Adaptation or maladaptation of achievement goals in physical education

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Most human behaviors are guided by specific goals. In educational settings, goals may derive from sources either external to the learner or within the learner. Currently, learner-generated goals are driving the research enterprise in goal research and, specifically, the study of achievement goal orientation constructs. In this chapter, I will provide a historic overview of this research, elaborate the dominant theoretical frameworks, and review the research evidence. I will then discuss the research implications for pedagogical practice and suggest future research directions. I will close with a summary of key findings in achievement goal research and pose reflective questions for further discussion.

**Historical overview**

Achievement motivation research can be traced to William James’ inquiry (1890) on achievement and self-evaluation. Decades later, Henry Murray (1938) published *Explorations in Personality* in which he identified 27 motivation-related needs including the need for achievement. David McClelland (1961) conceptually developed the need for achievement in his book, *The Achieving Society*, in which he described three motivational needs: achievement motivation, authority/power motivation, and affiliation motivation. Parallel with McClelland’s conceptualization, psychologist John Atkinson (1964) studied human motivation focusing on the joint influences of motivation to succeed and avoid failure in achievement situations.

Achievement motivation research began with John Nicholls’ (1984) work surrounding Achievement Goal Theory (AGT). Roberts (2012) documented the development of research on achievement motivation by describing the exciting atmosphere in the Institute for Child Behavior and Development at the University of Illinois in Fall 1977, where Nicholls, Maehr, Dweck, A. Ames, C. Ames, Hill, Farmer, and Roberts met regularly with their students in seminars discussing and designing research examining motivation. These discussions led to several prominent achievement motivation models and theories. For instance, Dweck’s inquiry into children’s apparent helplessness in achievement contexts demonstrated that children with equal aptitude can respond very differently to failure due to their different goal conceptions toward tasks. Some children displayed a mastery response, whereas others displayed helplessness...
response patterns (Diener & Dweck, 1980) (also see implicit theories by Dweck, Chui, & Hong, 1995). These studies led to the conclusion that achievement goals represent an individual’s purpose for engagement and to the identification of performance and learning goals often displayed by individuals in achievement contexts.

Nicholls (1984, 1989) published two influential AGT texts that evolved from his conceptual theorizing and worldview focused on equal educational opportunity. One of the tenets of AGT centers on whether individuals define success as self- or other-referenced. Individuals who adopt the self-referenced success orientation (mastery orientation) are interested in improving their skills or learning and demonstrate mastery of tasks. Conversely, individuals who assume the other-referenced success orientation (ego orientation) tend to demonstrate an ego-centered performance-based comparison to others (Nicholls, 1984). AGT has had a tremendous impact on PE and has generated an impressive plethora of PE studies that has advanced our knowledge about learner motivation.

Carole Ames (Ames, 1992a, 1992b, 1992c) first introduced the motivational climate concept to educational achievement motivation research. Her studies illustrated that task-involvement leads learners to the mastery goal orientation, while ego-involvement leads to the performance goal orientation (Ames, 1992a). The environmental determinants of motivational climate, according to Ames, include six teacher-controlled factors, Task, Authority, Rewards/Recognition, Grouping, Evaluation, and Time to complete tasks, described as the TARGET system. Students are likely to learn successfully in classrooms in which teachers assign Tasks suitable to students’ development levels, share Authority with students, Reward effort, use heterogeneous Grouping strategies and criterion-referenced Evaluation, and maximize academic learning Time (Epstein, 1989).

In the 1990s, Andrew Elliot and his colleagues (Elliot, 1999; Elliot & Harackiewicz, 1996) incorporated the achievement and avoidance approaches into the mastery vs. performance goal structure, therefore, developing the two-goal theoretical model into a 2×2 structure: a) mastery-approach and b) mastery-avoidance goals and c) performance-approach and d) performance-avoidance goals (Elliot, 1999). The 2×2 Model postulates that individuals have needs or valence toward either achievement or avoidance (Roberts, 2012). It has generated a lot of interest in PE and sport since its inception.

