

Role of Achievement Goals in Adolescent Creative Thinking

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Abstract:

With creativity becoming increasingly indispensable to the competitive world, there is a need to enhance our understanding of the role played by positive psychological constructs such as Goal orientation that may influence creativity of adolescents. The present investigation studies the association between creativity and goal orientation in adolescents. In this study (N=350), the sample was drawn from public and private schools and college in the district of Panchkula and Himachal Pradesh. A convenience sample of 350 adolescents (175 male, 175 female), all between the ages of 16 and 18, participated in the study. Consistent with achievement goal theory, the findings demonstrate that mastery goals positively predict creative thinking, providing empirical support for implementing mastery-focused pedagogy to enhance student innovation.

Keywords: adolescents, creativity, goal orientation.

Adolescence is a crucial period of development that occurs between childhood and adulthood, characterized by a multitude of changes in the human body, mind, social interactions, and emotions. Adolescence is considered the most creative age after early childhood (Barbot et al., 2019). An adolescent can not only distinguish between what is experienced and perceived, but can also operate his thought process to come up with a novel idea. The advent of adolescent thinking unfolds new cognitive and social perspective. Their thinking is progressively abstract (adolescents conceive more abstractly than children), logical (adolescents think like scientists, who formulate problem-solving strategies and consider solving problems analytically) and idealistic (adolescents often think about what is feasible), ideals of themselves, others and the world); better able to assess their own thoughts, what other people believe and what other people believe about them, and more adept at analysing and observing the social world (Santrock, 2002). This stage is frequently seen as crucial for the formation of a creative identity (Beghetto & Dilley, 2016; Barbot & Heuser, 2017). Adolescent creativity functions better than that of a child because it is more mature, responsible, productive, and autonomous. In contrast, a child's creativity is instinctual. In fact, researchers studying creativity have come to understand both the dynamic (Beghetto & Corazza, 2019) and the way that sociocultural settings and creative action are inextricably linked (Glăveanu et al., 2019). Even though research on the development of adolescents creativity is a promising area in the academic literature (Barbot et al., 2016), there is still much to learn about the factors that influence the development of creativity in the young minds.

Adolescents with creativity are assets to society. The goal of our educational institutions should be to help young people become more creative so they can be prepared to undertake a variety of life paths. In this era of intense competition, no nation, no matter how big or small, can afford to undervalue the significance of creativity. The advancement of science and technology as well as society at large are greatly impacted by creative acts. Nations that are able to recognize, foster, and enhance the creative potential within their population may have a distinct advantage over those that are unable to recognize and nurture gifted individuals. In any community or civilization, creativity is a fundamental tool for advancement. Higher levels of creativity are called for in the complex and interdependent modern world due to rising expectations, advances in communication and technology, and increased interdependence (Mars, 1981).

Creativity

The term "*Creativity*," which is only seventy years old, has transitioned from referring to divine processes to the psychic functioning of human beings in educational research. Humans are endowed with unique capacities. There is a "spark of genius"—a creative ability that goes untapped in each of us—waiting to be unleashed. Even a computer, capable of achieving incredible speeds, cannot match it because it is limited to replicating mechanical orientations and is unable to generate original ideas, a task that only the human mind is capable of. The ability to produce a unique and valuable product that arises from an interaction between an individual's aptitude, process, and environment is a commonly used description of creativity (Plucker et al., 2004). While research on the nature and evolution of creativity has focused on educational psychology for many years (Torrance, 1967; Lau & Cheung, 2010; Smith & Smith, 2010; Lin & Shih, 2016), it is being explored in various other domains as well.

Wallas (1926) made a pioneering attempt to demystify creativity by breaking down the creative process into four stages, namely, Preparation, Incubation, Illumination and Verification. In the first step of Preparation, there entails gathering of pertinent knowledge and guidelines about how to approach the task. The second phase of incubation involves ongoing, unconscious processing while one is working on other projects. In the next step of illumination there occurs an unexpected burst of insight where more reflection is needed. Verification, the last step in the process, entails putting the work in a format that can be understood by others.

