2). Zimmerman argues that this "self-directed process" occurs in the course of cyclical phases, which includes three distinct stages involving periods of *forethought, performance* and *self-reflection*.

Self-regulatory theorists hypothesize that during the *forethought* phase learners consider their desired goals and then select strategies or techniques believed to aid in achieving preferred outcomes. Evidence also seems to suggest that goal and strategy selection are further mediated by one's self-efficacy beliefs, goal orientation, and intrinsic interest (Zimmerman in Schunk & Zimmerman, 1998). For instance, students who are highly self-efficacious with regard to a given task often will choose more effective learning strategies (Zimmerman & Bandura, 1994), as well as, set more ambitious goals in comparison to their less self-efficacious student counterparts (Zimmerman & Martinez-Pons, 1992).

Likewise, goal and strategy selection are also influenced by one's relative goal orientation and degree of intrinsic interest for a given task. Students who are strongly compelled by the

product as opposed to the *process* (grades versus learning) and/or harbor minimal intrinsic interest for a subject area will be less likely to persist toward the end goal.

During the second, *performance* phase it is purported that self-regulated learners actively control their attention in order to minimize distracters that might compromise performance. Volitional theorists such as Kuhl (1985), Heckhausen (1991), and Corno (1993) maintain that significant differences in attention focusing are evident between high and low achievers, whereas, low achievers are more susceptible to external and cognitive diversions.

Self-instruction and the use of imagery further influences task performance. Self-instruction involves the vocalization, subvocalization or mental process of guiding one's learning through self-directed teaching. More proficient, self-regulated students coach themselves as they negotiate problem-solving or learning. Besides verbal cues, the use of mental imagery also helps to guide performance as learners envision models engaged in similar tasks.

Also critical to performance is the extent to which a student can monitor his or her own progress. *Self-monitoring,* which constitutes another type of volitional or self-regulatory function, affords the learner feedback about his or her performance and provides information regarding the efficacy of selected strategies.

Four major subprocesses comprise the third phase of the self-regulatory learning process. During this phase of *self-reflection,* learners engage in self-evaluation, form self-reactions and attributions, and adapt their behavior accordingly. *Self-evaluation* involves the comparison of one's performance against established norms. Such norms may be derived from an external source or self-imposed. When comparisons do not meet the established criteria, learners will typically attribute cause for the apparent disparity. The nature of these attributions can have

profound effects on the self-regulatory process. For instance, if a student receives a less than adequate test grade, the learner can choose to attribute cause to a variety of sources including his or her own innate ability or contributed effort (Weiner 1979).

Ability versus effort attributions have been shown to influence the cyclical subproceeses of self-regulatory learning in differing ways. For example, it has been demonstrated that more adept self-regulators will attribute cause for poor performance to less self-threatening sources including strategy selection, whereas, naïve learners are more apt to connect performance outcomes with innate ability. Furthermore, affirming attributions tend to yield more positive *self-reactions*. Whereas, when attributions instigate self-reactions that lead to ego-injury, the less than skillful self-regulator sets in motion an infectious sequence of pessimism that adversely influences the self-regulatory cycle and its associated subprocesses (Zimmerman & Kitsantas 1997). The latter has been referred to as the *adaptation* process, or the learner's desire to persist in the presence of undesirable outcomes.

Self-regulatory practices differ greatly between high-achievers and less skillful learners. Goal and strategy selection, self-efficacy beliefs and attributions, planning, monitoring, and adaptation patterns are uniquely distinct in comparison. Using goal setting as an example, the naïve learner will often establish less tangible and more far-reaching goals, and since distal goals often provide delayed feedback and reward this often undermines student motivation and persistence. By contrast, skillful self-regulators dissect goals into more manageable and proximal goals that graduate on a continuum toward the overall goal lending itself to regular feedback regarding one's progress (Bandura, 1991).

Throughout all phases of the self-regulatory process, performance and reactionary differences between these types of students have been identified. In sum, naïve self-regulators set nonspecific, more distal goals, have lower self-efficacy, and demonstrate less intrinsic task interest. They engage in a lesser amount of focused planning and self-monitoring and are more apt to select maladaptive strategies. By contrast, skillful self-regulators establish hierarchical goals, have a propensity toward mastery performance, and are more self-efficacious and intrinsically interested. Their performance is typically focused, and they use better strategies, continually self-monitor, welcome self-evaluation, and have more positive self-reactions (Zimmerman in Schunk & Zimmerman, 1998).

So then how can help-seeking be defined within a self-regulatory framework? Essentially, where does help-seeking fit within the proposed scheme? To answer this, one must assume, as many self-regulatory researchers have demonstrated, that the adept self-regulator amasses over time an arsenal of learning strategies that s/he strategically selects from when the conditions demand. For all intents and purposes, the skilled learner depends upon and invests his/her time and effort in the belief that these strategies, having proved to be "tried and true", will aid successfully in the pursuit of the desired goal.

For instance, a student struggling with an assigned math problem can choose from a number of ways to solve it, including the use of a known heuristic.. However, she must believe that the available strategy (the heuristic) will prove effective, is worthy of the amount of effort needed to employ it, and will render the correct solution. Less these basic assumptions, it is unlikely the learner will access this "tool" under this particular circumstance.

Like heuristics, mnemonic devices, and other known learning strategies, help-seeking can be included in this repertoire of tactics under the right conditions. As noted, in fact, higher incidences of strategy use have been associated with increased use of adaptive help-seeking (Karabenick, 1987). But not all help-seeking attempts can or should be considered strategic. So what then characteristically separates *adaptive* help-seeking from others types of bids for help? First, similar to more traditional conceptions of learning strategies, students must know *when* and *how* to use help-seeking in order for it to serve as a useful means to improve upon one's knowledge base and skill acquisition (Karabenick, 2006). Second, "the help seeker must act purposefully and instrumentally, not only remedying the immediate problem but ensuring long-term autonomy through mastery of a task." (Newman, 1994).

Newman (1994) proposed that adaptive help-seeking within academic settings can be further defined by a series of decisions and actions that emanate from a student's awareness of a lack of understanding through *self-reflection*, and involve the consideration of relevant information such as the necessity of the request, content and target, method of expression, and the determined use of the help. Furthermore, Newman suggests that this sequence of decisions and actions can be framed within a self-regulatory model of adaptive help-seeking. For simplicity purposes, the model can be illustrated using the following example.

Consider the student who is working on an assigned classroom task, specifically a series of 5 word problems. He rather successfully completes questions 1 and 2, but is then confounded by question 3. He scans his memory for analogous problems and known algorithms, but to no avail. Knowing that he has likely exhausted all internal mechanisms available to remedy the situation, he considers whether he should persist.

His decision to proceed is contingent upon several factors including causal attributions (reason for the lack of understating), goals (why he should continue), values (what he gets out of it), agency (can he do this), and expectations (will he be successful). Presuming he decides to persist, he must now address the question regarding "*how*." This next decision, which involves seeking help or not hinges on the weighing of two parameters that Newman argues to be the confidence tolerance level (CTL) and one's self-efficacy level (SEL).

According to Newman (1991), the *confidence tolerance level* (CTL) is a predetermined, intrinsic preference for challenge and proclivity to take risks. It is the level below which one thinks that help is necessary and is comfortable relying on him or herself. The *self-efficacy level* (SEL) refers to the learner's belief or level of confidence for completing the task. Newman purports that help-seeking will more likely result when the self-efficacy level is considerably lower relative to the CTL.

Let's presume the latter is true for our student, so his next series of decisions and actions will be dependent upon known information regarding the task demands and expertise of the available help sources. For instance, he might ask himself, "Should I request help from a friend or my teacher? and "What are the risks and benefits of choosing the former over the latter?" The answers to these self-directed questions will be influenced by a variety of variables that are not only inherent to the individual but are also contingent upon external factors such as the help source, classroom climate, and nature of the task.

Newman (1994) notes a caveat regarding a propensity to presume one's decision-making and actions proceed in a linear fashion. In fact, Newman (1994) remarks that the model likely flows in more cyclical and sometimes even nonsequential manner, much like the nature of the self-

regulatory process. Furthermore, the model presupposes that both motivational and affective factors hover over this metacognitive scheme, influencing each step of the executive decision-making process.

If we dissect this example, we can see elements of the self-regulatory process at work. For instance, what Newman (1994) regards as "an awareness of a lack of understanding" is exactly indicative of the self-monitoring process. Furthermore, the student's decisions, manner in which to proceed, and strategy selection (help-seeking being among the available choices) hinges on other self-regulatory attributes such as one's goals, self-efficacy level, attributions, and outcome expectations.

Although the analogy appears clear, help-seeking is also quite different from other strategy types, posing its own unique challenges. After all, one would wager that most elementary, high school and college educators would attest that the need for help within the classroom is far greater than the demand for it. So why the disparity? Karabenick (2006) notes that the differences can be attributed to one of three distinct causes. First, the act of help-seeking may violate self-worth and indicate inadequacy not only to others but also to one's self. Second, help-seeking is by nature a "social strategy", and necessitates the need for interpersonal involvement, which can expose the student to public inspection. Third, the provision of help invokes a sense of obligation on the part of the help-seeker in relation to the help-provider, thus creating a disparity of power and indebting one party to another (Karabenick, 2006).

Although by far not exhaustive, these factors alone and in combination can undoubtedly account for some variation. But *what specific characteristics distinguish the adaptive help-seeker from the less strategic type* and *why do these differences exist to begin with*? Newman

(2007) argues the former question can be answered by examining particular affective-motivational variables including one's *learning goals*, *self-beliefs* (self-efficacy and competence), and *emotions* or feelings about the benefits and drawbacks of soliciting help. These variables, which Newman (2007) uses in part to differentiate adaptive versus nonadaptive help-seeking, in addition to other cognitive and social factors, will be reviewed comprehensively in the next section, followed by a review of Carol Dweck's (1999) research on students' theoretical conceptions of intelligence. The latter will serve to address the more speculative question of "why" we may observe such differences.

CHAPTER TWO

LITERATURE REVIEW

COGNITIVE FACTORS RELATED TO ACADEMIC HELP-SEEKING

Person-Oriented Achievement Goals

Students' goal preferences or achievement orientations can significantly shape help-seeking choices. Research shows that some students operate toward *learning goals* as compared to *performance goals. Learning goals* stress the mastery of a task, whereas, performance goals motivate students to demonstrate high ability and avoid inadequate performance.

When students perform under either of these types of goals, their help-seeking behaviors have been shown to vary. For instance, Nelson-Le Gall and Jones (1989) examined the relationship between children's mastery motivation, self-assessment of performance, and task-related help-seeking behavior during task performance. Seventy-nine African American 3rd and 5th-grade students participated in this study. The learners, who were diverse with regard to their mastery preferences, performed a verbal task, and were instructed that they could seek help following a difficulty rating after each trial.