The core of social-cognitive theories, such as achievement goal theories, is found in the complex interplay between environment and individual. The majority of contemporary PE research has examined these relationships. Researchers have focused on understanding the mediating role of achievement goals and orientations between the psychological environment created by the teacher, coach, parent, or learner and numerous outcomes. In these studies, researchers have conceptualized and examined psychological environments using Ames’ (1992a) motivational climate concept or the three psychological needs structure from the Self-Determination Theory (Deci & Ryan, 1985, see Chapter 41 in this volume). Although Nicholls’ (1984) dichotomous model has been widely used for scientific inquiry in PE, there has been a subtle shift toward Elliot’s (1999) 2×2 framework. It may be that the 2×2 Model provides more plausible solutions to understand student motivation or the novelty of Elliot’s ideas that have drawn scholars toward the 2×2 framework.

**Theoretical frameworks and empirical evidence**

Typically, PE teachers set psychomotor, cognitive, and affective learning goals for their students. Although these goals may relate to students’ skill and health development, some students may not share their teachers’ goals. Instead, students’ goals may be adaptive or maladaptive in regard
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to the teachers’ intended educational outcomes. Adaptive goals refer to motivational goals that enhance positive learning outcomes consistent with learning goals, whereas maladaptive student goals may lead to motivation goals that are inconsistent with learning goals. In PE, a key motivation question is how can teachers better enhance and direct student motivation to facilitate student participation in teacher-directed curricula and learning tasks.

AGT derives from an understanding of the interactions between achievement, competence/ability perception, and the social environment in which achievement is expected. The strength of AGTs is that the theories are taking account of this interplay and employing a social-cognitive approach, examining motivation and learning-related behaviors. An underlying assumption in social-cognitive theories is that individuals are active, intentional, and rational decision makers who, governed by their beliefs and values, will behave in certain ways in achievement contexts. In PE, for instance, students with adaptive achievement motivation voluntarily choose to participate with high intensity in tasks designed by the PE teacher. Conversely, students with maladaptive achievement motivation do not want to participate in teacher-designed tasks and, if teachers attempt to force their participation, the students’ participation may be marginal with little effort and commitment. Therefore, researchers’ theoretical goal when studying achievement motivation is to understand students’ adaptive and maladaptive achievement goals and their impact on learning and participation.

Nicholls’ AGT

AGT is a prominent framework used to understand PE and sport achievement behaviors (Nicholls, 1984, 1989). AGT provides a useful framework to understand why students either decide to engage in teacher-directed learning tasks and drills or refuse and sit on the bleachers. To understand the why, one must explore and understand students’ purposes or goals for their actions. To understand motivation that directs and energizes behavior, researchers must consider the purpose of the achievement behavior and understand the goals of actions (Roberts & Treasure, 2012). Nicholls (1984) argued that the goal of action is a driving force that can be directed toward demonstrating competence or avoiding displaying incompetence. AGT states that individuals in achievement contexts can have multiple goals due to different reasons and purposes. These goal-related phenomenological meanings (or cognitive perceptions) are important because they govern intensity and effort of actions. Nicholls pointed out that individuals perceive their abilities (or competence) differently (Nicholls & Miller, 1983) and can have either undifferentiated or differentiated ability conceptions (Nicholls, 1984). With an undifferentiated ability conception, one perceives ability holistically and therefore is not able to differentiate ability from other factors such as effort, coincidence, or outside influences that may impact performance (Nicholls & Miller, 1983). An individual with a differentiated ability conception defines ability independently from these factors.

Whether individuals see ability as undifferentiated or differentiated, these conceptions have an important role in the ways they view success. One of the central AGT tenets is the definition of success, which can be viewed as self- or other-referenced. Individuals with the undifferentiated ability conception see success to be self-referenced, with interest in improving their skills or learning and demonstrating task mastery (Nicholls, 1984). Individuals with a differentiated ability conception see success as other-referenced and tend to focus on demonstrating performance in comparison to others (Nicholls, 1989). Self-referenced individuals participate in activities due to task-centered reasons and, thus, are likely to direct and maintain energy and effort more consistently compared to other-referenced individuals who participate due to ego-centered reasons. For instance in PE, students who see success as self-referenced demonstrate persistence in the
face of adversity, while other-referenced students are hesitant to continue or give up easily if they see little chance to outperform others.

