

EFFECTS OF ACHIEVEMENT GOALS ON PERCEPTIONS OF SUCCESS AND ACHIEVEMENT EMOTIONS IN MINORITY CHILDREN

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Abstract:

Obesity is a global epidemic even more so for some minority groups. Physical activity is one arm in the fight against obesity. Research has demonstrated that engagement in physical activity is predicted by positive emotions and perceptions; thus, the activity chosen to help burn calories must be enjoyable for sustained engagement. The present experiment examined the effects of manipulated achievement goal climates (mastery, performance approach and performance avoidance) on perception of success and discrete achievement emotions in Hispanic and African-American 4th and 5th grade students. After performing a dribbling task, perception of success, pride, shame, and frustration were assessed. After accounting for the children's performance expectancies, the mastery participants reported greater perceptions of success ($p < .05$) as well as less frustration ($p < .05$) compared to the performance groups. Taken together, the present experiment suggested that the manipulation of the trichotomous goals significantly affects perceptions of success and the discrete achievement of frustration. Some support was found for pride. Future experimental research in a variety of population samples is warranted to clarify and extend achievement goal and discrete achievement emotion relationships with physical activity participation.

Key words: *children, physical education pedagogy, motivation, emotions*

Introduction

Increasing knowledge and understanding of children's motivation towards physical activity is critical (Chen, Chen, & Zhu, 2012). In the United States the number of obese children has reached epidemic proportions as 19.6% of 6- to 11-year olds are estimated to be obese (Ogden & Carroll, 2010). Participation in physical activity is one long standing viable means of combating this epidemic. Research has demonstrated that emotions following an acute bout of physical activity are predictive of physical activity participation up to a year in healthy, sedentary adults (Williams, et al., 2008). In addition, the motivation climate surrounding physical education has been linked to important outcomes such as positive emotions (Braithwaite, Spray, & Warburton, 2011; Halvari, Skjesol, & Bagoien, 2011). Empowering physical education teachers with strategies designed to enhance children's physical activity enjoyment and thus long-term motivation is essential. Therefore, this investigation was designed to examine whether an acute experimental manipulation of achievement goal climates based on the trichotomous achievement goal framework affected the outcome emotions of pride, shame and frustration

(Pekrun, Elliot, & Maier, 2006; Elliot & Pekrun, 2007) in two minority groups that are at greater risk for obesity. For instance, Hispanic elementary school children are at a much greater risk for obesity than Caucasian students of the same age. African-American girls are at a greater risk for obesity than Caucasian girls (Ogden & Carroll, 2010).

Achievement goals and emotions

For many years researchers have known that emotions within an achievement context play a role in determining future commitment to similar engagement, to the energizing of future goal-directed behavior, and to providing feedback as to the status of one's goals (Emmons, 1996). In addition and as previously mentioned, long-term physical activity participation is predicted by emotions (more positive, of course, than negative) following an acute bout of moderate to vigorous physical activity (Williams, et al., 2008). Thus, emotions are worthy to investigate in trying to provide physical education teachers with theoretically based pedagogical strategies. In the study of emotions in sport and physical activity contexts, the dichotomous achievement goal framework has been dominant (Roberts,

Treasure, & Conroy, 2007). Past studies using the dichotomous framework from an individual (Biddle, Wang, Kavussanu, & Spray, 2003) or climate perspective (Ntoumanis & Biddle, 1999) have focused on general feelings of positive affect, enjoyment and sport anxiety. These reviews have consistently reported that a mastery orientation or climate is linked to greater enjoyment and satisfaction, whereas an ego orientation or climate has been positively linked to state and trait anxiety. In the mid-90s, Elliot (1997) argued that the approach-avoidance goal distinction should be added to at least the ego or performance goal distinction.

