

MOTIVATION AND GIFTED STUDENTS: IMPLICATIONS OF THEORY AND RESEARCH

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An analysis of contemporary motivation theories reveals implications for gifted and talented students. The expectancy-value framework, intrinsic-extrinsic motivation theories, goal orientations, self-efficacy and other self-perceptions, and attribution theory are described and discussed with respect to implications for the psychology and education of gifted and talented students. Illustrative empirical research on motivation and gifted students is presented, and a model of classroom motivation factors is provided as a practical structure within which to consider instructional practices with this population. © 2012 Wiley Periodicals, Inc.

One of the most intriguing, and often frustrating, puzzles for those who study individuals with great intellectual and creative promise is why some bright students never reach the level of success of which they seem so capable. More than half a century ago, David McClelland and his colleagues published a now-classic study of this problem, *Talent and Society* (McClelland, Baldwin, Bronfenbrenner, & Strodbeck, 1958). They suggested that the solution to this puzzle could be found by looking at a range of nonintellective factors, with particular attention to achievement motivation.

One recent definition of motivation is “the process whereby goal-directed activity is instigated and sustained” (Schunk, Pintrich, & Meece, 2008, p. 4). In other words, motivation includes choosing some goals and not others, starting work toward a goal, and persevering in that work. Motivation is commonly defined in psychology and education publications in a way that includes both personal and environmental factors. Motivation theory and research address differences in the relatively stable motivational characteristics of people, but they also address the situational characteristics of tasks and environments that may lead to more or less motivation.

How is motivation related to a “gifted” level of performance? What are the motivational characteristics of gifted and talented students? Which aspects of motivation seem to either promote or inhibit the fulfillment of giftedness? Research and theory on motivation and gifted students has a long history, and it can be classified into personal and environmental categories as noted previously (Clinkenbeard, 1996, 2006). On the more psychological or personal side, there is a large body of research that has investigated the motivational characteristics of children and adults who have been identified as gifted. Many theories of giftedness and definitions of the gifted even include motivation as a defining characteristic (e.g., Renzulli, 1986, included task commitment along with creativity and above-average ability in his three-ring model of giftedness). On the more educational or environmental side, there is a growing set of studies that examines motivation, especially variables related to achievement motivation, as an important outcome of educational programs and practices for gifted students. Both perspectives are important for an understanding of the motivation of gifted students.

The purpose of this article is to analyze several contemporary theories of motivation for their implications regarding gifted students and their education. Selected empirical research studies on motivation and gifted students, where available, will be used to illustrate the theories and their implications. A classroom-based motivation model will be presented as a way of discussing the application of motivation theories to gifted students. Finally, cautions about definitional issues and suggestions for research will be presented.

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MOTIVATION THEORIES

Contemporary motivation theories tend to arise from a cognitive perspective. As distinguished from the mechanistic view of behaviorism, in which motivation is seen as behavior resulting from reinforcements and punishments, and the psychoanalytic perspective, where motivation is seen as the outcome of unconscious drives or needs, cognitive perspectives assume that individuals have a conscious point of view, that they perceive and interpret situations for themselves, and that they make choices about their behavior (Stipek, 2002). Although there are numerous theories and models of motivation that relate to achievement tasks and settings, the following theories have generated substantial research and have useful explanatory value with regard to the psychology and education of gifted and talented students.

Expectancy-Value Theory

Contemporary expectancy-value theories are built on a foundation laid partly by Atkinson's (1964) work on achievement motivation, which built on McClelland's (1961) more psychoanalytic investigation of need for achievement. Expectancies are people's beliefs about whether they can succeed at a task, and values are beliefs about why they might want to engage in a particular task (Schunk et al., 2008). Motivated behavior occurs when we think a task is worth doing and expect that we can do it. In addition, many other motivation theories can be considered from within an expectancy-value framework. For instance, attribution and self-efficacy theories (discussed later) are related to expectancy: Do I think that I can achieve at this task? Goal and intrinsic motivation theories are related to value: Do I want to pursue this task?

Eccles and her colleagues (e.g., Eccles, Wigfield, & Schiefele, 1998) developed a comprehensive expectancy-value model and have conducted research on its various components. In their model, expectancies include student beliefs about how well they might do on some future task or in a particular subject-matter area, and higher expectancies are related to greater motivation and achievement outcomes. Values include interest in a task, importance or usefulness, and trade-off or cost of doing the task. There are numerous other components to this particular theory, many of which are related to theories mentioned later. However, when one looks just at expectancies and values, a number of implications for gifted students can be generated.

