The Interactive Impact of Generational Status and Achievement Goal Adoption on Academic Achievement

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In recent years, increasing interest has been paid to how groups of students perform at four-year universities (Harackiewicz et al., 2014; Sirin, 2005). Specifically, greater attention is being given to systematic patterns of underperformance for certain groups, with an emphasis on understanding and potentially ameliorating these achievement gaps. Examples of such achievement gaps include race, gender, and social class (Harackiewicz, Canning, Tibbetts, Priniski, & Hyde, 2016; Miyake et al., 2010). The purpose of this paper is to examine another achievement gap in four-year universities that has been relatively understudied in the educational psychology literature: The achievement gap between first-generation college students (FGS) and continuing-generation college students (CGS) at four-year universities (Harackiewicz et al., 2014).

Generational Status Achievement Gap

FGS have been typically defined as students whom neither parent has a four-year college degree, whereas CGS have been defined as students with at least one parent with a four-year college degree (Sirin, 2005). These students tend to come from working class and poor backgrounds, and tend to struggle with the transition from home and family life into a fully immersive undergraduate college experience (Covarrubias & Fryberg, 2015). In conjunction with this discomfort, research has indicated that FGS tend to systematically underperform compared to their CGS peers (Harackiewicz et al., 2014).

The reasons for this generational status achievement gap have been recently debated in the literature, with perspectives ranging from more psychological (Harackiewicz et al., 2014) to

more socio-cultural (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012). The overall pattern of these findings suggest that FGS struggle due to a lack of parental knowledge and involvement in their undergraduate activities, which leads to a lack of help-seeking behaviors in times of academic trouble (Stephens, Hamedani, & Destin, 2014).

A promising new line of research assessing the generational status achievement gap has featured work from educational psychology on academic motivation. Specifically, achievement goal theory (Elliot & McGregor, 2001) is being utilized to try and further understand why FGS underperform compared to CGS. It is this work that will be the theoretical cornerstone of the present study.

Achievement Goal Theory

Research on achievement goal theory has been taking place for decades within the educational psychology literature (Nicholls, 1984; Elliot & Thrash, 2001). This work posits that there are goal standards that students can adopt in achievement tasks that direct and guide their behavior and subsequent performance (Elliot & Thrash, 2001). There are two broad types of goals which uniquely define competence in achievement tasks, and it is these two goals which were the original focus of achievement motivation research. One is a mastery goal based on an intrapersonal standard of competence (Nicholls, 1984). Typically, people adopt a mastery goal when they seek to develop new skill sets and base their standard of competence on how well they are performing on the task in relation to their previous attempts or future goals of achievement (Elliot & Church, 1997). They can also seek to demonstrate their competence to others by showing their improvement on past work. The other type of goal is a performance goal, based on an interpersonal standard of competence (Nicholls, 1984). Performance goals are typically adopted when the focus of the achiever is on their performance relative to the performance of

others. This is done in an effort to establish a sense of self-competence or to demonstrate their competence to others to satisfy their own self-worth (Ames & Archer, 1987 as cited in Elliot & Church, 1997; Hulleman, Schrager, Bodmann, & Harackiewicz, 2010).

Early research on goal theory emphasized only the content of goals, specifically mastery and performance aspects. Later work in this area began focusing on a motivation dimension that was common in earlier theories within the field: the valence of motivation (approaching success or avoiding failure; Atkinson & Litwin, 1960). An approach motivation focuses on achieving success and gaining competence. Avoidance motivation, by contrast, focuses on avoiding failure on a task. Approach motivation has been seen as adaptive and avoidance motivation as maladaptive. Those who are approach motivated tend to focus on learning from mistakes and revaluating unsuccessful strategies whereas those who are avoidance motivated prefer tasks that are either so easy that success is almost certain or so difficult that failure is inevitable and therefore is not an indicator of actual ability (Elliot & Church, 1997).

Joining the valence dimension to goal content, Elliot and McGregor (2001) identified four possible achievement goals (See table 1). *Mastery-approach goals* are those in which the achiever is striving to develop personal topic competence, whether by improving upon past performance or learning as much as personally possible. *Performance-approach goals* are those in which the achiever is striving to perform well on a task in relation to everyone else performing that task and ideally to be the best in a given group. *Performance-avoidance goals* are those in which the achiever is striving to avoid underperforming others in a group and ideally to avoid being the worst at a given task in relation to others. *Mastery-avoidance goals* are those in which the focus is on avoiding a decline in skill or task performance or a failure to learn the topic.