Later on, in his Structure of Intellect Model, Guilford (1967) expanded upon and distinguished discrete capacities for both intelligence and creativity. Torrance created his battery of tests known as the Torrance Tests of Creative Thinking (originally the Minnesota Tests of Creative Thinking; Torrance & Gowan, 1963), building on the research of Guilford. Torrance's interpretation of what creativity was and how he measured it reflected his own definition. According to Torrance (1966, p. 6), creativity is:

“A process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies; testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results”.

Even though Torrance thought that all students have creative abilities that can be developed, it is more important to identify and develop the skills of students from underrepresented populations whose abilities might not be revealed by traditional IQ and achievement tests, or those who may have behavioural and learning issues due to their unique ways of thinking.

Goal orientation: Theoretical foundation

Goal orientation originally emerged in the literature on educational psychology to explain variations in student learning behaviour (Dweck & Reppucci, 1973; Dweck, 1975; Diener & Dweck, 1978, 1980). Today, it is the most widely studied motivational variable in applied psychology and the primary approach used to study achievement motivation. Goal orientation has been used to understand and predict learning and adaptive behaviour in a wide range of contexts, including training, since its introduction to the field (Kanfer, 1990; Cannon-Bowers et al., 1998; Fisher & Ford, 1998; Ford et al., 1998; Brown, 2001). Goal orientation emphasizes the purpose for which an individual participates in an activity or engages in a task (Rivers, 2008).

Early goal orientation theorists such as Ames, 1992, dichotomized the construct into Mastery Goal Orientation and Performance Goal Orientation. The *Mastery Goal Orientation* is “a desire to develop competence and increase knowledge and understanding through effortful learning” (Murphy & Alexander, 2000, p. 28). In the literature, the terms "*mastery goal orientation*" and "*learning goal orientations*" (Dweck, 1986; Dweck & Leggett, 1988) and "*task goal orientations*" (Nicholls, 1984) are often used interchangeably. On the other hand, the *Performance Goal Orientation* is “a desire to gain favourable judgments...of one's competence” (Murphy & Alexander, 2000, p. 28). This construct is often used interchangeably with *ego-involved goal orientation* (Nicholls, 1984) and *self-enhancing goal orientation* (Skaalvik, 1997).

Numerous student traits and learning variables have been associated with each of the first proposed goal orientations. In general, the set of learner characteristics associated with the mastery goal orientation are

perceived positively in relation to the traits and achievements of students. Learning has a high intrinsic value for mastery-oriented students (Butler, 1987; Covington, 1999). They also use deep information processing techniques, like creating several conceptual examples (Ames, 1992) and are likely to be self-reliant, employing organizational techniques and self-monitoring techniques, as well as flexibility in the midst of task failures. Students who are mastery-oriented tend to seek out difficult assignments (Dweck, 1986; Dweck & Leggett, 1988; Elliot & Dweck, 1988). Additionally, they commit themselves to specific tasks and invest a lot of time in them (Schunk, 1996). The mastery-oriented student's positive attitude toward the class (Archer, 1994), interest in the class (Elliot & Church, 1997; Harackiewicz et al., 1997; Church et al., 2001), excitement of the classroom lectures (Harackiewicz et al., 2000; Harackiewicz et al., 2002), and attributions of success to effort and strategy use (Ames & Archer, 1988) are all congruent with the extensive involvement and time spent on tasks. The mastery-oriented student believes that effort, not talent, is the secret to success (Dweck & Leggett, 1988). Academic performance is positively correlated with Mastery Goal Orientations as well (Bouffard et al., 1995; Church et al., 2001; Elliot & McGregor, 2001). Ames (1992) also mentioned that mastery-oriented students are known to feel proud and satisfied with their accomplishments.

On the contrary, the set of learner's characteristics associated with the performance goals orientation are considered negative as these characteristics were not linked with academic success. Outperforming others is the main concern of performance-oriented students (Dweck, 1986; Nicholls, 1984), not appreciating the intrinsic value of learning (Butler, 1987; Covington, 1999). Performance-oriented students sought results higher than those of their peers with the least amount of effort because they believed that success and failures are determined by fixed ability or task difficulty rather than by malleable effort (Ames, 1984). This indifference led to rote memorization and other forms of shallow information processing (Meece et al., 1988). Furthermore, the tendency to attribute task difficulty to failure resulted in the avoidance of difficult tasks due to the elevated risk of failure or perceived inferiority (Dweck, 1986; Dweck & Leggett, 1988; Elliot & Dweck, 1988). A Performance orientation, as opposed to a Mastery orientation, is linked to a negative attitude toward the classroom (Ames & Archer, 1988).

