



Learning and Grade Orientation in Undergraduate Students

Kailey Meyer*, Natalie Homa**, and Kate Marley***

Doane University

Thiel College

Kailey Meyer graduated magna cum laude from Doane University in May, 2018, with a Bachelor of Arts degree in Psychology. Currently, she is enrolled in her first semester at Missouri State University in the Master of Science Industrial-Organizational Psychology program. Kailey would like to extend a special thank you to Dr. Natalie Homa for her mentorship, guidance, and support on this research.

Author Note

This research was supported in part by grants from Doane University for Undergraduate Summer Research. I would like to acknowledge Dr. Natalie Homa on her assistance through the research and construction of the manuscript.

Correspondence concerning this article should be addressed to Kailey Meyer, Department of Psychology, Missouri State University, Springfield, MO 65897. Contact: meyer20@live.missouristate.edu

*Kailey Meyer, Department of Psychology, Doane University. Kailey will be attending graduate school at Missouri State University within the Industrial Organizational Psychology department in Fall 2018.

**Natalie Homa, Department of Psychology, Doane University. Natalie is now in the Department of Psychology at Thiel College.

***Kate Marley, Department of Biology, Doane University.

Abstract

This research examines relationships between college students' learning and grade orientations and a variety of academic related variables. Online surveys were completed by 115 college students at a small Midwestern liberal arts university. Results revealed that those with a high learning orientation had significantly better reported time management skills, academic self-efficacy, academic self-regulation, and study habits compared to those with low learning orientation. Additionally, faculty support significantly predicted more learning oriented attitudes and less grade oriented behaviors. Finally, students who reported higher learning orientation attitudes were significantly more likely to use traditional peer tutoring than students who did not receive tutoring. These findings can be used to consider designing

class activities to encourage learning orientation beliefs and behaviors in college students.

College students may be motivated to learn, to get good grades, or both (Purcell, 2010). Academic achievement motivations can have an overall impact on the students' success. This study will examine academic motivations (i.e., attitudes and behaviors) and tutoring services, both traditional tutoring and drop-in tutoring, that were offered at a small liberal arts university in the Midwest. In addition, the current study will provide an examination of the relationship between students' academic motivations and a variety of demographics and student characteristics.

Motivation and achievement goal research has informed our understanding of academic achievement across all ages. Very broadly, researchers examine intrinsic and extrinsic motivations, revealing that intrinsic motivation involves a drive to master a task and external motivation involves individuals seeking an external goal after engaging in a task (e.g., Ryan & Deci, 2000). These motivations influence behavior and cognition within the home, work, sport, and school environments. Specifically, one large meta-analysis revealed that extrinsic rewards are negatively related to intrinsic motivations during basic word problems and puzzle completion tasks (Deci, Koestner, & Ryan, 1999), while a more recent meta-analysis replicated some of these findings and continued to emphasize the importance of intrinsic motivation on quality of performance (Cerasoli, Nicklin, & Ford, 2014). It has also been found that these motivations can influence our way of thinking. Walker, Greene & Mansell (2006) examined cognitive engagement revealing that intrinsically motivated individuals tend to have meaningful cognitive engagement; externally motivated individuals reported more shallow cognitive engagement. These motivations can also impact one's achievement goals.

According to Dweck (1986) & Nicholls (1984), achievement goal theory is a way of examining a student's actions towards challenges (as cited in Senko, Hulleman & Harackiewicz, 2011). In an academic setting, students set goals for themselves, whether they are toward reaching a certain grade or having a better understanding of a concept. Achievement goal theory has theoretically and empirically distinguished mastery and performance goals during task completion including academic related tasks (Cellar et al., 2011; Covington, 2000; Elliot, 2005). Mastery goal oriented students strive to develop competence and gain knowledge while completing tasks, whereas performance goal oriented students focus solely on completion of a task (Hulleman, Schragar, Bodmann, & Harackiewicz, 2010). Coutinho's (2007) research expressed that mastery oriented students reported greater performance (i.e., higher GPA) and higher self-efficacy compared to performance oriented students. Similarly, D'Lima, Winsler, & Kitsantas (2014) found that college students who were more performance oriented had lower GPAs. However, some research has revealed a positive relationship with GPA in college students who are both mastery and performance oriented

(Eppler, Carsen-Plentl, & Harju, 2000).