With regard to expectancies, most intellectually and academically gifted students will expect to perform well on a wide range of school tasks. However, difficulties can arise if students are placed in a fast-paced general class but their academic talent is restricted to one particular domain; for instance, a child with extremely high math achievement but more typical verbal achievement may have low expectancies of success with the reading curriculum if placed in a self-contained gifted class. With regard to values, high-achieving gifted students are probably willing to engage in any work that is assigned, whereas less compliant students and gifted underachievers may see no reason to work on tasks that are too easy or otherwise of no interest to them.

Siegle and McCoach (2005) presented a motivation model for gifted students that fits with the expectancy-value theoretical framework. They included four components: goal valuation, self-efficacy, environmental perception, and self-regulation. They offered research-based practical motivation tips for educators and parents for each area of their model. Patrick, Gentry, and Owen (2006) provided an overview of research on motivation and adolescents within a framework that includes expectancies for success and values for tasks. They provided examples and research evidence and discussed the implications of that research for gifted youth. The general cautions and advice regarding the motivation of gifted students from an expectancy-value theoretical framework are: try to match the challenge level of the task with the abilities of the student (so that expectancies for success are not for easy success, but for success that requires effort), help students see the long-term

value of tasks that may not seem intrinsically interesting to them, and allow enough choice so that students can select tasks of interest and value to them.

Intrinsic and Extrinsic Motivation

Motivation is often divided into two contrasting types: intrinsic and extrinsic (Schunk et al., 2008). People who are highly intrinsically motivated to learn are interested, curious, and usually focused on the task. People who are extrinsically motivated are interested in the outcomes of learning (grades, prizes, etc.) more than the task itself. Most of us are motivated by a combination of intrinsic and extrinsic reasons that may vary according to the task. Although intrinsic and extrinsic motivation can change in individuals depending on context, they have often been investigated as personal characteristics.

Several researchers have found that gifted students score more “intrinsic” than other students do on measures of motivation. Olszewski-Kubilius, Kulieke, and Krasney (1988) reviewed several studies showing that gifted students score higher on measures of motivation that reflect intrinsic reasons for learning, including internal locus of control and measures of intrinsic motivation and autonomy. Csikszentmihalyi, Rathunde, and Whalen (1993) conducted a longitudinal study of intellectually talented adolescents and found that compared with average students, they showed more intrinsic motivation for reading, thinking, and solitude. Gottfried and Gottfried (1996) found that gifted students (as defined by IQ above 130) scored significantly higher on a measure of academic intrinsic motivation than a comparison group.

Csikszentmihalyi's (1991) theory of flow also has implications for gifted students and motivation. Flow is defined as a state of deep involvement associated with intrinsic motivation, which occurs when an individual's capability matches the challenge level of the task. A task that is too difficult leads to anxiety; a task that is too easy leads to boredom. An appropriate match, accompanied by student interest in the task, can lead to an un-self-conscious state of flow, which is associated with a number of positive emotional and mental health factors. The connection to gifted students in school is probably obvious. When students spend most of their time in school working on tasks that are too easy, which has been demonstrated to be the usual case, they are unlikely to be in a state of flow or to experience any form of intrinsic motivation.

Another motivation theory related to intrinsic motivation is Deci and Ryan's (1985) self-determination theory. A sense of autonomy is central to this theory, that is, that humans need to feel in control of their own lives. Other important factors in this theory are the need to feel competent and the need to feel related to others. Implications for gifted education include the consideration of how parents and educators provide evaluative feedback to gifted students. Feedback that praises students for independence and for successful results based on their own effort is more likely to preserve and develop self-determination than feedback that focuses primarily on students' abilities. Feedback that provides information (“Here's how this section could be improved”) is more motivating than feedback that can seem controlling (“I'm disappointed in you”). Relatedness is also a particular issue for gifted students. Working with teachers who genuinely like and appreciate gifted students, as well as spending time with peers with similar abilities and interests, are important social-emotional concerns for these students (see Neihart, Reis, Robinson, & Moon, 2002).

Finally, intrinsic motivation may have important implications for gifted underachievers as well. Emerick (1992) identified motivational variables that led to the reversal of underachievement in a case study of several gifted adolescents. Variables related to intrinsic motivation included a strong intellectual or creative interest pursued outside of school, classes that allowed for advanced and independent study, and an ability to relate school success to personal goals. Although parents and teachers may tend to employ extrinsic measures to try to get gifted underachievers to improve their

performance, it appears that appealing to their intrinsic interests may be more effective in the long term.

