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Extrinsic rewards and their subsequent effects on student intrinsic motivation

Anne-Grete Kaldahl Miller
University of Northern Iowa

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Extrinsic rewards and their subsequent effects on student intrinsic motivation

Abstract

This paper reviews the current literature on the advantages and disadvantages of the use of different extrinsic rewards and their impact on student intrinsic motivation. A review of literature will address three central questions: 1.What are the advantages of extrinsic rewards? 2.What are the disadvantages of extrinsic rewards? 3.What are the special conditions under which external rewards impact intrinsic motivation?

EXTRINSIC REWARDS AND THEIR SUBSEQUENT EFFECTS ON STUDENT
INTRINSIC MOTIVATION

Submitted in Partial Fulfillment
of the Requirements of the Masters Degree
in General Educational Psychology

Anne-Grete Kaldahl Miller

University of Northern Iowa

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Entitled: Extrensic Rewards and Their Subsequent Effects
on Student Intrinsjc Motivation

has been approved as meeting the
research paper requirement for the Degree of

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Sherry Gable

Director of Research Paper

Charles V. L. Dedrick

Co-Reader of Research Paper

Graduate Faculty Advisor

Barry J. Wilson

Head, Department of Educational
Psychology & Foundations

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Date Approved

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CHAPTER I

Introduction

Motivation and reward systems are an everyday part of life. Motivating oneself to get up and start the day is a challenge for some, however, the reward of seeing the sunrise may be a gift for others. In Alfie Kohn's (1993) book, Punished by Rewards, the author challenges the commonly held belief that rewards motivate people. Kohn (1993) claims that rewards motivate people only to the extent that the individual attains the desired reward. As educators, administrators, and parents, we have all seen the effects that coveted tangible extrinsic rewards (such as free movie tickets or pizzas) have in getting youngsters to participate in academic tasks. However, once the rewards are gone, a need for more rewards become evident. Extrinsic rewards are easy to implement, and can function very effectively in reinforcing appropriate academic and social behaviors (Chance, 1992). Athletic and academic rewards such as being named the most valuable player in a given sport or being named class valedictorian, all serve as extrinsic rewards for individual achievements. To achieve such a reward status, the individual must, to some extent, be motivated, and this motivation usually entails some expenditure of time and effort.

In the context of this paper, there is a need to discriminate between intrinsic motivation and extrinsic reinforcers or rewards. Natural consequences are usually intrinsic in nature, such as the sheer enjoyment of participating in an activity. If the rewards are provided by an outside source, they are said to be extrinsic. Some examples of extrinsic rewards are social reinforcers like smiles and thumbs up or tangible reinforcers like certificates, candy, and gold stars. Reinforcement can be provided by peers, teacher aides, parents, as well as teaching devices

such as computers.

However, Chance (1992) stresses that it is often difficult to distinguish between extrinsic and intrinsic rewards; therefore, Chance said the distinction is somewhat artificial. Consider the example of a little boy learning to ski. At first his parents might reward him with little treats to keep him persevering on task. After the boy becomes a skilled skier, he begins to enjoy the activity for its own sake. At first, what kept the activity going was tangible extrinsic rewards. The boy was extrinsically motivated. Later on, the boy became intrinsically motivated since he found the activity interesting in and of itself. Furthermore, the argument that extrinsic rewards have detrimental effects on intrinsic motivation is founded on the belief that behavior which is extrinsically motivated can be sharply contrasted from behavior which is the product of intrinsic motivation (Pittman & Heller, 1987).

In addition, it is also necessary to distinguish between rewards that reflect competence (performance-contingent rewards or contingent rewards) and rewards for task participation (task contingent rewards or non-contingent rewards) (Harackiewicz, 1979). Humans, who are extrinsically motivated, are said to be engaged in activities for the main purpose of receiving tangible rewards. This is in contrast to people who are intrinsically motivated, and who participate in a task for the sole purpose of the enjoyment of the task itself (Kohn, 1993).

For decades, educators have disagreed over the use of extrinsic rewards. The opponents believe that when students are given the opportunity to work at their own pace and follow their own interests, learning will be rewarding and intrinsically motivating in itself (Montessori, 1965; & Piaget, 1952). On the other hand, Behaviorists favor the utilization of external rewards as effective educational methods to control and strengthen designated academic and

social student behavior.

Today we are witnessing a renewed spark in the debate. In the classroom, American teachers have students who show disinterest in academic tasks, who achieve poorly in comparison with international educational standards, and students who misbehave and are disrespectful toward others. Major issues educators have to deal with are school discipline, academic learning, and school motivation.

There are two schools of thought which offer explanations for the current educational situation. The Behaviorists, who are the main proponents of rewards, believe that rewarding students for acceptable behaviors and for involvement in and/or success in academic tasks will promote learning. The Behaviorists view all human behavior as a result of stimuli in the environment that can act as reinforcers. However, Constructivists, Adlerians, and other professionals, believe rewards are unnecessary, and impair “natural” learning. The Constructivists oppose the use of rewards, since they believe reinforcers are counterproductive to the development of learner autonomy. Behaviorists advocate the use of reinforcers to modify human behavior, whereas, Constructivists claim that humans actively possess a potential for a high degree of self-initiating behavior.

