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Relationship between Rewards and Intrinsic Motivation for Learning – Researches Review

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Abstract

In this paper, we review some of the initial researches, conducted during the 70's and later, about the potential role of external rewards on intrinsic motivation for learning. This is considered from different theoretical approaches such as self-determination theory, cognitive approach, attribution theory, general interest theory, behaviorist approach. The review is divided into three parts. Firstly, we review researches related to the effect of external reward on reducing internal motivation for learning and some research which is opposite to them. Secondly, we discuss the benefits of motivation for improving creative achievements. Thirdly, a significant part of this paper refers to analyzing the interests, as a part of students' intrinsic motivation, which are not given enough attention in literature. Finally, we draw conclusions from the researches review. In the summary, analyzing these early researches, we can say that there is a good evidence that rewards have a strong influence on the students' motivation for learning and high creative outcomes which is opposite to some initial researches (although this depends on the type of undertaking rewards). Considering these early researches indicates that producing negative effects requires combining specific conditions that are not characteristic for activities in everyday life, especially in school life and the idea that rewards disturb intrinsic motivation of individual requires a more detailed analysis. We believe that rewards are not harmful, which is proved by some researches, and that there is a certain interrelation between external motivators and task-oriented motivation which is confirmed by the cognitive approach. Future researches should be oriented towards the examination of the impact of different types of interests on learning and the variety of personal motives, examining the interactions between motivation and cognitive constructs, but also on how to develop personal interests and motivational constructs.

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1. Introduction

Pedagogues and psychologists have long recognized the importance of motivation for supporting students' learning. In literature, motivation has been repeatedly reported as a key element for students' success in learning and people working, so motivation is often considered as an inner drive for behaving or acting in a certain manner. In the middle of the 70's, a different definition of intrinsic motivation has been proposed and in this paper, these definitions will not be thoroughly discussed and analyzed, but the focus will be directed towards the relationship between external and internal motivation, ie, rewards and intrinsic motivation for learning. There is a great deal of research that investigates the effects of extrinsic rewards on intrinsic motivation, from those who indicate that reinforcement can undermine intrinsic motivation, lowering intrinsic interest in students, to those who indicate that external reward programs do not have a detrimental effect on students' intrinsic interest. In this review we will revise the initial researches related to external rewards and intrinsic motivation conducted during the 70's and later, based on different theoretical approaches.

2. Effects of external rewards on intrinsic motivation – different approaches

Deci defined intrinsically motivated behaviours as those that are engaged in for their own sake, in other words, for the pleasure and satisfaction of performing them (Deci, 1971). These are the activities that people voluntarily perform in the absence of material rewards or constraints (Deci & Ryan, 1985). On the other hand, extrinsic motivation pertains to a wide variety of behaviors where the goals of actions extend beyond those inherent in the activity itself. Therefore, there are behaviors that are engaged in as a means to an end and not for their own sakes (Deci, 1975; Kruglanski, 1975). Originally, it was considered that extrinsic motivation refers to behaviours performed in the absence of self-determination and thus which could only be prompted by external contingencies. In order to consider the relationship between reward and intrinsic motivation for learning we shall review some initial researches and theoretical approaches. Deci and his associates conducted laboratory studies in early 70's. According to these studies, under certain conditions extrinsic rewards could decrease intrinsic motivation. So, on the basis of these studies, to explain the obtained results they developed cognitive evaluation theory as a sub-theory of self-determination theory (Deci and Ryan, 1985). Deci confirmed that extrinsic motivation should not be used just because it "deprives" human interest and pleasure in activities. He presented his reason with the aim to scientifically prove that the rewards and positive reinforcement can "harm" internal motivation. The results from these studies are often cited as evidence that rewards and positive reinforcements can backfire, or as Kohn stated, that the positive external incentives based on the use of rewards can cause pervasive negative effects (Kohn, 1993). The general conclusion derived from these studies is related to the fact that the system of rewards and positive corroborating has extensive negative effects. This conclusion has soon taken place in the public and continually repeated in elementary textbooks of psychology, pedagogy and business management. When the completion-contingent rewards and intrinsic motivation are in question, Deci and his associates (Deci et al, 1999) on the basis on their meta-analysis proved that empirical results showed that for interesting activities performance-contingent rewards have a detrimental effect on the persistence of free choice and completion-contingent rewards have also detrimental effect on intrinsic motivation, and further, that the use of such rewards in school can adversely affect the intrinsic motivation of students. Deci et al. (1999) argued that these findings supported Deci and Ryan's cognitive evaluation theory, which assumes that events leading to greater perceived self-determination or perceived competence increase intrinsic motivation, whereas events that decrease self-determination or competence lessen intrinsic motivation. Deci et al. argued that reward lessens perceived autonomy, leading to reduced intrinsic motivation. Reward for intrinsically motivating activities in everyday life, according to them, reduces intrinsic motivation.