Goal Theories

There are a number of theories that address the specific goals that people might select across a variety of life areas. Goal orientation theories are strongly related to achievement and school settings (Schunk et al., 2008). The main two orientations in these theories are mastery (or learning) goals and performance goals. The terminology may vary across theories, but in general, a learning goal is a focus on wanting to learn more about a subject. The emphasis is on mastery of a task, learning new material, and developing understanding. A performance goal (in the intellectual domain) is a focus on wanting to appear smart compared with others. It is more ego-oriented and concerned with demonstrating one's intelligence. Aspects of the classroom environment can affect whether students adopt learning or performance goals.

Dweck and her colleagues (Dweck, 1986, 2012; Elliott & Dweck, 1988) based their theory and research on students' naïve theories of intelligence, now referred to as "mindset." Students with an entity theory of intelligence believe that ability is fixed: that they have a given amount and that it is unrelated to effort. Students with an incremental theory of intelligence believe that intelligence is malleable and that they grow smarter with increased effort and learning. Dweck (2012) addressed the dangers of a fixed mindset in the case of gifted students: being praised for their abilities and the ease with which they earn high grades can support a fixed mindset. Gifted learners may become fearful at the first sign of failure and engage in a variety of self-protective and avoidance behaviors to avoid demonstrating what they see as a lack of ability. This syndrome can appear even in very young children (Clinkenbeard, 2012). Even the most gifted students need to be challenged and need to learn that effort is necessary for high-level accomplishment, that is, to adopt a growth mindset. Dweck's (2012) recent efforts have focused on helping students learn about the malleability of the brain and how to adopt growth mindsets based on that understanding.

Perceptions of the Self

Motivation theories that involve people's self-perceptions are related in part to the "expectancy" side of the expectancy-value framework. Academic self-concept and self-efficacy are two theories of people's beliefs about how competent they are in certain domains or at certain tasks. Alexander and Schnick (2008) distinguished the two by noting that academic self-concept is domain-specific (for instance, one might have a strong academic self-concept for learning languages) and self-efficacy is more narrowly task-specific (e.g., feeling efficacious at conjugating French verbs). Both are related to, but are more specific and targeted than, self-concept or global self-esteem.

Schunk et al. (2008) noted that self-efficacy is individuals' personal evaluations of whether they are capable of succeeding at a particular task, that is, not just whether they are generally good at similar tasks, but that they have the specific skills necessary to complete that particular task successfully. Students must perceive that their skill mastery is increasing over time for them to feel efficacious (Bandura, 1982).

Gifted students are likely to have both high academic self-concept and self-efficacy in those domains in which they are gifted or talented. McCoach and Siegle (2003) compared gifted achieving and underachieving students and found that, although the underachievers scored lower on measures of motivation and self-regulation, there was no significant difference between the groups on measures of academic self-perception.

Attribution Theory

Attribution theory assumes that individuals naturally search for the causes of achievement (and other) outcomes. Attributions for success and failure vary on locus (internal or external), stability over time, and controllability (Weiner, 1985). Causal attributions are the reasons or explanations we give for our successes and failures, and they have important implications for effort. The attribution that a student makes for success or failure on a task (ability, effort, luck, etc.) affects how the student approaches similar tasks in the future. The more positive attributions for success are those that are internal and controllable, for instance, believing that you did well because you understood the task and you worked hard. Less positive attributions for success, from the point of view of ongoing motivation to put forth effort, would include believing that you did well because the teacher likes you or the task was easy. Positive attributions for failure (or at least doing less well than expected) include lack of effort and wrong strategy use, and negative attributions for failure would include lack of ability and bad luck because they would be out of the control of the student.

Some researchers have found that gifted students seem to have more positive attributions than other students do. A review of research on personality factors and giftedness (Olszewski-Kubilius et al., 1988) found that gifted students are more likely to demonstrate positive attributions for success and failure, for example, attributing success to their own ability and effort and attributing failure to bad luck or inappropriate strategy choice. Chan (1996) found similar results in a comparison of gifted and other high school students. Ziegler and Heller (2000) demonstrated some success in retraining negative attributions held by gifted students. In a study of young adolescent girls who were gifted in science, they found that training teachers to help students give more positive attributions for their performance increased both physics class achievement and student motivation.