The findings indicated that achievement orientation mediated by perceived task difficulty and predicted performance had a significant effect on the nature of the help solicited. Essentially, the children characterized as having high intrinsic orientations toward mastery learning showed greater preference for instrumental forms of help. Students with lower intrinsic mastery levels, by contrast, were more likely to ask for direct answers and solutions. These resulting, dichotomous patterns may have implications for the development of either adaptive or maladaptive help-seeking behaviors, attitudes, and beliefs. For instance, children who seek less

instrumental types of assistance may be less inclined to formulate views of help-seeking as a learning strategy and more likely to encounter negative responses during help-seeking attempts. The following research example illustrates this point.

In an investigation by Nelson-Le Gall (1989), 40 elementary school girls performed a perceptual problem-solving exercise while their help-seeking behaviors were assessed. Prior to this, the students were classified as either high- or low-mastery oriented. In order to determine if students varied as a function of their mastery orientation, student bids for help were categorized as either task-focused or self-focused. Task-focused questions involved direct and clear requests for information and assistance, and typically centered very explicitly on the task at hand. Self-focused bids were nonspecific to the task, and usually reflected the child's affective state in relation to the task.

The results of this investigation were significant along two dimensions. First, the girls with high mastery orientation levels displayed more adaptive requests for help than did the students classified as low mastery oriented, and this finding was consistent with the previous study. But secondly, the girls in the high mastery category also viewed help-seeking more favorably and as a means toward attaining their assigned goal as compared to their low mastery peer counterparts. The latter finding supports the point asserted above, in that, students who exhibit more maladaptive forms of help-seeking are less likely to perceive help seeking as a socially effective strategy.

Newman (1998) explored the interactive effects of personal achievement goals within varying contextual achievement goals in order to demonstrate how students differ with regard to help-seeking measures. In this study, 4th and 5th grade students were instructed to complete a fixed

number of math problems with the opportunity to request assistance from an adult. Goals were identified along two dimensions: locus of the goal and emphasis of the goal. Locus goals were defined as the personal goals students held versus the contextual goals that were characterized by the activity. Goal emphasis related to the extent of importance of learning as compared to performance.

In sum, the results of this investigation showed that personal learning goals had a positive influence on the frequency of help requests. By comparison, personal performance goals had a negative result on the same behavior. However, for students who exhibited strong personal performance goals, a contextual learning goal served to facilitate more instrumental help-seeking attempts than did a contextual performance goal. In essence, the findings are encouraging in that they indicate even strong personal goals can be mediated to some extent by contextual structures.

Ability and Prior Knowledge

According to Newman (1994), a student's choice to seek help results from a conscious decision-making process that involves the consideration of a number of cognitive and affective variables. This course of action, however, is precipitated by a learner's awareness that he or she lacks understanding. Obviously, without this element, help is not necessarily required. Therefore, one's prior level of achievement and knowledge play significant roles in choosing to seek or not to seek assistance.

Consider the results of the Nelson-Le Gall and Jones (1989) study. Although it was noted that the children's learning orientations played vital roles as to the type and nature of the help that was sought, it was actually the student difficulty ratings that proved to be the deciding factor

as to whether or not they requested help at all. In fact, these prejudgments were more predictive of help-seeking behavior than were the students' prior performance.

In an earlier review by Nelson-Le Gall and Glor-Schieb (1983), these researchers demonstrated that varying ability levels were predictive of specific help-seeking behavioral patterns. In an observational study using 1st, 3rd and 5th-grade learners, high-, average- and low-ability students' help-seeking attempts were analyzed during a problem-solving activity. Although grade level, subject type, and gender had some mediating effects, the findings demonstrated that children of differing ability levels varied not only in the rate of help-seeking and type, but also in the nature of responses they elicited from the helpers they chose.

Interestingly, in the area of mathematics, low ability students sought help most often and average-ability students sought help less frequently. In reading, however, the help-seeking patterns varied. In this case, average students sought help most frequently followed by low-ability students. High-ability reading students requested help less frequently in comparison to their average- and low-ability peer counterparts. Also rather intriguing were the responses the average-ability students received from their peers and teachers. These children's *solicitations* were more often rejected and ignored as compared to the high- and low-achieving students' requests. Yet, these same learners (average-ability students) received more *unsolicited* offers for assistance than did the students in the other two groups.

However, here again, the research showed that even while low-achievers did not seem to lack the availability of assistance, their help-seeking behaviors were less adaptive than their average-ability friends who received even less attention. Low-achievers were also noted to copy answers more often as a means to complete assigned tasks as compared to high-achieving and average-

achieving students. Of these observed incidences, the rates of copying for each group were as follows: low = 44.26%, high = 31% and average = 8.88%.

In the case where a student has been diagnosed with a specific learning challenge, one's perceived ability can often become stigmatized as fixed. Under these circumstances a student's perception of his or her own abilities may also be underestimated, and thus may have a profound impact on help-seeking behavior. Hartman-Hall and Haaga (2002) investigated this possible phenomenon by soliciting the participation of 86 college students with learning disabilities. In part, these researchers were interested in knowing whether a stigmatized perception of one's learning disability would be expected to render a lower willingness to seek help. Quite intuitively, the data indicated that students who viewed their learning disabilities as amenable to change and less stigmatizing were also more willing to seek help even given the consequence of negative reactions from peers and instructors.

Like ability level, extent of prior knowledge can affect the nature of student help-seeking behavior. Van der Meij (1990) examined that the effects of prior knowledge on question asking using 5th grade students who varied in prior knowledge. In this study, these students were asked to explain the meaning of specified terms and were allowed to ask either global questions, specific questions, or none at all. In this investigation, the researcher was interested in knowing (a) whether prior knowledge would affect the number of questions asked, (b) which question type was preferred, and (c) whether or not prior knowledge would affect the practical significance of the questions asked.

The data revealed a negative relation between prior knowledge and the number of questions asked, but did not influence the type of questions elicited (global or specific). However, the

pragmatic nature of the questions asked did vary as a function of prior knowledge. Students with little to no experience with the terms asked more irrelevant questions, which rendered less helpful responses and, in turn, resulted in more incorrect choices.

MOTIVATIONAL-AFFECTIVE FACTORS RELATED TO ACADEMIC HELP-SEEKING

Performance Attributions

When a learner is successful or unsuccessful at performing some given task, she or he may attribute the results to a number of factors including ability, effort, task difficulty, or luck (Weiner, 1979), and these attributional patterns can then translate into varying propensities toward help-seeking. Attributions can be further classified as either external or internal with respect to a student's perceived locus of control. For instance, task difficulty is outside of a student's realm of control, whereas, degree of effort is not.

Ames and Lau (1982) argued that if a student regards help to be relevant or as an instrumental means of achieving success, then that individual should pursue assistance. Locus of control or attributional style, therefore, can have a profound influence on this choice. If a learner persistently believes that the probability of success is contingent upon uncontrollable factors, such as a fixed ability or bad luck, then that individual will unlikely view help-seeking as a viable achievement strategy. From Ames' perspective, help-seeking is most probable when students believe they are generally capable of successful performance, view achievement in terms of task mastery, and/or realize the significant impact of applied effort.

Attitudes Towards Help-Seeking

In addition to performance attributions, help-seeking attitudes can also motivate students to ask or avoid assistance when necessary. Newman (1990) used structural modeling to explain children's intentions to seek help with their schoolwork. In this investigation, 177 3rd, 5th, and 7th grade students were assessed on their perceived academic competency, intrinsic orientation (preference for challenge and striving for independent mastery), and attitudes about help-seeking. The findings indicated differences by developmental level, whereas, 3rd and 5th grade students' help-seeking behavior was contingent upon intrinsic preference for challenge, extrinsic dependence on the teacher, and attitudes regarding the benefits of help-seeking. However help-seeking attitudes, such as the benefits and costs of asking for help, had the greatest influence on the likelihood of help-seeking for middle-school age children (7th graders). These findings seem to suggest that early propensities toward help-seeking and resulting experiences may serve as the basis for the development of student attitudes that, in turn, function to direct future help-seeking behaviors.

SOCIAL FACTORS RELATED TO ACADEMIC HELP-SEEKING

Classroom Activity Goals

The instructional climate or the way in which learning activities are articulated by the teacher can also have a profound impact on students' help-seeking behavior. Achievement activities may too be framed as either *task* or *ego-oriented*. When an achievement activity is *task-oriented*, learners strive to acquire and master the new skill. Task-related goals emphasize achievement through effort, and render feelings of competency for the intrinsic rewards of learning alone. In addition, task-related goals assist in fostering behaviors that ensure persistence toward mastery, and inhibit behaviors that minimize this objective. By contrast, *ego-*

oriented achievement goals focus the activity on obtaining personal success and demonstration of skill in comparison to others.

Established features of the classroom organization, the choice of instructional style, and type of performance assessment used can either promote or hinder task- and ego-involvement in students. More specifically, how students are grouped, the extent of their autonomy within the classroom, and level of existing cooperation versus competition can collectively or individually serve to promote or reduce the incidence of social comparison. When social comparison is high among peers, the conditions for ego-involvement significantly increase. This point is particularly relevant for the reason that higher levels of ego-involvement have been linked to lower occurrences of help-seeking behavior.

Ryan, Gheen, and Midgley (1998) examined the interplay among students' academic efficacy, teachers' social-emotional role, and the classroom goal structure on self-reported help-seeking behavior. Pertinent to the objectives of this section are the results regarding the influence of classroom goal structure on help-seeking among the adolescent population studied. To ascertain the extent of task- versus ego-oriented goals within their learning environments, 516 6th-grade students and their respective teachers completed portions of the Patterns of Adaptive Learning Survey (PALS; Midgley et al, 1996). The outcome of this analysis supported the above noted claim, in that, perceived emphasis on self-improvement was related to lower levels of help avoidance. In comparison, perceived emphasis on relative ability was associated with higher levels of self-reported help avoidance. Interestingly, teacher reports of instructional approaches were found to be unrelated to students' help-seeking tendencies.

In another study by Butler and Neuman (1995), the effects of task and ego achievement goals on help-seeking behaviors and attitudes were examined. A total of 129 Israeli 2nd- and 6th-grade students were asked to solve relatively difficult puzzles in either task- or ego-related conditions. In the task-focused climate, the children were told that the game they were about to play would enhance their ability to solve puzzles despite the level of challenge. Ego-focused students were instructed that their performance was contingent upon how smart they were. As anticipated, participants in the task-focused group requested help more often and expressed attitudes about help-seeking as a function of striving for mastery. However, within the ego-focused context, the students demonstrated diverse and interesting patterns of help-seeking behavior, whereas, those students of intermediate ability were more likely to seek help as compared to low- and high-achieving students. In addition, ego-focused participants reported incidence of help avoidance as related to their need to disguise incompetence.