Many studies have applied the above achievement goals to academic settings. Mastery-approach goals are positively related to course interest, enjoyment, and intrinsic motivation (Elliot & Church, 1997; Lepper, Corpus, & Iyengar, 2005 as cited in Hulleman et al., 2010), academic engagement (Negru, Pop, & Opre, 2013), and a preference for attempting challenging tasks (Grant & Dweck, 2003 as cited in Hulleman et al., 2010). Though the positive benefits of mastery-approach goals have been widely documented for many academic outcomes, their relationship with academic achievement is rather mixed with some researchers finding a positive relationship (Van Yperen, Blaga, & Postmes, 2014), whereas others have found a negligible relationship (Hulleman et al., 2010).

Performance-approach goals tend to have more mixed findings compared to the other achievement goals. Generally, they have a modest positive relationship with a variety of beneficial academic outcomes such as achievement, effort, cognitive learning strategies, and self-regulatory processes (Barron & Harackiewicz, 2003; Midgley et al., 2001; Wolters, Yu, & Pintrich, 1996). However, performance-approach goals have also been linked to negative outcomes such as test anxiety and poor performance (Linnenbrink, 2005), cheating behavior (Van Yperen, Hamstra, & van der Klauw, 2011), and impaired cognitive performance on achievement tests (Crouzevialle & Butera, 2013).

Performance-avoidance goals predict a wide range of negative academic outcomes such as lower intrinsic motivation (Elliot & Church, 1997), surface-level studying strategies such as rote-memorization (Elliot, McGregor, & Gable, 1999), high levels of worry and perceived negative feedback from parents (Elliot & McGregor, 2001) and low exam performance (Elliot & Church, 1997; Elliot & McGregor, 2001; Elliot, McGregor, & Gable, 1999), especially when the material is perceived as difficult (Darnon, Butera, Mugny, & Hulleman, 2009).

Mastery-avoidance goals, by far the least studied of the four achievement goal constructs, are positively related to ineffectual studying habits and stress (Elliot & McGregor, 2001), hindered performance improvement on a verbal skills test (Van Yperen, Elliot, & Anseel, 2009), and disrupted emotion regulation during stressful achievement situations (Sideridis, 2007). The primary reason for the lack of work on these goals is that research has found that they are relatively uncommon among college-aged populations (Ciani & Sheldon, 2010), however that research was conducted primarily on student athletes, which is a unique population among undergraduates. These few findings leave open many questions regarding the true nature of mastery-avoidance goals.

Achievement Goals and Generational Status

At present, only a smattering of academic work has addressed the generational status achievement gap from an achievement goal theory perspective. What research that has been done has indicated that FGS tend to adopt performance-avoidance goals more than CGS (Jury et al., 2015). This finding is particularly important given the generally deleterious effects of performance-avoidance goal adoption (Elliot & Church, 1997; Elliot et al., 1999). Additionally, Sommet, Quiamzade, Jury, & Mugny (2015) found that when academic departments were perceived as particularly competitive and stressful, mastery-approach goal adoption declined for all participating students. However, the declines were sharper for FGS compared to CGS. This indicates that FGS may feel more threatened by academic competitiveness and rigor compared to CGS.

The above two studies addressed the degree to which FGS adopted various achievement goals in relation to CGS, however additional work has also attempted to connect those differences to academic achievement. Smeding, Darnon, Souchal, Toczek-Capelle, & Butera

(2013) found that when mastery-goal structures were utilized in the classroom (e.g. focusing more on personal attainment rather than normative success), the achievement gap between FGS and CGS was reduced. This study is of particular interest because it provides initial justification for arguing that mastery-oriented goals may produce positive effects for FGS in particular, despite a lack of evidence connecting mastery-approach goal adoption to academic achievement more broadly (Hulleman et al., 2010). In support of this possibility, Darnon, Jury, & Aelenei (2017) found that mastery-approach goal adoption was positively related to academic achievement for FGS, whereas performance approach goal adoption was positively related to achievement for CGS. The researchers argued that these diverging outcomes were due to a moderating effect of competence expectancies, with FGS having less confidence in their academic abilities than CGS. Therefore, mastery-approach achievement goals, which have been argued to benefit those who are less academically confident (Midgley et al., 2001), were positively related to achievement for only FGS. Likewise, performance-approach goals, for which the opposite pattern is true with regard to competence expectancies, were positively related to achievement for only CGS.