It is of great importance to find out if extrinsic rewards have an adverse affect on student motivation. If teachers, by using rewards, reduce student interest in learning, or make the student less likely to engage in an activity when the extrinsic rewards are no longer available, it is time to reexamine educational practice (Chance, 1992). Deci and Ryan (1985) and Kohn (1986) stress that behavior modification programs in schools should be replaced with programs that are more intrinsically-motivating.

Realizing that the use of rewards is evident in every school, the effects of extrinsic reward on student motivation are of prime concern for many educators. Educators constantly seek to discover ways to increase student motivation in order to facilitate autonomous learners. Many educators do find that rewards motivate students. Even Kohn (1993) agrees with this. However, Kohn (1993), who is a Constructivist, believes that rewards motivate students only to receive more rewards. This sort of motivation lasts only for a short time, and comes at the expense of quality work, creativity, and reduced interest in the rewarded task (Kohn, 1993). The professionals who believe that extrinsic rewards may reduce and interfere with student motivation claim that when students participate in an activity for its own sake, they are intrinsically motivated and experience task enjoyment. Intrinsic motivation cultivates creativity, flexibility, and spontaneity. On the contrary, extrinsically motivated behaviors may cause tension and anxiety which could result in low self-esteem (Deci and Ryan, 1985).

Over the last three decades, the use of classroom reward systems have been looked upon as detrimental to meaningful learning. Several studies have been conducted to examine the conditions under which extrinsic rewards enhance or undermine intrinsic motivation. The existing evidence against extrinsic rewards and its effects on student intrinsic motivation is ambiguous. The alleged decline in student intrinsic motivation from the use of extrinsic rewards does not seem to occur under all conditions.

This paper reviews the current literature on the advantages and disadvantages of the use of different extrinsic rewards and their impact on student intrinsic motivation. A review of literature will address three central questions:

1. What are the advantages of extrinsic rewards?

2. What are the disadvantages of extrinsic rewards?
3. What are the special conditions under which external rewards impact intrinsic motivation?

In an effort to answer the three research questions, the writer has surveyed the literature on the basis of four themes, which constitute the format for chapter II:

1. Basic propositions of behavioristic thought
2. Studies conducted by behaviorists regarding the effects of external rewards on student intrinsic motivation
3. Basic propositions of constructivist thought
4. Studies conducted by constructivists regarding the effects of external rewards on student intrinsic motivation

CHAPTER II

Review of Related Literature

Current educational practices represent a broad spectrum of psychological and philosophical theories. The behavioristic and teacher-centered models are at one end of the continuum, and humanistic and student-centered models are at the other end. The Behaviorists advocate the use of rewards. They claim that children need extrinsic rewards to achieve certain academic standards and to demonstrate socially acceptable behaviors. The behaviorists view extrinsic rewards as necessary components in the motivational and learning processes. On the contrary, Humanists, who emphasize the learner's autonomy, believe that extrinsic rewards inhibit the natural learning process.

Basic Propositions of Behavioristic Thought

At the behavioristic end of the continuum, B.F. Skinner (1982) and Lee and M. Canter (1985) offer ideas on how to control student behavior through direct control and manipulation of environmental stimuli. This included the use of external rewards as well as unpleasant consequences for inappropriate behavior. The emphasis is on modifying student behavior.

The hypothesis that a positive consequence increases the likelihood that a particular behavior will be repeated, was developed by Edward Thorndike in 1898. Within behaviorism there are two main theories of learning. A Russian behavioral psychologist, Ivan Pavlov, experimented with dogs and their conditioned reflexes. From these experiments, Pavlov developed the theory of classical conditioning. The operant conditioning theory was

developed by B.F. Skinner, and began with his research on rats.

The classical conditioning model began with Pavlov's observation of dogs and their natural responses to the smell of meat. The dogs salivated to the smell of meat, and by pairing this natural response with an artificial one (ringing a bell), the dogs associated the stimuli with each other. The artificial stimulus can therefore be used to trigger the natural response (salivation) (Kohn, 1993). According to B. F. Skinner and the operant conditioning theory, positive consequence will strengthen targeted behaviors. Infraclassical studies initiated by behaviorists, like I. Pavlov and B.F. Skinner, on training animals to perform a task lead to further research with human subjects.

Furthermore, behaviorists believe that human behaviors are influenced by stimuli from the environment. Behavior is learned as a result of reinforcement, and can therefore be controlled through environmental contingencies. Humans behave to seek rewarding and pleasant stimuli and avoid unpleasant consequences. Positive reinforcers strengthen the students behavior. Teachers and parents have a vast array of positive reinforcers to utilize: examples include rewards like money, candy, stickers, and grades. Token economies are situations in which students earn points or tokens which later can be redeemed for tangible rewards. On the other hand, negative reinforcers strengthen the behavior when they are removed (Allen Queen Blackwelder, & Mallen, 1997). An example of this is the annoying beeping signal which symbolizes that the car driver's seat belt is not attached. The negative reinforcer (sound) stops when the desired behavior (fastening the seat belt) has occurred. Another behaviorist intervention technique can be derived from Bandura's social learning theory. Through the process of identification, when teachers model appropriate behaviors, there is a strong

possibility that students will imitate these behaviors.