**Achievement goal orientations**

PE students who have the undifferentiated ability conception have a predisposition for task orientation. These predispositions are individuals’ inherited tendencies to act in certain ways. Task-oriented students are inclined to focus on task completion and understanding, learning and developing skills, showing mastery, solving problems, seeking challenges, and persisting in the face of failure (Nicholls, 1984). Conversely, ego-oriented students approach tasks as a contest and aim to show superiority over peers. Roberts (2012) emphasized these predispositions should not be viewed as traits or needs but are dynamic “cognitive schemas” that may be altered in light of new information received when performing tasks. Additionally, Nicholls (1989) postulated that task and ego orientations are not mutually exclusive but vary independently and are, thus, orthogonal, meaning that students can be strong in either or both goal orientations simultaneously. In other words, they can perceive success as both gaining mastery and being better than others. Pensgaard and Roberts (2000) found evidence supporting the orthogonal relationship between the two goal orientations.

**Adaptive and maladaptive goal profiles**

Nicholls theorized that task-oriented individuals were more adaptive than ego-oriented learners, pointing out various positive task-oriented indicators of motivation, such as enhanced performance, intrinsic motivation, and positive affect (Nicholls, 1984). Conversely, he predicted that ego-oriented learners would be less motivationally adaptive. He postulated that these two goal orientations would interact with perceived ability/competence in achievement-related processes. Nicholls (1984) further argued that goal orientations work together with one’s competence perception in determining the meaning of success and desired outcome. Task orientation appears to have minimal influence on perceived competence. Task-oriented individuals may display adaptive outcomes regardless of his/her competence perception levels because they often define success in association with effort. Individuals with both high ego orientation and high competence perception may select moderately difficult tasks to ensure success that they define as outperforming others. Individuals with a high ego orientation and a low competence perception, however, may select very easy or sometimes very difficult tasks so that they can attribute success or failure to competence rather than effort.

**Goal orientations and learning outcomes**

In PE, task orientation has been positively correlated with numerous positive outcomes, whereas empirical evidence on ego orientation has been mixed. Most studies have focused on motivational or mediating variables, such as motivational regulations, affective variables, and achievement-related strategies, assumed to facilitate learning achievement (see review by Biddle, Wang, Kavussanu, & Spray, 2003). In addition, researchers have examined the relationship between achievement orientations and more direct learning outcomes, such as effort, intensity, physical activity (PA), and fitness (Roberts, 2012).

Although studies have shown a positive relationship between task orientation and adaptive outcomes, a literature review by Biddle et al. (2003) found positive relationships between task orientation and perceived competence (14 out of 30 studies), task orientation and enjoyment
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(36 out 48), and task orientation and behavioral variables (16 out of 25). Task orientation was found to have an inverse relationship with negative affect (13 out of 34). On the other hand, ego orientation had a positive relationship to competence perceptions in 14 studies (no relationship in 16 studies out of 30), no relationship to positive affect (31 studies out of 44), and a positive relationship to negative affect in 13 studies (no relationship in 20 studies out of 38). Ego orientation had no relationship to behavioral variables in 19 studies (out of 25).

Biddle et al. (2003) reviewed the literature from 2005 to 2014 noting that a positive relationship was found between task orientation and eight variables. These were (a) PA behavior (Yli-Piipari, Barkoukis, Jaakkola, & Liukkonen, 2013), (b) self-determined motivation (Murcia, Gimeno, & González-Cutre, 2010), (c) intrinsic motivation (Balaguer, Castillo, Duda, & García-Merita, 2011; Bortoli, Bertollo, Filho, & Robazza, 2014; Chin, Khoo, & Low, 2012; Stuntz & Weiss, 2009), (d) identified regulation (Bortoli et al., 2014), (e) flow (Murcia et al., 2010), (f) satisfaction/enjoyment (Cunningham & Xiang, 2008; Newton, Watson, Kim, & Beacham, 2006; Stuntz & Weiss, 2009), (g) pleasant psycho-bio-social states (Bortoli, Bertollo, Comani, & Robazza, 2011), and (h) unpleasant psychological states (Bortoli, Bertollo, & Robazza, 2009). Not surprisingly, task orientation was negatively correlated with amotivation (Balaguer et al., 2011). In other studies, for example, two youth sport-related studies (Bortoli et al., 2009; Chin et al., 2012), the findings were mixed. In turn, the findings between ego orientation and outcomes were mainly non-significant. Biddle et al.’s (2003) review showed that ego orientation was positively related to introjected regulation (Balaguer et al., 2011), extrinsic regulation (Balaguer et al., 2011; Bortoli et al., 2014; Chin et al., 2012), amotivation (Chin et al., 2012), and anxiety (Abrahamsen, Roberts, & Pensgaard, 2008), and negatively correlated with self-determined motivation (Murcia et al., 2010).