Within the trichotomous framework, the performance-approach goal defines competence based on normative achievements with behavior being initiated by a positive or desirable event or possibility, whereas the performance-avoidance goal defines competence based on avoiding displays of normative incompetence with behavior being initiated by a negative or undesirable event or possibility (Elliot, 1999). A body of literature is emerging that has demonstrated the importance of including the approach-avoidance distinction in understanding achievement behaviors with the performance goal (e.g. Conroy, Kaye, & Coatsworth, 2006; Lochbaum, Podlog, Litchfield, Surles, & Hilliard, 2013; Lochbaum, Stevenson, & Hilario, 2009; Wang, Biddle, & Elliot, 2007). Certainly, the body of literature on approach-avoidance goals has dramatically risen to include the mastery-avoidance goal in Elliot's 2 x 2 framework and now his much more complex 3 x 2 framework (Elliot, Murayama, & Pekrun, 2011). Certainly, in an elementary education context, the mastery-avoidance goal (i.e. try to not be worse than you were before) is not advocated to the extent of the other three goals.

Concerning the trichotomous achievement goals and emotions, Pekrun et al. (2006) proposed a theoretical model to examine the influence of the trichotomous framework (mastery, performance-approach, and performance-avoidance goals) on discrete achievement emotions. This proposed framework was in response to the growth of approach-avoidance goals in education research. To date, only prospective or cross-sectional investigations have been conducted. The purpose of the present experiment was to experimentally test the effects of the three distinct achievement goals climates upon discrete achievement emotions, as well as perceptions of success, as these three goals are most prominent in achievement contexts.

Based on the trichotomous framework, Pekrun et al. (2006) initially theorized that a mastery goal is predictive of activity emotions such as enjoyment, boredom and anger. Frustration is an outcome-based emotion more recently included in Pekrun's discussions (Elliot & Pekrun, 2007). For the performance goals, a performance-approach goal is theorized to

positively predict pride, while a performance-avoidance goal is theorized to predict shame and frustration. Pekrun and colleagues (2006) expanded upon their initial hypotheses to suggest that both mastery and performance-approach orientations and climates are most likely related to pride, as pride could be both self-based (linked to performance-approach goal) and task-based (linked to mastery goal). In addition to activity and retrospective emotions, Pekrun et al. (2006) examined prospective emotions such as hope, anxiety and hopelessness in their framework. In the first test of their model, Pekrun and colleagues reported in two independent university samples that both the mastery ($r=.28$; .26) and performance-approach goal ($r=.21$; .17) were related to academic pride. Though not significant, the authors reported a trend for the performance-avoidance goal in predicting academic shame. Similarly, Pekrun, Elliot and Maier (2009) reported, in a sample of 213 undergraduates, significant correlations with pride for the mastery ($r=.34$) and performance-approach ($r=.26$) goals. The performance-avoidance goal was the only goal significantly correlated with shame ($r=.20$) as hypothesized.

In the physical education setting, researchers have examined the trichotomous achievement goal framework (Ağbuğa & Xiang, 2008; Ağbuğa, Xiang, & McBride, 2010; Mouratidis, Vansteenkiste, Lens, & Auweele, 2009; Warburton & Spray, 2009). Studies conducted with secondary students in Turkey and in England demonstrated support for the trichotomous achievement goal framework (Ağbuğa & Xiang, 2008; Warburton & Spray, 2009). Mouratidis and colleagues (2009) examined the relationship between achievement goals, and Pekrun and colleagues (2006) analyzed discrete achievement emotions in 319 Greek elementary students in a physical education class. Examination of their data also demonstrated theorized relationships with pride as both the mastery and ego or performance-approach goal were significantly correlated with pride ($r=.36$ and $.35$, respectively).

Given the nature of the present experiment, prospective emotions were not examined as the task was not one within the framework of the student's daily physical education program. It is important to note the difficulty of solely pairing achievement goals to emotions without having to measure additional variables that may affect emotional responses. For instance, Elliot and Pekrun (2007) suggested that perceptions of success/failure are important when studying achievement emotions. Stephanou (2003) demonstrated the importance of performance expectations in influencing emotions in an academic setting. Therefore, we also measured perceptions of success as an outcome variable along with emotions while controlling for pre-performance expectations in our sample of 4th and 5th grade African-American and Hispanic boys and

girls. Thus, the aim of the present investigation was to examine the impact of manipulated achievement goal conditions on perceptions of success and discrete achievement emotions on a physical activity task. It was specifically hypothesized that pride and perceptions of success would be greater in both the mastery and performance-approach conditions when compared to the performance-avoidance condition. It was also hypothesized that shame and frustration would be greater in the performance-avoidance condition compared to both the mastery and performance-approach conditions.