A current behaviorist, Paul Chance, believes that reinforcers are the most powerful teaching tool available. Chance (1992) makes some recommendations for the use of extrinsic rewards. Chance stresses that educators have to be aware of the undermining effects of extrinsic rewards on intrinsic motivation; however, he does not view the effects as harmful.

The following represents Chance's (1992) guidelines for the use of extrinsic rewards:

1. Use the weakest reward required to strengthen a behavior.
2. When possible, avoid using rewards as incentives.
3. Reward at a high rate in early stages of learning, and reduce the frequency of rewards as learning progresses.
4. Reward only the behavior you want repeated.
5. Remember that what is an effective reward for one student may not work with another.
6. Reward success, and set standards so that success is within the student's grasp.
7. Bring attention to the rewards (both intrinsic and extrinsic) that are available for behavior from sources other than the teacher (Chance, 1992).

Furthermore, behaviorists like Pintrich and Schunk (1996), stress that students become motivated by observing others being rewarded. Rewards are therefore motivating, since students learn to expect to become rewarded when behaving appropriately.

Studies conducted by Behaviorists regarding the Effects of External Rewards on Student Intrinsic Motivation

J. Cameron and W. D. Pierce (1994) conducted a meta-analysis on 100 studies of 20 years of research to determine the effects of extrinsic rewards on intrinsic motivation. To this date, this study represents the most extensive review of literature on the effects of extrinsic rewards on intrinsic motivation. The results of this study contradict a common held belief among educators and psychologists that extrinsic rewards have undermining effects on subsequent intrinsic motivation. Cameron and Pierce's (1994) meta-analysis found that extrinsic rewards can be used effectively to increase or maintain student motivation.

Cameron and Pierce's (1994) results clarify the conditions under which extrinsic rewards are detrimental or enhancing to intrinsic motivation. The moderator variables included in this study were the effects of reward expectancy, reward contingency, and types of rewards. Cameron and Pierce (1994) summarize their findings by pointing out that verbal praise and performance feedback increase the value of an activity. When tangible rewards are offered contingent on level of performance or are given unexpectedly, students remain motivated in the subject area. A slight negative effect can be expected when a teacher offers tangible reward without regard to the students' level of performance. Under this condition, when the rewards are withdrawn, students will continue to like schoolwork as much as others, but they may spend less time on it in a free period. This negative effect can be easily prevented by offering students rewards for successful solution of problems, completion of work, or the attainment of specified levels of performance on particular tasks. The point is that teachers can reward the level and quality of students' work without disrupting motivation and interest in learning

(Cameron & Pierce, 1994, p. 40).

Effects of Reward Contingencies

According to Alyce Dickinson's (1989) review of the literature on extrinsic reward contingencies, she identified positive and negative consequences of utilizing external rewards. Dickinson identified three different reward contingencies: task-contingencies (non-contingent rewards), performance-contingent rewards (contingent rewards), and a new category labeled success-contingent rewards.

- 1) Task-contingent rewards were given according to any performance level just for the sake of being engaged in the activity. The majority of studies involving task-contingent rewards showed a decline in motivation for the rewarded activity.
- 2) Performance-contingent rewards are obtainable depending on student achievement level. The performance-contingent rewards did not have any detrimental effects on motivation.
- 3) Success-contingent rewards, which are based on student success such as a finished product or as a symbol for progress in working to meet a goal. These rewards are communicated to the students in the form of informational feedback. The success-contingent rewards were found to have no negative effects. The success-contingent rewards increase the student level of interest in the activity. Dickinson arrived at the conclusion that extrinsic rewards decrease student motivation dependent upon how they are utilized. Inappropriate use of extrinsic reward contingencies can have harmful effect on student motivation (Dickinson, 1989).

Dickinson's new category success-contingent rewards appear to be quite similar to performance-contingent rewards which are also informative in form of praise or feedback. Deci & Ryan (1985) stress the beneficial effects of these types of rewards, which they chose to label informational rewards.

To illustrate the complex function of performance-contingency, Boggiano, Ruble, and Pittman's (1982) study demonstrates that only positive, comparative feedback which reflected a challenging task level increases students' intrinsic motivation. By telling students that their individual performance was superior to their peers, fourth graders showed no significant difference in the degree of intrinsic motivation when the level of the task was not challenging.

The complexity of performance-contingent rewards has been studied by Deci and Ryan (1985). The function of these kinds of reward depends upon the subject's level of performance. The reward can be prohibitive if the subject performs poorly. On the other hand, the reward has informational value if the performance is good.

Basic Propositions of Constructivists Thought

The student-centered approaches to education, like the constructivistic approaches, builds upon Jean Piaget's theories of intellectual and moral development. The focus is on the cognitive aspect, the inner self. The focus is on assisting students to develop the intellectual and moral autonomy necessary to make independent decisions, and to meet specific individual goals. Therefore, from the perspective of the constructivists, the behavioristic teacher-centered environments with the emphasis on external controls, will seriously inhibit student control and the development of intellectual and moral autonomy.