The Trichotomous Model

Elliot and Harackiewicz (1996), revisiting McClelland’s (1951) original theoretical work, argued that achievement motivation may have two goals, to obtain success or to avoid failure. They pointed out the need to expand the dichotomous achievement goal model to incorporate the independent approach and avoidance components within the performance (ego) goal orientation. This resulted in the Trichotomous Model that includes mastery goals, performance-approach goals (PAp), and performance-avoidance goals (PAv). In this model, Elliot and Harackiewicz (1996) assumed that mastery goals were very similar to task-oriented goals, in which participation is purported to improve one’s skills and mastery. Conversely, performance goals have both definition and valence that lead to two independent ego-oriented goals, PAp and PAv goals. PAp goals imply that individuals seek to prove superior competence and gain positive evaluations for their abilities, whereas PAv goals suggest that individuals seek to prove that they are not incompetent and avoid negative evaluations of their competence from others (Elliot & Harackiewicz, 1996).

The Trichotomous Model has provided two important conclusions in terms of goal adaption and maladaptation (Elliot & Church, 1997; Elliot & Harackiewicz, 1996). First, the model assumes that both PAp and mastery goals are characterized by an approach focus on potential positive outcomes (Elliot, 2005). Elliot and Harackiewicz (1996) reported that mastery goals and PAp goals were linked with positive outcomes, such as enjoyment and intrinsic motivation, whereas PAv was linked with low levels of enjoyment and intrinsic motivation (Elliot & Harackiewicz, 1996). Elliot (2005) further identified possible outcomes differences in terms of mastery and PAp goals showing that PAp goals can be more beneficial than the mastery goals in situations where task attainment depends on externally imposed criteria rather than intrinsic task interest. Second, the
Trichotomous Model appears to counter the goal-competence interaction assumption by providing evidence showing that motivational orientations are independent of perceived competence (Elliot & Harackiewicz, 1996). Elliot and colleagues view perceived competence as an antecedent of achievement goal adaption (Elliot, 2005; Elliot & Church, 1997). Because individuals’ high competence perception may provide cues about success or failure possibilities, a competence perception may predict the adoption of both approach goals (mastery and PAp). On the contrary, low competence perceptions facilitate adapting PAv goals (Elliot, 2005; Elliot & Church, 1997).

**The 2×2 Model**

More recently, Elliot (Elliot, 1999; Elliot & McGregor, 2001) proposed an advanced 2×2 achievement goal framework. They reconceptualized mastery goals based on approach-avoidance distinctions introducing mastery-performance (MAp) and mastery avoidance (MAv) goals (Elliot, 1999; Elliot & McGregor, 2001). Although Elliot and colleagues agreed with previous literature indicating that mastery (task) goals led to positive learning and behavioral outcomes, they argued that these positive findings were due to research manipulations and measures primarily focused on positive mastery possibilities, while ignoring mastery avoidance aspects. In the 2×2 Model, MAv goals are conceptualized as avoiding self- or task-referenced incompetence. In other words, PE students may avoid situations they perceive will be difficult for them to show improvement or growth. Conversely, other PE students may view MAp goals as positively valenced goals enabling them to strive for skills and abilities advancing learning (Elliot, 1999). For instance PE students’ goals for action may be to improve their skill or fitness levels. Thus, Elliot presented four achievement goals: MAp (focused on task-based or intrapersonal competence), MAv (focused on task-based or intrapersonal incompetence), PAp (focused on normative competence), and PAv (focused on normative incompetence). The 2×2 Model provides an alternative explanation for adaptive and maladaptive achievement goals. Elliot originally (1999) and retrospectively (2005) pointed out the difficulty of determining “a priori” which specific approach and avoidance goals relate to outcomes. He theorized, however, that approach goals (MAp and PAp) should lead to adaptive outcomes, while avoidance goals should lead to maladaptive outcomes (Elliot, 1999). Although Nicholls conceptualized that task goals would be adaptive and ego goals maladaptive for students with low competence perceptions, Elliot (1999, 2005) theorized that approach goals can be adaptive for all students as long as they hold the approach goal orientations rather than the avoidance orientation.