Methods

Participants

Participants were 26 female and 27 male 10- to 12-year old Hispanic-American ($n=29$) and African-American ($n=24$) students participating in an after-school sponsored physical education program conducted for one month during the week (Monday through Friday) during the morning (i.e. 8 a.m. until 11:30 a.m.). The program was taught by undergraduate students in teaching physical education course for elementary school-aged children and directed by two university faculty members. One of the program's goals is to increase the amount of physical activity that low-income, minority students receive. Participants were blocked on sex prior to random assignment to a goal climate condition (mastery: 8 females, 12 males, M age=10.79 years, $SD=0.91$; performance-approach: 9 females, 12 males, M age=10.45 years, $SD=0.94$; performance avoidance: 9 females, 13 males, M age=10.22 years, $SD=0.73$).

The goal conditions

The goal condition manipulations were adapted from Cury, Elliot, Sarrazin, Da Fonseca, and Rufo (2002). Both performance manipulations included normative comparison statements with a public demonstration component (i.e. a video camera was set up but no filming really occurred). The following were the goal conditions scripts.

Mastery goal condition:

This research is being conducted in collaboration with several schools in West Texas in order to better understand how students of your age play basketball. The focus on this session is to see how well you dribble the basketball. We are simply interested in how students learn the game of basketball by playing in such a program that you have been involved in over the course of March Madness. We will be conducting this research in other West Texas cities to see how well they learn the game also.

Both performance goal conditions:

This research is being conducted in collaboration with the several schools in West Texas in order to better understand how students of your age play basketball. The focus on this session is to see how well you dribble the basketball. Our intention is to compare each of you with one another and then compare you to children of your age in other West Texas cities.

Performance-approach goal condition then additionally read:

Given that all of you are going to be dribbling, we are going to identify the best dribblers. You will be videotaped during this session and based on watching the tape we will be able to determine the best dribblers. We then also identify the best dribblers in all of West Texas as we will be conducting this research in other cities.

Performance-avoidance goal condition then additionally read:

Given that all of you are going to be dribbling, we are going to identify the most important errors that children of your age make while dribbling. You will be videotaped during the game. The tape of the students with the worst errors will be shown to other students in your class and in West Texas to show them what not to do while dribbling.

Procedure

Participants' parents signed the informed consent approved by the University's Institutional Review Board for their child to be enrolled in the after-school physical education program that included research. Participants were individually taken from the program to the laboratory and were provided, both in writing and orally, the purpose of the experiment. Next, participants were shown the dribbling task by a research assistant, informed of the goal condition both in writing and orally, and then were asked their performance expectancy. The dribbling task required the participants to dribble two balls simultaneously around a series of cones, followed by dribbling one ball around the series of cones with their non-dominant hand. The task was completed twice with a "halftime" in which the experimental condition was re-read. After completing the dribbling task, participants were led to another room where perception of success, discrete achievement emotions, and the experimental manipulation questions were completed with a research assistant who did not have knowledge of the participant's experimental condition. All participants were debriefed.