THE TARGET MODEL OF MOTIVATION

Motivation theories cover the motivational process and touch on a wide range of psychological and educational variables, from beliefs about the self to attributions for success and failure. How can these theories and their related research be synthesized and applied to a model of classroom practice? Research on motivation and schools tends to look at the effects of various aspects of classroom climate on student motivation outcomes. Research on achievement motivation in particular has moved toward discovering and developing more methods for fostering learning goals, or task commitment, which is defined as a love of learning for its own sake and a desire to persevere on tasks of interest (Ames, 1992).

TARGET is a model for structuring classroom practices in a way that is designed to promote student motivation. Originally developed as a model of parenting (Epstein, 1989), the model addresses six classroom practices that have been shown (through a strong research base) to affect student motivation and that are substantially under the control of individual teachers. TARGET is an acronym that stands for six classroom variables or structures that have an impact on student motivation: task, authority, recognition, grouping, evaluation, and time. The model was developed for education in general, but an analysis of each part of the model reveals recommended practices that can support gifted students in both regular and special classrooms. (For an overview of the model, see Schunk et al., 2008, pp. 200–206, or Woolfolk, 2011, pp. 491–498.)

The premise of the TARGET model is that classroom structures and organization can and do influence whether a student displays adaptive motivational patterns and task-oriented goals, or maladaptive patterns and nonachievement goals. The emphasis is on helping students develop mastery goals and their motivation-related outcomes, such as more long-term learning, deeper and more meaningful learning, more intense engagement with tasks, and more connections among subjects. These outcomes are certainly consistent with the goals of educational programming for

gifted and talented students. Following is a brief overview of the recommendations for each of the six classroom practices, along with an analysis of their appropriateness for the motivation of gifted students.

Task

The TARGET model suggests that tasks be of optimal difficulty, that there be a variety of tasks, and that they be presented with enthusiasm. All of these suggestions are appropriate for all students. The issue arises with the practical difficulty of differentiation, that is, making sure that all students are challenged at their own optimal level. Regular classroom teachers need to make sure that gifted students are not just achieving on typical classroom tasks, but are learning new things and being challenged. There are numerous suggestions in the gifted education literature as to how to accomplish this through the curriculum. For instance, all students need to develop high-order thinking skills, but one suggestion is to start gifted students with analysis, evaluation, and creative synthesis (in Bloom's Taxonomy terminology) and let them pick up basic comprehension and application of the material as they go.

Authority

It is important to give all students the opportunity for shared decision making in the classroom: to give them choices and the feeling of autonomy. Students may follow the orders of a highly authoritarian teacher, but long-term motivation outcomes can suffer. Gifted students who are given leadership opportunities and some choice about their work can use those opportunities to attempt challenging projects and work toward their potential. Highly creative students can be given some leeway in the content or method of their work.

Recognition

Rewards and recognition are generally viewed as extrinsic motivators, but the TARGET model recommends that intrinsic motivation be cultivated as well. Students can be praised for both accomplishment and improvement. Individual feedback comparing student work to a standard or to their own starting point is more beneficial than feedback that compares them to others. This is true for gifted learners as well as for those who may be struggling. Students who generally perform at the top of the class without much effort are at risk for future problems; if they have not had to develop intensive study skills or if they have learned to believe that accomplishment is easy, what happens the first time that they encounter material that is actually difficult for them? Teachers can recognize and praise the performance of gifted students, but the TARGET model would imply that the recognition should be for improvement, learning, and mastery of new material, not for performing the best on work that is too easy for them.

Grouping

The TARGET model recommends that students work together in heterogeneous groups, and that groupings of students be flexible. In addition to small groups, it supports developing the whole classroom into a community of learning. This TARGET variable probably poses the most problems for gifted students. Although small groups have been demonstrated to be useful for a variety of learning outcomes, when grouping is heterogeneous, the danger is that the highest achievers in the groups will do most of the work (either because of their own desire to get an "A" or because the group members expect and push them to do the work). When asked what to do with gifted learners in a regular classroom, teachers who have no training in gifted education often suggest that they tutor the other students. Although this can be beneficial to both tutor and tutee on a limited basis if

the high-achieving student enjoys tutoring, it is not a solution to giving both students an appropriate challenge. Gifted students should sometimes be given the opportunity to work in small groups with others who have similar interests and achievement levels so that the students can spur each other to reach their potential. Charges of “elitism” can be avoided by making these groupings flexible rather than permanent and by basing them on interest and potential as well as demonstrated achievement.