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Papaioannou, Zourbanos, Krommidas, and Amatzoglou (2012) identified 33 studies (25 correlational, 5 experimental, 3 longitudinal) that used either the Trichotomous or the 2×2 model. They found that in 21 studies MAp goals and in 11 studies PAp goals were positively related to adaptive outcomes, such as PA participation, race performance, shuttle run performance (MAp only), academic performance (MAp only), pacer test performance, fitness, intrinsic motivation, relatedness, autonomy (MAp only), identified regulation (MAp only), metacognition, incremental theory (MAp only), utility value, intrinsic value, situational interest, satisfaction, effort, enjoyment, and positive affect. MAv (in 10 studies) and PAv (in 14 studies) goals typically were unrelated to adaptive outcomes. In 6 studies, PAv goals were positively related to maladaptive goals, such as external regulation, self-handicapping, test anxiety, and negative affect, whereas MAv goals were positively related to negative affect in 2 studies. Although Papaioannou et al.
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(2012) did not find a positive relationship between MAp goals and maladaptive outcomes, they confirmed that PAp had a positive relationship with negative affect, test anxiety, and external regulation.

Since 2010, researchers have conducted 16 studies along this line of inquiry with 11 studies being correlational, 1 experimental, and 4 longitudinal. In general, MAp goals were positively related to intrinsic motivation and identified regulation (Gao, Podlog, & Harrison, 2012), effort/persistence (Gao et al., 2012), life satisfaction (Castillo, Duda, Álvarez, Mercé, & Balaguer, 2011), social affiliation/social recognition (Garn, Ware, & Solmon, 2011). In addition, the MAp goals had an indirect effect on pacer test results via self-efficacy (Gao, Xiang, Lochbaum, & Guan, 2013). Gao et al. (2013) found that PAp goals were positively related to pacer test results, intrinsic motivation and amotivation, and effort/persistence, while Garn et al. (2011) reported a positive relationship between PAp goals and social affiliation/recognition/status. Conversely, MAv goals were positively related only to pacer test results and effort/persistence (Gao et al. 2012). It should be noted, though, that this evidence was derived from only one study. PAv goals were positively related to amotivation (Gao et al. 2012), social affiliation/recognition (Garn et al., 2011), social physique anxiety (Balli, Erturan-Ilker, & Arslan, 2014), and negatively to lower self-esteem (Castillo et al., 2011).

In summary, the research evidence confirms that task orientation and MAp goals are the most adaptive. Research findings also indicate that, although the ego orientation can be adaptive, it is dependent on individuals’ competence perception and adoption of the approach-centered goals. Although there is empirical evidence of the adaptive impact of the ego orientation and PAp goals, the impact can be trivial in comparison with that of task orientation and MAp goals. In addition, task orientation and MAp goals are more positively correlated with a range of outcome measures than are the ego-orientation and PAp goals. Further, ego-orientation and PAp goals tend to be related to maladaptive outcomes, such as fear of failure, negative affect, and amotivation in general. Research findings using the 2×2 Model have repeatedly demonstrated that avoidance goals are the most maladaptive in terms of achievement.

Implications for evidence-based practice

Research evidence has provided a solid foundation to understand motivational goal processes and learning environments that nurture adaptive goal orientations. PE teachers should understand that students may operate according to their own goals rather than the goals that educators impose on them. Although externally imposed goals are consistent and similar, students’ goals can be different and very diverse. PE teachers making daily decisions using TARGET can have an impact on student learning and engagement. Additionally, because students interpret instructional cues in different ways, they can perceive learning process and learning environments differently. Teachers can facilitate students’ development of adaptive learning goals by adopting an individual teaching approach whenever possible.