Piaget emphasized the importance of mutual respect between adults and children, and children with one another. The role of a caring relationship is central in Piaget's theory. The theory is based upon the belief that the only behavior an individual can control is her own. Acceptable behaviors can be promoted by respecting students as worthwhile individuals. The

students will in return show respect to the teacher and one another. Caring relationships are thus built on acceptance.

Additionally, constructivists stress the importance of learning from cause-effect relationships, thereby bridging a relationship between behavior and forthcoming consequences. Types of consequences are natural, deprivation, exclusion, and restitution. A natural consequence assists the students in realizing the consequences of poor choices, like avoiding to put a coat on during recess, thereby becoming cold. Depriving students of art tools, which were misused, is an example of the use of deprivation as a consequence. Other times, a student might be excluded from the rest of the class for a short time period for disturbing others (Fields & Tarlow, 1996). Piaget also stressed the importance of allowing a child to fix the mistake (restitution). The consequences should not be highly punitive in nature, since aversive events are believed to be detrimental to relationships and the development of autonomy in learners (Fields & Tarlow, 1996).

In addition, Adlerian theory, developed from the work of Alfred Adler and Rudolph Dreikurs, also opposes the use of extrinsic rewards. Extrinsic rewards and/or punishments are seldom directly related to the students' behavior; therefore, youngsters have a hard time understanding the relationship between their behavior and subsequent consequences. Furthermore, Adler and Dreikurs believe that students should work because they are intrinsically motivated, not for just attaining a desired reward (Dreikurs & Grey, 1968).

Today, one of the main opponents against the use of extrinsic rewards and their undermining effects on intrinsic motivation is Alfie Kohn. Kohn examines the literature on this topic. According to Kohn (1993), the American culture is totally committed to behaviorism

and the use of rewards, in order to get people to do what we want (Kohn, 1993, p. 18). Kohn goes on to describe how the addiction to rewards end up in a vicious circle: Rewards do not bring about the changes we are hoping for, but the point here is also that something else is going on: the more rewards are used, the more they seem to be needed (Kohn, 1993, p. 17).

Furthermore, Kohn (1993) claims that reward-oriented people choose the easiest tasks possible to attain the award. When the rewards are not available anymore, the reward-oriented people continue to prefer simple tasks. The basic proposition makes logical sense. If you have been promised a reward, you come to see the task as something that stands between you and it. The easier the job is, the faster you can be done with it and pick up your prize. It's logical, all right, but the practical implications are staggering. Our workplaces and classrooms, saturated in pop behaviorism as they are, have the effect of discouraging people from taking risks, thinking creatively, and challenging themselves (Kohn, 1993, p. 65).

Kohn identifies five reasons why rewards fail. First, rewards punish; ...rewards and punishments are not opposites at all; they are two sides of the same coin. And it is a coin that does not buy very much (Kohn, 1993, p. 50). Rewards fail because they might not be the award the student hoped for, or they fail because they are controlling in nature. Second, rewards rupture relationships because they are controlling, and they can be competitive (since they often are distributed according to comparisons with others). Additionally, rewards might trigger anxiety which might interfere with performance. Third, rewards ignore reasons since they are distributed in accordance with behavior, without looking at the reason for the behavior (the cognitive aspect). Fourth, rewards discourage risk-taking. Risks are to be avoided whenever possible because the objective is not to engage in an open-ended encounter with

ideas; it is simply to get the goody (Kohn, 1993, p. 63). Fifth, people lose their enjoyment for solely participating in the task for its own sake; the intrinsic interest is undermined. The task becomes a means to achieve an award.

Constructivists Early Research on the Effects of Extrinsic Rewards on Intrinsic Motivation

Constructivist theorists have asserted that extrinsic rewards have detrimental effects on intrinsic motivation. A large number of studies have documented the undermining effects of extrinsic rewards. The demonstration of the effects of extrinsic rewards on intrinsic motivation started with the research of Deci (1971, 1972) and Lepper, Greene, and Nisbett (1973). According to Alyce Dickinson (1989), there are two main theories for the explanation of these effects: Lepper's (1981) overjustification hypotheses and Deci's motivational theory (Deci and Ryan, 1985).

Deci's Motivational Theory

Deci (1971) developed a hypothesis based on the self-perception theory. Self-perception theory stated that intrinsic motivation would decrease since extrinsic rewards given for participating in a previously intrinsically-motivating activity would lead to a reevaluation of the causality of the subjects' locus of control. However, subjects will perceive their involvement in an activity as a product of their own volition if extrinsic rewards are not present (Bem, 1972). With an external reward the activity often becomes a means to an end rather than an end in itself. The behavior is no longer something that is done because it is interesting; it is something that is done to get an external reward or to comply with an external constraint. This statement about the change in perceived locus of causality became a part of Deci's cognitive evaluation

theory. The perceived change in the locus of causality construct was changed by Deci and Ryan (1980) to be intended to reflect different motivational dynamics (Deci & Ryan, 1985, p. 49).

