

Interactive Effects of Ability Beliefs, Perceived Ability and Achievement Goal on Adolescents' Sport participation Intention

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Introduction

It is estimated there are more than 45 million children participate in organized sports every year in the United States (Weinberg & Gould, 2003). However, why so many youngsters engage in sports and what motivates them into a stressful training and competition environments (and sometimes causes injuries) are those prominent issues that attracted many researchers to study it. To deeper understand the underlying motives of youth's participation in sport, many sport psychologists suggested they adopt a theoretical framework as a tool in studying youth sport motivation would parsimoniously explain children's motivation (Gould & Petlichkoff, 1988; Weiss & Chaumeton, 1992). For example, use Harter's (1978) competence motivation theory as core theory, Weiss and Chaumeton (1992) debated that perceived competence differentiated those who continue participate in competitive sports from those discontinue in sport participation. Also, children's with high perceived competence had more positive affective responses such as fun and liking (Weiss & Chaumeton, 1992).

With same line of interest, recent achievement goal theory also proposed that individuals' definition of competence in achievement settings influence one's affective, cognitive and behavioral responses. Specifically, individuals define competence as outperforming others or perform same level of task with less efforts are considered as ego oriented while individuals define competence as mastery task at hand or improvement in one's assigned task are considered as task oriented. In such condition, ego oriented individuals seek to achieve performance goals that endorse normative comparisons of ability while task oriented individuals to seek performance goals that emphasize on intra-personal comparisons of ability (Ames, 1984; Dweck, 1986; Dweck & Elliot, 1983; Elliot & Dweck, 1988; Maehr & Nicholls, 1980; Nicholls, 1984).

Recently, this early achievement goal theory has advanced into 2x2 achievement goal framework in which one's competence is construed within the framework of definition or valence (Conroy, Elliot, & Hofer, 2003; Elliot & McGregor, 2001). When competence is defined in terms of absolute/intrapersonal standard, and competence is valenced in terms of positive (approaching success), it is termed

mastery approach goal. In contrast, when competence is defined in terms of the absolute/intrapersonal standard but competence is valenced in terms of negative (avoiding failure), it is termed mastery avoidance goal. On the other hand, when competence is defined in terms of the normative standard, and competence is valenced in terms of positive, it is termed performance approach goal. Last, when competence is defined in terms of the normative standard and competence is valenced in terms of negative, it is termed performance avoidance goal (Elliot & McGregor, 2001).

The 2 by 2 achievement goal framework has been extensively examined both within educational and sport settings. For example, in P.E class setting, Guan (2006) found students' mastery approach goal, mastery avoidance goal and performance approach goal predicted students persistence in classes. Similarly, Wang and his colleagues (Wang, Lim, Alpin, Chia, McNeil, & Tan, 2008) examined Singaporean students' attitudes, achievement goals and their psychological responses in P.E. classes. It was found students with high achievement motivation and mastery approach goal exhibited the most adaptive achievement pattern such as more enjoyable, more efforts, and less boredom in P.E. classes.

According to Elliot (1999; Elliot & McGregor, 2001), many antecedents such as need for achievement, fear of failure, implicit theories of ability, self-esteem...etc. provide energy to act and cause psychological outcomes such as efforts, choice of activity, and affect. Among these antecedents, implicit theories of ability are the key interest construct in this study. Especially, Dwech and Leggett (1988) contended that individuals endorse entity ability belief would attribute ability as gifted talent that one can not change while individuals endorse incremental ability belief would attribute ability as learned behavior that one can improve by hard working. Also, Dwech and Leggett (1988) suggested that entity ability belief individuals would adopt performance goal and exhibit adaptive behavioral pattern such as mastery approach, seeking challenge...etc. when they perceive high in abilities but exhibit maladaptive behavioral pattern such as avoidance challenge and low in persistence when they perceive low in abilities. In contrast, not matter perceived low or high in abilities, those endorsed incremental ability belief would adopt leaning goal and exhibit adaptive behavioral pattern such as mastery approach, seeking challenge...etc. Therefore, in this study it is hypothesized that individuals' ability beliefs would correlate to achievement goals, and achievement goals would correlate to children's sport participation motivation. Moreover, this study also hypothesized that perceived ability moderated the relationship between ability beliefs and achievement goals, while achievement goals would play as a mediating role in determining the relationship between children's ability beliefs and sport participation motivation.