Evaluation

In general, evaluation of student work should be criterion-referenced rather than normative and private rather than public. Social comparison and public grading can lower the self-efficacy of struggling students and can embarrass students who frequently perform the best and may make them targets for hostility from other students. Grading and evaluation, as noted earlier, should be based at least partly on effort and improvement if the goal is to increase mastery motivation. Struggling students can be graded partly for improving their skills, and high-achieving students can be challenged to improve and master new material as well.

Time

The time dimension of the model refers to the amount of time given for completion of tasks, including pacing and workload. The model recommends adjusting time and workload so that students can experience the most success and mastery. Sometimes this might mean differentiating the tasks so that students are doing different versions of the same assignment leading to the same standard. It may also mean that the teacher spends more time with struggling students while providing appropriate higher level work for high-achieving students. When students finish the assigned work more quickly than the teacher had anticipated, there should be regular options available for those students other than doing more of the same level of work. These options could include learning centers, individual or small group research projects, and even simply independent reading time.

A comprehensive approach to implementing the TARGET model is considered important (Ames, 1992); these classroom structures are interdependent, and the effects of using mastery-oriented strategies in one area could be offset by the use of performance-oriented strategies in another. Is the TARGET model good for the motivation of gifted and talented students? Most of its objectives and recommended practices are good for the motivation, especially the intrinsic or task-oriented motivation, of all students. A classroom that is structured for the mastery motivation of both struggling and at-grade-level students does not have to be one that sacrifices motivation and appropriate challenge for gifted students.

CAUTIONS AND FUTURE RESEARCH

This overview of motivation theories and their application to the psychology and education of gifted students has of necessity not gone into detail on within-group differences in motivation variables and on definitional issues with the concept of giftedness itself. There are differences in motivational portraits of the gifted based on developmental level, race or ethnicity, socioeconomic status, gender, and the existence of other exceptionalities. The definitional issues include both the core definition of giftedness and its relationship to underachievement (Robinson & Clinkenbeard, 1998, 2008). For instance, researchers who look at cognitive and metacognitive characteristics of the gifted usually use a traditional high IQ definition, probably as a way of holding constant at least some intellectual aspects of their samples. Researchers in nonintellectual areas such as motivation are more likely to use whatever practical definition of giftedness has been employed by participating school districts. There is some validity to this approach for the study of motivation because it tends to result in a more diverse sample and because the experience of being labeled “gifted” (however

that is defined) may be critical to the motivational patterns of gifted and talented students, for better or for worse.

Finally, underachievement needs to be mentioned in any discussion of motivation and the gifted. Underachieving gifted students are similar to achieving gifted students on some aspects of motivation and different on others. It is not always clear in published research on the gifted whether underachieving gifted students are included in a sample or not. Also, some underachievement in the gifted may be due to learning disabilities or other exceptionalities, which can mask the giftedness and result in the student being overlooked (Davis, Rimm, and Siegle, 2011).

A search of psychology and education databases using “gifted and motivation” as the search term results in thousands of articles, a minority of which (perhaps less than 20%) are empirical research articles. The large number overall attests to the lasting interest in this topic, but there are distinct differences between the empirical and nonempirical literature (Clinkenbeard, 2006). The research articles, both quantitative and qualitative, historically have tended to concentrate on characteristics and correlates of motivation in the gifted (motivation as a personality trait or relatively stable characteristic). The nonresearch articles, aimed more at parents and practitioners, have tended to focus on strategies for improving the motivation of gifted students (motivation as an educational outcome, something that fluctuates according to the situation). This “mismatch” has been partially remedied in more recent research in which scholars have devoted more attention to examining gifted students’ motivation as an outcome of educational practices and as a mediating variable in predicting achievement. The emphases on motivation as a trait and motivation as a state are both important, and a complete understanding would involve the interaction of the two.

Where might research on motivation and the gifted head in the future? In addition to looking at motivation as an outcome of programming, current research is attempting to link motivation with various cognitive variables in a rich, complex interaction that has promise for better understanding and nurturing of gifted students (see, e.g., Shore and Irving, 2005). Research on self-regulation, expertise in adulthood, inquiry learning and teaching, and the neuroscience underlying motivation and cognition (sometimes called “hot cognition”) all look at relationships between motivation, cognition, and instruction in ways that may help us help gifted students live up to their potential.

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