Newman and Schwager (1995) investigated the effects of grade level, prior achievement and academic goal condition on elementary school students' help-seeking behavior during problem solving. One hundred eighteen 3rd- and 6th-graders that were classified as high, medium, or low math achievers participated in this study. Operating under two separate sets of academic goal conditions (performance vs. learning), the students were asked to work out numerous problems with the assistance of an adult tutor. The results indicated characteristic differences in help-seeking behavior as a function of grade level, academic goal condition and achievement history. In sum, 6th-grade students were more likely than their younger counterparts to request process-oriented assistance rather than direct answers. In addition, goal orientation had a profound effect on student questioning. Participants in the learning condition were more likely to exhibit

adaptive patterns of questioning as compared to those in the performance situation, and this disparity was even more prevalent among the older students. Finally, problem-solving achievement in the performance goal context appeared comparatively inhibitive for low math achievers.

Teacher Role

In addition to the influence of assigned task goals, teacher quality is also an important predicator of student help-seeking behavior. According to Newman (2002), instructors are significant in mediating two processes, namely, *teacher-student intersubjectivity* and *students' personal beliefs*. Newman informally defines intersubjectivity as students and teachers "being on the same page", and teachers who are able to establish this climate in their classrooms are characteristically caring, nurturing, attentive, and expressive. Practically, this type of educator typically demonstrates a democratic style of teaching, and will ask questions of his or her students, inquire if they require help, and ensure mastery in a non-threatening manner (Wentzel, 1997).

Teacher involvement can also set a foundation for students' beliefs and feelings about help-seeking. The decision to ask for help is essentially a value judgment—a weighing of the costs and benefits that are ultimately yielded after the fact. So students who have experienced negative responses from instructors in the past may be more likely to view the usage of help-seeking as either costly to their self-esteem or as having little strategic utility (Newman, 2002).

In the primary school years, teacher approachability is attributed to global and affective traits. If an instructor is perceived as nice and kind, the youngster is more likely to seek assistance. Later on student judgments of helpfulness become more defined and related to the self. Teachers

who understand student problems, offer advice, time, and encouragement are more likely to have a positive impact on students' help-seeking attitudes and behaviors. During the adolescent years, help seeking becomes increasingly contingent upon on whether or not a student believes the teacher likes him or her. Furthermore, since social acceptance is a critical concern for middle-school children, they are even less inclined to assume the risk of embarrassment when instructor receptivity is not apparent (Newman & Schwagger, 1993).

In a number of ways teachers can also impact the extent to which students feel they are competent help-seekers. According to Cazden (1986), teachers establish patterns of dialogue that are internalized by their students, and through this discourse students learn the art and value of asking questions. For instance, the use of probing questions can help students to ask more intellectual questions. Giving or not giving further assistance may serve to facilitate an understanding between what is adaptive and maladaptive help-seeking. Explicit instruction on how to use help that is provided can also function as a means to develop the view that help-seeking is a learning strategy. Finally, subtle and often unintentional differences in teacher questioning between students can have a profound impact on a learner's level of help-seeking competency.

In a study by Karabenick (1992), the role of perceived teacher support and effectiveness as it related to student questioning was examined. In part, the results from this investigation supported the assertions noted above. It was found that teacher receptivity for student questioning was associated with instructor effectiveness, and this variable along with other measures served as antecedents for classroom questioning and help-seeking behavior. Thus

teachers, through their inherent characteristics and instructional methodologies, play pivotal roles in facilitating adaptive help-seeking.

Peer Role and Friendships

Like teachers, peers also serve as significant socializing agents for young and more mature learners. Essentially, the dynamic that exists between students can also significantly impact help-seeking attitudes, beliefs, and behaviors. Research has demonstrated that the nature of student relationships, extent of social comparison, and opportunity for collaboration influence this strategic quality.

Quality friendships establish a level of comfort and trust among peers that permit students to be more vulnerable with each other. Threats to self-esteem are lessened when one believes he or she can express the need for help and assistance without the consequence of ridicule or judgment (Newman, 2000). For instance, DeCooke and Nelson Le Gall (1989) examined help- seeking behavior among 3rd through 5th-grade peers, and their findings revealed that the greater the familiarity and quality of the friendships, the more likely help-seeking was strategically employed, yielded a successful result, and was positively reinforced by the students.

However, friendships are often fueled by varying social goals, thus these underlying motivations affect help-seeking in differing ways. Some students have a strong desire to bond with their peers in order to achieve intimacy and friendship, whereas, others strive to establish affiliations for the sake of elevating their social status. Ryan, Hicks, and Midgley (1997) demonstrated among 5th-graders that the more strongly children believed that social affiliation with classmates was an important goal, the less likely they were to avoid asking questions under difficult academic situations.

By contrast, those who are motivated to seek out friendships in effort to raise or define their social status are less likely to assume the personal risk of embarrassment during help-seeking. Once again, according to Ryan, Hicks, and Midgley (1997), the children in their study who significantly valued social approval from classmates and believed it was particularly important were also more fearful of judgment by their peers when seeking assistance.

Social Comparison and Help-Seeking

Social comparisons are necessary as individuals assess their own place in the world relative to others. Specific to academic help-seeking, social comparisons allow students the feedback required to determine when they might need assistance. However, social comparisons also highlight achievement differences among learners and make students increasingly sensitive to their own short-comings; thus, social comparisons can also hinder help-seeking attempts in order to protect the ego. But research has shown that certain classroom factors can mediate the possible effects of comparing one's self to his or her peers in either a positive or negative direction.

For example, emphasis on intrinsic motivation, learning goals, and individualized grading can increase the comfort level among students, and make it more likely that they will seek assistance from one another. By contrast, a focus on extrinsic sources of motivation, performance goals, and norm-reference grading schemes can make students more reluctant to express difficulties among their peers and ultimately reduce help-seeking attempts (Newman, 2000).

Collaborative Learning

Opportunities for peer collaboration within an academic setting can also influence a student's help-seeking comfort and competency level. Small group activities, for example, permit an

increase in the frequency and quality of student interaction. Within this framework, students can get to know one another, think aloud, and ask questions, while simultaneously reducing social comparisons and peer competition. Through these cooperative interactions, students can begin to appreciate the unique strengths among their peers, and develop a network of specific sources for future help (Newman, 2000).

CONCLUDING REMARKS

As we can see through this review, there exists a diverse array of variables that serve to characterize the adaptive help-seeker from the less adept type. Although these factors have been presented, for organizational purposes, to appear somewhat mutually exclusive, the following literature base on *self-theories of intelligence* may offer a unifying, theoretical framework to explain and predict one's inclination to regard, pursue, and utilize help-seeking adaptively.

SELF-THEORIES OF INTELLIGENCE:

THE INFLUENCE ON HELP-SEEKING

BEHAVIORS AND ATTITUDES

Carol Dweck and Allison Master (in Schunk & Zimmerman, 2007) remind us that even the originator of the intelligence test, Alfred Binet, believed that intelligence could be cultivated through education. In fact this notion served as the impetus for developing the test—the idea that if we could identify children in need of assistance, we could help to improve their performance through curricular intervention.

Despite this history, the construct of intelligence continues to fall prey to debate even 100 years later. Theorists, researchers, and educational practitioners cannot agree upon a definition, nor do lay folk. However, one's theoretical self-conceptions regarding intelligence as either *fixed* or *malleable* can have a profound impact on academic pursuits, particularly those that pose challenge.

There are some who harbor the notion that their intelligence (as well as that of others) is predetermined, and that there is a fixed amount of it that one cannot change. Conversely, there are those students who believe that intelligence is a function of effort and is ever-changing, so may be increased over time. Researchers have termed those with fixed viewpoints intelligence as "entity" self-theorists and the latter as "incremental" self-theorists. (Bandura & Dweck, 1985; Dweck & Leggett, 1988).

This contrasting perspective of intelligence may appear to be reasonably inconsequential with respect to everyday life, but within educational settings the difference has profound significance on the self-regulatory functioning of students. In fact, it appears that just about an equal

percentage of students hold entity self-views of intelligence as compared to incremental ones (approximately 40% each); while, the remaining 20% seem to be undecided either way (Dweck, 1999). But how do these disparate self-viewpoints translate into tendencies to form more or less adaptive patterns of help-seeking? In short, they do so by influencing how students self-regulate their learning.

One notable difference between the proficient and less adept self-regulators is his/her learning goal orientation. As previously discussed, the more adept self-regulator gravitates towards *learning* versus *performance* goals, and research has demonstrated that students' learning goal orientations vary as a function of their self-views of intelligence. Learners who believe that their intelligence is *fixed* (entity self-theorists) tend to operate in a manner that aims to protect the self from experiences that may injure, diminish, or expose intellectual inadequacies. Therefore, these learners become overly fixated on the performance outcomes such as grades, while place less emphasis on the intrinsic value of learning (Dweck, 1999).

On the other hand, because *incremental* self-theorists believe that intelligence is cultivated through learning, these students prioritize process over performance outcomes, thus operate with an inclination towards *learning goals*. This is not to insinuate that these learners are unconcerned about their grades, rather they believe that their performance (grades) can only be enhanced by improving intelligence through the process of learning (Dweck, 1999).

The literature seems to support these conclusions. For instance, in a study conducted on several hundred college students, the researchers found a significant correlation between learning goal preferences and an incremental self-view of intelligence (Robins & Pals, 2002). Furthermore, in another study that examined junior high school student self-beliefs about

intelligence, Blackwell, et al., (2007), found that incremental theorists more often agreed with the statement that "It is most important for me to learn things from my schoolwork than get good grades" (Dweck & Master, p. 34 in Schunk & Zimmerman, 2007).

Due to one's underlying motivation to either protect or enhance self-intellect, individuals will respond differently to available help sources. For instance, Hong et al. (1999) completed a study with college students at the University of Hong Kong where instruction is conducted strictly in English. Students came to the university with varying levels of language competency and so were offered the opportunity to enroll in a course that could support their studies by improving their English language development. Hong et al. (1999) found that learners who held incremental self-viewpoints of intelligence indicated greater interest in taking the course as compared to entity theorists who were less enthusiastic. Furthermore, in a follow-up study, Hong et al, (1999) found that entity theorists, even after performing poorly on a given task, were less likely to indicate interest in a tutorial as compared to incrementalists (Dweck & Master, in Schunk & Zimmerman, 2007).

Other aspects of the self-regulatory process are also affected by one's inherent view of intelligence. For instance, during the self-reflective phase of self-regulation learners make attributions regarding their performance and then subsequently adjust their behaviors accordingly. Thus, one's belief in the role effort plays in learning is critical to the process. Incremental theorists view effort as an explanation for outcomes and a means to improve performance. Entity theorists, on the other hand, interpret effort from a self-handicapping perspective. These learners harbor the notion that an over-expenditure of effort infers a deficiency in one's ability.

We can see how the cyclical nature of the self-regulatory process may be hindered by this viewpoint of effort for entity theorists but enhanced for incrementalists. If the goal for entity theorists to maintain the integrity of their ability, then expending additional effort serves to expose inadequacies and reinforce negative connotations about their inherent intelligence level. Conversely, incrementalists, who believe effort will only enhance intelligence, are motivated to expend it in order to improve performance as well as overall intellectual functioning.

