REVIEW ARTICLE

Integration in the Achievement Motivation Literature and the Hierarchical Model of Achievement Motivation

Andrew J. Elliot[1] · Nicolas Sommet[2]

Abstract

Integration is a valuable yet underutilized process in scientific literatures, including the achievement motivation literature. In this piece, we advocate for and illustrate the benefits of giving integration a central place within the achievement motivation literature. We pay particular attention to the hierarchical model of achievement motivation that is explicitly and intensively integrative in nature. We believe that this hierarchical model may be used as a theoretical foundation from which to organize and bring together the many different constructs and concepts in the extant literature. We further believe that the most important contributions to the literature in the next decade and beyond will be integrative—bringing together what is currently separate to form a more complete and comprehensive whole.

Keywords Integration · Achievement motivation · Hierarchical model · Achievement goal complex

The achievement motivation literature has a long and laudable history. Many different explanatory constructs have been proffered over the years, including needs/motives, expectancies/perceptions, values, implicit theories, goals, attributions, emotions, and intelligence/ability (see the table of contents of the *Handbook of Competence and Motivation*; Elliot & Dweck, 2005, p. xiii, where these are identified as the "central constructs" in the achievement motivation literature). Theoretical and empirical work on these constructs has borne considerable fruit, yielding a

🍀 Springer

deeper and clearer understanding of achievement motivation in incremental fashion. Applied research has taken the insights gleaned from the theoretical and empirical work and used them to address important practical issues in daily life in the school, sport, and work domains and (far) beyond. Truly there is much to like about the emergence and development of the scholarly study of achievement motivation.

One limitation of the achievement motivation literature, however, is that much of the existing theoretical and applied work has been carried out in siloed fashion. That is, research on one explanatory construct has typically taken place in isolation from research on other explanatory constructs (Anderman, 2020; Pintrich, 1994). Indeed, it is commonplace for researchers to cast their focal construct and the other available constructs as competitors, vying with each other to account for variance in the phenomena under consideration. This siloed/competitive approach is understandable and even commendable. It is understandable given that achievement motivation is complex and multifaceted (as the many and varied "central constructs" mentioned above attest), and it is undoubtedly necessary and beneficial to initially study these constituent parts independently and in isolation. It is commendable in that a new construct should only be introduced into a literature to the extent that it makes a unique, distinctive contribution both empirically (i.e., discriminant validity; Campbell & Fiske, 1959) and with regard to conceptual understanding (i.e., construct validity; Cronbach & Meehl, 1955). This facilitates parsimony and clarity.

Nevertheless, in surveying the lay of the achievement motivation landscape, we believe that the primary explanatory constructs in the literature have been identified and sufficiently understood to the point that the most important need at present is for research that integrates the extant available constructs. Rather than researchers and conceptual camps carrying out isolated research programs or competing with each other to find differences and uniqueness in their approaches, we believe the time has come for a primary focus on integration and collaboration. Doing so promises to generate deeper, clearer insights into achievement motivation that produce a more comprehensive account and understanding of this important domain of inquiry. Each construct and conceptual approach has strengths and weaknesses, and we believe that integrating them will emphatically demonstrate that the integrative whole is more than the sum of its siloed parts. In fact, we believe that the major advances of the next decade (and, likely, beyond) within the achievement motivation literature will be integrative in nature. Failing to move from isolation to integration runs the risk of the literature stagnating and remaining incomplete. It is time for integration to take center stage.

In the present piece, we seek to facilitate this movement toward integration. We begin by defining and specifying the conceptual nature and parameters of the achievement motivation literature. We then describe and overview an existing integrative framework within this literature, the hierarchical model of achievement motivation. We proceed to highlight a concept within the hierarchical model, achievement goal complex, that we believe represents a particularly promising opportunity for integrative contributions. We conclude by telescoping out to envision a broadly integrated achievement motivation literature.

Definition and Conceptualization in the Achievement Motivation Literature

Just as protracted siloing and competition among researchers get in the way of integration, the lack of clear, precise construct definition and conceptualization can also be a formidable impediment (Podsakoff et al., 2016). Scientific literatures often struggle with problems regarding and related to construct definition and conceptualization; motivation science in general and achievement motivation science in particular are no exceptions (Koenka, 2020; Murphy & Alexander, 2000; Pintrich, 1994). Constructs must be precisely defined and conceptualized so that their nature and boundaries are clearly understood, and so that they may be carefully differentiated from other constructs in the conceptual space. Once clarity and precision are in place on the definitional and conceptual front, the foundation is set for the bringing together of separate constructs to create the integral whole. Without such clarity and precision, jingle fallacies (i.e., two constructs that are different are mistakenly given the same label; Thorndike, 1904) and jangle fallacies (i.e., different labels are mistakenly given to the same construct; Kelley, 1927) abound.

Much like construct definition and conceptualization are integral to good science, defining and delineating the conceptual space that is the focal point of one's science is of critical importance. Therefore, before turning to construct definition and conceptualization, we first address the broader issue of defining and delineating the nature and function of achievement motivation. Both the terms "achievement" and "motivation" (and variants therein) commonly appear in daily language and, therefore, have colloquial usages and meanings. It is in this type of instance, when well-known and oft-used words are also utilized in scientific discourse, that careful and precise scientific definition and conceptualization are particularly needed.

Colloquially, especially in Western cultures, the term achievement commonly connotes a performance or accomplishment, especially one that is individual, public, and norm-based (i.e., relative to others). In the scientific literature on achievement motivation, achievement means *competence*, that is "a condition or quality of effectiveness, ability, sufficiency, or success" (Elliot, 2005, p. 5; drawing on the *Oxford English Dictionary, 2nd Edition (1989), and Merriam-Webster's 3rd New International Dictionary Unabridged*, 1961). Competence implies a comparison or evaluation relative to a standard of excellence (Crandall et al., 1960; Elliot, 1997; Heckhausen, 1991; McClelland et al., 1953; Nicholls, 1984), and these comparisons and evaluations may be multifarious in nature. Thus, placing competence at the conceptual core of achievement yields a much broader and more inclusive conceptualization than the colloquial understanding of the term affords.

Colloquially, the term motivation connotes quantity, an amount of desire or effort that drives or is manifest in behavior. In the scientific literature on motivation, motivation means the energization and direction of behavior (Arkes & Garske, 1977; Cofer & Appley, 1964; Elliot, 1997; Mook, 1987; Petri & Govern, 2012; Reeve, 2009). Energization is the initial impetus or instigator of behavior

(James, 1890/1950). Its functional role is to invigorate, engage, and orient the person in a general way; it is commonly experienced by people as a desire, a fear, an interest, or a concern. Energization represents the "why" of behavior, the reason that a person is engaged in an action (Elliot, 2020). In the achievement motivation literature, researchers have used the following types of constructs to represent energization: Needs/motives, values, expectancies/self-perceptions, implicit theories, and subjective and objective environmental emphases and cues (which activate or accentuate the aforementioned constructs). Direction is the channeling or guiding of behavior. Its functional role is to focus the person on a more specific, concrete possibility that addresses the energization (i.e., the chronically or situationally activated desire, fear, interest, or concern); it is commonly experienced by people as goal pursuit. Direction attends to the "what" or "how" of behavior, the specific way that a person is engaging in the self-regulation of behavior (Elliot, 2020). In the achievement motivation literature, researchers have typically used goals to represent direction, although strategies, tactics, and intentions also fit this category. As with achievement above, defining motivation in terms of the energization and direction of behavior yields a much broader and more inclusive conceptualization than the colloquial understanding of the term affords. Putting the two concepts—achievement and motivation—together, achievement motivation is defined as the energization and direction of competence-relevant behavior.

We would be remiss if we did not point to a critical conceptual distinction within the study of motivation that applies equally to energization and direction—the approach-avoidance distinction. Approach motivation represents the energization by or direction of behavior toward positive stimuli (i.e., objects, events, possibilities). Avoidance motivation represents the energization by or direction of behavior away from negative stimuli (again, objects, events, possibilities; Elliot, 2006). This approach-avoidance distinction is fundamental and basic to any analysis of motivated behavior and any full and complete account of achievement motivation must include it, both in theorizing and in empirical work.

The Hierarchical Model of Achievement Motivation

The hierarchical model of achievement motivation is a framework that has emerged and developed over the past several decades, and that is explicitly and intensively integrative in nature. We think this model not only highlights and illustrates the value of an integrative approach to achievement motivation, but that it also represents a theoretical foundation from which integrative work may be organized and carried out. The model has been generative over the years, bringing together many different constructs and ideas in the extant literature.

A core premise of the hierarchical model is that energization and direction are separate, equally important components of motivation. Energization and direction serve different functional roles in motivation, and both are needed for a full and thorough account of motivational phenomena. Energization is needed to explain why people orient to particular stimuli, but energization is too general and diffuse to guide behavior in an effective manner. Energization must be accompanied

by direction, which serves energization by channeling it and providing a concrete focus for the self-regulation of behavior. That is, when desires, fears, concerns, interests, etc. are activated, individuals commonly adopt and pursue specific aims to help them concretely attend to and regulate these more general forms of energization. Energization is seen as exerting a distal, indirect influence on behavior via the directional constructs that they prompt and that proximally predict ongoing behavior (Elliot, 1999; Elliot & Church, 1997).

There are multiple ways in which energization may be activated or evoked, and these may occur in concert (i.e., they are not mutually exclusive). First, some energization constructs are chronically accessible, representing an evolutionary or genetically engrained predisposition, extended exposure and learning over time, and/or a combination of these sources. For example, the need for achievement may be construed as a basic human need (Ryan & Deci, 2019), a socialized motive disposition (McClelland et al., 1953), or a mix of both (Elliot et al., 2002). Regardless of origin, in this instance, individuals navigate daily life with these dispositional propensities chronically activated. Second, some energization constructs represent propensities that are activated or evoked by situational cues or affordances. For example, an achievement situation in which the instrumental stakes are high, the probability of success is low, and/or performance outcomes are publically displayed will activate concerns about failing for individuals who have a propensity to experience shame upon failure (Ames, 1992; Birney et al., 1969). Third, when situational cues are strong enough, they may create desires, fears, concerns, interests, etc. even among those without pre-existing propensities. For example, if the aforementioned situational cues are strong and salient enough, they may evoke concerns about failing even in individuals for whom this response is infrequent or even foreign. Fourth, energization may be evoked "bottom-up" in the hierarchy by a directional construct, whereby the directional construct serves as a cue the prompts activation of the energization construct. An example of this form of motivational spreading-of-activation would be a boss assigning a salesperson a target goal that activates his/her competitive tendency.

With regard to directional constructs, they are often created and adopted through conscious, deliberative processes focused on what will help the individual address an activated desire, fear, concern, interest, etc. For example, when a concern about demonstrating immutable incompetence is activated, a student may adopt the goal of doing better than others at a task or activity. Directional constructs may be used so frequently that they become automated, and therefore present themselves as the default focus and way of regulating, independent of deliberative selection processes (Custers et al., 2019; Wood et al., 2022). For example, if one repeatedly adopts the goal of not doing worse than others, one may use this goal as a default in entering a new situation, even if failure or even achievement is not a focal aspect of the situation. Finally, as alluded to in the preceding paragraph, directional constructs may be assigned by an external source, with the only decision being the degree to which one accepts and commits to regulating accordingly.

The hierarchical model is hierarchical in two primary ways—focus and function. Regarding focus, the model brings together constructs that are abstract, general, and broadly applicable, and connects them to constructs that are concrete, specific, and

more narrowly applicable. Regarding function, the constructs in the model serve different roles, some energize and have an indirect and distal influence on behavior, while others guide and have a direct, proximal influence on behavior. Together, these higher- and lower-order constructs form a more complete and informative account of achievement motivation than any single construct or type of construct in isolation.

In a good deal of achievement motivation research, the distinction between energization and direction is neither attended to nor even acknowledged. As such, some accounts of achievement motivation overemphasize one component over the other, ignore one component altogether, and/or collapse the two components together without accounting for their distinct natures and functions (see, for example, the original goal orientation approach to achievement goals; Ames, 1992). The results can be problematic, including an unbalanced, incomplete, and/or unclear conceptual analysis. A lack of clarity on the conceptual front translates directly into a lack of clarity and imprecision on the operational front, which leads to a lack of clear empirical findings, which accrue to produce a literature that stagnates and fails to reach its full potential (Elliot, 2023).

In the hierarchical model, there is an emphasis on a two-step process for developing a conceptual account of achievement motivation. The first step is to separate and clearly define both the nature and function of energization and direction. The second step is to then take these two separate and clearly defined components and join them together to create the full model. This process, importantly, carried out in this order, yields the desirable combination of clear and precise conceptualization with full and complete theoretical explanation (Elliot, 2020). In short, it facilitates optimal integration.