Researchers have examined intrinsic and extrinsic motivation and achievement goal orientation's impact on various behaviors including academics; however, nested within these broader literatures, other researchers have operationalized a similar, but more academically focused construct. Specifically, Eison, Pollio, & Milton (1983) conceptualized two types of motivations in the college classroom: learning orientation (LO) and grade orientation (GO). As defined by Eison et al (1983), learning orientation is "the predominant attitude held by those students who approached the college experience as an opportunity to acquire knowledge and to obtain educational and personal enlightenment" (2). An example of a learning orientation attitude might be students who seeks to learn outside of their major. An example of learning orientation behavior would be taking courses outside of one's major without fearing it may hurt one's GPA. Grade orientation is defined as "students who view obtaining a good course grade, in and of itself, a valid reason for their being and doing in college" (Eison et al., 1983, p. 2). An example of a grade oriented attitude may be a student who does not understand or complains about taking required courses outside of the major; thus, an example of a grade oriented behavior would be that student seeking information about which instructors assign grades less rigorously than others.

Learning and grade orientation definitions can be compared to, but not equated with, performance and mastery orientations. Theoretically, mastery orientation is comparable to learning orientation, whereas performance orientation is similar to grade orientation. Empirically, students with learning orientation ideals such as inquiring knowledge and seeking development (Eison et al., 1983) are similar to those with high mastery orientation (Hulleman et al., 2010). While similarities do exist between the narrower topic of LOGO and the more broad achievement goal and motivation theories, the remainder of this paper will focus on findings specific to the LOGO research.

Much of the research has focused on the relationship between LOGO and academic success variables. Beck, Rorrer-Wood, & Pierce (1991) found that grade orientation had a negative relationship with both GPA and SAT scores in a sample of 110 undergraduate students. Beck et al. (1991) also discovered through interviews that students who were more grade oriented studied the material presented in class differently than students who were more learning oriented. Grade oriented students tended to focus only on questions that they felt would be on the test, while less grade oriented students focused on a wider variety of knowledge discussed in class (Beck et al., 1991). The current study will attempt to replicate these findings. It is hypothesized that students who report higher learning orientation will report higher GPAs and those that report higher grade orientation will report lower GPAs.

Past research on LOGO has primarily focused on academic outcomes, specifically cognitive strategies and GPA. To our knowledge, there has been minimal research focusing on predictors of LO and GO. Interestingly, Purcell

(2010) examined differences in student orientation between traditional-aged college students and non-traditional college students. Students who were at least 25 years old reported a higher learning orientation compared to those who were younger than 25 years. This finding suggests that there may be something different about these groups of students, beyond age, that may influence their orientation. The current study will focus on students' characteristics beyond age such as time management, academic self-regulation, and academic self-efficacy. Previous research within the LOGO literature and broader motivation research has shown relationships between cognitive engagement (Walker et al., 2006), study strategies (Beck et al., 1991), and self-efficacy (Coutinho, 2007). Therefore, it is hypothesized that students who report higher learning orientation will report using better study habits, time management, academic self-regulation, and academic self-efficacy.

Previous LOGO research has also examined student and faculty attitudes and values regarding learning orientation and grade orientation. Pollio & Beck (2000) assessed the values that students and faculty attached to LOGO through focus groups and questionnaires. Specifically, they asked the students and faculty about their current and ideal orientation in a series of three studies. The first study examined students' own orientations. Students who reported high LO scores also reported wanting ideal high LO scores and students who reported having high GO scores reported having an ideal high LO score, indicating that both LO and GO students would want to be more learning oriented. This highlights the fact that students know the importance of learning orientation. In the second study, students were asked to describe their professors current LO and GO along with what they would like to see in an ideal professor with regards to LO and GO. Pollio & Beck (2000) found that students' ideal professor would be more learning oriented. This means that students' ideal professor would focus less on students' grade than what their professors currently do. The third study asked professors to describe their typical students' LO and GO and their ideal students' LO and GO. Pollio & Beck (2000) found that professors' ideal student would be less grade oriented. Based on this research, one may assert that faculty could influence students' orientation. Perhaps, if students are surrounded by faculty who model a high learning orientation as well as encourage a high learning orientation, then students may be more learning oriented. The current study set out to examine the relationship between campus climate—specifically faculty support—and orientation. In addition, the current study also explored the variable of university attachment. It was believed that if the students felt a strong attachment to the university that went beyond a place to get grades and achieve a diploma, then perhaps they would report higher learning orientation. Therefore, we hypothesized that students who perceived higher faculty support and university attachment would be more likely to report higher learning orientation.