Method

Participants

Participants were 314 elementary students (males=171; females=143) with mean age of 12.51 (SD= ± 0.75) years who studied in Northern Taiwan. All participants were either 5th or 6th grade students who are currently not the member of any sport club or involving in any sport program.

Measuring Instruments

Demographic Questionnaire and Sport Participation Intention Scale :

The Demographic Questionnaire was designed to collect participants' basic information such as age, gender, grade, and athletic experiences. In addition, to evaluate whether participants are willing to participate in competitive sports program, one question was designed to ask participants sport participation motivation. In this question, we asked whether they will participate in any sport team in the near future under a condition that they do not have to consider significant others' opinions.

Sport Ability Beliefs Inventory for Children (SABI-C, Jiang, 2007):

Sport Ability Beliefs Inventory for Children originally developed by Chiang (2007) was used to measure two dimensions of ability beliefs in sport setting. To revise it to fit children's perception, the authors re-worded sentence of each item so to reflect children's perceptions. The complete scale is a 6-items self-report instrument reflecting one's belief on what make a person's success in sports. All items were assessed on a 6-point Likert scale that ranged from "(1) not agree at all" to "(4) very agree." The total scores of SABI-C ranged from 6-36. There are two subscale of SABI-C ---fixed ability belief and incremental ability belief. Our preliminary statistical analysis found SABI-C with appropriate reliability (Chronbach $\alpha = .85$ for incremental ability belief and $\alpha = .75$) and validity (total explained variance from exploratory factor analysis (EFA) was 61.04%).

Children's 2x2 Achievement Goal in Sport Questionnaire (CAGSQ, Cho & Lu, 2008)

It was to measure children's achievement goals tendencies based on Conroy, Elliot and Hofer's (2003) 2x2 achievement goals questionnaire. To revise CAGSQ to children's perceptions, Cho and Lu (2008) revised semantic meaning of the items to fit children. The subscales of Children's 2x2 Achievement Goal in Sport Questionnaire (CAGSQ, Cho & Lu, 2008) are as follows: 1) mastery approach goal; 2) mastery avoidance goal ; 3) performance approach goal; and 4) performance avoidance goal. Cho and Lu (2008) reported that Children's 2x2 Achievement Goal in Sport Questionnaire internal consistence was ranged from .72 ~ .89, and validity (total explained variance from exploratory factor analysis (EFA) was 66.35%).

Procedures

The authors contacted schools' supervisors in the first stage, told them the purpose of the study and general data collection procedures. After gaining consent, participants were informed by their teachers and arranged proper date and time to complete the measures. Participants took about 15 minutes to complete Sport Ability Beliefs Inventory for Children (SABI-C, Jiang, 2007), Children's 2x2 Achievement Goal in Sport Questionnaire (CAGSQ, Cho, 2008), Perceived Ability Inventory (Huang & Chi, 1994), and Demographic Questionnaire.

Statistical Analyses

The statistical analyses followed procedures outlined in the Statistical Package for Social Sciences (SPSS version 14.0). After a preliminary screen of data such as outliers, skewness, kurtosis, normality, and homogeneity, two major analyses were conducted: (a) Pearson correlation analyses; (b) Hierarchical Regression analysis.

Results

Table 1 indicated the correlation among Ability Beliefs, Perceived Ability, Achievement Goal and Sport participation Intention.

Table 1. Correlations of All Variables

	(1)Ety Belief	(2)Int. Belief	(3)PA	(4)MAp	(5)MAv	(6)PAp	(7)PAv	(8)PM
(1)	1.00							
(2)	-.57**	1.00						
(3)	-.42**	.45**	1.00					
(4)	-.36**	.47**	.36**	1.00				
(5)	.10	-.12*	-.21**	-.01	1.00			
(6)	-.01	.05	.14*	.26**	.14*	1.00		
(7)	.14*	-.07	-.12*	-.03	.18**	.33**	1.00	
(8)	-.35**	.35**	.47**	.31**	.00	.12*	-.06	1.00

