

**Rewards and Creativity:  
Building a Bridge Between Two Theories**

**By  
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**A Doctoral Project Submitted in Partial Fulfillment of  
the Requirements for the Degree of Doctor of Psychology  
in the Department of Psychology at Pace University**

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## Rewards and Creativity

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Table of Contents

	ACKNOWLEDGEMENTS.....	iii
	LIST OF TABLES.....	ix
	LIST OF FIGURES.....	x
	ABSTRACT.....	xi
I.	INTRODUCTION.....	1
II.	LITERATURE REVIEW.....	4
	What is Creativity? .....	4
	Reward, Motivation, and Creativity – Cognitive Evaluation Perspective.....	5
	Reward, Motivation, and Creativity – Behavioral Perspective.....	11
	Reward, Motivation, and Creativity – Moving Toward a Resolution.....	15
	Gender Differences in Motivation and Creativity.....	19
	Statement of Purpose.....	23
	Hypotheses.....	24
III.	METHOD.....	25
	Participants.....	25
	Materials.....	25
	Torrance Tests of Creative Thinking.....	25
	Consensual Assessment Technique.....	26

	Children's Sex Role Inventory.....	28
	Procedure.....	29
IV.	RESULTS.....	32
	Inter-Judge Reliability.....	32
	The Effect of Condition.....	34
	The Effect of Gender.....	34
	Condition by Gender Interaction.....	36
V.	DISCUSSION.....	46
	The Effect of Condition.....	46
	The Effect of Gender.....	47
	Condition by Gender Interaction.....	48
	Implications for the Classroom.....	50
	Implications for Future Research.....	52
	REFERENCES.....	53
	APPENDICES.....	59
	A. Informed Consent Form.....	59
	B. Assent Form.....	60
	C. Verbal TTCT Task.....	61
	D. Nonverbal TTCT Task.....	63
	E. Verbal CAT Task.....	65
	F. Nonverbal CAT Task.....	66



Rewards and Creativity

G. Children’s Sex Role Inventory.....67

H. Token..... 69

I. Instructions – Completion Contingent Reward Group..... 70

J. Instructions – Performance Contingent Reward Group.....71

K. Demographic Information Sheet.....72

L. Debriefing Form.....73

List of Tables

1. CAT Inter-Rater Reliabilities.....	33
2. Effect of Condition.....	35
3. Effect of Gender.....	37
4. Condition-by-Gender Interaction Effects.....	38
5. Descriptive Statistics of CAT Interactions.....	40
6. Descriptive Statistics of TTCT Interactions.....	45

List of Figures

1. Verbal CAT – Originality..... 41

2. Verbal CAT – Humor..... 42

3. Nonverbal CAT – Humor..... 43

4. Nonverbal CAT – Originality..... 44

### Abstract

The effect of extrinsic motivation on creativity can be positive or negative, depending on the circumstances of the given task, and perhaps also depending on gender of individuals. Cognitive evaluation theorists have demonstrated that reward offered for completion of a task has a negative impact on creativity. Behavioral theorists have demonstrated that reward offered for explicitly creative performance has a positive impact on creativity. The purpose of this project is to bridge this isolation of theories, by demonstrating that reward can have positive as well as negative effects on creativity, depending on its contingencies.

This study examined the difference between the effects of performance contingent rewards (PCR; only students whose projects are rated as top five in creativity receive a reward) and completion contingent rewards (CCR; everyone who completes the project receives the reward). It was expected that students who were offered a performance contingent reward would produce projects that would be evaluated as more creative than those who were offered a completion contingent reward. Gender differences were also examined, as were interactions between gender and condition. The participant sample consisted of 57 seventh- and eighth-grade students attending a parochial school in a suburban town. Participants were randomly divided into two groups, one of which was offered a PCR, and the other was offered a CCR. Four creativity tasks were administered (verbal and nonverbal creativity tasks judged according to the consensual assessment

technique or CAT; verbal and nonverbal creativity tasks from the Torrance Tests of Creative Thinking or TTCT), along with the Children's Sex Role Inventory, which was used to measure any differences between the results of children who were rated as more masculine, feminine, or androgynous than others.

Results indicate that the overall creativity did not differ between the projects produced by participants of the two conditions; however, significant interactions between condition and gender were found in several measures of creativity, particular in the tasks using CAT. As predicted, the creativity demonstrated in the projects of the girls who worked for PCR decreased in comparison to those who worked for CCR; whereas the creativity demonstrated by the boys in the PCR group increased relative to the boys in the CCR group. Implications have been made for teachers on encouraging creativity most effectively among their students.

## Rewards and Creativity: Building a Bridge Between Two Theories

A middle school teacher is trying to encourage her students to be creative in their writing. She has heard of various techniques that her colleagues use to encourage their students, but she does not know whose advice to take. Should she ask the students to do their best, and not offer additional advice, so as not to pressure them? Or, should she give them tips on how to be creative? Should she offer praise or reward? Should she tell them that everyone who does a good job will have less homework tomorrow? Or should she say that the top five essay writers will receive a prize?