The current study sought out to examine the relationship between a number of campus factors including faculty support and attachment as well as

academic services, specifically tutoring. To our knowledge, there has been no prior research examining the characteristics of learning orientation and grade orientation in relationship to tutoring services. We know from past research that tutoring can be helpful. For instance, Cooper (2010) examined the effectiveness of an undergraduate tutoring program. An electronic system recorded the number of times a student visited the tutoring program, what course they were receiving assistance for, and the amount of time spent at the program. Research found that students who visited the tutoring program were 10 times more likely to continue to enroll in college. Additionally, Cooper (2010) found that freshman who received tutoring more than 10 times within the semester were typically in better academic standing. Students who did not utilize the tutoring service had a mean cumulative GPA of just below a 2.9. Students who visited fewer than 10 times had a mean cumulative GPA of approximately 2.85, and for students who received tutoring more than 10 times had an approximate cumulative GPA of just below a 3.10 (Cooper, 2010). This research suggests using tutoring services is related to improved GPA; however, we cannot make a specific prediction because the relationship between GPA and LOGO is unclear. We hypothesize that there will be a relationship between learning orientation and tutor seeking behavior.

Hypotheses

Understanding a student's attitude and behavior in relation to academics is important in an educational setting. The current study set out to replicate previous findings as well as establish new relationships between LOGO and a variety of student and campus characteristics. A summary of the hypotheses examined above is listed below.

H1: Students who are more learning oriented are more likely to have a higher GPA and students who are more grade oriented are more likely to have lower GPAs.

H2: Students who are more learning oriented are more likely to have better student characteristics, such as time management skills, self-efficacy, academic self-regulation, and study habits.

H3: Students who have a higher perceived faculty support are more likely to have a higher learning orientation.

H4: There will be a relationship between learning orientation and tutor seeking behaviors.

Method

Participants

The sample included 163 undergraduate students at a small Midwestern liberal arts university (52.2% females, $M_{\text{age}} = 19.12$, $SD=1.33$). Forty-eight participants were excluded from this research because of incomplete data, which means our final sample consisted of 115 undergraduate students (68.7% White,

2.5% African/Black, 5.5% Hispanic/Latino, 0.6% Native American/Alaskan Native, 1.8% Asian, 1.8% Other). Fifty percent of the participants were freshmen, 27.3 % sophomores, 18.2% juniors, and 4.5 % were seniors. The average self-reported GPA for these students was 3.36 ($SD = .44$). Students from a wide variety of majors participated in this research.

Procedure

Approval from the Institutional Review Board was obtained prior to conducting this research. Participants received an online link in which they were able to participate in the survey. The first page of the survey included the consent form in which participants were informed of the nature of the study and were told they had the option of leaving the survey at any time and for any reason. If the participants agreed to participate, they were able to click on the link, which would open up the survey. The survey took approximately 30 minutes to complete. Some students received extra credit for their course if they completed this survey.

Measures

Time Management Scale. This 10-item scale used a Likert scale from 1 (seldom) to 5 (very often). An example item is “When I have to manage my time, I review my goals” (Peeters & Rutte, 2005). A total sum score of all items was calculated and used in statistical analyses with higher scores indicating better time management.

Motivated Strategies for Learning Questionnaire. This scale is 24-items and includes two subscales that use a 7-point Likert scale from 1 (not at all true of me) to 7 (very true of me). The academic self-efficacy subscale includes 8 items such as, “I’m confident I can understand the most complex material presented by the instructor in my courses.” The academic self-regulation subscale includes 16 items such as “When I study for class, I set goals for myself in order to direct my activities in each study period” (Adapted from Pintrich et al., 1993). A total sum score of items for both subscales (academic self-efficacy and academic self-regulation) was calculated and used in statistical analyses.

Campus Climate Measure. This 21-item scale consists of three subscales, but for the purpose of this research only the faculty support subscale (6-items) was used and was measured on a Likert scale from 1 (strongly disagree) to 4 (strongly agree). An example item is “I feel that I have received adequate guidance from faculty members at this university” (Hutchinson, Raymond, & Black, 2008).

University Attachment Scale. This 9-item scale uses a five point Likert Scale from 1 (not at all good) to 5 (extremely good) with higher scores indicating stronger attachment. An example item is “How good would you feel if you were described as a typical [insert institution] student” (France, Finney, & Swerdzewski, 2010). A total sum score of all items was calculated and used in statistical analyses with higher scores indicating stronger attachment to institution.

Study Habit Checklist. This 35-item scale examines a student's study habits on a scale from 1 (not at all like me) to 5 (exactly like me). An example item is "I generated my own examples about the material" (Gurung, Weidert, & Jeske, 2010). A total sum score of all items was calculated and used in statistical analyses with higher scores indicating adoption of better study habits.