This integrative approach opens the door to a number of possibilities for conceptual and empirical work. First and foremost, it provides a template for how the various existing achievement motivation frameworks, most of which emphasize one component and one type of construct, can be brought together and studied within a single model. For example, achievement motives account for energization but not direction, and achievement goals account for direction but not energization; when considered together these constructs account for both aspects of motivation. Second, it allows one to study how the same energization can be served by many different types of directional aids. For example, those with a high fear of failure can simply adopt a goal that is also focused on avoiding failure or they can regulate their general failure concerns by adopting and pursuing a goal that is focused on succeeding (in order to avoid failure). This illustrates that aversive energization is not destiny, but may be regulated in a more positive, appetitive direction (Elliot & Church, 1997). Third, it allows one to study how the same directional construct can have different implications for processes and outcomes as a function of different types of underlying energization (Elliot, 2006). For example, those with a goal focused on succeeding may pursue this goal out of an intrinsic valuing of task engagement or they may pursue this goal out of an instrumental desire to impress one's teacher, peers, or parents. The former goal pursuit is likely to be experienced as enjoyable and personally volitional, whereas the latter goal pursuit is likely to be experienced as more pressured and externally driven. These are just some of the many benefits of

engaging in the two-step process of integration carried out in the hierarchical model of achievement motivation.

An additional, important benefit of separating the energization and direction components of motivation is that it helps to establish and clearly define the boundary conditions for what is and what is not considered achievement motivation. As noted, achievement is conceptualized in terms of competence, and competence must be present in *either* the energization *or* the direction component of motivation for achievement motivation to be implicated. That is, competence can present in both the energization and direction component, but it need not be; if competence is present in one or the other, achievement motivation is implicated. Thus, non-competence-based energization (e.g., the aforementioned desire to impress an authority figure or peer) may underlie competence-based direction (e.g., striving to be better than others at school), or competence-based energization (e.g., a chronic desire to compete with others) may prompt non-competence-based direction (e.g., aiming to become friends with a highly popular person)—in both instances, achievement motivation is implicated. In addition, motivation within a context that is commonly viewed as an achievement context (e.g., school) is not achievement motivation if competence is not involved in the energization or direction of behavior. For example, a student at school with a chronic desire to avoid rejection (energization) with the goal (direction) of being invited to a weekend party at a new friend's house) is not achievement motivated. In short, separating energization and direction simultaneously broadens the conceptual reach of the achievement motivation literature, and provides clear parameters for identifying what lies outside the purview of this literature.

The Goal Construct Within the Hierarchical Model

As suggested by the aforementioned examples, the goal construct is an important directional construct within the hierarchical model. In fact, it is viewed as the conceptual centerpiece or hub of the model. Goal is defined as "a cognitive representation of a future object that the organism is committed to approach or avoid" (Elliot & Fryer, 2008, p. 244). "Object" in this definition can mean many different things (e.g., outcome, experience, characteristic), and with regard to achievement goals, it means competence. Thus, an achievement goal is a cognitive representation of a future competence-based possibility that a person is committed to approach or avoid (Elliot, 2006).

The achievement goal literature is voluminous, and different models of achievement goals have been proffered and utilized within it. One that is commonly used, and that we will primarily focus on herein, is the 2×2 standards model of achievement goals (Elliot & Murayama, 2008). In this model, achievement goals are conceptualized in terms of two basic components of competence—definition and valence. Definition represents the standard that is used to evaluate a person's level of competence. Two standards are identified, a task-/self-based standard (labeled mastery) and an other-based standard (labeled performance). Valence represents whether the

person is focused on the positive possibility of success (labeled approach) or the negative possibility of failure (labeled avoidance). When considered together, these two components produce the four goals of the 2×2 model: a mastery-approach goal focused on approaching task-/self-based competence (e.g., "I am trying to do better than I have done before"), a mastery-avoidance goal focused on avoiding task-/self-based incompetence (e.g., "I am trying to avoid doing worse than I have done before"), a performance-approach goal focused on approaching other-based competence ("I am trying to do better than others"), and a performance-avoidance goal focused on avoiding other-based incompetence ("I am trying to avoid doing poorly compared to others"; Elliot, 1999).[1]

Achievement goals are viewed as establishing a precise type of focus on competence that creates a framework for how people interpret, experience, and act in achievement contexts (Dweck, 1986; Nicholls, 1984). These goals specify what a person is aiming for and their concrete focus in a competence-relevant situation. The hierarchical model posits that these specific aims emerge from and functionally serve the more general underlying reasons that represent the energization of behavior. The reason(s) behind a goal explain(s) why the individual has adopted and is pursuing the goal. Achievement goals are not sufficient to account for competence-motivated behavior, it is also necessary to identify the energization source of these goals. Goals may come from many different sources and together, these goals and their broader motivational contexts provide a full account—addressing both energization and direction—of competence-relevant behavior (Elliot & Thrash, 2001). Linking achievement goals to other constructs, both within the achievement motivation literature and beyond, that serve as energizers or psychological processes is what the hierarchical model has focused on in building its integrative framework.

Integration from the Perspective of the Hierarchical Model

Achievement goals have been conceptually and empirically linked to each of the central constructs (Elliot & Dweck, 2005) in the achievement motivation literature. Some of these integrative links have received significant research attention (e.g., achievement needs/motives), whereas others have only begun to be explored (e.g., achievement values). Furthermore, some empirical work has focused on linking achievement goals to constructs outside of the competence domain, greatly extending the breadth of the hierarchical model. Finally, some of these constructs (within and beyond the competence domain) are conceptualized as antecedents and energizers of achievement goals, some as moderators or mediators

---

[1] The definition and conceptualization of goals herein is equally relevant to other competence-based goal constructs such as personal best goals (Martin, 2006), potential-based goals (Elliot et al., 2015), social achievement goals (Ryan & Shim, 2006), goals in the standpoints model (Korn & Elliot, 2016), and specific, difficult goals in goal-setting theory (when focused on competence; Seits et al., 2004). These constructs fit within the hierarchical model in the same manner as the goals in the 2×2 standards model of achievement goals.

of achievement goals, and some as a mix of the aforementioned. In the following, we review research in this area, starting with central competence-based constructs that have received noteworthy research attention, and then moving on to other central competence-based constructs, as well as other constructs beyond the competence domain.

Achievement Needs/Motives Dispositional tendencies to seek success and avoid failure have long been posited in the achievement motivation literature (for a review, see Elliot et al., 2002). These dispositions have been conceptualized as basic needs inherent to our psychological makeup, such as the need for achievement (Murray, 1938) and the need for competence or effectance (Deci & Ryan, 1991; White, 1959), and as socialized propensities grounded in associations between success and pride (the achievement motive; McClelland et al., 1953) and failure and shame (Atkinson, 1957). Needs and motives are posited to drive affect, cognition, and behavior across a wide array of achievement-relevant situations (McClelland, 1985).

Within the hierarchical model, needs and motives are viewed as energizers of behavior that orient the individual, making the general concepts of success or failure salient. These general motivational dispositions are posited to prompt the adoption of concrete achievement goals, which serve as "focused needs" or cognitive-dynamic manifestations of their underlying competence-based propensities. Needs and motives are cast as indirect predictors of achievement outcomes, with achievement goals serving as direct regulators and proximal predictors of behavior (Elliot, 1997).

Elliot and Church (1997) provided data supportive of this integration. Undergraduates completed measures of need for achievement and fear of failure at the beginning of a semester, and indicated their achievement goals for the class a week later; they took several exams during the semester and reported their intrinsic motivation for (i.e., interest in and enjoyment of) the class at the end of the semester. The data indicated that need for achievement was a positive predictor of students' mastery-approach goals (mastery-avoidance goals were not included) and performance-approach goals, whereas fear of failure was a positive predictor of students' performance-avoidance goals and performance-approach goals (the latter representing a proactive way of coping with the fear of failure by striving to succeed). Mastery-approach and performance-approach goals were positive predictors of intrinsic motivation and academic performance, respectively, while performance-avoidance goals negatively predicted both intrinsic motivation and academic performance. The need for achievement and fear of failure had no direct influence on the outcome variables, and the indirect path model from motives to goals to outcomes fit the data well. In subsequent studies, we obtained additional support for aspects and extensions of this integration (e.g., with implicit and self-attributed motives; Thrash & Elliot, 2002; with work mastery and competitiveness components of need for achievement, Elliot & McGregor, 2001; including mastery-avoidance goals, Elliot & Murayama, 2008; in the sports domain, Conroy et al., 2003). Empirical work by other researchers has provided further support for the motives/needs predicting goals aspect of the model (Conroy, 2004; Johnson et al., 2013) or the full path

model (Chen et al., 2009; Diseth & Kobbeltvedt, 2010; Harackiewicz et al., 2008; Nien & Duda, 2008; Tanaka & Yamauchi, 2001; Zusho et al., 2005).[2]

Test Anxiety: Trait and State Test anxiety is defined as the experience of apprehension regarding competence evaluation (Speilberger & Vagg, 1995). Researchers have studied the nature of test anxiety for over a century (Folin et al., 1914) and its implications for decades (Brown, 1938; Mandler & Sarason, 1952), and two central distinctions have emerged in the literature. One distinction is the trait-state distinction: Trait test anxiety represents an individual difference indicating that those high in test anxiety experience evaluation apprehension across time and achievement situations; state test anxiety represents a situation-specific experience of evaluation apprehension that is likely to be encountered by most in a given achievement setting (Spielberger, 1972). The other distinction is the worry-emotionality distinction: Worry represents cognitive concerns about the consequences of failure, and is posited to have a negative effect on performance; emotionality represents negative feelings and concomitant autonomic arousal during evaluation and is posited to have implications for well-being but not performance attainment (Liebert & Morris, 1967).

Within the hierarchical model, trait test anxiety is viewed as having a similar energizing and orienting function as the fear of failure motive described above. Test anxiety theorists construe fear of failure as an important aspect of trait text anxiety (Hill, 1972). Achievement motive theorists have considered trait text anxiety and fear of failure to be essentially equivalent (Atkinson & Feather, 1966), and trait test anxiety measures have been used to operationalize fear of failure in many studies in this tradition (Heckhausen, 1991; McClelland, 1985). Thus, trait test anxiety is posited to prompt the adoption of performance-based achievement goals that, in turn, channel and regulate the underlying evaluation apprehension and proximally predict achievement-relevant outcomes (Elliot, 1997; Elliot & McGregor, 1999). State test anxiety, on the other hand, is viewed as a mechanism that explains the deleterious influence of performance-avoidance goals on achievement outcomes. Performance-avoidance goals focus on the possibility of normative failure which is likely to evoke both worry and emotionality; worry cognitions are thought to undermine both quantitative (e.g., performance) and qualitative (e.g., intrinsic motivation) outcomes, while emotional arousal is thought to undermine qualitative outcomes only. Performance-approach goals focus on the possibility of normative success and may be seen as an appetitive coping strategy used to regulate trait test anxiety; accordingly, these goals may evoke emotional arousal to some degree but not worry cognitions, which keeps them from undermining performance attainment (Elliot, 1997).

Elliot and McGregor (1999) yielded findings supportive of this integration. Undergraduates completed a measure of trait test anxiety at the beginning of a semester and indicated their achievement goals for an upcoming exam two weeks

---

[2] In providing supportive citations, both here and throughout this article, we seek to demonstrate that other research has found similar patterns of relations. We do not seek to convey that the cited work is entirely supportive in all ways, nor that each and every study in the literature provides support. Readers interested in a particular relation are encouraged to access and read the cited work, which will provide detail on the focal relations and the broader "forest view" of the literature.

prior to the exam. Immediately following the exam, the students reported the degree to which they experienced (omnibus) state anxiety, worry, and emotionality during the exam. The data indicated that trait test anxiety was a positive predictor of students' performance-avoidance goals and performance-approach goals, which were negative and positive predictors of exam performance, respectively. The indirect path model from trait anxiety to goals to achievement fits the data well. The state test anxiety data supported the role of the state test anxiety variables as mediators. Performance-avoidance goals were a positive predictor of state anxiety, worry, and emotionality, performance-approach goals were a positive predictor of emotionality, and (not predicted) mastery-approach goals were a negative predictor of worry (mastery-avoidance goals were not included). State test anxiety and worry (but not emotionality), in turn, negatively predicted exam performance, and the indirect path models (from goals to anxiety variables to performance fit the data well. In subsequent studies, we obtained additional support for aspects and extensions of this integration (e.g., including mastery-avoidance goals, Elliot & McGregor, 2001; with anticipatory state test anxiety, McGregor & Elliot, 2002; including intrinsic motivation as an outcome, Cury et al., 2002a, 2002b; focused on anxiety experienced while studying, Pekrun et al., 2009; using within-person analyses, Goetz et al., 2016). Other researchers have conducted studies that have provided further support for one or more aspects of the model (for trait test anxiety: Riou et al., 2012; Smith et al., 2002; Song et al., 2020; Stan & Oprea, 2015; for state test anxiety: Bandalos et al., 2003; Chang, 2021; Daniels et al., 2008; Eum & Rice, 2011; Liu et al., 2020; Lopez, 1999; Middleton & Midgley, 1997; Pajares et al., 2000; Skaalvik, 2018).