Such disparate viewpoints regarding effort also impact strategy selection, yet another vital aspect of the self-regulatory process. Blackwell et al. (2007) surveyed adolescent students following the completion of a test. Students who had not done well on the test but harbored incremental views of intelligence remarked that their study strategies were likely ineffective thus the cause for their performance, and that they would study harder and find better methods to prepare in the future. In contrast, entity theorists more often attributed their poor performance to their ability and noted that instead of adopting better strategies moving forward they would likely not take this type of course in the future, consider cheating, and/or study less next time.

Other studies on strategy selection have also demonstrated similar results as noted above. Ommundsen (2003) examined strategy change as students encountered increased task difficulty. Although this researcher was observing this relation with regard to inherent beliefs about sports ability, the results were the same as those assessed under academically-oriented settings. That is, incremental theorists said more often that "If the activities or exercises are difficult to understand, I change the way I approach them."

Furthermore, having already established a link between learning goals and self-theories of intelligence, Grant and Dweck (2003) looked at the relationship between learning goal

orientation and study strategies in college students who were enrolled in a premed, chemistry course. These researchers found that students who operated under learning goals tended to be more strategic with regard to their study habits. When studying they "searched for themes or principles that cut across units, pinpointed materials that were essentially difficult to understand and stayed with it until they had mastered it." These deeper level strategies permitted these students to recover from course setback and to obtain higher course grades than their performance-oriented peers.

So, in sum, according to Dweck and Master (in Schunk & Zimmerman, 2007), for entity self-theorists, learning is restricted by one's view of intelligence, so incidents of failure or circumstances that demand greater effort serve to imply intellectual inadequacies, and success is defined by the outperformance of the self over others. Conversely, incremental self-theorists believe intelligence is unrestricted, so are motivated to use effort, effective strategies, and embrace challenge or take risks in order to achieve success which these learners define as instances when mastery or improvement is attained.

So if one's self-theory regarding intelligence hinders or enhances academic performance by mediating the self-regulatory process, particularly strategy selection, we can take the logical leap and assume that adaptive forms of help-seeking are likely to be greater when one harbors *incremental* self-views of intelligence and less likely to be pursued when students operate under *entity* views. I argue this for the following reasons.

First, entity theorists believe intelligence is fixed, thus intervention from this perspective would be ineffectual. Second, help-seeking requires *effort*. One must formulate questions, seek the right help sources and then try to use the information to advance performance or increase

knowledge. Again, since entity theorists are of the opinion that intelligence is fixed, then effort serves only to imply a low intelligence rather than as an instrumental means to promote learning. Thus, once again, help is pointless. Lastly, since success for the entity theorist is defined in relation to others (look smarter than my peers), and learning is weighted much less heavily than the former, the act of seeking help inherently violates what these individuals seek to protect—that is, the belief that they are unintelligent. Therefore, help-seeking can be particularly ego-threatening to the entity self-theorist.

THE PRESENT STUDY

The literature on academic help-seeking serves well in unearthing a variety of factors that have been linked to the incidence of adaptive versus maladaptive help-seeking behavior and, as well, in demonstrating how these variables are influenced by a person's self-theory regarding intelligence. However, the potency of the existing research may be limited to some degree by its reliance on younger participant pools. Since a majority of the investigations have used elementary school-age samples, the results may not necessarily be generalizable to college students, a population in need of research attention as emphasized in the introductory remarks.

Furthermore, while there have been some noteworthy attempts to observe help-seeking behavior among college students, many of these findings have not been truly empirical in quality. Help-seeking attitudes and behaviors have been, by and large, assessed through questionnaires, surveys, and other self-reporting methods. Direct observation of such variables does not seem possible according to the existing literature. Specifically, the limited number of studies that have examined academic help-seeking among college students have focused mainly on either (a) establishing relationships between adaptive help-seeking behavior and the use of

other metacognitive strategies (Karabenick & Knapp 1991; Karabenick, 1988; Karabenick, 1987), (b) assessing college students' preferred help-seeking targets (i.e. peers versus faculty) (Volet & Karabenick, 2006; Alexitch, 2002; Hartman-Hall, & Haaga, 2002; Moncada, & Sanders, 1995), and (c) identifying self-reported reasons for seeking or not seeking help within classroom environments (Karabenick & Sharma, 1994; Schwalb, 1995).

In addition to the methodological limitations, the existing literature has yet to directly investigate the role of self-theories of intelligence and a number of critical self-regulatory processes including *self-efficacy* on help-seeking behavior. It is clearly evident by the research presented above how powerful one's self-theoretical perspective of intelligence is on the self-regulatory process. In addition, self-efficacy, in particular, has been shown to be one of the greatest predictors of academic achievement over and above other self-constructs such as self-esteem and self-confidence.

Albert Bandura (1998) suggests that students with high self-efficacy are generally more persistent and expect to be successful as compared to less efficacious persons who expect to fail and so avoid challenge. In addition, in a longitudinal study on 1st-year college student adjustment in which the role of self-efficacy and optimism were examined in relation to academic performance and desire to persist in college among other related variables, the results demonstrated that academic self-efficacy was strongly related to academic expectancies, academic performance, commitment to remain in school, and overall adjustment (Chemers, Hu, & Garcia, 2001).

So then what is the relation between self-theories of intelligence and self-efficacy for learning, and how do these variables affect help-seeking behavior? The answer to these

questions may have profound significance for helping college educators create learning environments that better enhance post-secondary student success.

Thus, the present study sought to examine the role of self-theories of intelligence and self-efficacy for learning on adaptive help-seeking behavior. The following were hypothesized (see Figure 2.1):

1. Students' view of intelligence will impact their help-seeking choices such that incremental theorists would seek more adaptive forms of help than entity theorists.
2. Students' self-efficacy beliefs for improving learning through help-seeking will impact their help-seeking choices such that students with high self-efficacy ratings will seek more adaptive forms of help than students with low self-efficacy ratings.
3. Interaction effects between view of intelligence and self-efficacy are predicted to impact help-seeking as follows:
    (a) Students with entity views and high self-efficacy will seek the adaptive forms of help.
    (b) Students with entity views and low self-efficacy will seek the least adaptive forms of help.
    (c) Students with incremental views of intelligence regardless of their self-efficacy beliefs will seek the most adaptive forms of help.
4. Adaptive forms of help-seeking will be associated with higher scores on the posttest vocabulary scores and posttest self-efficacy ratings. Conversely, it is predicted that maladaptive forms of help-seeking behavior will be associated with lower vocabulary performance scores and lower posttest self-efficacy ratings.

----------Figure 2.1----------

Predicted Help-Seeking Behavior Patterns and
Task Performance Based Upon Self-Theories of Intelligence
and Self-Efficacy Beliefs

Self-Theory of Intelligence	Self-Efficacy Beliefs	Help-Seeking Behavior	Posttest Task Performance
Entity Theory (*fixed intelligence*)	High →	Adaptive →	High
	Low →	Maladaptive →	Low
Incremental Theory (*malleable intelligence*)	High →	Adaptive →	High
	Low →	Adaptive →	High

I suggested the following rationale for the 4 proposed hypotheses. First, regarding *hypothesis 1*, I argued that incremental theorists will pursue more adaptive forms of help-seeking since they strive toward mastery learning and are less concerned with exposing intellectual inadequacies than entity theorists. With respect to *hypothesis 2*, I proposed that one's self-efficacy beliefs would affect their help-seeking behavior such that students with higher self-efficacy beliefs would pursue more adaptive forms of help because they have greater confidence in the use of help to improve learning as compared to those students with lower self-efficacy ratings. Regarding *hypothesis 3a*, I purported that entity theorists with high self-efficacy beliefs would gravitate towards more adaptive forms of help since their confidence in completing the task would mitigate their concerns about intellectual exposure. However, entity theorists with low self-efficacy beliefs would be the most vulnerable since they also have low confidence in help as a means to improve learning, thus would seek the least adaptive forms of help (3b). Finally, I hypothesized that incremental theorists, regardless of their self-efficacy beliefs, would seek the most adaptive forms of help. My rationale for this predication was based upon the same assumption noted under the rationale for *hypothesis 1* such that students who have incremental views of intelligence strive toward mastery learning regardless of how confident they might be in successfully completing the task. Since they believe learning is a function of effort, they would be more inclined to pursue assistance or expend energy to improve their performance (3c). Lastly, I presumed that the interactive roles of self-theories of intelligence and self-efficacy would be positively associated with performance since more adaptive forms of help-seeking should advance the participants' learning while less adaptive forms will hinder it (*hypothesis 4).*

CHAPTER 3 METHODOLOGY AND PROCEDURES

Participants

One-hundred first-year, college students were are enrolled in at small, urban, Catholic college located in Jersey City, New Jersey were recruited for this study. The characteristics of the sample reflected the College's diverse ethnic and academic composition. The Class of 2012 (the population from which this sample was drawn) had a mean composite SAT of 960, and was approximately 40% White/Non-Hispanic, 30% Hispanic, 20% African American, 7% Asian and 3% Native American. The participants were recruited with the assistance of the College's first-year, faculty advisors and through classroom and email solicitation. The students were informed that they would be "pilot-testing" language problems that were intended for future instructional use. Although participation was voluntary, each student received an entry into a raffle with the chance to win a popular item among college students, an iPod Nano.

In addition, a doctoral-prepared student aided the primary investigator in deciphering the audio-recorded, student attribution responses in order to provide interrater reliability for this measure. The assistant was not informed of the purpose of the study or the hypotheses, but was trained in advance so to be familiar with the type of verbiage associated with the two types of attributions (ability versus effort).