Goal Orientation Trichotomy: Mastery, Performance-Approach, Performance-Avoidance

The original goal orientation dichotomy has further evolved into a trichotomy. Prior to the development of goal orientation theory, Atkinson (1957) introduced the constructs of approach and avoidance into the literature on motivation. He suggested that some individuals pursued achievement (approach) while others sought to avoid failures (avoidance). Consequently, Elliot et al. (1999) divided the performance goal orientation into performance-approach and performance-avoidance, citing Atkinson's work. According to McCollum & Kajs (2007), students who are performance-approach oriented strive to obtain positive evaluations of their competence from others, while those who are performance-avoidance goal oriented try to prevent negative evaluations of their competence from others. For instance, students who were more focused on performance approach aimed to outperform their peers in terms of grades, while students who were more focused on performance avoidance wanted to stay above the bottom of their class. As a result, the approach-avoidance distinction was added to a trichotomous model of goal orientations.

2 x 2 Goal Orientation Model

The next advancement in goal orientation theory was the development of a goal orientation 2 x 2 model (Elliot, 1999). Mastery goals were divided with the approach-avoidance distinction, just as performance goal orientations were split. The mastery-avoidance and mastery-approach orientations were compared, with the latter group attempting to acquire competency, skill, and appreciation while the former sought to avoid losing them.

Review of Literature

While, there is a paucity of research linking or exploring the relationship between creativity and goal orientation of adolescents, to understand the dynamics of these two variables we can look up to research connecting creativity and motivation for some guidance. Intrinsic motivation has been one of the concepts studied in motivational research in educational setting. Intrinsic motivation, according to Deci & Ryan (2000), is motivation that comes from within the person and makes the process of improving one's competency in

relation to specific academic tasks enjoyable. More precisely, students that are intrinsically motivated are driven by an internal sense of satisfaction to acquire knowledge, perform well, and/or succeed (Gottfried, 1985; Deci & Ryan, 2000). On the other hand, motivation aimed at obtaining or avoiding something external to oneself is known as extrinsic motivation. Extrinsically motivated students work to achieve a desired grade or some other type of external reward, while intrinsically motivated students work to feel satisfied (i.e., money or awards). According to research by Shalley et al. (2004), intrinsic motivation increases positive affect, risk-taking behaviour, cognitive flexibility, and persistence—all of which are factors that boost creativity. Mumford et al. (2009) attest to the central role that cognition plays in the ability to generate original ideas. Since "employee creativity requires various cognitive skills that only intrinsically motivated people are likely to achieve," it is imperative that we better understand the relationship between creativity and intrinsic motivation in this context (Hon, 2012). A conceptual parallel can be drawn between these motivational frameworks, where internal motivation aligns closely with mastery goal orientation (focus on skill development and competence), while extrinsic motivation mirrors performance goal orientation (focus on external validation and outperforming others). This similarity suggests that both theoretical perspectives emphasize comparable underlying drivers of behaviour, albeit through slightly different lenses.

Amabile (1997a, 1997b, 1988) asserts that using extrinsic motivation techniques—like attribution, rewards, or punishments—damages the intrinsic motivation of creative people. When extrinsic motivations become central, people's attention abruptly shifts from being fully involved in a task and intrinsically motivated toward the outcome to pursuing social, managerial, and financial gain or the desire to avoid risks or repercussions. Thus, unless the organization's reward system is carefully designed, intrinsic motivation gives way to extrinsic motivation, which may negatively impact creative performance. Those who are intrinsically motivated, on the other hand, become completely engaged in their work because they are not distracted by extraneous or outside factors related to the activity's extrinsic goals. They can experiment with ideas and materials because of their freedom to take chances, their ability to analyse novel cognitive patterns, and their ability to follow paths that aren't always related to solving problems. (Amabile, 1988).