Learning Orientation and Grade Orientation (LOGO II). This 32-item scale measures a student's learning and grade orientation on a five point Likert Scale from 1 (strongly disagree) to 5 (agree strongly). Example items from LOGO II include LO Attitudes: "I find the process of learning new material fun," LO Behaviors: "I discuss interesting material that I've learned in class with my friends or family," GO Attitudes: "I do not find studying at home to be interesting or pleasant," and GO Behaviors: "I try to find out how easy or hard an instructor grades before signing up for a course" (Eison, Pollio, Milton, 1983). A total sum score of items for the four subscales was calculated and used in statistical analyses. Some analyses combined behavior and attitude subscale scores for a total LO score and total GO score.

Jacobs (1992) explored the internal reliability of the LOGO scale. A Cronbach's alpha is a statistical measure to evaluate the internal consistency and reliability of a measure. A statistical score of .70 or above is when a measure is considered to have good reliability (Morling, 2018). According to Jacobs (1992) this scale had a Cronbach's alpha of .58 for learning orientation and .70 for grade orientation. These findings for the Cronbach's alpha were lower than previously reported in the research (Jacobs, 1992). However, for the current study the Cronbach's alpha was more in-line with others for learning orientation: for learning orientation, the Cronbach's alpha was .66; it was .75 for grade orientation.

Additional survey questions focused on tutoring service usage and demographics. These tutoring services included traditional tutoring and the drop-in tutoring system, which are typically offered in the library in a similar setting. The tutoring system provides services to all students for a wide variety of courses that are across different disciplines.

Results

The first hypothesis stated that students who are more learning oriented are more likely to have a higher GPA and students who are more grade oriented are more likely to have lower GPAs. To analyze this hypothesis, a multiple linear regression examined how well LOGO attitudes and behaviors predicted student reported GPA. Collectively, these four variables explained 15% of the variance in GPA, $F(4, 62) = 2.77, p < .01$. Learning oriented behaviors positively predicted GPA ($\beta = .34, p = .01$), whereas grade oriented behaviors negatively impacted GPA ($\beta = -.36, p = .008$). LO attitudes and GO attitudes were not significant predictors.

The second hypothesis stated that students with a high learning orientation would predict better student characteristics (time management, academic self-

efficacy, academic self-regulation, and study habits). Total scores for LO and GO were used for these analyses, which includes both behavior and attitude scores. A median split was used to create High (Hi) and Low (Lo) scores for LO and GO. A series of *t*-tests analyzed differences in student characteristics based on LOGO scores. See Table 1 for mean scores and standard deviations of student characteristics based on LOGO scores.

Students with a Hi LO reported significantly higher time management skills compared to Lo LO, $t(112) = -2.04, p = .04, d = .38$. Students with Lo GO also reported significantly higher time management skills compared to Hi GO students, $t(112) = 2.16, p = .03, d = .40$.

Students with a Hi LO had significantly higher academic self-efficacy scores compared to Lo LO, $t(112) = -4.05, p < .001, d = .76$, and also had significantly higher academic self-regulation scores compared to Lo LO, $t(112) = -2.38, p = .02, d = .45$. No significant GO differences were found for academic self-efficacy, $t(112) = -.26, p = .79$, nor academic self-regulation, $t(112) = -1.72, p = .09$. Students with a Hi LO were significantly more likely to report using better study habits compared to Lo LO, $t(112) = -2.90, p = .005, d = .55$, but again no significant GO differences were found, $t(112) = -.76, p = .45$.

Table 1

T-test Results Examining Differences in Student Characteristics Based on LOGO Score

	Learning Orientation			Grade Orientation		
	HiLO Mean (SD)	LoLO Mean (SD)	t-value	HiGO Mean (SD)	LoGO Mean (SD)	t-value
Time Management	39.31 (5.74)	36.89 (6.75)	-2.04*	36.70 (6.49)	39.24 (6.11)	2.16*
Academic Self-Efficacy	5.88 (.73)	5.21 (1.00)	-4.05***	5.54 (1.03)	5.49 (.87)	-.261
Academic Self-Regulation	4.71 (.79)	4.38 (.79)	-2.38*	4.41 (.71)	4.64 (.74)	1.71
Study Habits	104.58 (16.95)	95.05 (17.95)	-3.06***	121.84 (20.89)	124.72 (19.71)	.758

Note. Hi=participants scored above the median, Lo=participants scored below the median.

* $p < .05$. ** $p < .01$. *** $p < .001$.