Implicit Theories of Ability Implicit theories of ability are lay beliefs about the nature of competence. Dweck introduced this construct to the achievement motivation literature in several seminal pieces (Dweck, 1986; Dweck & Bempechat, 1983), contending that individuals tend to embrace one of two theories of ability: an entity theory (a belief that competence is immutable and stable) or an incremental theory (a belief that competence is changeable). These theories are conceptualized as mindsets that guide and dictate individuals' affect, cognition, cognition, and behavior in achievement settings. Entity theory is posited to lead to maladaptive processes and outcomes, whereas incremental theory is posited to lead to adaptive processes and outcomes (Dweck, 1999).

Within the hierarchical model, implicit theories are viewed as cognitive conceptions of the nature of ability that prompts the adoption of achievement goals (Elliot, 1999). When one holds an entity belief that ability is fixed, one seeks to demonstrate that one has this immutable attribute by performing better than others (a performance-approach goal) or at least by not performing worse than others (a performance-avoidance goal). On the other hand, when one holds an incremental belief that ability is malleable, one seeks to develop this changeable attribute by mastering tasks or doing better than one has done before (a mastery-approach goal) or by not making mistakes or doing worse than one has done before (a mastery-avoidance goal). Entity and incremental theories are viewed as indirect predictors of achievement outcomes, and achievement goals are seen as the direct and proximal predictors (Elliot, 2006).

Cury et al. (2006) provided data supportive of this integration. In the first study, middle school students completed a measure of implicit theories for math at the beginning of a semester, and indicated their achievement goals for their math class three weeks later; grade data were acquired from school records. The data indicated that incremental theory was a positive predictor of math performance, whereas entity theory was a negative predictor. Incremental theory positively predicted mastery-approach and mastery-avoidance goals, and entity theory positively predicted performance-approach and performance-avoidance goals. Mastery-approach and mastery-avoidance goals were unrelated to math performance; performance-approach goals were positive predictors and math performance and performance-avoidance goals were negative predictors. Mastery-based goals did not have any intermediary role in predicting performance, whereas performance-based goals had different types of intermediary roles—suppression and mediation, respectively. Specifically, entity theory facilitated performance-approach goals, and these goals in turn facilitated math performance; performance-approach goals served as suppressors of the direct negative relation between entity theory and math performance, as this direct relation increased when performance-approach goals were accounted for. Entity theory also facilitated performance-avoidance goals, and these goals in turn debilitated math performance; performance-avoidance goals served as mediators of the direct negative relation between entity theory and math performance, as this direct relation decreased when performance-avoidance goals were accounted for. In the second study, Cury et al. (2006) extended this work by using an implicit theories manipulation, focusing on IQ test performance, and including an intrinsic motivation measure. The results were highly similar to those obtained in the first study, again supporting the proposed integration. In other studies, we obtained additional support (in one instance, partial support) for the implicit theories to achievement goals aspects of the model (Elliot & McGregor, 2001; Mascret et al., 2015, 2017). Other researchers have likewise obtained supportive data, for both the theories to goals aspect of the model (Burnette et al., 2013; Cury et al., 2002a, 2002b; Payne et al., 2007; Riou et al., 2012; Vella et al., 2016; Vogler & Bakken, 2007; Yeager et al., 2016), and the full model (Corrion et al., 2010; Lou & Noels, 2016; Moreno et al., 2010; Shih, 2021; Yan & Wang, 2021; Wang et al., 2009).

Other Competence-Based Constructs The other central constructs in the achievement motivation literature have also been integrated within the hierarchical model, both conceptually and empirically, both in our lab and in other labs. Achievement values such as task attainment value (the personal importance of doing well; Eccles et al., 1983) and competence valuation (caring about competence; Harackiewicz & Manderlink, 1984) have been posited and shown to be predictors of achievement goals (Church et al., 2001; Elliot & McGregor, 2001; Elliot & Reis, 2003; see also Conley, 2012; Hong et al., 2020; Jiang et al., 2018; Plante et al., 2013; Yan & Wang, 2021). Competence expectancies and perceptions (including subjective probabilities of success and failure, perceived competence, self-efficacy, and ability self-concept; Bandura, 1986; Harter, 1982; Senko & Harackiewicz, 2005) have been documented as both predictors of and processes emerging from achievement goals (Cury et al., 2006; Elliot & Church, 1997; Mascret et al., 2015; Wang et al., 2007; see also Bong,

2009; Chiang et al., 2011; Cho et al., 2011; Jaakkola et al., 2016; Jiang et al., 2014; Morris & Kavussanu, 2008; Ommundsen, 2004; Senko & Hulleman, 2013; Skaalvik, 1997; Tanaka et al., 2006; Warburton & Spray, 2008). Achievement attributions (i.e., perceived causes for success and failure in achievement situations; Weiner & Kukla, 1970) are integral to cognitive strategies such as self-handicapping tendencies (affording an external attribution for failure by constructing or claiming obstacles to performance) that both predict and are predicted by achievement goals (Elliot & Church, 2003; Elliot et al., 2006; see also Ferradás et al., 2016; Haynes et al., 2008; Lee et al., 2021; Leondari & Gonida, 2007; Midgley & Urdan, 2001; Skaalvik, 2018; Urdan, 2004; Yu & McLellan, 2019); achievement goals have also been posited and shown to be predictors of ability, effort, task difficulty, and luck attributions; Elliot, 1997; see also Arens & Waterman, 2021; Luo et al., 2014; Wolters et al., 2013).

Characteristics or perceived characteristics of the achievement environment (Ames, 1992), such as a normative emphasis or stringent evaluation have also been posited and shown to influence achievement goal adoption, both directly and through activating the aforementioned constructs (Church et al., 2001; Elliot, 1999; Elliot et al., 2018; see also Anderman & Anderman, 1999; Bardach et al., 2020; Halvari et al., 2011; Karabenick, 2004; Luo et al., 2011; Midgley & Urdan, 2001; Negru & Damien, 2010; Peng et al., 2018; Polychroni et al., 2012; Schwinger & Stiensmeier-Pelster, 2011; Urdan, 2004; Warburton, 2017). Intelligence/ability (Sternberg, 2005), more specifically, proxies for intelligence/ability such as past achievement or standardized test scores, have been used as control variables in documenting antecedents and consequences of achievement goals (Church et al., 2001; Elliot & Thrash, 2010; Harackiewicz et al., 2002; Murayama & Elliot, 2012; see also Anwar & Menekse, 2020; Arens & Waterman, 2021; Barron et al., 2006; Darnon et al., 2007; Haynes et al., 2008; Lavrijsen et al. 2022; Wolters et al., 2013).

Non-Competence-Based Constructs Integration within the hierarchical model of achievement motivation is not limited to competence-based constructs per se. Other constructs from theoretical frameworks and research traditions outside of the achievement motivation literature may also be and have been included in the integration process (Elliot, 1999; Liem & Elliot, 2018). This form of integration is very important because it dramatically expands the conceptual reach, generativity, and practical utility of the hierarchical model. Scholars and laypeople alike tend to believe that competence-based desires, concerns, and strivings pervade daily life, and empirical work that brings together these competence-based energization and/or direction constructs with other non-competence-based constructs validates these intuitions about breadth and ubiquity.

Many different forms of this distinct type of integration of competence-based and non-competence-based constructs are present in the achievement motivation literature. Illustrative examples Include the following: temperaments (Gray, 1987), namely approach and avoidance temperament, as predictors of achievement goals (Elliot & Thrash, 2002, 2010; see also Bipp et al., 2017; Bjørnebekk & Diseth, 2021; Lochbaum et al., 2013; Rawlings et al., 2020; Sánchez Rosas, 2015; Scott et al., 2015); attachment dimensions (Fraley & Shaver, 2000), namely anxiety and avoidance dimensions, and attachment security as predictors of achievement goals

(Elliot & Reis, 2003; see also Bal & Barušs, 2007; Maltais et al., 2015; McNeill et al., 2015; Or et al., 2015; Özgüngör, 2020; Wang et al., 2018); social motives and needs (Veroff & Veroff, 1980) such as the need for affiliation and social interdependence preferences (Elliot et al., 2016; see also Bardach et al., 2020; Bipp & Dam, 2014; Nie & Liem, 2013; Lee et al., 2020; Pulfrey & Butera, 2016; Won et al., 2018) and Big Five traits (Costa & McCrae, 1985) as predictors of achievement goals (McCabe et al., 2013; see also Bipp et al., 2008; Chen, 2015; Chen & Zhang, 2011; Longin et al., 2021; Miller & Speirs Neumeister, 2017; Payne et al., 2007; Pickett et al., 2019; Zheng et al., 2019); trait autonomy, autonomy support, and felt autonomy (Ryan & Deci, 2019) as predictors of achievement goals and mediators of achievement goal effects (Chen et al., 2018; Elliot & McGregor, 2001; McGregor & Elliot, 2002; see also Ciani et al., 2011; Diseth & Samdal, 2014; Jiang & Zhang, 2021; Kenny et al., 2010; Lee et al., 2003; Madjar et al., 2012; Pelletier et al., 2013; Shih, 2013; Xu et al., 2018); the link between structural socioeconomic variables and achievement goals, including income inequality in one's local area (i.e., zip code or county) as an indirect predictor of achievement goals via perceived competitiveness (Sommet & Elliot, 2022; Sommet et al., 2019a, 2019b), social class (e.g., first- vs. continuing-generation college student status) as a predictor of achievement goals (Sommet et al., 2015; see also Akhter, 2019; Berger & Archer, 2016, 2018; Erentaitė et al., 2022; Jury et al., 2015) and moderator of the relation between achievement goals and outcomes (Bruno et al., 2019; Darnon et al., 2018), and social mobility beliefs as a moderator or mediator of the relation between social class and achievement goals (Bruno et al. 2020; Jury et al., 2018; Jury et al., 2019). These are all examples focused on achievement goals; many other, as yet unexplored areas of empirical work that focus on other central achievement motivation constructs also hold great promise, and we encourage more researchers to till this fertile ground.