If someone possesses the characteristics of a creative person, they may be high on intrinsic motivation. For instance, gratifying one's curiosity, pleasure, personal challenges, interest, and self-expression are examples of intrinsically motivated people (Amabile, 1993 & 1997). Since creativity is attributed primarily to intrinsic motivation, creative individuals are more likely to exhibit intrinsic motivation than extrinsic motivation (Runco, 2004). Studies included in the present sample also analysed motivational factors. Researchers studying creativity have long observed the significance of intrinsic motivation in students' creative expression, so this is not surprising (Hennessey, 2010). According to Erbas & Bas (2015), intrinsic motivation has a positive relationship with creativity. Similar findings were made by Hong et al. (2014), who discovered that creative self-efficacy and intrinsic motivation supported creative endeavours and achievements in the fields of writing, music, art, and/or science.

Previous research findings have shown that students who possess intrinsic motivation are more likely to overcome obstacles through academic challenges (Vallerand & Bissonnette, 1992; Boyd, 2002), demonstrate greater creativity (Moneta & Siu, 2002), have a stronger academic self-concept (Cokley et al., 2001), volunteer for tasks (Johnson et al., 1998), and, lastly, perform better academically (Deci & Ryan, 1985; Gottfried, 1985; Mitchell, 1992; Vallerand et al., 1993; Goldberg & Cornell, 1998).

Heintz & Steele-Johnson (2004) examined relationships between goal orientation dimensions and intrinsic motivation. Results revealed that learning goal orientation is related to intrinsic motivation. Research studies have indicated that learning orientation is associated with intrinsic motivation, and performance orientation is usually related to extrinsic motivation (Rawsthorne & Elliot, 1999). However, Goal-Oriented is a much more complex variable and requires further exploration.

Method

Sample

For the purpose of this study, a convenience sample was chosen from the population. It consisted of 350 subjects comprising of 175 males and 175 females. The data was collected from public and private schools

and colleges (Government. P.G College, Panchkula, Haryana; Govt. Girls School, Nalagarh; and Shivalik Senior Secondary School, Baddi, Himachal Pradesh). The sample was in the age range of 16-18 years of age.

Instruments

Torrance Test of Creative Thinking (Torrance, 1990):

The most popular and extensively used test for assessing creativity is the TTCT (Baer, 1993; Kim, 2006; Fernando, 2006; Wechsler, 2002). There are verbal and figural subtests in the test. The two parallel forms of the TTCT-Verbal, A and B, contain the following subtests: (a) Asking Questions and Making Guesses (subtests 1, 2 and 3), where participants write out questions and make guesses about possible causes and consequences of situations based on a drawing of a scene; (b) Improvement of a Product (subtest 4), where the examinees list ways to change a toy elephant so that they will have more fun playing with it; (c) Unusual Uses (subtest 5), where the examinees list interesting and unusual uses of a cardboard box; and (d) Supposing (subtest 6), where the examinees are asked to list all the consequences should an improbable situation come true (Torrance (1969, 1974). The TTCT-Figural consists of two parallel forms with three subtests: (a) compose a drawing; (b) finish a drawing; and (c) compose a different drawing parting from parallel lines (Torrance, 1974). Both forms are oriented to assess five principal cognitive processes of creativity: (a) fluency or number of relevant responses; (b) flexibility as referred to a variety of categories or shifts in responses; (c) originality entails considering novelty responses, not familiar and unusual, but relevant, (d) elaboration as referred to the number of details used to extend a response; and (e) resistance to premature closure scores an individual's capacity to remain flexible and tolerate ambiguity for a sufficient amount of time to arrive at an original solution.

Reliability and validity

According to Kim (2008), The verbal subtest exhibits a strong internal consistency of $\alpha = .91$. The inter-rater reliability for flexibility was 0.95 and 0.99 for fluency among scorers of the verbal subtest. Test-retest reliability coefficients for the TTCT range from 0.59 to 0.97 (Torrance, 2000).

Cho-Hee Yoon (2017), demonstrated the significant correlations between different subscales of TTCT: high correlation was found between fluency and originality ($r = .73, p < .001$). Additionally, elaboration and resistance showed high correlation ($r = .66, p < .001$), abstractness and resistance ($r = .53, p < .001$), and abstractness and elaboration ($r = .47, p < .001$). This denotes the presence of convergent validity among the variables of TTCT.