The assistant's training was conducted over a period of 3 hours. The primary investigator presented the assistant with sample responses that corresponded to each level of the coding scale. Following, the primary investigator left the training area so that the assistant could engage in a series of 10 practice trials using sample audio-recorded attribution data. Upon completion, the primary researcher and assistant compared their independent codings. A high degree of

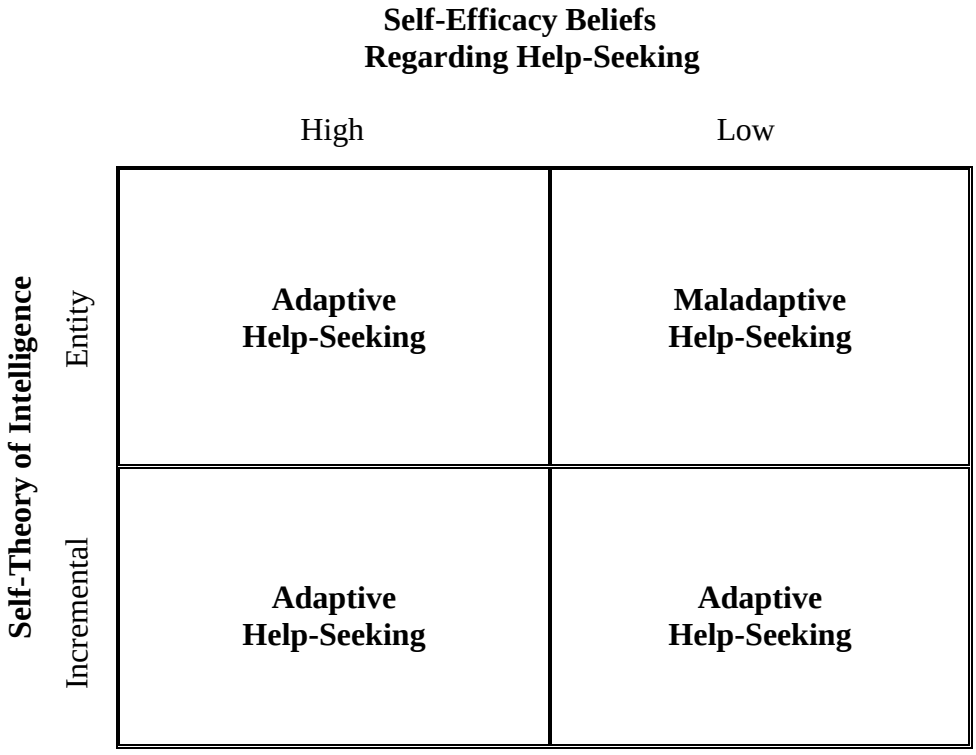
reliability was assessed for the sample responses. The assistant was then given a copy of the audio-recorded attribution data for all 100 participants to decipher independently. Interrater reliability for the full data set was reported in the results section.

Design

In this quasi-experimental study, the research design was a 2 x 2 factorial with self-theory of intelligence (entity and incremental) and self-efficacy (high and low) as the predictor variables and adaptive help-seeking, posttest self-efficacy and posttest performance as the predicted measures (see Figure 3.1).

----------Figure 3.1----------

Quasi-Experimental Design: Predictor Variable Levels for Self-Efficacy Beliefs and Self-Theories of Intelligence with Predicted Help-Seeking Behavior



Task

Vocabulary test items were used in this investigation. Specifically, the students were presented with moderate to difficult words to define. This type of assessment measure was chosen because it is widely utilized on college preparatory and placement exams. Thus, it was presumed that a majority of the participants would have had some degree of experience with this type of task, and so would not require elaborate explanation.

The actual "word bank" used in this study was developed through pilot tests conducted in advance to ensure that the vocabulary words were sufficiently rigorous enough to obtain the desired result, specifically, the necessity of help. With the permission of a 3 faculty members, a pilot study was conducted in several upperclassmen courses. The students were given a list of 75 words, and asked to indicate on a scale of 1 to 5 how confident they were that they could provide a *correct* definition for each term (1 = no confidence, 3 = somewhat confident, and 5 = highly confident). The students were not asked to provide a written definition, rather to simply rate how familiar they were with the vocabulary words. From this data, a word bank including only those terms in which a majority of the students were unfamiliar with was constructed.

A total of 34 words were used during the learning phase of this study (Appendix A). These terms were rotated after each individual session to minimize the contaminating effects of participant communication.

Measures

The following measures were collected at various points during the investigation.

1. Attribution Measure: Students were asked to attribute cause as to why they believed they did not perform well on the initial vocabulary task. Specifically, they were asked the question, "*Why do you think you didn't do better on this test*?" Two independent raters coded the participants' audio-taped attribution data using a scale from 1 to 3 that was defined as follows. Participants who espoused effort-oriented reasons for their failure were given a score of 3 whereas those who attributed their performance to uncontrollable forces such as ability or teachers were provided a score of 1. Students who seemed to be neutral with regard to their attributions were assigned a score of 2.
2. Self-Efficacy Measures: At various points during the course of the present study, students were asked to make self-efficacy judgments for three uniquely, independent tasks. This detailed approach to assessing self-efficacy was based upon previous literature that demonstrates self-efficacy judgments are most predictive when they are correspondent and task-specific (Pajares, 1996). Although self-efficacy can also be measured at global and domain-specific levels, the strength of its predictability is much greater when self-efficacy judgments are reflective of corespondent outcomes. Therefore the self-efficacy questions listed below were designed in accordance with their context.

   During the *pretesting phase*, participants were asked to indicate their confidence level for correctly defining other words of similar difficulty level if given the opportunity to receive some form of assistance. Specifically, the students were asked the following questions: "*How confident are you that you could learn to correctly define another vocabulary word of similar difficulty if you were allowed to ask for help?",* and "*How*

confident are you that you could learn to correctly define a vocabulary word of greater difficulty if you were allowed to ask for help?" The 2 self-efficacy judgments were measured using a scale ranging from 1 to 10, with 1 = no confidence at all, 5 = somewhat confident, and 10 = highly confident, and then were assessed for inter-item reliability purposes. This measure was used to assess students' self-efficacy for the use of help-seeking to improve learning. It should be further noted that similar procedures and scales have been successfully used for assessing self-efficacy judgments in prior research (Kitsantas & Zimmerman 2002; Zimmerman & Kitsantas, 1999, 1997; Cleary & Zimmerman, 2001).

During the *learning phase* of the study, students were also asked to provide self-efficacy ratings for correctly defining 10 additional words using the same scale and procedures as noted above. Specifically, the students were asked the following question after the presentation of each word: "*How confident are you that you can correctly define this word without assistance*?". Unlike the self-efficacy for help-seeking measure described above, these self-efficacy measures were used to assess the students' perceived confidence in defining vocabulary words without assistance.

Lastly, during the *posttest* phase of the study, the participants were asked to provide a self-efficacy rating from 1 to 10 for achieving a grade of "B" or better on the vocabulary posttest.

3. Adaptive Help-Seeking Score: The students were allowed to ask questions that were categorized as either *hints*, *direct answers*, *none* (no questions asked) or as *other*. Each type was defined as either an adaptive or maladaptive bid for help. Adaptive bids for

help received a score of "1" whereas maladaptive requests were coded with score of "0." These scores were totaled for each of the participants. Thus, higher *adaptive help-seeking scores* were associated with preferences for more adaptive forms of help-seeking whereas lower scores indicated that the student preferred more maladaptive help types. Since each student was presented with a total of 10 words to define or 10 possible attempts to seek help during the learning phase, an individual's total help-seeking score ranged anywhere from 0 to 10.

4. Vocabulary Performance (Posttest) Score: As a learning measure, each student received a score from 0 to 10 based upon the number vocabulary words he or she correctly defined on the posttest. A total of 34 words of similar difficulty were rotated for use on the posttest. No assistance was permitted during the posttest (Appendix B).

Procedures

The primary investigator scheduled and conducted all sessions with the selected participants. Participants were contacted by phone and/or email to schedule their individual testing appointments. All sessions were conducted in a private conference room on the College's campus so to minimize distractions and ensure participant confidentiality. In order in insure experimenter bias did not influence the participants' behavior, the protocols were standardized, and all questions and instructions were read verbatim to all students.

At the outset of the session, each student was provided with a participant consent form that explained the overall intent of the study and potential risks and benefits (Appendix C). The participants were also asked to complete a basic demographic information sheet (Appendix D). The principle investigator made certain to review both documents carefully and to answer any

questions before the students signed the consent sheets and began completing the demographic information forms. All sessions were audio-recorded with the participants' signed consent.

Immediately thereafter, pretesting began. Each student was presented with a highly difficult vocabulary word to define, which was designed to ensure universal failure (a motivational challenge to uncover causal attributions). The participant was given 1 minute to provide a written definition. No assistance was given during this phase of the study. At the end of the allotted time period, the investigator supplied the correct answer. None of the 100 participants were able to define the initial vocabulary words presented.

Subsequently, the investigator posed these questions as follows: (a) "*Why do you think you didn't do better on this test*?", (b) "*How confident are you that you could learn to correctly define another vocabulary word of similar difficulty if you were allowed to ask for help?",* and (c) "*How confident are you that you could learn to correctly define a vocabulary word of greater difficulty if you were allowed to ask for help?"*.

The responses to the initial question, "*Why do you think you didn't do better on this test*?", were later analyzed using the audio-recordings. For the latter questions, the students were asked to indicate their self-efficacy ratings on a form that included a scale ranging from 1 to 10, with 1 = no confidence at all, 5 = somewhat confident, and 10 = highly confident. These ratings were used to classify students as having high self-efficacy or low self-efficacy in using help to improve learning.

Once the 2 measures were collected, the student began the *learning* phase of the study. During the *learning* phase, the student was asked to define a total of 10 words of similar difficulty that were presented individually. The following instructions were read verbatim:

During the next phase of this session, I will ask you to define 10 vocabulary words, which will be similar in difficulty to the sample word that you just attempted to define. Each word will be presented individually, and you will be asked to provide a written but tentative definition on side A of this index card, which you can choose to submit as your final answer or change after being given the opportunity to ask 1 question during each trial. Your question, however, must be selected from a menu of question-types that include only the following options: (a) a hint, (b) an answer, (c) no question or (d) other.

So that you understand the menu options, let me explain the difference between a hint and an answer. A *hint* will provide you with some information to help you to learn how to define the word. For example, you might be given the meaning of the root, prefix or suffix of the word presented. On the other hand, an *answer* will provide you with a sample definition that was a given by a student from a previous session.

You may also choose not to ask a question, thus render your tentative answer as your final answer or choose to ask 1 question of your own. After you have asked your question, you must write down your final answer on side B of the index card. If your tentative answer will be your final answer, you need not write it over again.

You will also be asked to write down your confidence level for defining each of the words before you provide your tentative answer. You will do so by using the same 10-point scale that I presented to you earlier. You should also be aware that at the end of this session, you will receive a short, 10-item quiz to judge how much you have learned. The task on the final quiz will be similar to the one you will be working on during the

next session; however, you will not be able to ask me any questions at that time. Are the directions clear? Do you have any final questions before we begin?

Following the instructions, the investigator presented the student with the first word, asked him or her to write down the confidence rating about defining the word, and then instructed him/her to write down the tentative definition. Then the participant was prompted to ask 1 question from the provided menu or to submit the tentative response as his/her final answer. If a question was asked, the investigator provided the response within the parameters inherent to the question-type. The student was given no more than 1 minute to write down the final answer. The same procedure was followed for all subsequent trials. Once all final answers were rendered, the investigator moved on to the posttest phase of the session.

During the *posttest* phase, the students were given an additional 10 words to define. Before beginning the vocabulary posttest, the students were asked once again to provide a self-efficacy rating for success in passing the vocabulary posttest with a grade of "B" or better. No assistance of any kind was provided at this time. Upon completion, the students were supplied with their scores. A debriefing letter was sent via email to all participants disclosing the true nature of the investigation following the conclusion of the study (Appendix E).