A) Ety Belief: entity ability belief; Int. Belief: incremental ability belief; PA: perceived ability; MAp: mastery approach; MAV: mastery avoidance; PAp: performance approach; PAv: performance approach; PM: participation motivation

B) *p<.05; **p<.01

Moderating Effects of Perceived Ability on the relationship between Ability Beliefs and Achievement Goals

Four separate hierarchical multiple regression analyses were used to explore whether perceived ability moderated the relationship between ability beliefs and achievement goals. Results indicated that there is an interaction effect of perceived ability on the relationship between ability beliefs and mastery avoidance goal. Specifically, when individuals perceived low in ability, both high entity beliefs individuals with same level of mastery avoidance goal, however, when individuals perceived high in ability, high entity beliefs individuals had higher level of mastery avoidance goal than low entity beliefs individuals

(see figure 1) . In contrast, participants with low perceived ability and low incremental belief of ability had higher level of mastery avoidance than participants with high incremental belief of ability; however, when participants with high perceived ability, individuals with low incremental belief of ability had lower level of mastery avoidance than those with high incremental belief of ability (see figure 2).

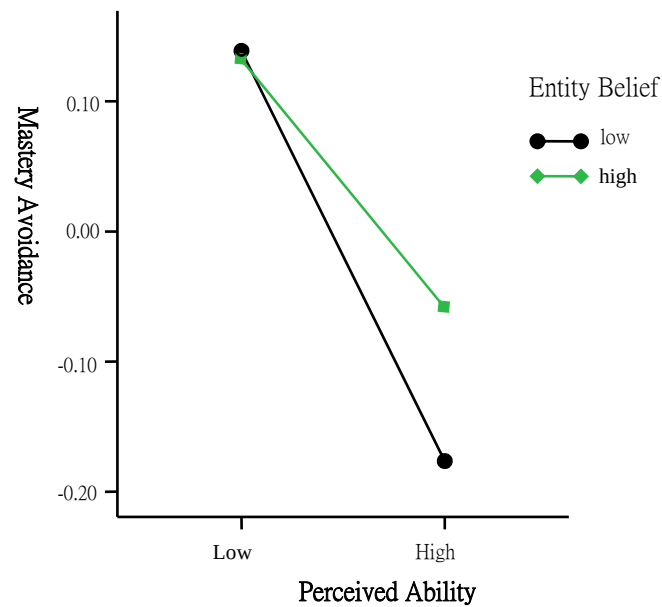


Figure 1. Interaction Effects of Entity Belief and Perceived Ability on Mastery Avoidance Goal

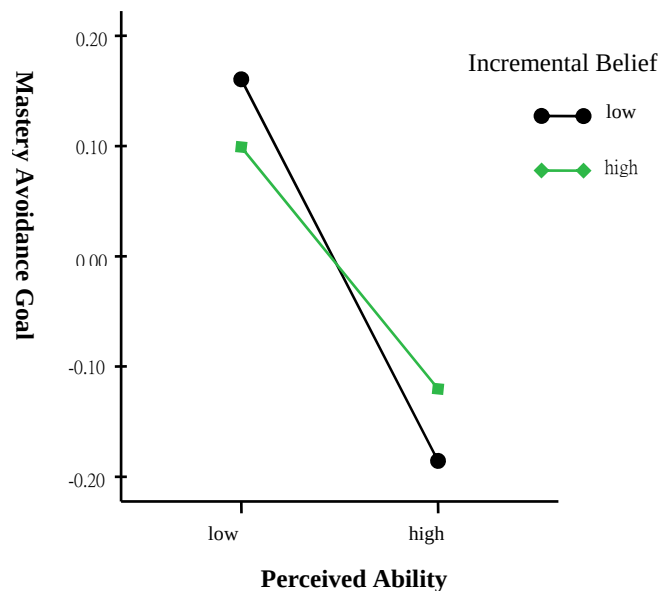


Figure 2. Interaction Effects of Incremental Belief and Perceived Ability on Mastery Avoidance Goal

Mediating Effects of Achievement Goals on Ability Beliefs and Participation Motivation

Four separate hierarchical multiple regression analyses were used to explore whether there is a mediating effect of achievement goals on ability beliefs and participation motivation. It was only found mastery approach goal mediated the relationship between ability beliefs and participation motivation. The rest of three achievement goals – mastery avoidance, performance approach, and performance avoidance did not meet the mediating conditions as Baron and Kenny (1986) suggested.