Achievement Goal Complexes

As described thus far, the hierarchical model of achievement motivation implicitly uses a billiard ball metaphor to characterize the relation between energization and direction constructs. Energization constructs are portrayed as the instigator of motivation that orients attention, and this energization is then channeled in a concrete way by selecting a directional construct such as an achievement goal (achievement goal will be used as the running example in this section; for a graphical representation of an example using the billiard ball approach, see Fig. 1). In this conceptualization, energization is construed as a distal, indirect predictor of outcomes; once energization prompts a directional aid—an achievement goal—the goal itself operates as the proximal, direct predictor of outcomes. That is, energization (the first billiard ball in the metaphor) initiates behavior, but once a directional aid (the second billiard ball) is prompted (struck by the first billiard ball), the energization source is ostensibly left behind and exerts no continued influence. From this perspective, one might conclude
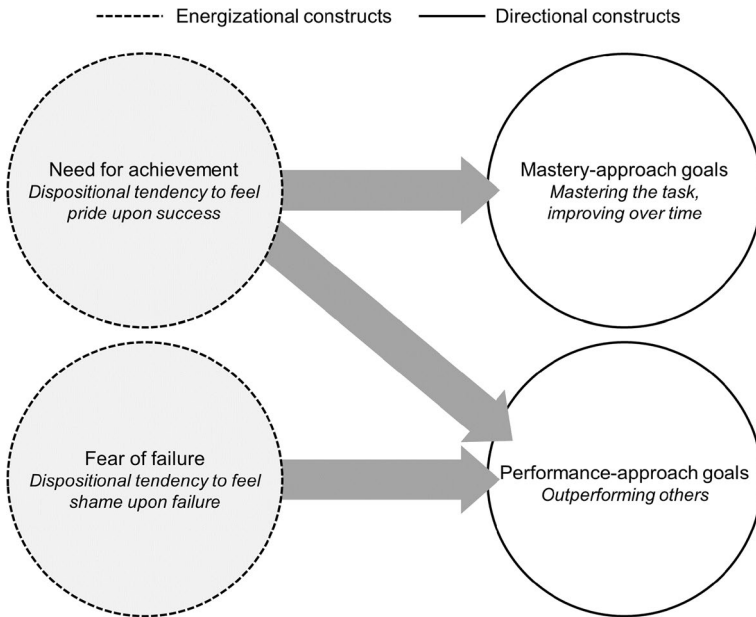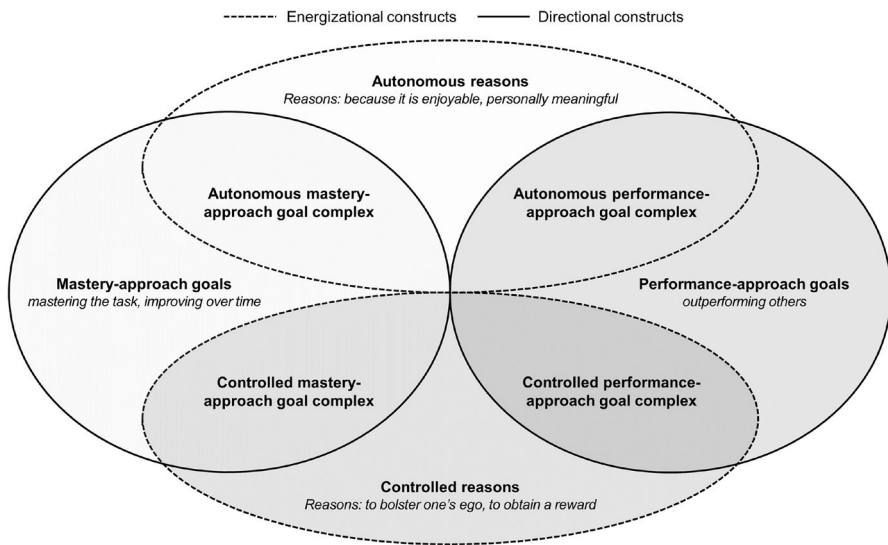
Fig. 1 *Example of Integration from the Perspective of the Hierarchical Model of Achievement Motivation: The "Billiard Ball" Approach. Note*. In this example, energizational constructs (need for achievement and fear of failure) prompt directional constructs (mastery-approach and performance-approach goals). Only approach-based goals are included for presentation clarity

that the goal has the same influence on downstream affect, cognition, and behavior regardless of the energization source that prompted it (Elliot, 2023).

The billiard ball metaphor nicely captures the idea that two independent constructs work together to produce outcomes and that both constructs are needed for a full and complete explanation. However, this metaphor does not adequately capture the deeply intertwined way in which energization and direction work together in actual daily self-regulation. Energization is not simply left behind after it prompts the goal; rather, energization continues to exert an influence on the process of goal pursuit (see Lewin, 1935, for a similar idea). Energization represents the reason for pursuing the goal and this reason impacts the thoughts, feelings, and actions that emerge as one is guided by the goal. As such, the same goal can be experienced quite differently as a function of the energization that prompted it and that stays actively connected to it during self-regulation. For example, the goal "Try to do well compared to others in school" is undoubtedly experienced quite differently when pursued in order to experience the satisfaction of competitive success versus in order to avoid losing one's scholarship and going further into debt.

We introduced the concept of "goal complex" into the hierarchical model to capture this idea that energization and direction become enmeshed together during the motivational process (Elliot & Thrash, 2001; Thrash & Elliot, 2001; see Murray, 1938, for a related idea). When energization prompts the adoption of a goal, the energization and the goal fuse together to create a third reason-goal combined

Fig. 2 *Example of Integration from the Perspective of the Hierarchical Model of Achievement Motivation: The Goal Complex Approach. Note*. In this example, energization constructs (autonomous and controlled reasons) and directional constructs (mastery-approach and performance-approach goals) fuse into achievement goal complexes. Only approach-based goals are included for presentation clarity

construct that is represented in memory and operative in self-regulation (for a graphical representation of an example using the goal complex approach, see Fig. 2). Structurally, the goal complex may be conceptualized as "Try to X in order to Y" or "Try to X because Y" (Sommet et al., 2021). Using the examples from the preceding paragraph, the goal complexes may be stated as "Try to do well compared to others in order to experience the satisfaction of competitive success" and "Try to do well compared to others in order to avoid losing my scholarship and go further into debt." This illustrates that the same goal can be fused with different underlying sources of energization. It is also true that the same energization can prompt and become fused with different types of goals (Elliot, 2023). For example, one can "Try to do well compared to others in order to avoid my parents' disapproval" or one can "Try to avoid doing poorly compared to others in order to avoid my parents' disapproval." In short, the goal complex concept is highly flexible in that it can incorporate the myriad variants of idiographic reason-goal combinations that animate daily life.

In addition to being highly flexible, the goal complex concept is broadly applicable to any and all of the aforementioned competence-based and non-competence-based constructs. With regard to the former, one can "Try to do well compared to others in order to show that I am smart" or "Try to do well compared to others in order to challenge myself to reach my full potential" (competence-based reasons grounded in implicit theories of ability); with regard to the latter, one can "Try to do well compared to others in order to impress my romantic partner" or one can "Try to do well compared to others in order to avoid losing the respect of my romantic partner" (non-competence based reasons grounded in romantic interest). Beyond

being highly flexible and broadly applicable, the goal complex concept is ecologically valid in that it accounts for motivation in a way that captures the ideographic, idiosyncratic phenomenological experience of daily self-regulation.

The goal-complex approach allows seemingly disparate aims to be addressed, simultaneously facilitating both conceptual precision and explanatory breadth. On the one hand, it embraces the importance of conciseness and clarity in defining and articulating the functional nature of constructs, which is an essential feature of any effective scientific account. On the other hand, it takes these concise, clear constructs and flexibly integrates them together to account for the inherent complexity of real-world, situated achievement behavior. Thus, we agree (and join) with those calling for research on broad meaning systems (Urdan & Kaplan, 2020), complex dynamic systems (Kaplan & Garner, 2017), and multifaceted goal orientations (Ames, 1992), and think that the goal complex approach represents a promising means to this desired end.

During the past decade, there has been a surge of empirical activity focused on goal complexes. Most of this research has linked achievement goals to underlying reasons grounded in self-determination theory, namely autonomous reasons (i.e., fun and enjoyable; important and meaningful) and controlled reasons (i.e., bolstering one's ego; obtaining a reward; Deci & Ryan, 2000; for reviews see Senko & Tropiano, 2016; Sommet et al., 2021; Vansteenkiste et al., 2014). For example, in a series of studies, we (Sommet & Elliot, 2017) showed that an autonomous mastery-approach goal complex positively predicted adaptive achievement outcomes (e.g., interest, persistence, help-seeking) over and above the influence of mastery-approach goals alone and autonomous reasons alone. Controlled mastery-approach goal complexes did not show the same benefits. Comparable results were observed for autonomous and controlled performance-approach goal complexes (see also Benita et al., 2022; Gaudreau, 2012; Gillet et al., 2017; Michou et al., 2014; Özdemir Oz et al., 2016; Pulfrey et al., 2019; Sommet et al., 2019a, 2019b; Vansteenkiste et al., 2010). Another goal complex research has likewise documented the utility of achievement goal complexes involving competence-based reasons and other non-competence-based reasons (Hodis et al., 2016; Korn et al., 2019; Lee & Bong, 2016; Senko et al., 2023; Świątkowski & Dompnier, 2021; Urdan & Mestas, 2006; Warburton & Spray, 2014).

Goal complex research has barely begun and much remains to be learned about this undoubtedly generative concept. One avenue for future research is to examine precisely how goal complexes are represented in and accessed from memory. Are they only represented as the fused goal complex or do the component parts continue to be represented independently? Likewise, can the component parts be activated and operate independently, or is only the fused construct accessible? An additional avenue for future research is to explore whether goal complexes grounded in dispositional tendencies have a different influence on downstream processes and outcomes than goal complexes grounded in situational induction. When energization is dispositionally grounded, it may be easier or more likely for the person to fully endorse and commit (including to interventions or assigned goals or strategies), or to do so in a way that feels self-concordant (Sheldon & Elliot, 1998); this may lead to greater stability or persistence of motivation over time and more favorable processes

and outcomes, accordingly. A corollary of this proposition is that goal complexes grounded in dispositions would likely be less amenable to change via intervention than those grounded in situational induction.

Developmental issues have yet to be examined with regard to goal complexes and this would be a valuable addition to the literature. Interesting questions abound such as "Which types of energization within goal complexes tend to emerge first in young children?," "Which change more as a function of important developmental transitions (e.g., the move from middle school to high school), reasons or aims?," and "Do parents transmit their own reasons, aims, or full goal complexes down to their children (and, if so, is the transmission stronger within gender pairs than across gender pairs)?".

Another intriguing question for future research is whether some types of energization-direction combinations within goal complexes are more beneficial than others. For example, are goal complexes with a valence match (e.g., "Try to avoid doing poorly compared to others in order to avoid the shame of failure") more efficient or effective in self-regulation than those with a valence mismatch (e.g., "Try to do well compared to others in order to avoid the shame of failure")? Interestingly, in this instance it is possible to pit two hypotheses against each other: on the one hand, a valence match may be best given regulatory fit, but on the other hand, aversive motivation may be inherently problematic (especially for persistence and well-being outcomes) and an appetitive-aversive mismatch may be preferable (see Elliot & Gable, 2019; Scholer et al., 2019). Finally, an important aspiration for future empirical work is the identification of the most prevalent achievement goal complexes in daily life. There are literally an infinite number of idiographic achievement goal complexes possible, and it is important to work toward identifying and organizing the subset that will be most informative and beneficial to study (Senko & Tropiano, 2016; Sommet et al., 2021; see Korn et al., 2019, for a historically-grounded selection).

To date, conceptual and empirical work on goal complexes has focused primarily on a basic version of the concept involving one energization or reason construct coupled with one direction or aim construct (for noteworthy exceptions, see Liem & Elliot, 2018; Liem & Senko, 2022). It is sensible to start with this form of goal complex as it provides clarity in introducing the goal complex concept and affords precision with regard to operationalization. However, we acknowledge that this one reason/one aim version of goal complexes is a simplified version of what occurs in the real world where multiple reasons and/or multiple aims are often implicated in a given conative situation. Liem and Elliot (2018) discussed this in terms of distal reasons (e.g., cultural emphases such as interdependence) and proximal reasons (e.g., desiring to satisfy one's parents) for achievement goal pursuit (e.g., trying to do well relative to others at school). In a comparable fashion, Liem and Senko (2022) touched on this in their discussion of multiple goals whereby, for example, a student could pursue a concrete lower-order achievement goal (e.g., make 10 baskets in a basketball game) to help attain a less concrete higher-order achievement goal (e.g., do better than others in the game), all for an ultimate reason (e.g., impress a love interest in the stands). These examples illustrate that the distinction between reason/energization, on the one hand, and aim/direction, on the other hand, is primarily functional and that energizers and directors should not be conceived as

mutually exclusive but as orthogonal categories. Clearly, some general motivational constructs operate upstream and act as *pure* energizers (e.g., achievement motives, achievement values), whereas some specific motivational constructs operate downstream and act as *pure* directors (e.g., achievement goals, target goals focused on achievement; Harackiewicz & Sansone, 1991). However, any given motivational construct can occupy a more intermediate place and act as both an energizer and a director, that is, as a regulatory surrogate that cements the achievement goal complex, and connects the pure energizer to the pure director.

To date, the primary focus in the goal complex literature has been on pure reasons which are the initial psychological starting point for behavior, and proximal aims which are the immediate guides of behavior. As this literature matures, it will need to incorporate and empirically attend to the aforementioned complexities of daily motivation, goal pursuit, and self-regulation. This incorporation will have to occur while maintaining a balance between comprehensiveness and parsimony. A sufficient number of energizer(s) and director(s) will need to be conceptualized to account for the complexity of achievement motivation and better predict behavioral outcomes. However, it will be crucial to avoid excessive reductionism and over-specification of achievement goal complexes, as a chain of motivational constructs could be further parsed without improving predictive utility. This work of refining and expanding the concept of goal complexes may be seen as an opportunity for further integration across motivational (especially goal- and goal-based) theorizing, for example, incorporating ideas regarding proximal and distal goals in goal hierarchies (Bandura, 1986; DeShon & Gillespie, 2005; Harackiewicz & Sansone, 1991; Locke & Latham, 2015), equifinality and multifinality in goal systems (Kruglanski et al., 2015), self-concordance (Sheldon & Elliot, 1998), implantation intentions (Gollwitzer & Sheeran, 2006), implicit goal pursuit (Custers et al., 2019), and regulatory foci (Higgins, 1997).