Measures

Performance expectancy was assessed by a single-item measure ("I expect to do well in this dribbling game."). Immediately after performing the dribbling task, a single-item question assessed participants' thoughts regarding their performance success, "I feel that I did well during this dribbling game." The three discrete retrospective emotions (pride, shame, and frustration) were assessed after completion of the dribbling task based on Pekrun et al. (2006) and Elliot and Pekrun (2007) work. The questions read: "I am very proud of my performance in this dribbling game." (pride); "My play in the dribbling game ashamed me." (shame); and "I feel very frustrated about my performance in the dribbling game." (frustration). Last, manipulation check items were administered. They were adapted from Cury et al. (2002). The manipulation checks read as follows: mastery ("The purpose of this dribbling game was to see how much better I could get without comparison to my classmates."); performance-approach ("The purpose of this dribbling game was to select the students with the best dribbling abilities compared to everyone in the game."); and performance-avoidance ("The purpose of this basketball game was to select the students with the worst dribbling abilities compared to everyone in the game."). For all of the measured items, the statement stem immediately prior to the questions read: "Please read the following questions. Circle your answer as to how much each statement describes you when thinking about your performance. There are no right or wrong answers, please just answer truthfully." Participants responded to all questions on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale.

Data analyses

Four separate preliminary analyses were conducted. A MANOVA was conducted with condition, sex, and ethnicity as the independent variables, performance expectancies as the covariate, and the four dependent variables to determine the importance of sex and ethnicity. To examine the amount of shared variance between the continuous variables, correlations were run amongst the covariate and the four dependent variables. Next, a MANOVA was conducted to determine whether the manipulation was perceived by the each par-

ticipant group. Last, an ANOVA was conducted to determine whether performance expectancies were independent of the experimental goal conditions, a requirement for the use of a variable as a covariate (Field, 2009).

To examine the purpose of the experiment, a MANCOVA was conducted with the independent variable being condition (mastery, performance-approach, and performance-avoidance), the covariate being performance expectation, and the dependent variables being perceptions of success and the three discrete achievement emotions. *A priori* it was decided that if the covariate and condition were significant, *post-hoc* tests could be run on the estimated marginal means to determine whether significant differences existed amongst the conditions on the four dependent variables. Last, effect size comparisons (Hedges, 1981) were calculated to examine meaningfulness of differences with .20 considered small, .50 a medium, and .80 large.

Results

Preliminary analyses

None of the main effects, two-way or one three-way effects was significant with sex and ethnicity; thus, they were not explored in any other analyses. The correlation matrix (Table 1) revealed modest to moderate correlations as one would conceptualize. For instance, pride was negatively correlated with shame and frustration. The MANOVA on the manipulation check questions was significant, Wilk's lambda=.15, $F(6, 116)=29.90$, $p<.001$. Each of the follow-up ANOVAs were also significant: mastery manipulation question: $F(2, 60)=13.87$, $p<.001$; performance-approach manipulation question: $F(2, 60)=31.30$, $p<.001$; performance-avoidance: $F(2, 60)=61.45$, $p<.001$. Examination of the mean data for each manipulation check demonstrated that each group rated their condition significantly greater (all Tukey *post-hoc* tests $p<.05$) than the other two conditions. Thus, the manipulations were successful. Last, it was of importance to determine whether or not performance expectancies were independent of the experimental goal conditions. The non-significant findings, $F(2, 60)=.61$, $p>.05$, revealed this; and thus, performance expectancy was appropriate to use as a covariate (Field, 2009).

Table 1. Means, standard deviations and correlations amongst continuous variables

Variables	Mean	SD	1	2	3	4	5
Performance expectations	4.49	1.01	–				
Perceptions of success	3.73	1.42	.42**	–			
Pride	4.00	1.23	.26*	.30*	–		
Shame	1.68	1.26	-.23	-.32*	-.18	–	
Frustration	1.75	1.33	-.01	-.28*	-.48**	.29*	–

Note: * $p<.05$; ** $p<.01$.

Table 2. Estimated marginal means (M), standard errors (SE), and 95% confidence intervals upper bound (UB) and lower bound (LB) for perceptions of success and the discrete achievement emotions

	Experimental Conditions											
	Mastery				Performance -Approach				Performance -Avoidance			
	M	SE	LB	UB	M	SE	LB	UB	M	SE	LB	UB
Perceptions of success	4.44	.28	.66	1.82	3.49	.27	2.95	4.03	3.32	.26	2.79	3.84
Pride	4.55	.26	4.02	5.07	3.73	.25	3.24	4.25	3.75	.25	3.25	4.24
Shame	1.32	.28	.76	1.87	1.69	.27	1.15	2.22	2.03	.26	1.50	2.55
Frustration	1.24	.29	.67	1.82	1.62	.28	1.06	2.18	2.32	.27	1.77	2.87