The third hypothesis predicted that students who received more faculty support would report having more learning oriented attitudes. Simple correlations revealed a positive relationship between faculty support and learning orientation, meaning that those reporting higher perceived faculty support also reported higher learning orientation ($r = .19, p = .04$). Results revealed a significant negative relationship with grade orientation, meaning that those who perceived higher

faculty support reported lower grade orientation ($r = -.25, p = .008$). However, we set out to see the impact of support after taking into account other influencing variables such as student characteristics. Therefore, four hierarchical regression analyses examined predictors of learning and grade orientation attitudes and behaviors including Block 1 demographics, Block 2 student characteristics, and Block 3, campus factors. The first block included demographics such as age, gender, year in school, and percent of shared tuition expenses with family. The second block included time management, academic self-efficacy, academic self-regulation, and study habits. The third and final block included faculty support and university attachment (see Table 2 for list of variables and results of final model).

In the final model examining predictors of learning oriented attitudes we found that year in school ($\beta = .38, p < .01$) and faculty support ($\beta = .23, p < .05$) were significant predictors, $R^2 = .22, F(10, 99) = 2.79, p < .01$. However, when examining learning oriented behaviors campus factors, including faculty support, were not significant predictors. Student characteristics were the main significant predictors of LO behaviors including study habits ($\beta = .45, p < .001$), academic self-efficacy ($\beta = .25, p < .05$), and student age ($\beta = .34, p < .05$), $R^2 = .30, F(10, 100) = 4.25, p < .001$.

Interestingly, campus factors were significant predictors of grade oriented behavior, but not attitudes. Specifically, faculty support ($\beta = -.34, p < .001$) negatively predicted grade oriented behavior while university attachment ($\beta = .18, p < .05$) was a positive predictor. In addition, students' study habits ($\beta = .33, p < .01$) and time management ($\beta = -.24, p < .05$) predicted grade oriented behaviors in the final model, $R^2 = .34, F(10, 100) = 5.06, p < .001$. The final model for grade oriented attitudes was not significant, $F(10, 99) = 1.79, p = .07$.

Hypothesis four stated that we expected to see a relationship between learning orientation and tutor seeking behaviors. Nearly 40% of the students in our sample reported they had received peer tutoring and just over a quarter of the students reported they had used the drop-in tutoring service. To examine our hypothesis, multiple *t*-tests were used. It was found that those students who received traditional peer tutoring reported significantly higher learning oriented attitudes ($M = 3.72, SD = .43$) compared to those students who did not receive tutoring ($M = 3.45, SD = .53$), $t(111) = 2.82, p = .006$. In addition, those who sought out help at the drop-in tutoring services reported significantly higher learning oriented attitudes ($M = 3.67, SD = .45$) compared to those students who did not receive tutoring ($M = 3.38, SD = .43$), $t(59) = 2.44, p = .02$. This is in support of hypothesis four. There was no significant difference in total grade orientation scores between those who received and those who did not receive peer tutoring $t(112) = .60, p = .55$. In addition, there was no significant difference in total grade orientation scores between those who used and did not use the drop-in tutoring services, $t(59) = -.20, p = .98$.

Table 2*Summary of Hierarchical Regression Analysis*

Variable	Learning Orientation Attitudes	Learning Orientation Behaviors	Grade Orientation Attitudes	Grade Orientation Behaviors
Block 1: Demographics				
Age	-.14	.33*	-.19	-.17
Gender	.12	-.04	-.12	-.28**
Year in School	.38**	-.20	.09	.23
Tuition	.05	-.03	.12	.04
Block 2: Student Characteristics				
Time Management	.16	-.09	.03	-.24*
Self-Efficacy	.10	.26*	.18	.11
Self-Regulation	.03	-.08	-.04	-.15
Study Habit Checklist	-.01	.44***	-.29	.33**
Block 3: Campus Factors				
Faculty Support	.23*	-.02	-.01	-.34***
University Attachment	-.07	.07	.10	.18*
R2 (DR2)	.22(.05)	.30(.00)	.15 (.01)	.34 (.10)
Overall F (ΔF)	2.78** (2.92)	4.25*** (.22)	1.79 (.44)	5.06*** (7.86)**

Note. Only standardized beta coefficients from final model are presented.