Though the above findings provide some clarity to the role of achievement goal adoption within the generational status achievement gap, the overall number of studies that have addressed this issue remains small and a variety of questions remain unanswered. For example, none of the above studies featured all of the achievement goal constructs in one model, which means that comparisons between samples on achievement goal adoption is limited due to potential variability between them. Further, no studies have actually connected generational status to achievement goal adoption, and then subsequently connected that achievement goal adoption to achievement. Leaving either of those paths unexplained in any one model leaves open the

possibility of whether or not these differences are actually meaningful in academic contexts. Finally, no one has yet addressed the puzzling finding that mastery-approach goal adoption (or mastery-oriented practices more broadly) tend to positively predict academic achievement for FGS (Darnon et al., 2017; Smeding et al., 2013), despite meta-analytic evidence suggesting that there is not a strong relationship between mastery-approach goal adoption and academic achievement overall (Hulleman et al., 2010). This study attempted to modestly address all of these issues.

Purpose of the Current Study

The current study was undertaken to attempt to better understand the generational status achievement gap through the lens of achievement goal theory. Specifically, this study sought to include multiple achievement goals in one model, along with connecting generational status, achievement goal adoption, and subsequent academic achievement all at one time for one sample to address all possible relationships.

Hypothesis 1 was that FGS would have lower academic achievement compared to CGS. This is line with previous work, and would establish that there is a generational status achievement gap among the students in the sample.

Hypothesis 2 was that mastery-approach goal adoption would moderate the relationship between generational status and academic achievement such that as mastery-approach goal adoption increases, the more FGS achievement increases, whereas there would be no significant relation for CGS with regard to mastery-approach goal adoption. This hypothesis would attempt to reconcile the diverging findings of previous research indicating that mastery-approach goal

adoption is particularly useful for FGS exclusively and not for the overall student population more generally (CGS included).

Hypothesis 3 was that performance-approach goal adoption would positively predict academic achievement for all students regardless of generational status. This hypothesis is in support of previous research on achievement goals that has found that performance-approach goals tend to positively relate to grades more broadly. It should be noted that there was an interesting finding from Darnon et al. (2017) in which performance-approach goals did not predict achievement for FGS, and therefore it is possible that they would not predict academic achievement for them in this study. However, this possibility was not addressed in this study.

Finally, *hypothesis 4* was that performance-avoidance goal adoption would negatively predict academic achievement for all students regardless of generational status. This is directly in line with a host of previous research documenting the negative outcomes associated with performance-avoidance goal adoption.

Method

Participants

Participants were 351 undergraduates (92 Male, 256 Female, and 3 nonbinary) recruited via online recruitment at a four-year public university in the northeast United States. Participants were either freshman (n = 213) or transfer students (n = 138). There were roughly equal numbers of FGS (n = 161) and CGS (n = 190) represented with the majority identifying as white (n = 225) compared to Hispanic (n = 68), Black (n = 31), Asian (n = 21), Native American (n = 2), and Pacific Islander (n = 1). Twenty-three participants declined to provide racial information. Some participants identified with more than one race, which resulted in the total number of race

identifications to add to 371. The mean age of the sample was 19.84 (*SD* = 4.65). Participants were entered into a raffle for either Amazon gift cards or gift cards for use at on-campus venues as compensation for participating.

Measures

An electronic survey was used to gather all data from the participants. Demographic information was collected including generational status, age, gender, race, and high-school GPA (a covariate). Status as a FGS was defined as not having a parent who has a four-year college degree. Table 2 features a summary of the measures used in the current study. Achievement goal constructs were measured via the revised Achievement Goal Questionnaire (Elliot & Murayama, 2008), which is a validated revision of the original achievement goal questionnaire created by Elliot and McGregor (2001). The questionnaire has 9 questions that assess the degree to which the participant identifies as having mastery-approach goals (three items; α = .72; "e.g., My aim is to completely master the material presented in my class"), performance-approach goals (three items; α = .88; "e.g., My goal is to perform better than the other students"), and performance-avoidance goals (three items; α = .93; "e.g., My aim is to avoid doing worse than other students"). All questions were in 5-point Likert scale format with answers ranging from 1 (*not true of me*) to 5 (*very true of me*). Scores for each construct were aggregated by taking the average of each of their respective items. Due to limitations within the dataset used, mastery-avoidance goals were not collected for the current study, and will not be discussed further. Data regarding first-semester GPA (0.0-4.0 scale) was provided by the institutional research office of the university in which the data was collected. This data was an objective measure that reflected the first-semester academic performance of all participants, thus avoiding the pitfalls associated with self-report measures of academic achievement.