Goal complexes are a valuable addition to the hierarchical model and, importantly, their inherently integrative nature (both within the construct and across different constructs from different kinds of literature) promises to accelerate the integration process. It is our hope that others will see the tremendous conceptual and empirical utility of this underutilized aspect of the hierarchical model and join the research endeavor accordingly.

Concluding Thoughts

In our overview of the hierarchical model herein, we have focused on achievement goals as an integrative linchpin. We have done this for two reasons. First, achievement goals are the construct that we have focused on most in our work and that we know best. Second, and more importantly, throughout the history of scholarship on motivation, goals have played a central place, both conceptually and empirically, and it is difficult to envision a full and complete account of motivation, achievement or otherwise, without attending to the goal concept (see also Carver & Scheier, 1998; Pervin, 1983). This stated, it is important to note that valuable integration has and continues to take place in the achievement motivation literature with variables other than achievement

goals. In fact, there are several "classic" models that are inherently integrative and that do not focus on goals per se, such as Lewin et al.'s (1944) expectancy-value model, Atkinson's (1957) risk-taking model (focused on needs/motives and expectancies/perceptions), Spielberger's (1966) model of test-anxiety (focused on needs/motives and anxiety), Weiner and Kukla's (1972) attributional reconceptualization of needs/motives, and Bandura's (1977) self-efficacy theory (focused on expectancies/perceptions and intelligence/ability). Furthermore, conceptual and empirical work focused on two (or more) non-goal-based achievement motivation constructs is certainly present in and represents a valuable contribution to the contemporary literature (e.g., needs/motives and test anxiety, Conroy et al., 2002; expectancies/perceptions and values, Wigfield & Eccles, 2000; values and test anxiety, Pekrun et al., 2006; implicit theories and attributions, Hong et al., 1999; attributions and expectancies/perceptions, Perry et al., 2014; intelligence/ability and expectancies/perceptions, Marsh et al., 2006). We believe that this other, non-goal-based work fits seamlessly within the hierarchical model and both enrich the hierarchical model and further enhance the utility of the non-goal-based work by connecting it to a broader conceptual foundation.

It is sensible for integrative work to hone in on pairs of constructs at any given time and to focus on clearly and emphatically documenting their conceptual and empirical connection. However, it is important to bear in mind and to continuously acknowledge that these integrative attempts remain part of a broader whole and that the ultimate aim is full and complete integration. This "forest view" can often get lost in the intensive focus on an analysis of a few constituent trees. Simply put, we cannot envision a comprehensive model of achievement motivation that omits any of the central constructs that we identified in the opening paragraph of this piece. We believe the hierarchical model of motivation represents a promising foundation on which to organize conceptual and empirical work designed to carry out this ultimate aim.

In closing, we would like to emphasize the inherently integrative nature of the hierarchical model of achievement motivation. The model is integrative in three primary ways. First, it separates the energization and direction components of motivation and insists on both being attended to in accounting for achievement behavior. Second, it represents a conceptual platform for bringing together each of the central constructs in the achievement motivation literature and, indeed, much empirical work has been carried out in this fashion. Third, it not only brings together the central, competence-based constructs *within* the achievement motivation literature, but it also incorporates non-competence-based constructs from outside of the achievement motivation literature (with the potential reach having no boundaries). We believe that each of these three aspects of integration is essential and must be thoroughly attended to in the ongoing process of developing a truly comprehensive conceptual model of achievement motivation.

References

Akhter, M. (2019). Predictive power of socio economic status for achievement goal orientation of secondary school students in Punjab. *Responsible Education, Learning and Teaching in Emerging Economies, 1*, 9–18.

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*, 261–271.

Anderman, E. M. (2020). Achievement motivation theory: Balancing precision and utility. *Contemporary Educational Psychology, 61*, 1–7.

Anderman, L., & Anderman, E. (1999). Social predictors of changes in students' achievement goal orientations. *Contemporary Educational Psychology, 25*, 21–37.

Anwar, S., & Menekse, M. (2020). Unique contributions of individual reflections and teamwork on engineering students' academic performance and achievement goals. *International Journal of Engineering Education, 36*, 1018–1033.

Arens, A. K., & Waterman, R. (2021). Students' achievement goals and beliefs of causes of success: Temporal relations and gender differences. *Contemporary Educational Psychology, 64*, 101941.

Arkes, H., & Garske, J. (1977). *Psychological theories of motivation*. Brooks/Cole.

Atkinson, J. W. (1957). Motivational determinants of risk-taking behavior. *Psychological Review, 64*, 359–372.

Atkinson, J. W., & Feather, N. T. (Eds.). (1966). *A theory of achievement motivation*. Wiley.

Bal, M., & Barušs, I. (2007). Perceived parental attachment and achievement motivation. *Psychological Reports, 109*, 940–948.

Bandalos, D. L., Finney, S. J., & Geske, J. A. (2003). A model of statistics performance based on achievement goal theory. *Journal of Educational Psychology, 95*, 604–616.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191–215.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Bardach, L., Yanagida, T., & Lüftenegger, M. (2020). Studying classroom climate effects in the context of multi-level structural equation modelling: An application-focused theoretical discussion and empirical demonstration. *International Journal of Research & Method in Education, 43*, 348–363.

Barron, K., Evans, S., Baranik, L., Serpell, Z., & Buvinger, E. (2006). Achievement goals of students with ADHD. *Learning Disability Quarterly, 29*, 137–158.

Benita, M., Matos, L., & Cerna, Y. N. (2022). The effect of mastery goal-complexes on mathematics grades and engagement: The case of Low-SES Peruvian students. *Learning and Instruction, 80*, 101558.

Berger, N., & Archer, J. (2016). School socio-economic status and student socio-academic achievement goals in upper secondary contexts. *Social Psychology of Education, 19*, 175–194.

Berger, N., & Archer, J. (2018). Qualitative insights into the relationship between socioeconomic status and students' academic achievement goals. *Social Psychology of Education, 21*, 787–803.

Bipp, T., & van Dam, K. (2014). Extending hierarchical achievement motivation models: The role of motivational needs for achievement goals and academic performance. *Personality and Individual Differences, 64*, 157–162.

Bipp, T., Steinmayr, R., & Spinath, B. (2008). Personality and achievement motivation: Relationship among Big Five domain and facet scales, achievement goals, and intelligence. *Personality and Individual Differences, 44*, 1454–1464.

Bipp, T., Kleingeld, A., & Van Dam, K. (2017). Approach and avoidance temperament: An examination of its construct and predictive validity at work. *European Journal of Psychological Assessment, 33*, 196–206.

Birney, R., Burdick, H., & Teevan, R. (1969). *Fear of failure*. Van Nostrand-Reinhold Co.

Bjørnebekk, G., & Diseth, Á. (2021). Approach and avoidance temperaments and achievement goals among children. *Personality and Individual Differences, 49*, 938–943.

Bong, M. (2009). Age-related differences in achievement goal differentiation. *Journal of Educational Psychology, 101*, 879–896.

Brown, C. H. (1938). Emotional reactions before examinations: II. Results of a questionnaire. *The Journal of Psychology, 5*, 11–26.

Bruno, A., Jury, M., Toczek-Capelle, M. C., & Darnon, C. (2019). Are performance–avoidance goals always deleterious for academic achievement in college? The moderating role of social class. *Social Psychology of Education, 22*, 539–555.

Bruno, L., Toczek-Capelle, M. C., & Darnon, C. (2020). Facing the risk of upward mobility: Performance-avoidance goals and social class among high-school students. *The Journal of Social Psychology, 160*, 496–508.

Burnette, J. L., O'Boyle, E. H., VanEpps, E. M., Pollack, J. M., & Finkel, E. J. (2013). Mind-sets matter: A meta-analytic review of implicit theories and self-regulation. *Psychological Bulletin, 139*, 655–701.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multi-method matrix. *Psychological Bulletin, 56*, 81–105.

Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. Press.

Chang, Y. (2021). 2-dimensional cognitive test anxieties and their relationships with achievement goals, cognitive resources, motivational engagement, and academic performance. *Learning and Individual Differences, 92*, 102084.

Chen, C. (2015). Incremental validity of achievement goals in predicting subjective well-being among university students. *Journal of Cognitive Education and Psychology, 14*, 38–62.

Chen, C., & Zhang, L. (2011). Temperament, personality and achievement goals among Chinese adolescent students. *Educational Psychology, 31*, 339–359.

Chen, L. H., Wu, C. H., Kee, Y. H., Lin, M., & Shui, S. (2009). Fear of failure, 2 × 2 achievement goal and self-handicapping: An examination of the hierarchical model of achievement motivation in physical education. *Contemporary Educational Psychology, 34*, 298–305.

Chen, Z., Sun, K., & Wang, K. (2018). Self-Esteem, achievement goals, and self-handicapping in college physical education. *Psychological Reports, 121*, 690–704.

Chiang, Y., Yeh, Y., Lin, S. S. J., & Hwang, F. (2011). Factor structure and predictive utility of the 2 × 2 achievement goal model in a sample of Taiwan students. *Learning and Individual Differences, 21*, 432–437.

Cho, Y., Weinstein, C., & Wicker, F. (2011). Perceived competence and autonomy as moderators of the effects of achievement goal orientations. *Educational Psychology, 31*, 393–411.

Church, M., Elliot, A. J., & Gable, S. (2001). Perceptions of classroom environment, achievement goals, and achievement outcomes. *Journal of Educational Psychology, 93*, 43–54.

Ciani, K. D., Sheldon, K. M., Hilpert, J. C., & Easter, M. A. (2011). Antecedents and trajectories of achievement goals: A self-determination theory perspective. *British Journal of Educational Psychology, 81*, 223–243.

Cofer, C. N., & Appley, M. H. (1964). *Motivation: Theory and research*. Wiley.

Conley, A. (2012). Patterns of motivational beliefs: Combining achievement goal and expectancy-value perspectives. *Journal of Educational Psychology, 104*, 32–47.

Conroy, D. E. (2004). The unique psychological meanings of multidimensional fears of failing. *Journal of Sport and Exercise Psychology, 26*, 484–491.

Conroy, D. E., Elliot, A. J., & Hofer, S. M. (2003). A 2 x 2 achievement goals questionnaire for sport. *Journal of Sport and Exercise Psychology, 25*, 456–476.

Conroy, D. E., Willow, J. P., & Metzler, J. N. (2002). Multidimensional fear of failure measurement: The performance failure appraisal inventory. *Journal of Applied Sport Psychology, 14*, 76–90.

Corrion, K., d'Arripe-Longueville, F., Chalabaev, A., Schiano-Lomoriello, S., Roussel, P., & Cury, F. (2010). Effect of implicit theories on judgment of cheating acceptability in physical education: The mediating role of achievement goals. *Journal of Sports Sciences, 28*, 909–919.

Costa, E. T., Jr., & McCrae, R. R. (1985). *The NEO Personality Inventory manual*. PAR.

Crandall, V. J., Katkovsky, W., & Preston, A. (1960). A conceptual formulation for some research on children's achievement development. *Child Development, 31*, 787–797.

Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin, 52*, 281–302.

Cury, F., DaFonseca, D., Rufo, M., & Sarrazin, P. (2002a). Perceptions of competence, implicit theory of ability, perception of motivational climate, and achievement goals: A test of trichotomous conceptualization of endorsement of achievement motivational in the physical education setting. *Perceptual & Motor Skills, 95*, 233–244.

Cury, F., Elliot, A. J., Sarrzin, P., Da Fonseca, D., & Ruffo, M. (2002b). The trichotomous achievement goal model and intrinsic motivation: A sequential mediational analysis. *Journal of Experimental Social Psychology, 38*, 473–481.

Cury, F., Elliot, A. J., Da Fonseca, D., & Moller, A. C. (2006). The social-cognitive model of achievement motivation and the 2 x 2 achievement goal framework. *Journal of Personality and Social Psychology, 90*, 666–679.

Custers, R., Vermeent, S., & Aarts, H. (2019). Does goal pursuit require conscious awareness? In R. Ryan (Ed.), *The Oxford handbook of human motivation* (2nd ed.). Oxford University Press.

Daniels, L. M., Haynes, T. L., Stupnisky, R. H., Perry, R. P., Newall, N. E., & Pekrun, R. (2008). Individual differences in achievement goals: A longitudinal study of cognitive, emotional, and achievement outcomes. *Contemporary Educational Psychology, 33*, 584–608.