In general, research findings clearly indicate that the mastery orientation is the most adaptive goal orientation. This cognitive schema defines characteristics required to be successful in most learning environments. It is highly desirable for PE teachers to nurture students’ mastery orientation rather than an ego goal orientation. In so doing, it seems, PE students with both low and high competence perceptions can achieve success. Although the ego orientation can have adaptive learning effects (especially combined with individuals’ high perception of competence), a high ego orientation may lead to undesirable outcomes, such as low sportsmanship, low value for rules, low moral functioning, and high self-reported cheating (Boixados, Cruz, Torregrossa, & Valiente, 2004; Lee, Whitehead, Ntoumanis, & Hatzigeorgiadis, 2008; Sage &
Kavussanu, 2007). It may be prudent for PE teachers to refrain from ego-supportive practices when teaching.

There is evidence showing that adapting approach achievement goals may counter undesirable influence from competence perceptions. Elliot and Harackiewicz (1996) hypothesized that individuals with both low and high competence perceptions can obtain adaptive outcomes if their goals are related to approach rather than avoidance tendencies. In other words, PE teachers should be aware that both MAp and PAp goals can lead to adaptive outcomes. During a fitness class, for example, not only may students with a high MAp be motivated to participate fully with the goal of fitness improvement but also students either with high PAp and high competence perception or high MAp and low competence perception may be motivated as well. Although the reasons may be different, these students can display positive, desirable adaptive motivation for learning.

Empirical evidence confirms that approach goals are positively related to PA and fitness-related performance (Garn & Sun, 2009; Wang, Biddle, & Elliot, 2007), competence (Castillo et al., 2011; Cetinkalp, 2012; Cuevas, Garcia-Calvo, & Contreras, 2013), intrinsic motivation (Barkoukis, Ntoumanis, & Nikitaras, 2007; Gao et al., 2012; Nien & Duda, 2008; Smith, Duda, Allen, & Hall, 2002; Wang, Koh, & Chatzisarantis, 2009), and effort and persistence (Garn & Sun, 2009; Gao et al., 2012). In addition, correlational evidence has shown stronger relationship between adaptive outcomes and MAp goals than between adaptive outcomes and PAp goals. Teachers, therefore, should emphasize MAp goals over PAp goals enhancing strategies.

Additional research findings have provided support to Elliot’s (2005) assumptions that PAp goals may be more beneficial for individuals’ performance than MAp goals in situations where task attainment depends on externally imposed criteria rather than intrinsic interest. Specifically, two studies examining competitive race performance and pacer test scores showed larger correlation coefficients between PAp goals and outcomes than between MAp goals and outcomes (Garn & Sun, 2009; Stoeber, Uphill, & Hotham, 2009). Although this evidence is descriptive, its implications for teaching should not be overlooked. Although the PAp goals may facilitate achievement in tasks with externally imposed criteria such as races and competitive events, they are likely to lead to maladaptive outcomes, such as external regulation (Barkoukis et al., 2007; Smith et al., 2002), and test anxiety (Smith et al., 2002). The evidence cautions PE teachers to become aware of long-term (negative) side effects when adopting and using strategies centered on the PAp tenets.

It appears that avoidance tendencies are detrimental for human achievement (Elliot, 1999). Both MAv and PAv goals are unrelated to adaptive outcomes, and PAv goals in particular may lead to maladaptive outcomes, such as high self-handicapping (Ommundsen, 2004), test anxiety (Smith et al., 2002), and low sport satisfaction (Papaioannou, Ampatzoglou, Kalogiannis, & Sagovits, 2008). Nevertheless, limited evidence has shown that MAv (example: “I don’t want to do worse than last time”) may be beneficial to students who are studying to develop fitness (Wang, Lim, Aplin, Chia, McNeil, & Tan, 2008) or engaging in strenuous exercise (Lochbaum, Stevenson, & Hilario, 2009). PE teachers should be aware of the role that competence perception plays in determining the approach or avoidance paths. Elliot (1999) hypothesized that individuals with high competence perceptions may adopt approach goals, while those with low competence perceptions may adopt avoidance goals. When making instructional decisions, PE teachers should be aware of students’ diverse skill and fitness levels, their likely competence perceptions and actual competence, and their likely achievement goal structures (MAp, MAv, PAp, and PAv). It seems imperative for teachers to create learning environments that nurture mastery rather than an avoidance approach.
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Future directions