Achievement Goal Questionnaire Revised (Elliott & Murayama, 2008)

The AGQ-R scale, developed by Elliott & Murayama in 2008, consists of twelve items that are divided into four subscales: mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance. The answers provided by the respondents were averaged to create the mastery-approach, performance-approach, mastery-avoidance, and performance-avoidance indexes. The responses ranged from 1 (strongly disagree) to 5 (strongly agree).

Reliability and Validity

With regard to CFA-based reliabilities for the four measures, the reliabilities of the scores estimate for the items illustrating mastery-approach was .90, mastery-avoidance was .94, performance-approach was .98 and performance-avoidance was .98 Cronbach's α coefficients were .51, .62, .85, and .84, respectively (Apostolou, 2013).

Elliott & Murayama (2008) conducted a study that assessed the structural validity and predictive utility of the measures of achievement goal questionnaire- revised ($N = 229$) undergraduates at north eastern university in United States. The result showed that performance-approach goals, performance-avoidance goals, mastery-approach goals, mastery-avoidance goals, and represented Cronbach's alphas equal to .92, .94, .84, and .88, respectively. Guided by previous research, we proposed the following hypothesis:

Hypothesis: The association of creative thinking would be positive and significant with Mastery Goal-Oriented than with Performance Goal-Oriented.

Results and Discussion

Table no.1- Mean, Standard Deviation and Intercorrelations among Creativity, Mastery Goal Orientation and Performance Goal orientation

Variables	M	SD	1	2	3
1.Mastery Goal Orientation	21.97	4.060	1		
2.Performance Goal Orientation	21.57	4.919	.045	1	
3.Creativity.	84.42	18.495	.276**	-.003	1

Note: **M** stands for mean, **SD** stands for Standard Deviation, **** indicates $p < 0.01$** , $N=350$

Table 1: shows the Mean, Standard Deviation and intercorrelations among creativity, Mastery Goal Orientation and Performance Goal Orientation. The Pearson Product Moment coefficient of correlational value between Creativity and Mastery Goal Orientation came out to be $r = .276$ which is positively significant at $p < 0.01$ level. And the correlational value of r between Creativity and Performance Goal orientation came out to be $-.003$ which is not significant.

These data substantiate the theoretically-derived predictions from earlier work in this domain. The relationship between creativity and Mastery goal orientation was found to be positive and significant of ($r = .276$, $p < .01$). It supports the previous findings in the area of Creativity and Intrinsic Motivation with Mastery Goal Orientation indirectly. Previous researches have shown that students who possess intrinsic motivation are more likely to overcome obstacles through academic challenges (Vallerand & Bissonnette, 1992; Boyd, 2002), exhibit greater creativity (Moneta & Siu, 2002), have a stronger academic self-concept (Cokley, et al., 2001) and volunteer for tasks (Johnson, et al, 1998). They get engaged in task completely which leads to better chances of creating novel ideas and employing deeper processing strategies which is also a characteristic of Mastery Oriented individuals (Ames & Archer, 1988).

On the contrary, consistent with theoretical expectations, the analysis revealed a non-significant negative association between creativity and performance goal orientation. This finding aligns with Amabile's (1988) proposition that extrinsic motivation—characterized by excessive focus on external rewards or evaluations—can undermine creative performance by diverting attention from task engagement itself. Furthermore, the result corroborates prior evidence suggesting that performance-oriented individuals tend to employ superficial cognitive strategies (Meece et al., 1988), which may limit their capacity for divergent thinking and innovative problem-solving.

The aim of the present investigation was to study the association between creativity and goal orientation. The results revealed that there exists a positive and significant relationship between creativity and mastery goal orientation. However, the relationship between creativity and performance goal orientation came out to be negative and not significant. Consistent with the extant literature, these findings further validate previous theoretical frameworks.

The paucity of conclusive experimental data examining these interrelated factors highlights an important direction for future research. As, these findings offer actionable insights for designing teacher training programs that emphasize motivational strategies to nurture adolescent creativity, such as fostering intrinsic motivation through autonomy-supportive teaching practices. They also recommend the need for curricula that align mastery-oriented tasks with opportunities for creative expression, particularly during key developmental transitions. By aligning pedagogical approaches with evidence-based motivational principles, educators can configure classrooms that meet the individual psychosocial requirements of adolescents while enhancing their creative potential. These applications have the capacity to close the gap between classroom creativity development practice and theoretical knowledge.

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