Darnon, C., Harackiewicz, J. M., Butera, F., Mugny, G., & Quiamzade, A. (2007). Performance-approach and performance-avoidance goals: When uncertainty makes a difference. *Personality and Social Psychology Bulletin, 33*, 813–827.

Darnon, C., Jury, M., & Aelenei, C. (2018). Who benefits from mastery-approach and performance-approach goals in college? Students' social class as a moderator of the link between goals and grade. *European Journal of Psychology of Education, 33*, 713–726.

Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska symposium on motivation* (Vol. 38, pp. 237–288). University of Nebraska Press.

Deci, E. L., & Ryan, R. M. (2000). The "what"and "why"of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268.

DeShon, R. P., & Gillespie, J. Z. (2005). A motivated action theory account of goal orientation. *Journal of Applied Psychology, 90*, 1096–1127.

Diseth, Å., & Kobbeltvedt, T. (2010). A mediation analysis of achievement motives, goals, learning strategies, and academic achievement. *British Journal of Educational Psychology, 80*, 671–687.

Diseth, A., & Samdal, O. (2014). Autonomy support and achievement goals as predictors of perceived school performance and life satisfaction in the transition between lower and upper secondary school. *Social Psychology of Education, 17*, 269291.

Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist, 41*, 1040–1048.

Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development*. Psychology Press.

Dweck, C. S., & Bempechat, J. (1983). Children's theories of intelligence. In S. Paris, G. Olsen, & H. Stevenson (Eds.), *Learning and motivation in the classroom* (pp. 239–256). Erlbaum.

Eccles, J., Adler, T., Futterman, R., Goff, S., Kaczala, C., Meece, J., & Midgley, C. (1983). Expectancies, values, and academic behaviors. In J. Spence (Ed.), *Achievement and achievement motivation* (pp. 75–146). Freeman.

Elliot, A. J. (1997). Integrating "classic" and "contemporary" approaches to achievement motivation: A hierarchical model of approach and avoidance achievement motivation. In P. Pintrich & M. Maehr (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 143–179). JAI Press.

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist, 34*, 169–189.

Elliot, A. J. (2005). Competence and motivation: Competence as the core of achievement motivation. In A. Elliot & C. Dweck (Eds.), *Handbook of competence and motivation* (pp. 3–12). Guilford.

Elliot, A. J., & Dweck, C. S. (Eds.). (2005). *Handbook of competence and motivation*. Guilford.

Elliot, A. J. (2006). The hierarchical model of approach-avoidance motivation. *Motivation and Emotion, 30*, 111–116.

Elliot, A. J. (2020). Competition and achievement outcomes: A hierarchal motivational analysis. *Motivation Science, 6*, 3–11.

Elliot, A. J. (2023). Energization and direction are both essential parts of motivation. In J. Reeve, M. Bong, & S. Kim (Eds.), *Motivation science: Controversies and insights* (pp. 10–14). Oxford University Press.

Elliot, A. J., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology, 72*, 218–232.

Elliot, A. J., & Church, M. (2003). A motivational analysis of defensive pessimism and self-handicapping. *Journal of Personality, 71*, 369–396.

Elliot, A. J., & Fryer, J. W. (2008). The goal concept in psychology. In J. Shah & W. Gardner (Eds.), *Handbook of motivational science* (pp. 235–250). Guilford.

Elliot, A. J., & Gable, S. L. (2019). Functions and hierarchical combinations of approach and avoidance motivation. *Psychological Inquiry, 30*, 130–131.

Elliot, A. J., & McGregor, H. A. (1999). Test anxiety and the hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology, 76*, 628–644.

Elliot, A. J., & McGregor, H. A. (2001). A 2 x 2 achievement goal framework. *Journal of Personality and Social Psychology, 80*, 501–519.

Elliot, A. J., & Murayama, K. (2008). On the measurement of achievement goals: Critique, illustration, and application. *Journal of Educational Psychology, 100*, 613–628.

Elliot, A. J., & Reis, H. T. (2003). Attachment and exploration in adulthood. *Journal of Personality and Social Psychology, 85*, 317–331.

Elliot, A. J., & Thrash, T. M. (2001). Achievement goals and the hierarchical model of achievement motivation. *Educational Psychology Review, 12*, 139–156.

Elliot, A. J., & Thrash, T. M. (2002). Approach-avoidance motivation in personality: Approach and avoidance temperaments and goals. *Journal of Personality and Social Psychology, 82*, 804–818.

Elliot, A. J., & Thrash, T. M. (2010). Approach and avoidance temperament as basic personality dimensions. *Journal of Personality, 78*, 865–906.

Elliot, A. J., McGregor, H. A., & Thrash, T. M. (2002). The need for competence. In E. Deci & R. Ryan (Eds.), *Handbook of self-determination research* (pp. 361–387). University of Rochester Press.

Elliot, A. J., Cury, F., Fryer, J. W., & Huguet, P. (2006). Achievement goals, self-handicapping, and performance attainment: A mediational analysis. *Journal of Sport and Exercise Psychology, 28*, 344–361.

Elliot, A. J., Murayama, K., Kobeisy, A., & Lichtenfeld, S. (2015). Potential-based achievement goals. *British Journal of Educational Psychology, 85*, 192–206.

Elliot, A. J., Aldhobaiban, N., Kobeisy, A., Murayama, K., Gocłowska, M. A., Lichtenfeld, S., & Khayat, A. (2016). Linking social interdependence preferences to achievement goal adoption. *Learning and Individual Differences, 50*, 291–295.

Elliot, A. J., Jury, M., & Murayama, K. (2018). Trait and perceived environmental competitiveness in achievement situations. *Journal of Personality, 86*, 353–367.

Erentaitė, R., Vosylis, R., Raižienė, S., Simonaitienė, B., Augustinienė, A., & Branje, S. (2022). Profiles of achievement goal orientations among adolescents with different SES background before and during the Covid-19 pandemic. *European Journal of Developmental Psychology*, 1–19.

Eum, K., & Rice, K. G. (2011). Test anxiety, perfectionism, goal orientation, and academic performance. *Anxiety, Stress, & Coping: An International Journal, 24*, 167–178.

Ferradás, M. M., Freire, C., Valle, A., & Núñez, J. C. (2016). Academic goals and self-handicapping strategies in university students. *Spanish Journal of Psychology, 19*, E24.

Folin, O., Demis, W., & Smillie, W. G. (1914). Some observations on emotional glycosuria in man. *Journal of Biological Chemistry, 17*, 519–520.

Fraley, R., & Shaver, P. (2000). Adult romantic attachment: Theoretical developments, emerging controversies, and unanswered questions. *Review of General Psychology, 4*, 132–154.

Gaudreau, P. (2012). Goal self-concordance moderates the relationship between achievement goals and indicators of academic adjustment. *Learning and Individual Differences, 22*, 827–832.

Gillet, N., Huyghebaert, T., Barrault, S., Bucourt, E., Gimenes, G., Maillot, A., ... & Sorel, O. (2017). Autonomous and controlled reasons underlying self-approach and self-avoidance goals and educational outcomes. *Social Psychology of Education, 20*, 179–193.

Goetz, T., Sticca, R., Pekrun, R., Murayama, K., & Elliot, A. J. (2016). Achievement goals and discrete emotions: Using multi-level analyses to examine their intraindividual relations. *Learning and Instruction, 41*, 115–125.

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes., 69–119.

Gray, J. A. (1987). *The psychology of fear and stress* (2nd ed.). Cambridge University Press.

Halvari, H., Skjesol, K., & Bagoien, T. E. (2011). Motivational climate, achievement goals, and physical education outcomes: A longitudinal test of achievement goal theory. *Scandinavian Journal of Educational Research, 55*, 79–104.

Harackiewicz, J. M., & Manderlink, G. (1984). A process analysis of the effects of performance contingent rewards on intrinsic motivation. *Journal of Experimental Social Psychology, 20*, 531–551.

Harackiewicz, J. M., & Sansone, C. (1991). Goals and intrinsic motivation: You can get there from here. In M. Maehr & P. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 7, pp. 21–49). JAI Press.

Harackiewicz, J. M., Barron, K. E., Tauer, J. M., & Elliot, A. J. (2002). Predicting success in college: A longitudinal study of achievement goals and ability measures as predictors of interest and performance from freshman year through graduation. *Journal of Educational Psychology, 94*, 562–575.

Harackiewicz, J. M., Durik, A., Barron, K. E., Linnenbrink-Garcia, L., & Tauer, J. (2008). The role of achievement goals in the development of interest: Reciprocal relations between achievement goals, interest, and performance. *Journal of Educational Psychology, 100*, 105–122.

Harter, S. (1982). The perceived competence scale for children. *Child Development, 53*, 87–97.

Haynes, T. L., Daniels, L. M., Stupnisky, R. H., Perry, R. R., & Hladkyj, S. (2008). The effect of attributional retraining on mastery and performance motivation among first-year college students. *Basic and Applied Social Psychology, 30*, 198–207.

Heckhausen, H. (1991). *Motivation and Action*. Springer-Verlag.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist, 52*, 1280–1300.

Hill, K. (1972). Anxiety in the evaluative context. In W. Hartrup (Ed.), *The young children* (Vol. 2, pp. 225–263). National Association for the Education of Children.

Hodis, F. A., Tait, C., Hodis, G. M., Hodis, M. A., & Scornavacca, E. (2016). Analyzing student motivation at the confluence of achievement goals and their underlying reasons: An investigation of goal complexes. *Social Psychology of Education, 19*, 643–660.

Hong, Y. Y., Chiu, C. Y., Dweck, C. S., Lin, D. M. S., & Wan, W. (1999). Implicit theories, attributions, and coping: A meaning system approach. *Journal of Personality and Social Psychology, 77*, 588–599.

Hong, W., Bernacki, M. L., & Perera, H. N. (2020). A latent profile analysis of undergraduates' achievement motivations and metacogntive behaviors, and their relations to achievement in science. *Journal of Educational Psychology, 112*, 1409–1430.

Jaakkola, T., Ntoumanis, N., & Liukkonen, J. (2016). Motivational climate, goal orientation, perceived sport ability, and enjoyment within Finnish junior ice hockey players. *Scandinavian Journal of Medicine & Science in Sports, 26*, 109–115.

James, W. (1890). *The principles of psychology*. Dover Press.

Jiang, A. L., & Zhang, L. J. (2021). University teachers' teaching style and their students' agentic engagement in EFL learning in China: A self-determination and achievement goal theory integrated perspective. *Frontiers in Psychology, 12*, 704269.

Jiang, Y., Song, J., Lee, M., & Bong, M. (2014). Self-efficacy and achievement goals as motivational links between perceived contexts and achievement. *Educational Psychology, 34*, 92–117.

Jiang, Y., Rosenzweig, E. Q., & Gaspard, H. (2018). An expectancy-value-cost approach in predicting adolescent students' academic motivation and achievement. *Contemporary Educational Psychology, 54*, 139–152.

Johnson, R. E., Chang, C.-H., Meyer, T., Lanaj, K., & Way, J. D. (2013). Approaching success or avoiding failure? Approach and avoidance motives in the work domain. *European Journal of Personality, 27*, 424–441.

Jury, M., Smeding, A., Court, M., & Darnon, C. (2015). When first-generation students succeed at university: On the link between social class, academic performance, and performance-avoidance goals. *Contemporary Educational Psychology, 41*, 25–36.

Jury, M., Bruno, A., & Darnon, C. (2018). Doing better (or worse) than one's parents: Social status, mobility, and performance-avoidance goals. *British Journal of Educational Psychology, 88*, 659–674.

Jury, M., Quiamzade, A., Darnon, C., & Mugny, G. (2019). Higher and lower status individuals' performance goals: The role of hierarchy stability. *Motivation Science, 5*, 52.

Kaplan, A., & Garner, J. K. (2017). A complex dynamic systems perspective on identity and its development: The dynamic systems model of role identity. *Developmental psychology, 53*, 2036.

Karabenick, S. (2004). Perceived achievement goal structure and college students help seeking. *Journal of Educational Psychology, 96*, 569–581.

Kelley, E. L. (1927). *Interpretation of educational measurements*. World.

Kenny, M. E., Walsh-Blair, L. Y., Blustein, D. L., Bempechat, J., & Seltzer, J. (2010). Achievement motivation among urban adolescents: Work hope, autonomy support, and achievement-related beliefs. *Journal of Vocational Behavior, 77*, 205–212.

Koenka, A. C. (2020). Academic motivation theories revisited: An interactive dialog between motivation scholars on recent contributions, underexplored issues, and future directions. *Contemporary Educational Psychology, 61*, 101831.