Procedure

Data for this study were collected as part of a larger project utilizing the same participants. Informed consent was provided prior to the demographic survey via the same online interface mentioned previously. The participants were administered the demographic survey, the primary variable measures, plus other measures for the larger project. Upon completion of the survey, the participants had finished their role in the study and were thanked and debriefed. Academic achievement data, in the form of first-semester GPA, were obtained from the office of institutional research after the data collection procedure was completed. All data were kept anonymous to protect the privacy of participants.

Results

The descriptive statistics for all relevant variables are included in table 3, and the bivariate correlations between all variables are included in table 4. A hierarchical multiple regression was run predicting first-semester GPA from generational status and achievement goal adoption, after controlling for high-school GPA which has been noted as a likely covariate with first-semester GPA (Ferrari & Parker, 1992). High-school GPA was entered into step 1 as a covariate, and generational status, mastery-approach goals adoption, performance-approach goal adoption, performance-avoidance goal adoption, and the interaction term between generational status and mastery-approach goal adoption were all entered into step 2. Seven participants did not report their first-semester GPA, and another 59 participants did not report their high-school GPA. These participants did not differ on any key variables when compared to participants who did report their first-semester and high-school GPA, and were subsequently dropped from the analysis, leaving a final sample size of 288 participants.

Results from the regression analysis are presented in table 5. In support of hypothesis 1, a significant difference in first-semester GPA was found between FGS and CGS after controlling for high-school GPA (b = .123, p < .05). Refuting hypothesis 2, mastery-approach goal adoption was not significantly related to first-semester GPA (b = .003, p > .05), nor did it significantly interact with generational status to predict first-semester GPA (b = .069, p > .05). In support of hypothesis 3, performance-approach goal adoption positively predicted first-semester GPA for all participants (b= .257, p < .05). Finally, refuting hypothesis 4, performance-avoidance goal adoption was not significantly related to first-semester GPA, though the relation was in the expected direction (b = .172, p > .05).

Discussion

The results of the current study were largely disappointing, but are still informative for the purposes of clarity and further understanding. Overall, there was a generational status achievement gap found among the students in the sample. This is directly in line with research on this topic that has established that achievement gaps like these do exist (Harackiewicz et al., 2014). Additionally, and in full support of previous research (Elliot & McGregor, 2001), performance-approach goal adoption positively predicted academic achievement for all students regardless of generational status. This does not truly inform the generational status achievement gap literature as much as it supports the achievement goal theory literature, but this does provide support that the administration of the achievement goal measures were modestly viable.

Unexpectedly, mastery-approach goals did not moderate the relationship between generational status and academic achievement. In other words, mastery-approach goal adoption was irrelevant to the functioning of both FGS and CGS. This goes against the findings of recent studies that have shown that mastery-approach goals tend to promote academic achievement for

FGS specifically (Darnon et al., 2017; Smeding et al., 2013). Finally, most unexpectedly, performance-avoidance goal adoption did not predict academic achievement for any participants, which thoroughly goes against the majority of work on achievement goal theory in the literature (Elliot & Church, 1997; Elliot & McGregor, 2001; Hulleman et al., 2010).

Unpacking these unexpected findings reveals a call for more nuanced approaches to examining the generational status achievement gap. First, the achievement goals included in this study were all highly correlated (see table 4). This may have resulted in a multicollinearity problem within the dataset that may have reduced the power of the variables to predict first-semester GPA. There are statistical methods that can address multicollinearity, but this study did not include them. Therefore, that is a limitation of the current work.

Secondly, it may be the case that studying achievement goals alone is insufficient for understanding the academic motivation of FGS. Recent work in this area has combined the achievement goals students adopt with the reasons that they chose to adopt them (Sommet & Elliot, 2017). Termed ”goal complexes”, these constructs have been argued to be more precise than achievement goals alone as they take the individual context of students’ motivation into account. The current study did not address these reasons, and therefore future work should strive to do so.