In the line with cognitive evaluation theory is the attribution theory - the "overjustification" effect. According to the representatives of this theoretical approach, intrinsic motivation can be decreased by extrinsic incentives. This perspective argues that people make retrospective attributions about their own behavior based on what they did and the social context in which their behavior occurred (Lepper, Greene, and Nisbett 1973). The theory suggests that rewarding people for an interesting activity leads them to attribute their behavior to the extrinsic reward rather than to their intrinsic interest in the activity. Thus, intrinsic motivation is lower if there is no extrinsic reward. The over justification effect is manifested in decreased interests in an activity as a result of having been rewarded for

participation in the activity. According to the attribution theory, "discounting principle" decreases interest because the subject discounts the role of intrinsic motivation when salient extrinsic reward is present.

The long presented opinion of the early 21st century on the bad effect of the reward on the internal motivation and observations of extrinsic and intrinsic motivation as unrelated was shattered by later research. For example, in a meta-analysis of 96 experimental studies measuring the effect of reward on intrinsic motivation, Cameron and Pierce (Cameron & Pierce, 1994) found no consistent evidence that reward decreases intrinsic motivation; in fact, verbal praise appeared to increase intrinsic motivation. These researches pointed out only one negative effect of reward and that is a slight decrease in time spent on a task after reward was given for participation. Similar results were found by Eisenberger and Cameron two years later in a meta-analysis of almost 100 studies from 1971-1991, controlled for effect and sample size. These authors strongly believed that intrinsic motivation may be reduced if a reward is given for participation in a task (performance-independent reward) or completion of a task (completion-dependent reward), as these types of rewards lessen self-determination. However, a reward given for meeting a predetermined standard of quality (quality-dependent reward) does not necessarily reduce intrinsic motivation; although self-determination may decrease, the perception of competence may increase at the same time. In 1999 Eisenberger, Pierce and Cameron (1999) developed general interest theory which criticizes the limitations of cognitive evaluation theory. This theory indicates that the content of tasks and the context in which they are presented increases intrinsic motivation to the extent that they indicate that performing the task helps satisfying the needs, wants and desires. According to this theory, under certain conditions, extrinsic rewards can enhance intrinsic motivation.

Finally, in 1999 Eisenberger, Rhoades and Cameron (1999) based on the findings of the research conducted with college students, suggested that cognitive evaluation theory must be modified in order to assume that reward increases perceived self-determination and perceived competency, thereby increasing intrinsic motivation. In order to justify their attitude, they noted the findings of their research where reward contingency, requiring a high level of performance, increased perceived self-determination and perceived competence, which furthermore enhanced intrinsic task interest, and among the employees with a strong desire for control, they found a positive relationship between the expectancy of reward and intrinsic task interest. Therefore, they saw the rewards as an indicator of self-determination.

3. Rewards, intrinsic motivation and creativity

Of great importance for our review are the researches that examined the effect of reward on children's creativity, and the cognitive approach of Sternberg (Sternberg, 1985) who defined motivation as a driving force to use the cognitive components for creative purposes. Speaking about motivation Sternberg and Lubart (Sternberg & Lubart, 1991, 1993) suggest the crucial aspect of motivation for creativity and, according to them, that is the way that motivator affects a person's attention towards a task rather than the intrinsic-extrinsic nature of the motivator. In that context, they emphasized the task-focusing motivator and goal focusing motivator, ie, motivator that energizes a person to work and keeps person's attention at task versus person's attention which is focused on the reward to the detriment of the task itself. So, they concluded that intrinsic motivators tend to be task focusing because the goal (e.g. personal fulfillment) is integrated in the task itself and extrinsic motivator tend to be goal focusing because the rewards are salient and distinct from the tasks.

We can say that creative achievement requires high motivation of its creator. Authors of creative works have manifested great interest and love for the subject that they deal with and they have high concentration and are generally diligent and persistent in certain areas and certain problems until they reach their decisions. According to many authors, the school does not provide a favourable position to develop task-oriented motivation, which is supposed to stimulate students' creative production. In school, pupils deal with external motivators such as grades. Here Sternberg and Lubart corrected an old misconception, explaining that extrinsic rewards such as grades or money that parents can promise or give to children for a specific achievement, do not necessarily affect negatively their work. They believe that external motivators are even very desirable in certain stages of work on a certain task. Their positive influence is reflected on the fact that the individual does not encourage drawing his attention to the task. However, Sternberg (Sternberg, 1985, 1999) emphasized that motivation drives metacognitive skill and

activates learning and thinking skills, which then provides feedback to the metacognitive skills, enabling one's level of expertise to increase. The declarative and procedural knowledge acquired through the extension of the thinking and learning skills also results in these skills being used more effectively in the future. Speaking about different types of motivation, this author especially pointed out the achievement motivation and competence motivation. Experts need to develop a sense of their own efficiency to solve difficult tasks in their domain of expertise. Many researchers considered that this kind of self-efficacy can result from both intrinsic and extrinsic motivation (Amabile, 1996, Sternberg & Lubart, 1996).