Preparation of the Data for Analysis

Upon completion of the investigation, the resulting data were coded in order to test the underlying hypotheses. To begin, the audio content of the participants' responses to the first question, "*Why do you think you didn't do better on this test*?" was analyzed to determine the students' attributions for failure as either *ability* or *effort* oriented. Two independent raters coded the participants' audio-taped attribution data using a scale from 1 to 3 that was defined as

follows. Participants who espoused effort-oriented reasons for their failure were given a score of 3. Effort-oriented responses included examples such as "I do not read as much as I should" and "I don't always look up words that I don't understand in the dictionary." Those who attributed their performance to uncontrollable forces, such as ability or teachers were provided a score of 1. To illustrate, these students stated that they weren't "good at these types of tests", "were not that smart" or "had a really poor educational background." Students who seemed to be neutral with regard to their attributions were assigned a score of 2. Participants with higher scores were classified as *incremental self-theorists* (IST), whereas, students with lower scores were considered *entity self-theorists* (EST).

The data resulting from the second and third questions administered during the initial phase, "*How confident are you that you could learn to correctly define another vocabulary word of similar difficulty if you were allowed to ask for help?"* and "*How confident are you that you could learn to correctly define a more difficult vocabulary word if you were allowed to ask for help?"* were used to classify students as having high or low self-efficacy for learning through the use of help-seeking. Students were classified as having high self-efficacy for learning through help-seeking if their average score was equal to or greater than 6. Participants with scores less than 6 were classified as having low self-efficacy for learning through help-seeking. The cut score of 6 was chosen because it was the lowest number that represented a higher level of confidence than a rating of "somewhat" (5).

In order to generate an Adaptive Help-Seeking Score for every participant, the students' help-seeking attempts were analyzed and then coded as either *adaptive* or *maladaptive* bids for help. Recall that during the learning phase, the students were informed that they could ask 1 question

per word from a restricted menu to include 4 categories: (a) hints, (b) direct answers, (c) none or (d) other. To assess whether a particular bid for help was adaptive or maladaptive, a scheme used in similar research was applied here and is explained below (Van der Meij, 1988; Nelson-LeGall, Kratzer, Jones & DeCooke, 1990; Graesser, Person & Huber, 1992; Newman & Schwager, 1995).

Requests for *hints* were defined as *adaptive* forms of help since they provide information that promotes mastery learning, Hints have been previously defined as adaptive forms of help-seeking by other researchers since they are similar to the types of information-seeking questions that are most often used by self-regulated learners, such as to solicit clarification or further explanation (Nelson-Le Gall, et al, 1990; Karabenick & Knapp, 1991; Zimmerman & Martinez-Pons, 1986 in Newman & Schwager, 1995). Like hints, the content of the responses elicited by these types of questions offer *process* information that lends themselves mastery learning. Thus, a hint is *adaptive* because it seeks to provide information that will increase a student's autonomy during learning. In contrast, the *direct answer* response supports performance-based outcomes, and presumes both the absence of knowledge on the part of the learner and lack in motivation for learning. Therefore, direct answers were classified as maladaptive bids for assistance since they reinforce performance-oriented goals.

In the cases in which students chose not to ask a question (none category), the self-efficacy rating for that particular word was used to classify the response as either adaptive or maladaptive. If the self-efficacy rating was high ($\geq$ 6), this response (no question asked) was coded as adaptive. Presumably in this situation the student believed that s/he was capable of defining the word without the use of help. Alternatively, the "no question asked" response was

deemed maladaptive when the self-efficacy rating was low (< 6). In these cases, the students reported that they weren't confident that they could correctly define the word, but did not seek help.

Questions that fell into the "*other"* category were evaluated by 2 independent raters based upon the content of the participants' questions. If the content of the help request contained *process-related* information, then it was deemed as an adaptive form of help-seeking. For example, one student asked the researcher "to put the word in a sentence." This was coded as adaptive since the student made use of context clues to decipher the meaning of the word. Conversely, in the case that the request was either non-specific, unrelated to the task, or was posed with the intent to obtain the correct answer, it was coded as maladaptive. For example, a second student wrote down his answer and then asked the researcher directly, "Is this the right answer?" This was coded as maladaptive since the student simply wanted to know the correct answer. However, it should be noted that there were only 2 out of 100 instances in which a participant asked "other" questions.

The bids for help were tallied for each of participants by using a scale from 0 to 10. Adaptive bids were coded with a score of +1 and maladaptive bids with a score of 0. Therefore, since there were 10 words to define or 10 possible attempt to seek help, an individual student's total help-seeking score ranged anywhere from 0 to 10.

The chosen measurement as described above scheme deviates somewhat from previous studies. Most notably, in a similar study conducted by Newman and Schwager (1995) who examined the relation between grade level, prior achievement, and goal orientation on help-seeking. These researchers examined adaptive versus maladaptive answer-question patterns by

statistically comparing the cumulative frequencies of each sequence-type against the noted variables (grade, prior achievement, and goal orientation). Although Newman and Schwager's (1995) analyses appear reasonably sound, the use of a proposed metric ranging from 0 to 10 is preferred since it permits the construct of *adaptive help-seeking* to be evaluated on a continuum rather than dichotomously.

The posttest contained 10 vocabulary words that included all of the roots, prefixes and suffixes that appeared in the terms and hints presented during the learning phase of the study. For example, if a student was asked to define the word "herbicide" during the learning phase of the study, then the word "patricide" appeared on the posttest because both words share the same suffix. Thus, if the student chose the *hint* for this particular word, s/he would have learned that "cide" means "to kill", and then presumably applied this information at time of the posttest.

The posttest scores ranged from 0 to 10. No credit was given for definitions that were left blank or were completely incorrectly. Partial credit was given if the definition was somewhat correct or the student attempted to make strategic use of the hint. Full credit was awarded if the answer was completely accurate.

CHAPTER FOUR

RESULTS

Preliminary Analyses

Before beginning the main analyses, the qualitative data regarding the students' attributions for failure were coded numerically. Two independent raters coded the participants' audio-taped attribution data using a scale from 1 to 3 that was defined as follows. Participants who espoused effort-oriented reasons for their failure were given a score of 3 whereas those who attributed their performance to uncontrollable forces such as ability or teachers were provided a score of 1. Students who seemed to be neutral with regard to their attributions were assigned a score of 2. Interrater reliability for this item was determined to be substantial with Kappa = 0.92 ($p <$ .0.001).

Correlation Analyses

Pearson correlation coefficients were calculated for gender, self-efficacy and attribution measures with regard to the predicted variables: adaptive help seeking, posttest self-efficacy rating, and the vocabulary posttest score. The findings are reported in Table 4.1.

The only significant correlation that was observed with regard to gender was posttest self-efficacy measure (r = .30), indicating that males demonstrate greater confidence in their predictions for performance on the posttest than female participants. Since this finding seemed negligible with regard to the overall hypotheses, the gender factor was not considered in the subsequent multivariate analyses that were performed.

The pretest self-efficacy measures (Self Efficacy Rate 1 and Self Efficacy Rate 2) were highly correlated (r = .80) and significant at the .01 level. Since this correlation was to be used to assess

inter-item reliability, this was an important psychometric finding. In addition, a positive correlation was observed for Self-Efficacy and the Posttest Self-Efficacy rating ($r = .21$, $p > .05$). Thus, the pretest self-efficacy rating for the use of help-seeking in improving learning was associated with similar ratings for performance the posttest. However, no additional significant correlations were observed between the self-efficacy ratings and the other predicted variables (Adaptive Help-Seeking Score, Posttest Self-Efficacy Rating and Vocabulary Posttest Score).

Significant positive correlations ($p > .05$) were also detected for the Attributions for Failure (to controllable causes) measure with respect to all 3 of the predicted variables and are as follows: Attribution for Failure and Adaptive Help-Seeking score ($r = .44$); Attribution for Failure and Posttest Self-Efficacy score ($r = .26$); and Attribution for Failure and the Posttest Score ($r = .32$). In sum, attributions to controllable causes were positively associated with the adaptive help-seeking scores, posttest self-efficacy ratings and performance on the vocabulary posttest. Thus, students who attributed their performance to controllable, effort-oriented factors were more likely to seek adaptive forms of help, report higher self-efficacy predictions and perform better on the vocabulary posttest as compared to those who attributed their failures to ability or other less controllable forces. These students sought less adaptive forms of help, reported lower self-efficacy ratings, and performed poorer on the vocabulary posttest.

Significant positive correlations were also observed between the Adaptive Help-Seeking measure and the Posttest Self-Efficacy rating ($r = .49$) and the Posttest Vocabulary Score ($r = .57$). Participants who demonstrated adaptive forms of help-seeking were better at calculating their subsequent performance, and also obtained higher scores on the posttest as compared to those who gravitated toward maladaptive forms of help. These students were less adept at

predicting their work and also performed less well on the posttest measure. Finally, a significant positive correlation between the Posttest Self-Efficacy rating and the Vocabulary Posttest Score was also obtained (r = .51).

Main Analyses

Listed in Table 4.2 are the means and standard deviations for the following measures: adaptive help-seeking score, posttest self-efficacy rating, and posttest vocabulary score by group. To assess the effects of the predictor variables (self-efficacy for learning through the use of help-seeking and attributions for performance) on the predicted measures (adaptive help-seeking, posttest self-efficacy rating and posttest score), an overall multivariate analysis of variance (MANOVA) was performed. The results showed a main effect for attributions, F = 3.90, Wilks' Lambda = .787, p < .05 on the 3 predicted variables as a whole. With regard to second predictor variable, self-efficacy, an overall main effect on the predicted measures was not observed. In addition, no significant interaction effects were assessed for self-efficacy and attributions.

The follow-up test results are listed on Table 4.3. Here we can see the effects of the attributions on each specific predicted variable. Significant effects were observed on Adaptive Help-Seeking and the Posttest Vocabulary Score indicating that students who ascribed their performance to effort sought more adaptive forms of help, learned more, and subsequently had significantly higher scores on the vocabulary posttest.

Tukey post-hoc comparisons were conducted to determine where the participants in the Attribution groups (low, medium and high) differed with respect to the predicted measures. For Adaptive Help-Seeking, significant differences (all *ps* <.05) were observed between the low (M = 4.64) and medium groups (M = 7.26) as well as between the low and high groups (M = 7.02).

These findings reveal that students in the medium and high attribution groups had significantly higher Adaptive Help-Seeking Scores than participants in the low group. Comparisons between the medium (M = 7.26) and high groups (M = 7.02) were not statistically significant. Regarding the Posttest Vocabulary measure, significant differences were also observed between the low (M = 3.96) and medium (M = 6.24) groups and the low (M = 3.96) and high (M = 5.62) groups, but not between the medium and high groups. The results showed that participants in the medium and high groups significantly outperformed students in the low group on the vocabulary test. For the Posttest Self-Efficacy Rating, only the low (M = 3.64) and high (M = 4.12) groups differed significantly. No differences were found between the low and medium (M = 4.30) or medium and high groups.