Main analyses

The main analyses were conducted to determine whether the conditions caused different perceptions of success and felt achievement emotions. The initial MANCOVA indicated both a significant main effect for condition, Wilks' Lambda=.74, $F(8, 112)=2.26$, $p<.05$, and for the expectancy covariate, Wilks' Lambda=.77, $F(4, 56)=4.23$, $p<.01$. The univariate ANOVAs were significant ($p<.05$) for pride, $F(2, 59)=3.19$, for frustration, $F(2, 59)=3.78$, and for perceptions of success, $F(2, 59)=4.89$. The ANOVA was not significant for shame, $F(2, 59)=1.10$. To determine specific group differences for pride, frustration and perceptions of success, Bonferroni *post-hoc* tests were conducted on the estimated marginal means (Table 2). The *post-hoc* tests revealed that the mastery condition participants reported more pride ($p\leq.09$) than both performance groups ($ES=.28$ for both differences) and significantly less frustration ($p<.05$) than the performance-avoidance participants ($ES=-.34$). Concerning perceptions of success, the mastery group reported greater perceptions ($p<.05$) than both the performance-approach ($ES=.31$) and performance-avoidance groups ($ES=.37$). Contrary to performance goal hypotheses, no differences approached significance ($p>.10$) between the two performance conditions on any of the emotions.

Discussion and conclusions

The purpose of the present investigation was to examine the impact of manipulated achievement goal conditions on perceptions of success and discrete achievement emotions in a sample of Hispanic and African-American children on a physical activity task. For the most part, these minority groups are at much higher risk for childhood and adult obesity compared to Caucasian children. Thus, it is imperative for these students to have positive physical activity experiences as Williams and colleagues (2008) demonstrated that more positive feelings towards a physical activity stimulus is predictive of physical activity participation up to a year later. Likewise, Ağbuğa, Xiang, and McBride, (2013) reported on student attitudes in third to sixth graders

concerning an after-school program in which they participated. From the initial 158 students that completed survey measures, the authors qualitatively interviewed 20 students. The interview data revealed that one main source of positive attitudes towards their after-school program was that they had fun during the program. Hence, it seems imperative that elementary students find the activities in physical activity programs to elicit positive emotions.

Unfortunately, the present results for *pride* failed to conclusively support Pekrun and colleagues' (2006; 2009) hypothesis that pride is associated with both the performance-approach goal and mastery goals. The present data suggested that a manipulated mastery goal condition is the cause of slightly, but not statistically significant, greater feelings of pride more so than a performance-approach manipulation and the performance-avoidance manipulation. Differences between the mastery goal condition and both performance conditions were small in meaningfulness. Research studies contrary to our findings with correlation-based research (Mouratidis, et al., 2009; Pekrun, et al., 2006, 2009) have supported Pekrun and colleagues' basic achievement goal-pride hypotheses. Close examination of the meta-analytic findings concerning Ames' (1992) TARGET mastery climate research (Braithwaite, et al., 2011) points to a small effect on students' enjoyment in physical education classes. Certainly, the meta-analytic findings were not relative to any other achievement goal climate manipulations as in this study. It could be that simply the causal relationship is small in meaningfulness with a mastery climate and positive affect and/or emotions. Ağbuğa and colleagues' (2012) results concerning the positive emotion of fun were, as previously mentioned, qualitative in nature. Hence, it is unknown to what extent or level a positive feeling is required to impact future physical activity participation. It could be a small impact is all that is required to pique interest in continuing to play and being active as a child. Regardless, it was very positive that significant differences existed in students' perceptions of success which certainly has a positive emotion connotation. In addition, perceptions of success and pride were modestly correlated.

The effect size differences were still in the small to moderate range, but taken together these slightly increased feelings of pride, and then even larger differences in perceptions of success suggest more support than rejection of Pekrun and colleagues' (2006; 2009) basic hypotheses with the achievement goals and positive emotions such as pride and perceptions of success.