Deci (1971) hypothesized that the differential effects of rewards were due to subjects' individual interpretation of the rewards. A puzzle-solving task (Soma) was presented to 24 college students. The subjects were asked to fit the pieces together to reproduce several configurations which were previously drawn on paper. The subjects were then divided in two separate groups. The subjects in the first group were offered a dollar for every puzzle they were able to solve. The second group of students (control group) were not promised any rewards, and were asked to solve as many puzzles as possible. The results indicated that students who were offered money (external reward) for the activity showed a decline in intrinsic motivation in the free choice period which followed the 8 minutes experimental session. The students in the control group dedicated more time during the free choice period to solving puzzles. Additionally, Deci (1971) reproduced the experiment with 24 new college students, and the reward was changed to verbal feedback. During the free choice period both groups found the task enjoyable and spent approximately the same amount of time on the puzzle-solving activity. Deci's interpretation was that verbal feedback did not affect the subjects in the same way as money. A shift in the subject's locus of causality from intrinsic to extrinsic occurred, since the use of money as a reward was viewed as a control mechanism. According to the self-perception theory, such rewards would reduce the subjects future engagement in the activity.

Lepper (1981) found that the shift in subject's locus of causality was most likely to occur

when the initial interest in the activity was high, when the extrinsic reward was salient, and when there was a clear relationship between the task and the extrinsic reward. Deci & Ryan (1985) developed motivational theory based on their previous research. The motivational theory includes three motivational processes: extrinsic, intrinsic, and amotivational. Self-determination and perceived competence are reduced by extrinsic rewards. As a consequence, amotivational or extrinsic motivational processes were introduced, and weakened the intrinsic motivational processes on a permanent basis. The weakening processes are not irreversible. According to this theory, a child who loses her intrinsic interest in art will never regain it.

The Overjustification Hypotheses

The overjustification hypotheses developed as an offshoot from the self-perception theory. The overjustification studies provided a demonstration that a person induced to undertake an inherently desirable activity as a means to some ulterior end should cease to see the activity as an end in itself (Lepper, Greene, & Nisbett, 1973, p. 130). Lepper, Greene, and Nisbett (1973) tested the overjustification hypotheses on preschool children who during baseline observation demonstrated intrinsic interest in a drawing activity. The subjects were divided into three separate groups. The first group neither received or expected rewards. The second group received unexpected rewards after the activity. The third group agreed to engage in the activity in order to receive tangible rewards. As hypothesized, the children in the expected-award group showed evidence of less intrinsic interest in the activity compared to the two other groups .

Greene and Lepper (1974) replicated the previous study. One group of pre-school

children received rewards based on participation in the target task (drawing pictures). The second group of subjects were instructed that only the ones who made the best pictures would receive a reward. The third group, which was the control group, represented the non-rewarded condition. A free-choice period followed the experimental session. During the free choice period children from both of the rewarded conditions spent less time drawing compared to children from the non-rewarded condition.

Research to test the overjustification hypotheses were commonly criticized. In response, the effects on intrinsic motivation were then tested by utilizing a multiple-trial design (Reiss & Sushinsky, 1975; & Greene, Sternberg, & Lepper, 1976). Greene, Sternberg, and Lepper (1976) conducted a study on 44 fourth and sixth graders, in a token economy environment, to test the overjustification hypothesis with a multiple-trial token paradigm. The subjects were chosen based on the individual time spent in a math lab during a 13-day period. The subjects were asked to rank their two most favorite mathematics activities and their two least favorite of four newly introduced mathematics activities. According to the subjects preference, they were assigned to eleven groups of four. The groups of subjects were then randomly assigned to four different treatments. The subjects in the first group were rewarded for participating (task contingent reward) in their two most favorite activities. The subjects in the second group were rewarded for participating (task contingent reward) in their two least favorite activities. The participation in individual preferred activities, of the subjects in the third group, was rewarded (task contingent reward). The subjects in the fourth group were rewarded for participating in the activities according to their level of performance (performance contingent reward). Following the experiment, which lasted for twelve days, was a thirteen day period

with withdrawal of rewards. The rewards were one credit for every three hours of work (time spent on target activity). These credits could be turned in toward an award.

The results indicated that the subjects in the three groups who were exposed to task contingent rewards, spent less time on the activities during the withdrawal period compared to baseline data; however, during the reinforcing period, the time spent on the activities increased. Additionally, the subjects, who were rewarded according to their performance, dedicated more of their time to the activities during the withdrawal period compared to the subjects who were exposed to task contingent rewards.

According to Greene et al. (1976), the multiple-trial study proved the overjustification effect within a token economy environment. The evidence indicated that a decrease in motivation occurred as a result of a multiple-trial token economy. However, the results cannot function as evidence for the differences between task contingent and performance contingent rewards and their different effects on intrinsic motivation, since the rewards were given according to time spent on the task activities (Bates, 1979).