Korn, R. M., & Elliot, A. J. (2016). The 2 x 2 standpoints model of achievement goals. *Frontiers in Psychology, 7*, 1–12.

Korn, R. M., Elliot, A. J., & Daumiller, M. (2019). Back to the roots: The 2 x 2 standpoints and standards achievement goal model. *Learning and Individual Differences, 72*, 92–102.

Kruglanski, A. W., Chernikova, M., Babush, M., Dugas, M., & Schumpe, B. (2015). The architecture of goal systems:Multifinality, equifinality, and counterfinality in means-end relations. *Advances in Motivation Science, 2*, 69–98.

Lavrijsen, J., Vansteenkiste, M., Boncquet, M., & Verschueren, K. (2022). Does motivation predict changes in academic achievement beyond intelligence and personality? A multitheoretical perspective. *Journal of Educational Psychology, 114*(4), 772.

Lee, M., & Bong, M. (2016). In their own words: Reasons underlying the achievement striving of students in schools. *Journal of Educational Psychology, 108*, 274–294.

Lee, F. K., Sheldon, K. M., & Turban, D. B. (2003). Personality and the goal striving process: The influence of achievement goal patterns, goal level, and mental focus on performance and enjoyment. *Journal of Applied Psychology, 88*, 256–265.

Lee, Y. K., Cho, E., & Roseth, C. J. (2020). Interpersonal predictors and outcomes of motivational profiles in middle school. *Learning and Individual Differences, 81*, 101905.

Lee, A. A., Fleck, B., & Richmond, A. S. (2021). Exploring the relations of academic self-handicapping with achievement goals among urban, underrepresented minority, middle school students. *Educational Research: Theory and Practice, 32*, 79–105.

Leondari, A., & Gonida, E. (2007). Predicting academic self-handicapping in different age groups: The role of personal achievement goals and social goals. *British Journal of Educational Psychology, 77*, 595–611.

Lewin, K. (1935). *A dynamic theory of personality*. McGraw Hill.

Lewin, K., Dembo, T., Festinger, L., & Sears, P. S. (1944). Level of aspiration. In J. M. Hunt (Ed.), *Personality and the behavior disorders* (Vol. 1, pp. 333–378). Ronald Press.

Liebert, R., & Morris, L. (1967). Cognitive and emotional components of test anxiety: A distinction and some initial data. *Psychological Reports, 20*, 975–978.

Liem, G. A. D., & Elliot, A. J. (2018). Sociocultural influences on achievement goal adoption and regulation: A goal complex perspective. In G. Liem & D. McInerney (Eds.), *Research on sociocultural influences on learning and motivation Big theories revisited* (Vol. 12, pp. 41–67). Information Age Publishing.

Liem, G., & Senko, C. (2022). Goal complexes: A new approach to studying the coordination, consequences, and social contexts of pursuing multiple goals. *Educational Psychology Review, 34*, 2167–2195.

Liu, H., Yao, M., & Li, J. (2020). Chinese adolescents' achievement goal profiles and their relation to academic burnout, learning engagement, and test anxiety. *Learning and Individual Differences, 83–84*, 101945.

Lochbaum, M., Litchfield, K., Podlog, L., & Lutz, R. (2013). Extraversion, emotional instability, and self-reported exercise: The mediating effects of approach-avoidance achievement goals. *Journal of Sport and Health Science, 2*, 176–183.

Locke, E. A., & Latham, G. P. (2015). Breaking the rules: A historical overview of goal-setting theory. *Advances in Motivation Science, 2*, 99–126.

Longin, M. D., Hruška, D., & Sedinić, V. (2021). Relationship between personality and learning goal orientation preceding the first employment. *Sustainability, 13*, 1–14.

Lopez, D. (1999). Social cognitive influences on self-regulated learning: The impact of action-control beliefs and academic goals on achievement-related outcomes. *Learning and Individual Differences, 11*, 301–319.

Lou, N. M., & Noels, K. A. (2016). Changing language mindsets: Implications for goal orientations and responses to failure in and outside the second language classroom. *Contemporary Educational Psychology, 46*, 22–33.

Luo, W., Hogan, D., & Paris, S. G. (2011). Predicting Singapore students' achievement goals in their English study: Self-construal and classroom goal structure. *Learning and Individual Differences, 21*, 526–535.

Luo, W., Hogan, D. J., Yeung, A. S., Shen, Y. Z., & Aye, K. M. (2014). Attributional beliefs of Singapore students: Relations to self-construal, competence and achievement goals. *Educational Psychology, 34*, 154–170.

Madjar, N., Nave, A., & Hen, S. (2012). Are teachers' psychological control, autonomy support and autonomy suppression associated with students' goals? *Educational Studies, 39*, 43–55.

Maltais, C., Duchesne, S., Ratelle, C. F., & Feng, B. (2015). Attachment to the mother and achievement goal orientations at the beginning of middle school: The mediating role of academic competence and anxiety. *Learning and Individual Differences, 39*, 39–48.

Mandler, G., & Sarason, S. B. (1952). A study of anxiety and learning. *Journal of Abnormal and Social Psychology, 47*, 166–173.

Marsh, H. W., Trautwein, U., Lüdtke, O., Köller, O., & Baumert, J. (2006). Integration of multidimensional self-concept and core personality constructs: Construct validation and relations to well-being and achievement. *Journal of Personality, 74*, 403–455.

Martin, A. J. (2006). Personal bests (PBs): A proposed multidimensional model and empirical analysis. *British Journal of Educational Psychology, 76*, 803–825.

Mascret, N., Elliot, A. J., & Cury, F. (2015). The 3 x 2 achievement goal questionnaire for teachers. *Educational Psychology, 37*, 346–361.

Mascret, N., Elliot, A. J., & Cury, F. (2017). The 3 x 2 achievement goal questionnaire for teachers. *Educational Psychology, 37*, 346–361.

McCabe, K. O., Van Yperen, N. W., Verbraak, M., & Elliot, A. J. (2013). Big Five profiles of context-specific achievement goals. *Journal of Research in Personality, 47*, 698–707.

McClelland, D. C. (1985). *Human motivation*. Cambridge University Press.

McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. (1953). *The achievement motive*. Appleton-Century-Crofts.

McGregor, H. A., & Elliot, A. J. (2002). Achievement goals as predictors of achievement-relevant processes prior to task engagement. *Journal of Educational Psychology, 94*, 381–395.

McNeill, B., Watt, M., MacLean, K., & Gallagher, C. (2015). Adult attachment and achievement motivation in a sample of women rugby players. *Athletic Insight, 7*, 161–176.

*Merriam-Webster's 3rd New International Dictionary Unabridged. (*1961). Merriam-Webster.

Michou, A., Vansteenkiste, M., Mouratidis, A., & Lens, W. (2014). Enriching the hierarchical model of achievement motivation: Autonomous and controlling reasons underlying achievement goals. *British Journal of Educational Psychology, 84*, 650–666.

Middleton, M., & Midgley, C. (1997). Avoiding the demonstrating of lack of ability: An underexplored aspect of goal theory. *Journal of Educational Psychology, 89*, 710–718.

Midgley, C., & Urdan, T. (2001). Academic self-handicapping and achievement goals: A further examination. *Contemporary Educational Psychology, 26*, 61–75.

Miller, A. L., & Speirs Neumeister, K. L. (2017). The influence of personality, parenting styles, and perfectionism on performance goal orientation in high ability students. *Journal of Advanced Academics, 28*, 313–344.

Mook, D. (1987). *Motivation: The organization of action*. Norton.

Moreno, J., Gonzalez-Cutre, D., Sicilia, A., & Spray, C. (2010). Motivation in the exercise setting: Integrating constructs from the approach-avoidance achievement goals framework and self-determination theory. *Psychology of Sport and Exercise, 11*, 542–550.

Morris, R. L., & Kavussanu, M. (2008). Antecedents of approach-avoidance goals in sport. *Journal of Sports Sciences, 26*, 465–476.

Murayama, K., & Elliot, A. J. (2012). The competition-performance relation: A meta-analysis and a test of the opposing processes model of competition and performance. *Psychological Bulletin, 138*, 1035–1070.

Murphy, P. K., & Alexander, P. A. (2000). A motivated exploration of motivation terminology. *Contemporary Educational Psychology, 25*, 3–53.

Murray, H. (1938). *Explorations in personality*. Oxford University Press.

Negru, O., & Damien, L. (2010). Personal and classroom promoted achievement goals: Interdependence between students and teachers. *Cognition, Brain, and Behavior: An Interdisciplinary Journal, 14*, 81–99.

Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*, 328–346.

Nie, Y., & Liem, G. A. D. (2013). Extending antecedents of achievement goals: The double-edged sword effect of social-oriented achievement motive and gender differences. *Learning and Individual Differences, 23*, 249–255.

Nien, C., & Duda, J. L. (2008). Antecedents and consequences of approach and avoidance achievement goals: A test of gender invariance. *Psychology of Sport and Exercise, 9*, 352–372.

Ommundsen, Y. (2004). Self-handicapping related to task and performance-approach and avoidance goals in physical education. *Journal of Applied Sport Psychology, 16*, 183–197.

Or, M. B., Ishai, R., & Levi, N. (2015). The symbolic content in adults' PPAT as related to attachment styles and achievement motivation. *The Arts in Psychotherapy, 43*, 49–60.

Özdemir Oz, A., Lane, J. F., & Michou, A. (2016). Autonomous and controlling reasons underlying achievement goals during task engagement: Their relation to intrinsic motivation and cheating. *Educational Psychology, 36*, 1160–1172.

Özgüngör, S. (2020). The analysis of the relationships of attachment to mothers and fathers and achievement goal orientation and life satisfaction of adolescents. *Education and Science, 45*, 1–21.

Pajares, F., Britner, S., & Valiante, G. (2000). Writing and science achievement goals of middle school students. *Contemporary Educational Psychology, 25*, 406–422.

Payne, S. C., Youngcourt, S. S., & Beaubien, J. M. (2007). A meta-analytic examination of the goal orientation nomological net. *Journal of Applied Psychology, 92*, 128–150.

Pekrun, R., Elliot, A. J., & Maier, M. A. (2006). Achievement goals and discrete achievement emotions. *Journal of Educational Psychology, 98*, 583–597.

Pekrun, R., Elliot, A. J., & Maier, M. A. (2009). Achievement goals and achievement emotions: Testing a model of their joint relations with academic performance. *Journal of Educational Psychology, 101*, 115–135.

Pelletier, L. G., Rocchi, M. A., Vallerand, R. J., Deci, E. L., & Ryan, R. M. (2013). Validation of the revised sport motivation scale (SMS-II). *Psychology of Sport and Exercise, 14*, 329–341.

Peng, S.-L., Cherng, B.-L., Lin, Y.-Y., & Kuo, C.-W. (2018). Four-dimensional classroom goal structure model: Validation and investigation of its effect on students' adoption of personal achievement goals and approach/avoidance behaviors. *Learning and Individual Differences, 61*, 228–238.

Perry, R. P., Chipperfield, J. G., Hladkyj, S., Pekrun, R., & Hamm, J. M. (2014). Attribution-based treatment interventions in some achievement settings. In S. Karabenick & T. Urdan (Eds.), *Advances in motivation and achievement* (Vol. 18, pp. 1–35). Emerald Group.

Pervin, L. A. (1983). *The stasis and flow of behavior: Toward a theory of goals*. Current theory and research. University of Nebraska Press.

Petri, H., & Govern, J. (2012). *Motivation: Theory, research, and application* (6th ed.). Cengage.

Pickett, J., Hofmans, J., & De Fruyt, F. (2019). Extraversion and performance approach goal orientation: An integrative approach to personality. *Journal of Research in Personality, 82*, 103846.

Pintrich, P. R. (1994). Continuities and discontinuities: Future directions for research in educational psychology. *Educational Psychologist, 29*, 37–48.

Plante, I., O'Keefe, P., & Theoret, P. (2013). The relation between achievement goal and expectancy-value theories in predicting achievement-related outcomes: A test of four theoretical conceptions. *Motivation & Emotion, 37*, 65–78.

Podsakoff, P. M., Mackenzie, S. B., & Podsakoff, N. P. (2016). Recommendations for creating better concept definitions in the organizational, behavioral, and social sciences. *Organizational Research Methods, 19*, 159–203.

Polychroni, F., Hatzichristou, C., & Sideridis, G. (2012). The role of goal orientations and goal structures in explaining classroom social and affective characteristics. *Learning and Individual Differences, 22*, 207–217.

Pulfrey, C., & Butera, F. (2016). When and why people don't accept cheating: Self-transcendence values, social responsibility, mastery goals and attitudes towards cheating. *Motivation and Emotion, 40*, 438–454.