* $p < .05$. ** $p < .01$. *** $p < .001$

A series of exploratory analyses were conducted to examine group differences in LOGO scores based on student demographics. It was found that males ($M = 2.90$, $SD = .48$) reported significantly higher grade orientation scores compared to females ($M = 2.65$, $SD = .48$), $t(108) = 2.79$, $p = .006$, $d = .53$. No significant differences in learning orientation were found between sex, $t(108) = -.23$, $p = .82$. Juniors ($M = 3.24$, $SD = .43$) reported significantly higher learning orientation compared to freshmen ($M = 2.95$, $SD = .36$), $F(3,110) = 2.89$, $p = .04$. See Figure 1. There were no significant differences in grade orientation between year in school, $F(3,110) = 2.06$, $p = .12$. Students involved in a Greek organization ($M = 3.21$, $SD = .44$) reported significantly higher learning orientation compared to non-Greek students ($M = 2.96$, $SD = .32$), $t(39) = 2.12$, $p = .04$, $d = .66$. There were no significant differences in grade orientation between Greek and non-Greek students, $t(39) = .34$, $p = .74$.

Discussion

Overall, results indicated that there is a relationship between learning orientation and grade orientation and academic success. Specifically, results

replicated past findings, demonstrating that there is a negative relationship between GO behaviors and academic success (i.e., GPA) (Beck et al., 1991) and establishing a positive relationship between LO behaviors and GPA. In addition, differences in key student characteristics (time management, academic self-efficacy, academic self-regulation, and study habits) were highlighted among students with a higher LO compared to low LO, while very few differences emerged regarding GO. Finally, we examined campus factors, showing that perceived faculty support plays a role in predicting higher LO attitudes and lower GO behaviors and students who reported higher LO attitudes were more likely to seek out tutoring on campus.

Limitations

A major limitation the possibility of this study includes a lack of diversity in our sample. Our sample consisted of students from one small liberal arts college. It would be beneficial to examine a more ethnically diverse sample and include traditional and nontraditional students from private and public institutions.

Another limitation includes the possibility of socially desirable responding on the LOGO scale. Social desirability is a type of bias that occurs when participants respond to questions in a way that would be viewed as desirable to other individuals (Morling, 2018). The questions asked about the student's attitudes and behaviors with regard to an academic setting which could have elicited a socially desirable response from a participant. Along with responses to LOGO II, we also asked students about their GPA and use of tutoring services. This may have evoked a socially desirable response from the participants if they felt their GPA or use of the tutoring services was inadequate.

Implications & Application

A key finding of this study demonstrates that students who report higher GO behaviors may not learn the academic material in an effective manner, and, therefore, are unable to apply it to other concepts when necessary thus negatively impacting their GPA. This demonstrates the importance of reaching out to students who are grade oriented and helping them learn better study techniques and approaches to classroom material. As mentioned in Beck et al., (1991), students who score high on grade orientation may only focus on specific questions asked of them, which could hinder their ability to learn the broad picture. However, students who reported higher LO behaviors reported having a higher GPA. This may be explained by our findings that those with higher LO also reported significantly better academic skills including better study habits, higher academic self-efficacy and regulation skills, as well as time management skills. These skills are important to target and focus on because they are related to both higher GPA and higher LO.

Furthermore, these skills not only are related to GPA and LO, they could also be important characteristics to possess while transitioning to the workforce.

It could be expected that students with a higher LO experience a better transition into the workforce because they may be more motivated to seek out and hold employment. These students may be well-rounded and could be able to draw more from their education to apply to their job, thereby utilizing these skills. Ideally, these students would have a stronger intrinsic motivation to complete their job tasks rather than just completing the tasks to get their paycheck.

In addition to behavioral interventions, it is important to consider what may have an influence on a student's attitude. One top predictor of higher LO attitudes was perceived faculty support. Faculty support was also the best predictor of lower GO behaviors. The implications of these results could be far reaching. Faculty encouraging students to learn the material presented in class and challenging students outside of the classroom may explain these results. Faculty advising plays an essential role in student academic life. Advisors could serve as advocates for a stronger learning orientation by encouraging students to take classes that are interesting to them, rather than seeking out the easiest course that is offered. The advisor could encourage students to look at academics from a different light by showing the importance of the material they are learning rather than emphasizing the grades that they receive.

Interestingly, faculty support seemed to only have an influence on student LO attitudes. Thus, to more completely address students' behavior, it may be necessary to explore other avenues than faculty support. Academic support services such as tutoring may be one area that could target students' behavior. It is essential to also target students' behavior so that they are building a strong habit skill set and personal and professional behaviors that could transfer over to the workforce. Additionally, implication of freshman seminars may be another avenue that could be used to target students' behavior. With freshman seminars, students could be exposed to quality study techniques, time management skills, and strategies to cope with academic challenges.