Current studies conducted by Constructivists regarding the Effects of External Rewards on Student Intrinsic Motivation

Tang and Hall (1995) conducted a meta-analysis of the overjustification-effect. The overjustification-effect can be defined as: ...a person's intrinsic motivation in an activity may be decreased by inducing him to engage in that activity as an explicit means to some extrinsic goal (Lepper et. al., 1973, p. 130). The meta-analysis included 50 studies on the topic. The moderator variables included in this study were reward contingency, reward type, reward

expectancy, interest level, and post-task feedback.

The results of Tang and Hall's (1995) study indicated that the overjustification-effect does exist when the initial interest in the target activity is high, and when extrinsic, tangible, expected, task contingent rewards are offered with no additional feedback. Additionally, the quality of performance is low in these environments. The overjustification-effect is evident across subjects' age groups, and in a variety of settings. A second situation where the overjustification-effect occurs, but is less consistent, is when performance contingent rewards are dispensed with no reference to comparative feedback. Deci and Ryan (1985) contended that extrinsic rewards should not increase intrinsic motivation for low interest tasks. The results for situation 3, however, provide some evidence that at least college students show increased interest in such situations (Tang & Hall, 1995, p. 373). Age of the subjects was included in their characteristics of the study since: "....."The age of the subjects has ranged from preschool to college students. If it is assumed that cognitive re-evaluation is a prerequisite for the overjustification-effect to occur, we could argue that preschoolers are too young to employ such reasoning. At the other end of the continuum one could argue that college students have developed sufficiently stable intrinsic interest that it is unlikely that a small (e.g., \$1) reward would be sufficient to cause the same cognitive re-evaluation. Thus, it seemed possible at the outset of this review that the overjustification effects would vary with age of subjects" (Tang & Hall, 1995, p. 368).

Furthermore, the dispensation of unexpected, extrinsic rewards shows no effect on subsequent intrinsic motivation. This is explained through the overjustification-effect as due to the reason that the subject could not claim that the task engagement was a means to attain the

reward. Increased competency was reported as a result of positive information (post-task feedback). The authors concluded that ...”the overjustification effect has been consistently demonstrated in situations when it should be expected to occur” (Tang & Hall, 1995, p. 379). However, due to limited studies and effect sizes in some situations, informative verbal feedback showed no significant effect on the students’ liking of the target activity.

Rummel and Feinberg’s (1988) meta-analysis examined the circumstances under which the cognitive motivational theory would exist. The cognitive motivational theory is concerned with how intrinsic motivation is affected by perceived competence and perceived autonomy (Ryan & Deci, 1996); that is, when a shift of locus of causality occurs as a direct result of extrinsic rewards. An example of this is when a person, who first finds the target activity intrinsically motivating, starts to view the activity as a mean to attain a reward and becomes extrinsically motivated. The controlling nature of the reward is responsible for the shift in locus of causality. The sample included 45 studies. The moderator variables were: reward contingency, reward expectancy, and type of reward. The results indicated that of the 45 studies and 88 effect sizes, only 5 effect sizes did not support Deci’s cognitive motivational theory. This study further supports the premise that expected, tangible, extrinsic, task contingent rewards are detrimental to subsequent intrinsic motivation, while unexpected rewards have no significant effects. Performance contingent rewards, which are informational in nature, increase subjects’ intrinsic motivation.

Summary Statement

The effects of extrinsic rewards on student intrinsic motivation represent a major

educational controversy. Alfie Kohn (1993) has, with the publication of his book Punished by Rewards, caused the resuscitation within the debate. The Constructivists, among them Kohn, claim that extrinsic rewards reduce subsequent intrinsic motivation in the rewarded activity. In addition, this happens at the expense of creativity, academic performance, spontaneity, and flexibility. The use of extrinsic rewards is viewed by the constructivists as a way to control and manipulate students. From the constructivist perspective, this is detrimental to the development of learner autonomy.

On the contrary, the Behaviorists believe that extrinsic rewards enhance student learning. They view intrinsic motivation for certain academic activities to be insufficient, needing to be supplemented by extrinsic reinforcers. Extrinsic rewards strengthen the desired student behaviors and academic performances. The behaviors are more likely to be repeated when extrinsic rewards are offered and attained.

CHAPTER III

Summary with Respect to the Investigatory Research Questions

Advantages Associated with the use of Extrinsic Rewards

When children become accustomed to the dispensation of rewards, they learn to expect rewards; therefore, the children will manifest the desired behaviors. An additional effect is that children will become motivated when others receive rewards (Pintrich & Schunk, 1989).

Sometimes students lack the necessary skills to obtain intrinsic rewards....” Often, intrinsic rewards are too remote to be effective....in early stages of learning” (Chance, 1992, p. 206); therefore, extrinsic rewards can be very beneficial in motivating students for learning and to maintain the task activity. Extrinsic rewards can facilitate intrinsic motivation. The example of the boy learning to ski, alluded to previously in this manuscript, is a prime example.

Furthermore, “...intrinsic rewards for academic work are often weaker than the rewards available for behaviors...., the teacher must supplement intrinsic rewards with extrinsic rewards” (Chance, 1992, p. 206). In summary, rewards are easy to use, and offer a quick fix solution to motivational deficits (Chance, 1993).