With regard to univariate tests on the second predictor variable, self-efficacy, a significant effect was observed for the Posttest Self-Efficacy Rating whereas the high group (M = 4.79) reported greater confidence for performance on the vocabulary posttest than the low self-efficacy group (M = 3.20). No differences were found between the two groups for Adaptive Help-Seeking and the Posttest Vocabulary Score as predicted.

Bias Analyses regarding Self-Efficacy Beliefs

In an attempt to explore these non-significant effects of pretest self-efficacy findings further, the researcher turned to the literature on self-efficacy and calibration. Pajares and Schunk (2004) define calibration as a measure of how well self-efficacy judgments reflect actual task performance. With regard to how students differ in their ability to calibrate, studies have shown students to be often inaccurate in one direction or another, with higher achieving students being

better calibrated than underachievers and the latter learners tending to overestimate their abilities (Hacker & Bol, 2004).

One measure of calibration is to calculate a bias score. Bias scores can reveal whether an individual is under- or overestimating his or her confidence level for performance on a given task. Yates (1990) developed an effective method to estimate bias using a scale of -1 to 1, with negative scores indicating underestimates, positive scores demonstrating overestimates, and judgments near or at "0" yielding no bias or high precision in calibrating performance. The actual bias score calculation is derived by taking the mean difference between the predicted and actual scores. To determine whether bias may have contaminated the self-efficacy measure in the present study, a derivative of this computational method was used to create a bias score for each participant and then factored in as a covariate on a subsequent multivariate analysis.

The posttest self-efficacy ratings and vocabulary posttest scores were used to establish a bias measure for all participants. Recall self-efficacy was estimated on a scale from 1 to 10, with "1" indicating low confidence and "10", high confidence. Likewise, scores on the posttest could range from "0" if the student did not get anything correct to a perfect score of "10." Thus, the vocabulary posttest score was subtracted from the self-efficacy rating to yield a bias score that ranged from -10 to 10. Using the same scheme as described above, negative scores indicated underestimates, positive scores, overestimates, and "0" showed no bias.

To adjust the statistical analyses for potential bias in students' self-efficacy judgments, bias measures were included as a covariate. To reassess the effects of the predictor variable, self-efficacy for learning through the use of help-seeking, on the predicted measures (adaptive help-seeking, posttest self-efficacy rating and vocabulary posttest score) with the addition of the

covariate, *bias score*, an analysis of covariance (ANCOVA) was performed on each predicted measure. The results of this additional analysis revealed two significant findings beyond those identified by the original ANOVAs: Adaptive Help-Seeking, $F = 6.87$, $p < .05$ and the Posttest Vocabulary Score, $F = 8.80$, $p < .05$.

Pairwise comparisons showed that participants in the *Low Self-Efficacy* group significantly differed from the *High Self-Efficacy* group with respect to all 3 the predicted measures. For Adaptive Help-Seeking, the means were as follows: *Low Self-Efficacy* group ($M = 5.15$) and *High Self-Efficacy* group ($M = 6.65$). These findings demonstrated that students with lower self-efficacy for learning through help-seeking sought less adaptive forms of help. With regard to the Posttest Vocabulary Score, the *High Self-Efficacy* group performed significantly better on the vocabulary posttest ($M = 5.34$) than the *Low Self-Efficacy* group ($M = 4.47$). Additionally, students in the *Low Self-Efficacy* group showed lower self-efficacy posttest ratings ($M = 3.20$) than the participants in the *High Self-Efficacy* group ($M = 4.79$). This latter finding was observed in the original analysis but was improved upon with the inclusion of the bias measure. Table 4.4 outlines the comparative data from both regular and bias-corrected univariate tests on the three predicted measures.

Table 4.1

Intercorrelations Between Predictor and Predicted Measures (N = 100)

Measures	1	2	3	4	5	6	Mean	SD
1. Gender	_	.08	.05	.07	.30**	.10	1.29	.46
2. Self-Efficacy		_	.13	.16	.21*	.13	7.10	1.77
3. Attribution for Failure			_	.44**	.26**	.32**	1.97	.87
4. Adaptive Help Seeking				_	.49**	.57**	6.35	2.56
5. Posttest Self-Efficacy					_	.51**	4.47	2.01
6. Vocabulary Posttest Score						_	5.17	2.14

* Correlation is significant at the .05 level (two-tailed)
** Correlation is significant at the .01 level (two-tailed)

Table 4.2

Means and standard deviations for adaptive help-seeking score, posttest self-efficacy rating, and posttest vocabulary score for predictor variables by group.

Predictor Variable: Attribution

	High Group (N = 36)		*Medium Group (N = 25)*		*Low Group (N = 39)*	
Predicted Variables	Mean	SD	Mean	SD	Mean	SD
Adaptive Help Seeking Score	7.02	2.33	7.26	1.83	4.64	2.39
Posttest Self-Efficacy Rating	4.12	2.06	4.30	1.91	3.64	1.88
Vocabulary Posttest Score	5.62	2.09	6.24	1.74	3.96	1.93

Predictor Variable: Self-Efficacy

	High Group (N = 80)		*Low Group (N = 20)*	
Predicted Variables	Mean	SD	Mean	SD
Adaptive Help Seeking Score	6.65	2.46	5.15	2.66
Posttest Self-Efficacy Rating	4.79	2.02	3.20	1.36
Vocabulary Posttest Score	5.34	2.20	4.47	1.49

Table 4.3

Univariate Tests: Effects of Predictor Variables on Each Predicted Measure

Predictor Variable: Attribution

Predicted Measures	Type III Sum of Squares	df	Mean Square	F	Sig.	Noncent Parameter	*Observed Power
Adaptive Help-Seeking	91.13	2	45.56	8.95	.000	17.89	.969
Posttest Self-Efficacy Rating	5.06	2	2.53	.70	.501	1.39	.164
Vocabulary Posttest Score	537.58	2	268.79	7.73	.001	15.46	.944

* Computed using alpha = .05

Predictor Variable: Self-Efficacy

Predicted Measures	Type III Sum of Squares	df	Mean Square	F	Sig.	Noncent Parameter	*Observed Power
Adaptive Help-Seeking	5.30	1	5.30	1.04	.310	1.04	.172
Posttest Self-Efficacy Rating	25.32	1	25.32	6.96	.010	6.96	.743
Vocabulary Posttest Score	4.89	1	4.89	.141	.709	.141	.066

* Computed using alpha = .05

Table 4.4

Univariate Tests Comparison: Effects of Self-Efficacy for Learning through Help-Seeking on Each Predicted Measure Uncorrected and Corrected for Bias

Predictor Variable: Self-Efficacy Uncorrected for Bias

Predicted Measures	Type III Sum of Squares	df	Mean Square	F	Sig.	Noncent Parameter	*Observed Power
Adaptive Help-Seeking	5.30	1	5.30	1.04	.310	1.04	.172
Posttest Self-Efficacy Rating	25.32	1	25.32	6.96	.010	6.96	.743
Vocabulary Posttest Score	4.89	1	4.89	.141	.709	.141	.066

Predictor Variable: Self-Efficacy Corrected for Bias

Predicted Measures	Type III Sum of Squares	df	Mean Square	F	Sig.	Noncent Parameter	*Observed Power
Adaptive Help-Seeking	42.17	1	42.17	6.87	.010	6.87	.738
Posttest Self-Efficacy Rating	26.62	1	26.62	8.81	.004	8.81	.836
Vocabulary Posttest Score	239.17	1	239.17	8.80	.004	8.80	.836

* Computed using alpha = .05

CHAPTER FIVE

DISCUSSION

This study investigated the effect of students' intelligence attributions and their pretest self-efficacy for learning beliefs on their adaptive help-seeking behavior, posttest self-efficacy ratings, and performance on a vocabulary posttest. The results will be discussed in terms of each hypothesis.

Hypotheses

Hypothesis 1

The first hypothesis predicted that students' view of intelligence would influence their help-seeking choices such that entity theorists would seek less adaptive forms of help than incremental theorists. This hypothesis was confirmed. Entity theorists, who attributed their failure to ability or other less controllable forces, had significantly lower adaptive help-seeking scores than incremental theorists who attributed their performance to effort. The post hoc analyses supported the latter by demonstrating significant differences in adaptive help-seeking behavior between the medium and high attributions groups as compared to the low attribution group. Thus, students who attributed their performance to effort (even in part) sought more adaptive forms of help than students who did not.

Before elaborating further on these findings, it may be useful to revisit how the adaptive help-seeking measure was determined. The adaptive help-seeking measure ranged in scale from 0 (very low adaptive help-seeking behavior) to 10 (very high help-seeking behavior). During the learning phase of the study, a score for each participant was established by tabulating the total number of adaptive bids for help. Adaptive bids for help were classified as (a) requests for hints, (b) requests for help when it was needed, and (c) no request for help when it was unnecessary.

Conversely, maladaptive help-seeking behaviors were defined as (a) requests for direct answers, (b) requests for help when it was unnecessary and (c) no request for help it was clearly needed.

Thus, participants who espoused ability-oriented reasons for their failures (entity theorists) used more maladaptive forms of help such that they tended to request direct answers more than hints and avoided asking for help when it was clearly necessary. Furthermore, these students were also less strategic with regard to how they used the information gained through help-seeking such that when help was requested, they were less likely to make substantial changes to their final answers or tended to copy the information verbatim. In addition, entity theorists' help-seeking behavior was significantly more variable than incremental theorists. Incremental theorists were more consistent in that they routinely asked for hints and avoided asking for help when it was unnecessary. Entity theorists, on the other hand, acted more randomly with regard to their requests.

These findings seem to reinforce historic assumptions regarding the relationship between attributions and help-seeking. Ames and Lau (1982) argued that if a learner firmly believes that the probability of success is contingent upon uncontrollable factors, such as a fixed ability or bad luck, then that individual will be unlikely to view help-seeking as a viable achievement strategy. From this perspective, help-seeking is most probable when students believe they are generally capable of successful performance and/or realize the significant impact of applied effort.

In addition, the results of the present study offer behavioral support for conclusions drawn from prior investigations that relied solely upon self-reported means of assessing help-seeking behavior as a function of view of intelligence. For instance, recall that Blackwell, et al. (2007) surveyed adolescent students following the completion of a test. Students who had not done well on the test but harbored incremental views of intelligence remarked that their study strategies

were likely ineffective, and that they would study harder and find better methods to prepare in the future. In contrast, entity theorists more often attributed their poor performance to their ability and noted that instead of adopting better strategies moving forward they would likely not take this type of course in the future, consider cheating, and/or study less next time. Likewise, Hong et al. (1999) offered students the opportunity to enroll in a course that would support their studies by improving their English language development and found that learners who held incremental self-viewpoints of intelligence indicated greater interest in taking the course than entity theorists, who were less enthusiastic.