Table 2. Prediction of Ability Beliefs on Mastery Approach Goal

		Model 1	
		β	t
Entity Belief		-.13	-2.2*
Incremental Belief		.39	6.5*
Summary	F=47.58*; P=.00		R ² =0.23

Table 3. Prediction of Mastery Approach Goal on Participation Motivation

		Model 1	
		β	t
Mastery Approach		.31	5.8*
Summary	F=33.97*; p=.00		R ² =0.09

Table 4. Prediction of Ability Beliefs on Participation Motivation

		Model 1	
		β	t
Entity Belief		-.22	-3.4*
Incremental Belief		.22	3.5*
Summary	F=28.8*; P=.00		R ² =0.15

Table 5. Prediction of Ability Beliefs and Mastery Approach Goal on Participation Motivation

		Model 1	
		β	t
Entity Belief		-.20	-3.15*
Incremental Belief		.15	2.36*
Mastery Approach		.16	2.83*
Summary	F=22.23*; P=.00		R ² =0.17

Discussion

Base on Elliot and his colleagues' (1999; Elliot & McGregor, 2001) theoretical assumption, this study intended to examine the relationships among ability beliefs, achievement goals and children's participation motivation, and examined the mediating effect of achievement goals on the relationship between ability beliefs and participation motivation. This study found except mastery avoidance and performance goals, all variables correlated with participation motivation. Also, as predicted, perceived ability moderated the relationship between ability belief and achievement goal. Also, it was found mastery approach goal mediated the relationship between ability beliefs and participation motivation.

The results inspire several thoughts and applications for practitioners and researchers. First, children's sport participation motivation was influenced by many psychological factors such as ability beliefs and achievement goals. However, individual's perceived ability over ridden all variables in this study. Manly sport psychologists considered perceived ability not only determine individual's participation motivation but also influence their affect (Gould & Petlichkoff, 1988; Weiss & Chaumeton, 1992). In this study, it was found perceived ability moderated the relationship between ability belief and mastery avoidance goal. It implies that children with high/low change their avoidance goal adopted along with their ability beliefs. Therefore, how P.E teachers and coaches monitor students/athletes abilities and ability and assign with proper tasks are very essential in teaching and coaching. For those both low in perceived ability and incremental belief of ability tend to avoid the task that beyond their ability. In such case, by assign easy task with proper goal setting would facilitate their performance and subsequently enhance self competence, so to cultivate adaptive achievement behavior. In contrast, for those with high perceived ability and entity belief of ability, P.E teachers and coaches should pay more attention to this population. For they believe that ability is not changeable and will not try their best in any given achievement task. In such case, P.E teachers and coaches should educate their perceptions about the development of the ability. As they learn that ability is incremental with learning and experience, they would approach to achievement tasks with positive manner.

Second, this study found the mastery approach goal mediated the relationship between entity beliefs and participation motivation implied that coach in sport setting should emphasize children's hard working, improvement, and intra-personal comparison. When these goals are meet children feel competence and enhance their self esteem so to motivate them to achieve higher goal, and prevent them from burn-out or maladaptive behavior such as avoidance, cheating and anti-social behavior

(Duda, 1988; 1989). Moreover, when children adopt incremental belief of ability seemed link to children's sport participation motivation. Past research also indicated that students adopted incremental belief of ability had more positive affective experiences either in class or sport settings (Aronson, Fried, & Goode, 2002; Spray, Wang, Biddle, Chatzisarantis, & Warburton, 2005).

For those who interest in 2 X 2 achievement goals, there are several suggestions for the future research. First, since Elliot and his colleagues' (1999; Elliot & McGregor, 2001) suggested that several antecedents such as fear of failure, self esteem and motivation climate may influence one's achievement goal adopted in achievement settings, it is suggested that future researchers may examine how these factors influence one's achievement goals. Second, there are also several importance consequences of that worthy of further study such as self-handicapping, passion in sport and intrinsic and extrinsic motivation. Future research may examine the dynamic relationship between these variables and achievement goals so to deepen our knowledge about students and athletes behavior in physical activity settings.

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