Disadvantages Associated with the use of Extrinsic Rewards

The majority of behaviorists do not favor punishment, instead reinforcers are used to control student behavior, and reach desirable academic goals. However, rewards also have a negative impact on academic work (Kohn, 1993). Extrinsic rewards offer temporary compliance, but interfere with the development of intrinsically motivated and self-directed learners. Even though rewards do motivate students and increase participation in a designated

activity, the effectiveness of extrinsic rewards depend on how the activity is perceived, reduced interest in the activity, and the quality of performance. A task contingent extrinsic reward decreases the activity as a mean to attain a reward.

It is in the best interest of the children, and also parents, educators, and administrators, to have students function as intrinsically-motivated and self-directed learners. The research shows that socialization into responsible adulthood should occur with the absence of obedience, punishments, and the external pressure from rewards. Extrinsic rewards cause the learner to devalue the target activity. Since a reward is offered solely for participation (task contingent reward), the learner might believe that the activity is not worth doing in itself. The activity thus becomes a means to get a reward. Research indicates that the subject's intrinsic motivation for the activity is reduced, as well as the quality of the performance and the level of creativity. By using extrinsic, tangible, task contingent rewards, the students will find a way to manipulate and to find the easiest way to attain the reward. Children, who are exposed to frequent reward conditions, are also found to be less generous (Fabes, Fultz, Eisenberg, May-Plumlee, and Christopher (1989). The writer feels that creating a generation of egocentric and lazy manipulators will not be in the best interest of our global community.

However, the effects of reward-contingencies on intrinsic motivation is conflicting. Performance-contingent rewards had positive effects on intrinsic motivation, since they increased the students' time spent on the target task. A decrease in intrinsic motivation was found with the use of task-contingent rewards. There is strong evidence that informative performance-contingent rewards enhance intrinsic motivation while task-contingent rewards reduce intrinsic motivation. Therefore, the writer believes that informative performance-

contingent rewards can be used to benefit the students' perceived competence. However, the writer agrees with Dinkmeyer and McKay (1989) that the use of other extrinsic rewards should be limited, since the responsibility of the behavior is placed on adults not children. The acceptable behaviors can be understood by children as expected only in the presence of adults. The use of rewards can also invite conflicts between adults and children because of the controlling nature of the extrinsic rewards (Dinkmeyer & McKay, 1989).

Special Conditions under which External Rewards Differentially Impact Intrinsic Motivation

The reviewed studies in the meta-analyses (Cameron and Pierce, 1994; Tang & Hall, 1995; Rummel and Feinberg, 1988) represent a wide range of methodologies, subjects, type of reward, reward-contingencies, and environments. The overall message seems to be that rewards can be motivating; however, there is evidence that some rewards and reward contingencies have detrimental effects on intrinsic motivation.

When rewards were distributed simply for participating in the target task with no reference to any level of performance, a decrease in intrinsic motivation will occur. If the rewards are perceived as controlling and are salient in nature, a greater undermining effect might occur. By using performance-contingent rewards, which are informational, an increase in subsequent intrinsic motivation can be predicted.

Another finding (Tang & Hall, 1995 and Rummel and Feinberg, 1988) was that how a person perceives the extrinsic reward would have consequences for decisions to engage in the target activity. Tangible rewards (especially money) were perceived as controlling by the subjects, and this was the very reason why an undermining effect occurred. However, verbal

rewards, which impacted the subject's level of skill had positive effects on subsequent intrinsic motivation. The majority of studies supported this hypothesis; however, Cameron and Pierce (1994) had contradictory results in their study.

According to Deci & Ryan (1985), who examined the complicity of performance-contingent rewards, found that this kind of reward-contingency may lead to a performance effect. Participants who experienced engagement in the activity, increase/decrease the involvement based upon perceived competence and subsequent intrinsic motivation. Success in the rewarded activity was more likely to lead to further engagement, an experience of failure had the opposite effect.

Effects of the Subject's Reward Expectancy

Several studies have tested the effects of unexpected tangible rewards versus expected rewards and subsequent effects on intrinsic motivation. Lepper and Greene (1974) found no significant effects of unexpected tangible rewards on intrinsic motivation, the same was evident in the meta-analyses by Cameron and Pierce (1994), Tang and Hall (1995), and Rummel and Feinberg (1988).

The hypotheses that extrinsic rewards only have detrimental effects on subsequent intrinsic motivation when the subject expects a reward was first proven by Lepper, Greene, and Nisbett (1973). The children who expected rewards for performing the target activity showed less interest in the activity during the free-choice period, compared to subjects who received unexpected rewards. As mentioned earlier, the study was replicated by Greene and Lepper (1974). Additionally, Cameron and Pierce's (1994), Tang and Hall's (1995), and

Rummel and Feinberg's (1988) meta-analyses also proved that expected tangible rewards have negative effects on subsequent intrinsic motivation. This is strong evidence since hundreds of studies are included, a wide range of subjects from pre-school children to adults were sampled, and studies were conducted in a variety of different settings.