Third, as was stated earlier, the mastery-avoidance goal construct was not examined in this study. Leaving this construct out leaves a portion of the 2x2 achievement goal framework unassessed, and therefore is a weakness of the current study. This is a problem that spans most of the literature however. Mastery-avoidance goals are consistently excluded from studies examining achievement goals due to a perception that mastery-avoidance goals are uncommon among college-aged samples (Ciani & Sheldon, 2010). Future studies should attempt to

ameliorate this gap by including mastery-avoidance goals and incorporating them into models of academic motivation, especially for FGS. Very little research has been conducted on FGS from an achievement goal perspective more broadly and any additional insight should prove useful.

Finally, recent research has attempted to identify the intersectionality of college students' identities, with race and social class being specifically targeted (Harackiewicz et al., 2016). This compelling work speaks to the idea that students can hold multiple identities, and that these multiple identities can result in unique experiences above and beyond those who hold only one of those identities. Future work should explore the phenomenological experiences of FGS as an independent identity, and should assess how the intersectionality of generational status with other identities such as race, gender, or social class affects academic achievement.

Conclusions

Overall, the current study did not significantly contribute to the understanding of the generational status achievement gap beyond just providing additional evidence of its existence. Achievement goal adoption did not play a tremendous role in this gap, at least for the sample under investigation in this study. However, the present study provides a springboard for future research with more nuanced and precise approaches that may be able to provide greater clarity and understanding. FGS are underperforming, and efforts such as these to better explain this issue are certainly necessary as more and more FGS enter the university environment. It is hoped that more significant results are found in future work. Though this study had weaknesses, the main contribution of this study is providing a greater awareness of the achievement of FGS in four-year universities, and should serve as a call for motivation researchers to take the opportunity to do insightful and innovative research on this compelling topic in the future.

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Table 1

The 2x2 Achievement Goal Framework by Elliot & McGregor (2001)

		Valence	
		Positive (Approaching Success)	Negative (Avoiding failure)
Competence Standards	Mastery (Intrapersonal)	Mastery-Approach Attaining a goal to develop competence through learning	Mastery-Avoidance Avoiding a decline in skill or competence
	Performance (Interpersonal)	Performance-Approach Striving to outperform others	Performance-Avoidance Striving to avoid underperforming others

Table 2

Summary of Measures used in the Current Study

Variable	# of Items	Sample Item	α
Generational Status	2	What is the education level of your mother/father?	n/a
Mastery-Approach	3	My aim is to completely master the material presented in this class	.72
Performance-Approach	3	My aim is to perform well relative to other students	.88
Performance-Avoidance	3	My aim is to avoid doing worse than other students	.93

Table 3

Descriptive Statistics for Achievement Goals and GPA Values

Measure	*M(SD)*	Range	Skewness	Kurtosis
Mastery-Approach	4.19(.69)	3.33	-.62	-.19
Performance-Approach	3.45(1.11)	4.00	-.48	-.53
Performance-Avoidance	3.69(1.19)	4.00	-.76	-.32
First-Semester GPA	3.20(.67)	3.60	-1.33	2.16
High-School GPA	90.47(5.40)	26.90	-.70	.88

Table 4

Bivariate Correlation Matrix for All Variables Included in Regression Analyses

Measure	1	2	3	4	5	6
1. Mastery approach	-					
2. Performance-approach	.32**	-				
3. Performance-avoidance	.18**	.70**	-			
4. Generational status	.06	-.02	-.004	-		
5. First-Semester GPA	.10	.06	-.03	.17**	-	
6. High school GPA	-.09	.03	-06	.15*	.40**	-

Note: For achievement goal scales, higher numbers reflect stronger endorsement. For first-semester and high-school GPA, higher numbers reflect higher achievement. For generational status, higher numbers reflect CGS status (categorical variable).

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

Table 5

Results from Hierarchical Multiple Regression Analysis

	First-semester GPA		
Predictor	R^2	ΔR^2	*b*
Step 1	.395**		
High school GPA			**.395****
Step 2	.439**	.036	
High school GPA			**.367****
Generational status			**.123***
Mastery-approach			.003
Performance-approach			**.257***
Performance-avoidance			-.172
Generational status x Mastery-Approach			.069

Notes: $N = 288$ due to missing data for some participants. Seven participants did not report their first-semester GPA, and another 59 participants did not report their high-school GPA. All coefficients are standardized.

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