Also, in line with the behaviourist approach in considering literature of creativity, Eisenberger and Cameron (Eisenberger & Cameron, 1996) concluded that the detrimental effects of rewards on creativity was a myth. They agreed that the negative effect of rewards can easily be averted and that rewards can have positive effect on creativity in general if they are properly administered.

Both of these approaches, behaviouristic and social-cognitive, have been exposed to criticism. One of the criticisms of the behaviorist approach to studying creativity is that there is no way to distinguish the effects of reward as a reinforcer and the effects of the information provided by instructions and by the reward contingency itself. Thus, information could be a confounding variable (Joussemet & Koestner, 1999, p. 232). When the social-cognitive approach is in question, criticism refers to the small number of tasks included in the study.

4. Interests and intrinsic motivation

Authors like as Sansone and Morgan studied the question of intrinsic motivation and interest (Sansone & Morgan, 1992). They believed that whether it is the individual interest or interests in certain situations, intrinsic motivation is important, and one of the specific motives within that internal motivation is interest. We can certainly say that the intrinsic motivation and interest are in relation to the wider and narrower, higher and lower, but certainly in an interdependent relationship. While the intrinsic motivation is considered to have its roots in the basic human needs for capacity, challenge and control, for interest of individual is considered to be developed from internal sources that are consistent with external influences. Observation of the individual interest as a subject determined and recognition that it is developed from the interaction of people with the special material, particularly, implies that the individual interest and experience are under the influence of extrinsic and under the influence of intrinsic motivation. Creating an environment that encourages the development of situational interest is one of the ways in which schools can encourage students' motivation, which helps students to achieve cognitive benefits in the areas which they are attracted to at first. Furthermore, adjusting the intention to build individual interest is a way to facilitate the development of specific activities.

Based on a review of some researches and their criticisms, we think that neither behavioral-oriented researchers nor intrinsic motivation-oriented researchers devoted enough attention to examining initial interest in children. More precisely, if the educational activities include a situational interest, which is often the case, the tangible rewards can have a detrimental impact on internal motivation. However, when a well-developed individual interest of individuals is involved, the effects of reward do not have to be detrimental to intrinsic motivation and performance, and too general conclusions based on the results of meta-analysis can be a problem.

5. Concluding

We think that is disputable, and in some way, outrageous proposal to withhold reward in school setting that is based in the studies of motivation involved in Deci's and his associates meta-analysis. From the 70's and onwards there was a significant endeavor in the research agendas. Behavioral model of learning through rigid control of external reward is no longer the dominant paradigm. Researcher's attention has been placed on the contribution of valuable learning that comes from personal effort and "inner senses". Therefore, maybe it is time to move the agenda to the orientation of the synthesis of external and internal motivation that will engage students, especially adolescents, within the accepted teaching skills and competencies necessary for creative and productive future. And we should not forget the fact that in most cases the researchers were successful in identifying factors that reduce interest than factors that reinforce them. Only recently, researchers have begun to portray interventions that may enhance the interest and therefore the value, importance and meaning of the activities or polishing of the structure of

the task.

It is clear from the results of various studies (those who are presented and those who are not presented in this paper) that there is no simple answer to the effect of reward on intrinsic motivation for learning. The interaction between intrinsic and extrinsic motivation and creativity may be more complex than the linear model proposed by most researchers. And it is obvious that more research needs to be conducted in real-world settings such as classrooms and industries to develop our understandings of the relationship between external and internal motivation for learning.

Our assumption in this paper was that rewards are not harmful, but there is a certain interrelation between external motivators and task-oriented motivation which is confirmed by Sternberg's cognitive approach. Rewards are primarily considered to promote than to limit human freedom and independence. Some research has shown that placing the dichotomy between external and internal motivation is not necessary, even unacceptable. Even though students find pleasure in an activity at the beginning, their level of satisfaction and enjoyment in the activity over time and long-analysis may decline. A certain level of extrinsic motivation over time may become necessary to restore and continued activity, even at the beginning there was no need for external motivators.

We believe that the intent of promoting any of these types of motivation, intrinsic or extrinsic, or both, depends primarily on the personality, nature of activities, and the circumstances in which a person performs the activity at a certain time. Future research should be oriented to the examination of the impact of different types of interests on learning and the variety of personal motives, examining the interactions between motivation and cognitive constructs, but also how to develop personal interests and motivational constructs.

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