Pulfrey, C. J., Vansteenkiste, M., & Michou, A. (2019). Under pressure to achieve? The impact of type and style of task instructions on student cheating. *Frontiers in Psychology, 10*, 1624.

Rawlings, A. M., Tapola, A., & Niemivirta, M. (2020). Predictive effects of temperament on motivation. *International Journal of Educational Psychology, 6*, 148–182.

Reeve, J. (2009). *Understanding motivation and emotion* (6th ed.). John Wiley and Sons.

Riou, F., Boiché, J., Doron, J., Romain, A. J., Corrion, K., Ninot, G., et al. (2012). Development and validation of the French Achievement Goal Questionnaire for Sport and Exercise (FAGQSE). *European Journal of Psychological Assessment, 28*, 313–320.

Ryan, R. M., & Deci, E. L. (2019). Brick by brick: The origins, development, and future of self-determination theory. *Advances in Motivation Science, 6*, 111–156.

Ryan, A., & Shim, S. S. (2006). Social achievement goals: The nature and consequences of different orientations toward social competence. *Personality and Social Psychology Bulletin, 32*, 1246–1263.

Sánchez, R. J. (2015). Validation of the achievement goal questionnaire-revised in Argentinean university students (A-AGQ-R). *International Journal of Psychological Research, 8*, 10–23.

Scholer, A. A., Cornwell, J. F., & Higgins, E. T. (2019). Should we approach approach and avoid avoidance? An inquiry from different levels. *Psychological Inquiry, 30*, 111–124.

Schwinger, M., & Stiensmeier-Pelster, J. (2011). Performance-approach and performance-avoidance classroom goals and the adoption of personal achievement goals. *British Journal of Educational Psychology, 81*, 680–699.

Scott, M., Hauenstein, N., & Coyle, P. (2015). Construct validity of measures of goal orientation in the approach–avoidance network. *Learning and Individual Differences, 38*, 151–157.

Seijts, G., Latham, G., Tasa, K., & Latham, B. (2004). Goal setting and goal orientation: An integration of two different yet related literatures. *Academy of Management Journal, 47*, 227–239.

Senko, C., & Harackiewicz, J. M. (2005). Achievement goals, task performance, and interest: Why perceived goal difficulty matters. *Personality and Social Psychology Bulletin, 31*, 1739–1753.

Senko, C., & Hulleman, C. S. (2013). The role of goal attainment expectancies in achievement goal pursuit. *Journal of Educational Psychology, 105*, 504–521.

Senko, C., & Tropiano, K. (2016). Comparing three models of achievement goals: Goal orientations, goal standards, and goal complexes. *Journal of Educational Psychology, 108*, 1178–1192.

Senko, C., Liem, G. A. D., Lerdpornkulrat, T., & Poondej, C. (2023). Why do students strive to outperform classmates? Unpacking their reasons for pursuing performance goals. *Contemporary Educational Psychology, 73*, 102178.

Sheldon, K. M., & Elliot, A. J. (1998). All personal goals are not "personal": Comparing autonomous and controlling goals on effort and attainment. *Personality and Social Psychology Bulletin, 24*, 546–557.

Shih, S. (2013). Autonomy support versus psychological control, perfectionism, and Taiwanese adolescents' achievement goals. *Journal of Educational Research, 106*, 269–279.

Shih, S. (2021). Factors related to Taiwanese adolescents' academic engagement and achievement goal orientations. *The Journal of Educational Research, 114*, 1–12.

Skaalvik, E. (1997). Self-enhancing and self-defeating ego orientation: Relations with task and avoidance orientation, achievement, self-perceptions, and anxiety. *Journal of Educational Psychology, 89*, 71–81.

Skaalvik, E. M. (2018). Mathematics anxiety and coping strategies among middle school students: Relations with students' achievement goal orientations and level of performance. *Social Psychology of Education, 21*, 709–723.

Smith, M., Duda, J., Allen, J., & Hall, H. (2002). Contemporary measures of approach and avoidance goal orientations: Similarities and differences. *British Journal of Educational Psychology, 72*, 155–190.

Sommet, N., & Elliot, A. J. (2017). Achievement goals, reasons for goal pursuit, and achievement goal complexes as predictors of beneficial outcomes: Is the influence of goals reducible to reasons? *Journal of Educational Psychology, 109*, 1141–1162.

Sommet, N., Quiamzade, A., Jury, M., & Mugny, G. (2015). The student-institution fit at university: Interactive effects of academic competition and social class on achievement goals. *Frontiers in Psychology, 6*, 769.

Sommet, N., Elliot, A. J., Jamieson, J., & Butera, F. (2019). Income inequality, perceived competitiveness, and approach-avoidance motivation. *Journal of Personality, 87*, 767–784.

Sommet, N., Nguyen, D., Fahrni, K., Jobin, M., Nguyen, H. P., Sehaqui, H., & Butera, F. (2019). When and why performance goals predict exploitation behaviors: An achievement goal complex analysis of the selection function of assessment. *Motivation and Emotion, 43*, 266–284.

Sommet, N., Elliot, A. J., & Sheldon, K. M. (2021). The "what" and "why" of achievement motivation: Conceptualization, operationalization, and consequences of self-determination derived achievement goal complexes. In R. Robbins & O. John (Eds.), *Handbook of personality psychology: Theory and research* (4th ed., pp. 104–121). Guilford.

Sommet, N., & Elliot, A. J. (2022). Opposing effects of income inequality on health: The role of perceived competitiveness and approach/avoidance motivation. *European Journal of Social Psychology*.

Song, J., Kim, S. I., & Bong, M. (2020). Controllability attribution as a mediator in the effect of mindset on achievement goal adoption following failure. *Frontiers in Psychology, 10*, 2943.

Speilberger, C. D., & Vagg, P. R. (1995). *Test anxiety: Theory, assessment, and treatment*. Taylor & Francis.

Spielberger, C. D. (1966). Theory and research on anxiety. In C. Spielberger (Ed.), *Anxiety and behavior* (pp. 3–20). Academic Press.

Spielberger, C. D. (1972). Anxiety as an emotional state. In C. Spielberger (Ed.), *Anxiety: Current trends in theory and research* (Vol. 1, pp. 23–49). Academic Press.

Stan, A., & Oprea, C. (2015). Test anxiety and achievement goal orientations of students at a Romanian university. *Procedia Social and Behavioral Sciences, 180*, 1673–1679.

Sternberg, R. J. (2005). Intelligence, competence, and expertise. In A. Elliot & C. Dweck (Eds.), *Handbook of competence and motivation* (pp. 15–30). Guilford Press.

Świątkowski, W., & Dompnier, B. (2021). When pursuing bad goals for good reasons makes it even worse: A social value approach to performance-avoidance goal pursuit. *Social Psychology of Education, 24*, 653–677.

Tanaka, A., & Yamauchi, H. (2001). A model for achievement motives, goal orientations, intrinsic interest, and academic achievement. *Psychological Reports, 88*, 123–135.

Tanaka, A., Takehara, T., & Yamauchi, H. (2006). Achievement goals in a presentation task: Performance expectancy, achievement goals, state anxiety, and task performance. *Learning and Individual Differences, 16*, 93–99.

Thorndike, E. L. (1904). *An introduction to the theory of mental and social measurements*. Columbia University.

Thrash, T. M., & Elliot, A. J. (2001). Delimiting and integrating the goal and motive constructs in achievement motivation. In A. Efklides, J. Kuhl, & R. Sorrentino (Eds.), *Trends and prospects in motivation research* (pp. 3–21). Kluwer Academic Publishers.

Thrash, T. M., & Elliot, A. J. (2002). Implicit and self-attributed achievement motives: Concordance and predictive validity. *Journal of Personality, 70*, 729–755.

Urdan, T. (2004). Predictors of academic self-handicapping and achievement: Examining achievement goals, classroom goal structures, and culture. *Journal of Educational Psychology, 96*, 251–264.

Urdan, T., & Kaplan, A. (2020). The origins, evolution and future directions of achievement goal theory. *Contemporary Educational Psychology, 61*, 101862.

Urdan, T., & Mestas, M. (2006). The goals behind performance goals. *Journal of Educational Psychology, 98*, 354–365.

Vansteenkiste, M., Smeets, S., Soenens, B., Lens, W., Matos, L., & Deci, E. L. (2010). Autonomous and controlled regulation of performance-approach goals: Their relations to perfectionism and educational outcomes. *Motivation and Emotion, 34*, 333–353.

Vansteenkiste, M., Lens, W., Elliot, A. J., Soenens, B., & Mouratidis, A. (2014). Moving the achievement goal approach one step forward: Toward a systematic examination of the autonomous and controlled reasons underlying achievement goals. *Educational Psychologist, 49*, 153–174.

Vella, S. A., Braithewaite, R. E., Gardner, L. A., et al. (2016). A systematic review and meta-analysis of implicit theory research in sport, physical activity, and physical education. *International Review of Sport and Exercise Psychology, 9*, 191–214.

Veroff, J., & Veroff, J. (1980). *Social incentives: A life-span developmental approach*. Academic.

Vogler, J., & Bakken, L. (2007). Motivation across domains: Do goals and attributions change with subject matter for Grades 4 and 5 students. *Learning Environment Research, 10*, 17–33.

Wang, C. K. J., Biddle, S. J. H., & Elliot, A. J. (2007). The 2 x 2 achievement goal framework in a physical education context. *Psychology of Sport and Exercise, 8*, 147–168.

Wang, C. K. J., Liu, W. C., Lochbaum, M. R., & Stevenson, S. J. (2009). Sport ability beliefs, 2 x 2 achievement goals, and intrinsic motivation: The moderating role of perceived competence in sport and exercise. *Research Quarterly for ExerCise & Sport, 80*, 303–312.

Wang, Y., Wu, C.-H., Parker, S. K., & Griffin, M. A. (2018). Developing goal orientations conducive to learning and performance: An intervention study. *Journal of Occupational and Organizational Psychology, 91*, 875–895.

Warburton, V. E. (2017). Peer and teacher influences on the motivational climate in physical education: A longitudinal perspective on achievement goal adoption. *Contemporary Educational Psychology, 51*, 303–314.

Warburton, V., & Spray, C. (2008). Motivation in physical education across the primary-Secondary school transition. *European Physical Education Review, 14*, 157–178.

Warburton, V., & Spray, C. (2014). Appearance-and competition-focused performance goals: Examining their links with performance in physical education. *European Physical Education Review, 20*, 305–318.

Weiner, B., & Kukla, A. (1970). An attributional analysis of achievement motivation. *Journal of Personality and Social Psychology, 15*, 1–20.

White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review, 66*, 297–333.

Wigfield, A., & Eccles, J. (2000). Expectancy-value theory of motivation. *Contemporary Educational Psychology, 25*, 68–81.

Wolters, C. A., Fan, W., & Daugherty, S. G. (2013). Examining achievement goals and causal attributions together as predictors of academic functioning. *The Journal of Experimental Education, 81*, 295–321.

Won, S., Wolters, C. A., & Mueller, S. A. (2018). Sense of belonging and self-regulated learning: Testing achievement goals as mediators. *The Journal of Experimental Education, 86*, 402–418.

Wood, W., Mazar, A., & Neal, D. T. (2022). Habits and goals in human behavior: Separate but interacting systems. *Perspectives on Psychological Science, 17*, 590–605.

Xu, X., Dai, D., Liu, M., & Deng, C. (2018). Relations between parenting and adolescents' academic functioning: The mediating role of achievement goal orientations. *Frontiers in Education, 3*, 1–10.

Yan, V. X., & Wang, L. (2021). What predicts learners' study efforts? Implicit beliefs and interest are related to mastery goals but not to use of effective study strategies. *Frontiers in Psychology, 6*, 643421.

Yeager, D., Romero, C., Paunesku, D., Hulleman, C., Schneider, B., et al. (2016). Using design thinking to improve psychological interventions: The case of the growth mindset during the transition to high school. *Journal of Educational Psychology, 108*, 374–391.

Yu, J., & McLellan, R. (2019). Beyond academic achievement goals: The importance of social achievement goals in explaining gender differences in self-handicapping. *Learning and Individual Differences, 69*, 33–44.

Zheng, A., Briley, D. A., Malanchini, M., Tackett, J. L., Harden, K. P., & Tucker-Drob, E. M. (2019). Genetic and environmental influences on achievement goal orientations shift with age. *European Journal of Personality, 33*, 317–336.

Zusho, A., Pintrich, P. R., & Cortina, K. S. (2005). Motives, goals, and adaptive patterns of performance in Asian American and Anglo American students. *Learning and Individual Differences, 15*, 141–158.