Although achievement goal research has been a popular topic for decades, lately, researchers have raised concerns regarding the conceptual disagreement over the most adaptive goal profiles. Even though the adaptive role of mastery goals on learning outcomes is well established, researchers’ conceptual disagreements and inability to agree on the most suitable achievement goal profile may have weakened the AGT research. An important direction for future research is to further clarify the role of mastery in PE and in sport. Because the physical nature of PE differentiates it from other school content areas, PE researchers in the future should not rely solely on educational theories and conclusions but design innovative studies based on their unique understanding and standpoint. PE motivational climate interventions should focus on identifying and examining motivational pathways in all three outcome domains (psychomotor, cognitive, and affective) to more broadly understand the effects of different goal orientations on learning achievement in these domains.

Scholars agree that mastery goal orientation is the most adaptive orientation for learning-related outcomes. Given that much of sport-related PE content conveys a competitive element, future PE researchers should examine whether there are instances in which PAp goals are more beneficial than MAP goals in these competitive environments. It should be beneficial to learn whether PAp goals are motivating when a task is based on externally imposed criteria, a universal characteristic of activities/tasks in schools.

In the general education, achievement motivation scholars are examining the competence–achievement goal relationship. Lately, researchers have introduced the standards-based 3×2 Achievement Goal Model, arguing that individuals may define competence through task, self, or other evaluation and valence competence as a desirable possibility (i.e., success) or an undesirable possibility (i.e., failure) (Elliot, Murayama, & Pekrun, 2011). This model introduces the following goals: a task-approach goal focusing on the attainment of task-based competence (e.g., “doing the task correctly”), a task-avoidance goal focusing on the avoidance of task-based incompetence (e.g., “avoiding doing the task incorrectly”), a self-approach goal focusing on the attainment of self-based competence (e.g., “doing better than before”), a self-avoidance goal focusing on the avoidance of self-based incompetence (e.g., “avoiding doing worse than before”), an other-approach goal focusing on the attainment of other-based competence (e.g., “doing better than others”), and an other-avoidance goal focusing on the avoidance of other-based incompetence (e.g., “avoiding doing worse than others”). PE researchers should examine the theoretical conceptualization and utility of the multi-goal model in a range of PE content and learning environments.

Summary of key findings

- The mastery/task orientation in which students perceive PE success as self-referenced is the most adaptive achievement goal orientation in PE. Conversely, the performance/ego orientation, that is, perceiving PE success as other-referenced, can be either adaptive or maladaptive, depending on the participants’ own competence perceptions.
- Researchers have shown that task and ego orientations are orthogonal. Individuals can simultaneously perceive PE success as gaining mastery or being better than others.
- Students may hold both approach and avoidance tendencies related to their goal orientations in achievement contexts.
- Performance approach goals have been theorized to be adaptive and avoidance goals maladaptive.
Researchers have shown that MAp (focus on improvement) and PAp (focus on outperforming others) goals can be adaptive. Research evidence from MAV (avoiding tasks so as not to do worse than before) and PAv (avoiding tasks so as not to lose) goals have shown that avoidance goals are either non-related to outcomes or to maladaptive outcomes in PE contexts.

Motivational climate is a concept closely related to achievement goal orientations.

Motivational climate assumes that students perceive the learning environment to be either task- or ego-involving. Their perceptions can have a nurturing impact on their task and ego orientation.

If students perceive learning climates to be task-involving, they are likely to develop a task orientation. On the contrary, researchers assume that students in ego-involving climates will develop ego orientations.

Reflective questions for discussion

1. If a PE student does not want to participate in the teacher-assigned tasks, how should the teacher address the problem? Please use research evidence when answering/discussing the question.

2. Do mastery-supportive PE teaching practices undermine highly competitive students’ achievement motivation? Explain the rationale for your answer using research.

3. Do PE rules and regulations undermine students’ achievement motivation? Explain the rationale for your answer using research.

4. From the perspective of AGT, what interventions/strategies should researchers/teachers implement to enhance students’ achievement motivation? Explain why these interventions/strategies can be effective.

References


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