Effects of Different Types of Rewards

There are two main categories of rewards: verbal rewards and tangible rewards. The meta-analyses found an increase in intrinsic motivation when a verbal reward was informational in nature. However, when tangible rewards were expected, the rewards were then perceived as controlling, and thus led to negative effects; the task was perceived as not being interesting enough in itself, just a prerequisite for attaining the reward. Anderson, Manoogian, and Reznik (1976) provided monetary, symbolic, and verbal rewards to pre-school children for participating in an art project. The results indicated that monetary and symbolic rewards decreased subsequent intrinsic motivation as measured in the free-choice period, whereas, verbal rewards increased subsequent intrinsic motivation. One of the most interesting findings in this study was that the experimenter, who was unobtrusively present in the room, was considered as controlling by the subjects.

The effects of the salience of the rewards on subsequent intrinsic motivation have been studied by Ross (1975). One group of subjects were encouraged to think about their expected task-contingent reward. Another group of children were instructed to think about a distracter while participating. The third group received no rewards at all for engaging in the activity. The fourth group of children were introduced to task-contingent rewards. The results

indicated that the groups of subjects who were distracted showed no evidence of reduced intrinsic motivation. In contrast, the group that was encouraged to focus on the rewards while participating, and the group that was exposed to the traditional task-contingent procedure, both showed evidence of reduced intrinsic motivation compared to the non-rewarded control group. The more salient the reward, the greater the detrimental effects on the subject's intrinsic motivation.

Studies have also been conducted on the effects of small versus large amounts of rewards. Ryan and Golnick (1986) found that when offered bigger awards, subjects choose easier tasks. Freedman, Cunningham, and Krismer (1992) found that the bigger the reward, the more the activity was perceived negatively. In Enzle and Ross's (1978) study the size of rewards were combined with performance-contingencies. The authors found that the amount of size of a reward did not have any significant effect. However, the size or amount of the reward did matter when combined with performance-contingencies. Performance-contingencies with small rewards or small amount of rewards decreased subsequent intrinsic motivation, whereas, the same contingencies combined with large size or large amounts of rewards increased subsequent intrinsic motivation.

Level of Initial Interest

According to the meta-analyses, conducted by Tang and Hall (1995), and Rummel and Feinberg (1988), extrinsic rewards have a more detrimental effect on subsequent intrinsic motivation when the initial level of interest is high. Subjects who were exposed to tangible rewards while participating in tasks which were viewed by the subjects as highly interesting, showed evidence of reduced intrinsic motivation (Morgan, 1984). Additionally, in order to be

effective, rewards have to be desirable to the subjects, and the activity must not be intrinsically motivating to begin with. Tangible rewards which were offered for participation in uninteresting tasks assisted in increasing the subjects subsequent intrinsic motivation.

Conclusions and Recommendations

A substantive understanding of the positive and negative effects of rewards is crucial for anyone who works in the teaching profession. This is especially true for teachers who consistently use rewards to promote the desired behaviors in children. Caution must be applied when utilizing extrinsic rewards which can function as powerful educational tools. There is considerable difference of opinion regarding the relationship between external rewards and internal motivation of extrinsic rewards. There are however, a few practical guidelines which classroom teachers can utilize to make professional decisions regarding the use of rewards to motivate students. First, rewards should be given in accordance to performance standards. High standards which are within the reach of the students are more motivating and effective since they produce higher academic achievements which contribute to self-confidence. Second, success in the rewarded activity is more likely to lead to further engagement. Third, rewards should not be dispensed in a controlling way. Fourth, to enhance the student's sense of competence, rewards should be informative in nature, and also reflect student's prior work. Lastly, avoid the use of rewards if a student's initial level of interest in the activity is high.

In summary, the findings from this literature review reveal that applied behavioral analysis, does not purport to examine the underlying causes of behavior. The writer feels that it is crucial to include the cognitive aspect when dealing with student motivation in academic

subjects. Furthermore, the writer agrees with Kohn (1993) that the use of rewards offer only compliance. As an educator, the writer believes that it is crucial that we facilitate the development of self-directed and intrinsically motivated students. The focus should be on long-term effects.

During the process of reviewing the literature, it became evident that the concept of intrinsic motivation is unclear. There are difficulties in arriving at a consensus operational definition of this term. The first recommendation would be to clarify the concept in further research. Second, the distinction between extrinsic and intrinsic motivation should be more clearly delineated. Finally, additional research on the conditions under which extrinsic rewards undermine or enhance intrinsic motivation is needed to develop the best educational environments for future generations. This is necessary in order to avoid the use of extrinsic rewards in conditions where detrimental effects on subsequent intrinsic motivation are likely to occur. On the basis of the literature review, the writer believes that rewards can be beneficial to use in the early stages of learning when intrinsic rewards are not as powerful. However, the writer agrees with Kohn (1993) that rewards necessitate the need for more rewards, and therefore any reward system should be utilized with caution and coupled with a firm understanding of applied behavior analysis.

In summary, from the perspective of the writer, extrinsic rewards have limited value. Extrinsic rewards do not lead to sustained life-long learning. In order to maximize the value of intrinsic motivation, teachers should focus on creating warm and supported educational environments. Instructional strategies that encourage choice making nurture dispositions toward self-directed learning.

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