Future Research

Future research may explore classroom instruction that would encourage learning oriented beliefs and behaviors in college students. Future research could compare a lecture based classroom environment where grades played a larger role in a student's academic success to a classroom focused on service learning. A learning oriented environment, such as service learning could provide students with a greater opportunity to foster their educational development which could aid in their overall success (Celio, Durlak & Dymnicki, 2011). For example, service learning could enhance LO by encouraging students to apply concepts as opposed to memorization. Similarly, problem based learning encourages students to engage in flexible thinking and develop multiple answers for problems (Hmelo-Silver, 2004; Walker, Leary, Hmelo-Silver & Ertmer, 2015). Future research could compare a problem-based classroom to a classroom that only focuses on lecturing to the students and having the students complete assignments. Future research

could also differentiate between a classroom that implements only presentations from professors to a classroom that encourages discussion and active participation from every student.

Another possible future study could examine the emphasis the professor puts on grades in a course. If faculty provide too much emphasis on receiving a grade or even just passing a class, it may have an impact on the way that the students think about and approach their course material. Perhaps a professor who uses less graded activities, or use fewer points in their grading system, could emphasize learning orientation more. Another direction for future research could be exploring the difference between faculty that emphasize the purpose of the assignment to faculty that do not emphasize the purpose. This research could be utilized to determine what type of impact the grading may have on a student's learning. Potentially, finding a balance between faculty who have multiple worksheets and those who emphasize application is important. If faculty describe the purpose of the assignments, and explain it in a meaningful way, students may draw more from the assignment and could gain a stronger understanding along with application abilities. Students may value the learning process (i.e., LO) over, or in addition to, the point value of the assignment (i.e., GO).

Just as the classroom and advising opportunities are an important learning area, so are student support services, such as academic support. Therefore, it is important that tutors are trained and supervised in a way that will foster educational success (Bruffee, 1980). Bruffee (1980) discussed the importance of proper training for peer tutors. Tutors can help encourage their tutees to have learning oriented attitudes and behaviors, which may assist in fully learning the material. One potential tutoring program mentioned is designing a course that tutors could take for credit (Bruffee, 1980). It may be beneficial to construct a course that shows tutors the importance of fostering learning orientation attitudes and behaviors. Additional future research could examine tactics that may help tutors better target their tutees' academic needs. A study could be conducted to compare tactics tutors use to aid their tutees. This would foster a more individualized study plan that may assist students in also gaining and building their learning oriented attitudes and behaviors.

This study provided new insights into the role of LOGO throughout college; however, future research should explore when and how LO develops. Many young children enjoy learning the "why" aspect of life. When does this curiosity to learn seemingly diminish in some and become more of an external motivation? How can parents and teachers instill LO at an early age so that students can embrace being lifelong learners? If future research can hone in on LOGO and determine tactics to encourage learning orientation, even at a young age, then students may desire to become lifelong learners. This could aid students in all aspects of their lives, beginning in early elementary school and continuing through the transition from college to the workforce.

References

- Beck, H. P., Rorrer-Woody, S., & Pierce, L. G. (1991). The relations of learning and grade orientations to academic performance. *Teaching of Psychology, 18*(1), 35-7. doi: 10.1207/s15328023top1801_10
- Bruffee, K. A. (1980). Two related issues in peer tutoring: Program structure and tutor training. *College Composition and Communication, 31*(1), 76-80.
- Celio, C. I., Durlak, J., & Dymnicki, A. (2011). A meta-analysis of the impact of service-learning on students. *Journal of Experiential Education, 34*(2), 164-181.
- Cellar, D. F., Stuhlmacher, A. F., Young, S. K., Fisher, D. M., Adair, C. K., Haynes, S., ... & Riestler, D. (2011). Trait goal orientation, self-regulation, and performance: A meta-analysis. *Journal of Business and Psychology, 26*(4), 467-483.
- Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological bulletin, 140*(4), 980-1008.
- Cooper, E. (2010). Tutoring center effectiveness: the effect of drop-in tutoring. *Journal of College Reading and Learning, 40*(2), 21-34. doi:10.1080/10790195.2010.10850328
- Coutinho, S. A. (2007). The relationship between goals, metacognition and academic success. *Educate, 7*(1), 39-47. Retrieved from <http://educatejournal.org/index.php/educate/article/viewFile/116/134>
- Covington, M. V. (2000). Goal theory, motivation, and school achievement: An integrative review. *Annual review of psychology, 51*(1), 171-200. doi: 10.1146/annurev.psych.51.1.171
- D'Lima, G. M., Winsler, A., & Kitsantas, A. (2014). Ethnic and gender differences in first-year college students' goal orientation, self-efficacy, and extrinsic and intrinsic motivation. *Journal of Educational Research, 107*(5), 341-356. doi:10.1080/00220671.2013.823366
- Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125*(6), 627-668.
- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist, 41*(10), 1040-1048.
- Eison, J. A., Pollio, H. R., & Milton, O. (1983). Manual for use with LOGO-II.
- Elliot A. J. (2005) A conceptual history of the achievement goal construct. In A. J. Elliot & C. S. Dweck Editor (eds.), *Handbook of competence and*