Concerning *shame*, no significant differences were found between the children's ratings regarding the performance goal conditions, as well as the mastery condition. It is important to note that the hypothesized trend was supported for *shame* in that performance-avoidance manipulation resulted in the highest average rating. Examination of the means suggests that the children in all groups experienced low to moderately low levels of shame. It could certainly be that the isolation of the laboratory environment impacted feelings of shame. An experiment with children being watched by their peers would most likely elicit stronger feelings of shame. Without a peer or teacher relationship with the child being tested, self-reported feelings of shame will most likely always be low to moderate.

Unique to the present investigation was the examination of frustration and perceptions of success. Elliot and Pekrun (2007) have hypothesized several other outcome-based discrete achievement emotions with the approach-avoidance (Elliot, 1997) achievement goal framework such as *frustration*, and have placed more importance on discrete feelings of success. The present investigation included frustration, as well as perceptions of success. Certainly, the task was difficult as it required the dribbling of two basketballs simultaneously and then round of dribbling with one's non-dominant hand around a small obstacle course. Hence, such a task should elicit feelings of frustration when performed poorly and conversely perceptions of success when accomplished to a degree. The results appear in line as the children in the mastery condition reported significantly less frustration and significantly more perceived success than the children in the performance-avoidance goal condition.

As mentioned with the slightly greater perceptions of pride in the mastery condition children, it does appear that the one possible mechanism for the emotional differences between the mastery group and performance groups was the mastery group's heightened perception of success after performing the dribbling task. Based on the experimental manipulation, children in the mastery group appear to have felt that they did indeed improve their dribbling skills and thus meet their goal condition purpose. This mechanism is most likely to be associated with enhanced pride which was negatively correlated with frustration as one would conceptualize. Though the children in the two performance

goal conditions rated their perceptions of success above three on a scale to five, they did have significantly less success perceptions compared to the children in the mastery condition. It is important to remember that performance expectations were statistically controlled for in the main analyses. Thus, these expectations did not affect the mean data in the experimental conditions but controlled for the differences. The fact that significant results still emerged for the mastery condition compared to the performance conditions leads to the robustness of the mastery manipulation. The children in all conditions prior to performing the dribbling task had very high performance expectancies as 76.2% of the children rated their expectations as *strongly agree*. Hence, it appears that perceptions of success were at some cognitive level being reflected upon in relation to high performance expectancies that were not being met.

It is important to mention that the current research had limitations. The present experiment examined only three discrete achievement emotions assessed each by one item. In addition, although a unique sample, the minority status of the children raises more questions as to the ability to generalize to other samples. Future research should aim towards a more in-depth understanding of the relationship of achievement goals to both in-task, as well as outcome-based emotions. In addition, though the dichotomous achievement goal framework is alive and well since the late 1970s, achievement goal frameworks have expanded a great deal. Currently Elliot's 3 x 2 framework (Elliot, Murayama, & Pekrun 2011; Mascet, Elliot, & Cury, 2014) is the latest. To what extent achievement goal research needs to abandon earlier frameworks is surely unknown. Most likely, no one experiment could possibly within reason compare and contrast all of the frameworks simultaneously. Theoretically achievement goal and emotion relationships should be invariant with the context. But, it would be prudent to examine multiple achievement contexts (e.g. physical activity and academics) experimentally to determine whether context moderates any of the achievement goal and emotion relationships. But, even with the limitations, the findings from this investigation underscore the importance of creating mastery goal conditions for children. Physical education teachers need to embrace mastery-based instructional strategies that define success in terms of learning new skills, reward individual effort, and minimize social comparison (Parish, Rudisill, & St. Onge, 2007; Valentini, Rudisill, & Goodway, 1999). Given sport psychology/pedagogy researchers have not examined achievement goals and discrete emotions experimentally, the present experiment was a positive step forward for the sport psychology achievement goal-emotion literature applied to a physical education context.

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