It can be very difficult to motivate a class of children to be creative, and it is that much more difficult when “experts” on motivation offer conflicting viewpoints on the most effective techniques. The impact of reward on creativity is a very complex field of study; it is so complex that 30 years of research have not resulted in a resolution. Researchers in one camp believe that any form of extrinsic constraints (e.g., praise, rewards, competition, and evaluation) undermine intrinsic motivation, resulting in less creative performance (Amabile, 1979, 1996; Hennessey & Amabile, 1988). In contrast, another camp of researchers argues that not all forms of reward are harmful to creativity; sometimes, by reinforcement, rewards can actually enhance one’s creativity (Eisenberger, 1992). These two camps of theorists have each published numerous studies supporting their own argument. Who are we to believe?

The purpose of this study is to bridge the difference between these two camps of research. It aims to investigate how different forms of offering reward can have various

effects on creativity. More specifically, the study explores two different types of reward. The first type is a non-specified reward for project completion (e.g., everyone receives a reward for his or her completion of the project), which can be called a “*completion contingent reward*.” The second type is a specified reward for good performance (e.g., only students whose projects are rated as top five in creativity receive a reward), which can be called a “*performance contingent reward*.” It was expected that students who were offered a performance contingent reward would produce projects that would be evaluated as more creative than those who were offered a completion contingent reward.

In addition to demonstrating the impact of these two types of reward on creativity, gender differences were also explored. Previous research has demonstrated that girls and boys respond differently to different types of rewards. Boys have been found to respond more positively to outside rewards (especially performance contingent rewards) than girls. This includes praise (Henderlong, 2001), reward, constructive feedback, and expectation of evaluation (Baer, 1998). This study was conducted with seventh- and eighth-grade children, as early adolescence is a very gender-conscious period of development (Baer, 1998). It was expected that there would be an interaction between gender and condition. More specifically, when competition for a reward is made salient, such as introducing an instruction that only students whose projects are rated as top five receive a reward, boys’ creativity would be enhanced whereas girls’ creativity would be undermined. Differences were also explored between the results of children who were rated as more masculine, feminine, or androgynous than others. Creativity was measured by two of the most widely used techniques in assessing creativity, divergent thinking

tasks as well as the consensual assessment technique (Amabile, 1996). But before discussing how to reward students and how to measure their creativity, what exactly is creativity?

PREVIEW



## Literature Review

### *What is creativity?*

Amabile (1996) discussed the difficulty in identifying and defining creativity, as there are various approaches to studying such an abstract concept. Creativity has been defined according to process (Watson, 1928), person (Guilford, 1950), and reactions elicited by product (Jackson & Messick, 1965). A widely accepted definition in the field of creativity is “a person’s ability to produce something that is evaluated by a group of experts in a certain field and domain as both novel and appropriate (Csikszentmihalyi, 1988; and Sternberg, 1999). Amabile’s conceptual definition of creativity is also commonly used. It suggests that “a product or response will be judged as creative to the extent that (a) it is both a novel and appropriate, useful, correct or valuable response to the task at hand, and (b) the task is heuristic rather than algorithmic” (Amabile, 1996, p 35). Algorithmic tasks are ones in which the path is clear and straightforward, whereas heuristic tasks are open-ended, without a clear path.

Almost all creativity researchers agree that intrinsic motivation has a positive impact on creativity; however, there is a lot of controversy about how extrinsic motivation, or outside reward, affects one’s creativity. Whereas some believe that it is helpful (Eisenberger 1992), others believe that it is detrimental (Amabile, 1996). The following sections of this paper will review both lines of research, and attempt to bridge the gap. So how does reward affect creativity?

*Reward, Motivation, and Creativity – Cognitive Evaluation Perspective*

The cognitive evaluation theory states that upon engaging in a task, a person thinks about the task and considers how well it meets his or her needs to feel competent and in control. It was first presented by Deci and Ryan (1980, 1985) to study intrinsic and extrinsic motivations. If the person thinks that he or she is capable of completing the task, this will result in intrinsic motivation. However, if the task seems too difficult, external motivation may be required. The theory suggests that self-determination and perceived competence are fundamental to intrinsic motivation. Self-determination refers to attitudes and abilities required to make choices free from external interference (Wehmeyer, 1992). In other words, intrinsic motivation results from having the right attitudes and abilities (i.e., not feeling coerced into an activity), and believing that you are competent enough to complete a task. If you are intrinsically motivated, you will follow through.

According to the cognitive evaluation theory (Deci & Ryan, 1980, 1985) events can have three different functional significances in terms of motivating a behavior. First, intrinsic motivation can be enhanced by events that facilitate competence and provide information (e.g. feedback after a task). Second, intrinsic motivation can be undermined by events that make the person feel controlled. This includes any kind of rewards, deadlines, or surveillance, for example, that pressure people toward specific outcomes. Third, intrinsic motivation can also be undermined by events that are intended to motivate the person, but unintentionally make him or her feel incompetent. This includes negative feedback, for example.