motivation (pp. 52-72). New York, NY: Guilford Press.

- Eppler, M. A., Carsen-Plentl, C., & Harju, B. L. (2000). Achievement goals, failure attributions, and academic performance in nontraditional and traditional college students. *Journal of Social Behavior & Personality, 15*(3), 353-372. <http://eds.a.ebscohost.com/ehost/detail/detail?vid=3&sid=fb7a1a86-7a13-449f-aca3-c28b61766295%40sessionmgr4007&bdata=JkF1dGhUeXBIPWlwLHVpZCZzaXRIPWVob3N0LWxpdmU%3d#AN=18367479&db=aph>
- France, M. K., Finney, S. J., & Swerdzewski, P. (2010). Students' group and member attachment to their university: A construct validity study of the University Attachment Scale. *Educational and Psychological Measurement, 70*(3), 440-458. doi: 10.1177/0013164409344510
- Gurung, R., Weidert, J., & Jeske, A. (2010). Focusing on how students study. *Journal of the Scholarship of Teaching and Learning, 10*(1), 28-35. <https://eric.ed.gov/?id=EJ882123>
- Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn?. *Educational Psychology Review, 16*(3), 235-266.
- Hulleman, C. S., Schragar, S. M., Bodmann, S. M., & Harackiewicz, J. M. (2010). A meta-analytic review of achievement goal measures: Different labels for the same constructs or different constructs with similar labels? *Psychological Bulletin, 136*(3), 422-449. doi: 10.1037/a0018947
- Hutchinson, S. R., Raymond, K. J., & Black, K. R. (2008). Factorial invariance of a campus climate measure across race, gender, and student classification. *Journal of Diversity in Higher Education, 1*(4), 235-250. doi: 10.1037/a0014419
- Jacobs, K. W. (1992). Psychometric properties of the learning-orientation grade-orientation II scale. *Perceptual and Motor Skills, 75*(2), 367-370. doi:10.2466/PMS.75.5.367-370
- Morling, B. (2018). Research methods in psychology: Evaluating a world of information. New York: W.W. Norton & Company.
- Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*(3), 328-346.
- Pollio, H. R., & Beck, H. P. (2000). When the tail wags the dog. *Journal of Higher Education, 71*(1), 84-102. doi: 10.1080/00221546.2000.11780817
- Peeters, M. A., & Rutte, C. G. (2005). Time management behavior as a moderator for the job demand-control interaction. *Journal of Occupational Health Psychology, 10*(1), 64-75. doi: 10.1037/1076-8998.10.1.64

- Pintrich, P. R., Smith, D. A., Garcia, T., & McKeachie, W. J. (1993). Reliability and predictive validity of the Motivated Strategies for Learning Questionnaire (MSLQ). *Educational and Psychological Measurement, 53*(3), 801-813. doi: 10.1177/0013164493053003024
- Purcell, J. M. (2010). Learning and grade orientations of community college students: implications for instruction. *Community College Journal of Research & Practice, 34*(6), 497-511. doi:10.1080/10668920701382898
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78. doi: 10.1037/0003-066X.55.1.68
- Senko, C., Hulleman, C. S., & Harackiewicz, J. M. (2011). Achievement goal theory at the crossroads: old controversies, current challenges, and new directions. *Educational Psychologist, 46*(1), 26-47. doi:10.1080/00461520.2011.538646
- Walker, C. O., Greene, B. A., & Mansell, R. A. (2006). Identification with academics, intrinsic/extrinsic motivation, and self-efficacy as predictors of cognitive engagement. *Learning and Individual Differences, 16*(1), 1-12. doi: 10.1016/j.lindif.2005.06.004
- Walker, A. E., Leary, H., Hmelo-Silver, C. E., & Ertmer, P. A. (Eds.). (2015). *Essential readings in problem-based learning*. Purdue University Press: West Lafayette, IN.