Unlike these above-mentioned investigations, the present study demonstrated that entity and incremental theorists not only self-reported differences in their attitudes toward help-seeking but also behaved quite differently from each other. For instance, entity theorists were more comfortable with using someone else's answers as their own; they displayed overall help-avoidance tendencies, and were less deliberate at improving their performance. Incremental theorists by comparison preferred hints more often, and were also more inclined to ask for help when they were unsure about how to define a term. In addition, these students were more likely to strategically revise their answers rather than copy information directly from the help source.

Hypothesis 4

The fourth hypothesis was also confirmed. This hypothesis stated that adaptive forms of help-seeking would be associated with higher scores on the vocabulary posttest and posttest self-efficacy ratings, whereas, maladaptive forms of help-seeking behavior would be associated with lower scores on both measures. To test these predictions, Pearson correlation coefficients were calculated and found to be statistically significant as reported in the results chapter. Significant,

positive correlations were found for Adaptive Help-Seeking and the Posttest Self-Efficacy Rating (r = .49, $p < .01$), and for Adaptive Help-Seeking and the Posttest Vocabulary score (r = .57, $p < .01$).

The underlying rationale for these assumptions was based upon the notion that the tendency to seek help more strategically would directly serve to improve upon one's learning and, in turn, foster students' self-confidence and performance on the posttest. For instance, Karabenick (2001) found that learners who self-reported help-seeking behaviors that were characterized as strategic/adaptive were associated with higher levels of student motivation, the usage of more complex cognitive/metacognitive strategies, and better performance in college classes. By contrast, students' classified with lower strategic/adaptive help-seeking orientations reported higher help-seeking avoidance behavior and indicated the lowest levels of self-efficacy, use of cognitive strategies, and performance in their courses.

The present study supported the former findings, but went one step further to provide behavioral evidence (as compared to self-reported data) in support of the assumption that adaptive or strategic help-seeking is directly associated with increased learning and self-efficacy. Essentially, students who chose hints more often than answers afforded themselves the opportunity to extract critical information that served to improve upon their learning and self-confidence as assessed by the posttest scores and posttest self-efficacy ratings. By comparison, participants who requested direct answers more frequently were not empowered with the knowledge they needed to feel confident and perform well on posttest.

Hypotheses 2 and 3

Hypothesis 2 predicted a main effect for self-efficacy on adaptive help-seeking. Hypothesis 3 predicted additional interaction effects for attributions and self-efficacy on adaptive help-seeking. These hypotheses were based upon prior research that showed self-efficacy to be a strong predictor of academic performance in college students (e.g., Chemers, Hu & Garcia, 2001). However, neither hypothesis was supported by the initial analyses. To investigate the absence of self-efficacy effects further, a bias score was calculated for each participant and then used as the covariate in subsequent ANCOVA analyses. The results revealed that the corrected self-efficacy measures produced a significant effect on all three the predicted variables, *Adaptive Help-Seeking*, *Vocabulary Posttest* score and *Posttest Self-Efficacy* rating.

So how should these findings be interpreted? Although one clearly cannot confirm the proposed hypotheses (2 & 3) statistically, there is evidence that students' over- or underestimates of their self-efficacy to use help-seeking as a viable learning strategy may have diminished the results in this study. Furthermore, if one examines the correlations in Table 4.1, one can discern that pretest self-efficacy ratings did not correlate with the other variables. In contrast, the posttest self-efficacy scores correlated significantly with gender, adaptive help-seeking, attributions, and vocabulary posttest scores. It should be noted, the pretest self-efficacy ratings focused on a single vocabulary item whereas the posttest self-efficacy measure was based on 10 training items. In future research, a greater number of pretest self-efficacy items with and without performance feedback should be explored.

Limitations

The participants in this study were all first-year students recruited from a single small, Catholic college in New Jersey. Although the overall academic profile for this sample ranged

quite substantially, it may not necessarily be representative of all college students. Therefore, the findings obtained here may not completely generalize to students in all class years or to students at more selective institutions.

Educational Implications

Hypotheses 1 and 4 were clearly supported by the results in this study. Therefore, I was able to demonstrate that students' view of intelligence directly impacts their help-seeking behavior which, in turn, indirectly affects performance outcomes.

Identifying the underlying reasons for maladaptive help-seeking behavior should be a significant educational concern for those vested in college student success. If researchers can unearth the root causes for why students differ in their help-seeking beliefs, there is hope for manipulating the behavior. Future study should focus on experimental interventions to establish such causality. Although the present study was not a true experiment by design, it did provide compelling evidence in demonstrating that students' view of intelligence or attributions for failure and success are significantly tied to their help-seeking tendencies.

Furthermore, there exists evidence to show that one's beliefs regarding intelligence can be influenced. For instance, success in improving student motivation and student grades have been noted in studies that have attempted to teach an incremental theory of intelligence as part of an intervention (Dweck, 1999; Dweck & Master, 2007). Therefore, future research should also pursue similar intervention studies that manipulate students' attributions in an attempt to observe the impact help-seeking behavior.

Nevertheless, it is also important to acknowledge the need to pursue more complex methods to assess performance attributions as they relate to self-theories of intelligence. The present study,

with a significant degree of success, utilized highly qualitative data that was extracted from open-ended responses to a single question regarding a single task. However, future study should explore alternate or multi-modal measurement techniques to assure for construct validity.

Finally, in my opinion, as a higher education practitioner, minimal emphasis has been placed on the critical role that help-seeking plays in predicting college success. Furthermore, even less time has been spent on aiding college students toward developing adaptive help-seeking attitudes and behaviors. College administrators and faculty fall prey to the false notion that simply telling students where to find help is enough. Clearly help-seeking is a complex, social behavior that, for some, requires significant refinement. Many colleges and universities offer extensive new student orientations and first-year seminars that are designed to assist college students as they transition from high school. Book publishers produce scores of texts to support these efforts. Many of these initiatives focus on helping students to enhance the skills that are integral to college success such study habits, time management, critical thinking and note-taking, just to name a few. However, there has been a lack of focus on the viewpoint that help-seeking is a vitally important college, survival skill. Therefore, studies like the present one must be perpetuated, and the results communicated to higher educational professionals who are accountable to respond accordingly.

APPENDIX A

Task Vocabulary Words

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Neonate

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Antedate

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Secede

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Polychromatic

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Chronometer

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Culpable

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Pseudonym

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Pugnacious

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Circumspect

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Synthesis

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Metacognition

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Retrospect

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Tenable

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Archaic

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Herbicide

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Heterodox

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Inexhaustible

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Omnivorous

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Veracity

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Transoceanic

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Protract

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Splenectomy

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Equitable

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Reflux

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Extragalactic

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Misnomer

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Dynamometer

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Hyperkinetic

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Elucidate

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Malcontent

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Admonition

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Convene

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Antitoxin

Definition:

_____

_____

Confidence Scale

1 2 3 4 5 6 7 8 9 10

Not Confident At All Somewhat Confident Highly Confident

Demagogue

Definition:

_____

_____

APPENDIX B

Sample Vocabulary Posttest & Posttest Self-Efficacy Rating Scale

Participant # _____

Confident Level for achieving a grade of "B" or better on this quiz:

1 2 3 4 5 6 7 8 9 10

Anteroom

Influx

Culprit

Patricide

Lucid

Omnipresent

Premonition

Pseudoscience

Appendectomy

Pugilist

APPENDIX C

PARTICIPANT CONSENT FORM

My name is Mildred Broccoli, and I am a student in the Educational Psychology Ph.D. Program at The Graduate Center of the City University of New York (CUNY), and Principal Investigator of this project. The project is a research study that involves learning more about the extent of college students' vocabulary knowledge.

I would like your permission to participate in this investigation. The session will take no longer than 30-40 minutes, and, in short, you will be asked to complete a brief demographic questionnaire, and then asked to define a total of 6 vocabulary words. Following, you will be given a short, 10-item quiz to assess what you have learned.

Also with your permission, I would like to *audio-tape* this session so I can record the details accurately. The tapes will only be heard by me and my research associates. All information gathered will be kept strictly confidential, and will be stored in a locked file cabinet, to which only I will have access. At any time you can refuse to answer any question or end this session.

The risks from participating in this study are no more than those encountered in your everyday academic life. The task you will work on as well as the follow-up quiz will be very similar to those you have encountered when you took your college placement test and/or SAT. The benefit of your participation is the hope that it will add to the generalized knowledge of this research topic. There will be approximately 100 college students taking part in this study.

I may publish results of the study, but names of people, or any identifying characteristics, will not be used in any of the publications. If you would like a copy of the study, please provide me with your address and I will send you a copy in the future.

If you have any questions about this research, you can contact me at (201) 761-6030 or mbroccoli@gc.cuny.edu. If you have questions about your rights as a participant in this study, you can contact Kay Powell, IRB Administrator, The Graduate Center/City University of New York, (212) 817-7525, kpowell@gc.cuny.edu.

Thank you for your participation in the study. I will give you a copy of this form to take with you.

I agree to have this interview audio-taped please [circle one]: Yes No

_____ _____

Participant's signature Date

_____ _____

Principle Investigator's signature Date

APPENDIX D

Participant Demographic Information Form

(Please print)
Personal Information:
First Name: _____ MI: ___ Last Name: _____

Address: _____

Phone #: _____ Email Address: _____

Student ID# _____ Gender: M / F Cumulative GPA: _____

SATV: _____ SATM: _____ SAT Total Score: _____ ACT Score _____

Were you required to take any *remedial* or *ESL* courses in college? (circle yes or no below)

YES (If yes, please list the course(s) below.) **NO**

Remedial courses:

_____ _____

_____ _____

Ethnicity:
[ ] African-American / Black
[ ] American Indian / Alaska Native
[ ] Asian American/ Asian
[ ] Native Hawaiian/ Pacific Islander
[ ] Mexican American/Chicano
[ ] Puerto Rican
[ ] Spanish-American / Latino
[ ] Other: _____(please specify)
[ ] Decline to state:

APPENDIX E

PARTICIPANT DEBRIEFING STATEMENT

Date

Dear << First Name >> << Last Name >>:

I would like to take this opportunity to thank you once again for participating in my research study. Your contributions will hopefully add to the generalized knowledge in this area. This letter also serves to inform you of the true nature of the investigation that you participated in.

The study was entitled, "*The Role of Self-Theories and Self-Efficacy in Adaptive Help-Seeking by College Students*." The intent of this investigation was *not* to assess college students' vocabulary knowledge but rather to examine the role of performance attributions and self-efficacy beliefs on adaptive help-seeking behavior. Essentially, I wanted to know how these two variables influence the type of help students' preferred.

As you might be aware if you have taken an introductory research course, scientists often have to use forms of deception in order to elicit the desired behavior they wish to study. The agencies that supervise research projects such as this one weigh the costs and benefits of using deception before granting a researcher permission to conduct his or her study. So this is one method we use to advance scientific knowledge.

If you are interested in learning more about this study or your specific results, please feel free to contact me at (201) 761-6030 or mbroccoli@gc.cuny.edu. I would be happy elaborate further regarding the details of this investigation.

Again, thank you for your time and assistance.

Sincerely,

Mildred A. Broccoli

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