

The Influence of School's Reward Systems on Students' Development

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Abstract. This paper pays attention to how reward systems at school influence students' development. Specifically, this paper discusses how different reward systems work on students with different life stage, and finally analyzes why those influence occur with the employment of reward systems, such as operant conditioning and reward addiction. In a nutshell, the paper reveals that school's reward systems have both positive and negative effects on students' development. They can attract students' interests, foster good learning habits, establish a positive learning atmosphere, and increase students' motivation. However, students may also develop reward addiction, increasing sensitivity to punishment, and decreasing intrinsic motivation. If teachers aim to maximize the advantages of reward systems, avoiding deficiencies and keep merits is an efficient way. This paper provides insights for several deficits in the usage of reward system, pointing out the importance of addressing those issues. Moreover, by showing positive influence of reward system, this paper emphasizes the advantages of reward systems and the accessibility of making it a better tool in the education setting. However, current research does not show whether the influence on reward system can be affected by individuals' personalities. Thus, future direction of research can be oriented toward how people's personalities exert effects on the impact of reward systems.

Keywords: Reward systems; Students' development; Age differences.

1. Introduction

Students' growth has been one of the most significant concerns in countries all over the world. Since some research [1,2] indicate that reward systems at school have substantial effects on students' development, but the mechanisms behind the systems and the level of their influence are still equivocal. Figuring out how the whole systems work and what effects they have can help teachers to make better plans for educating students.

Former research did not focus on the effect of reward system on different ages of students and also students with different personalities. Moreover, even though some research studies proposed flaws of reward systems, they did not find solutions of the problems. As a result, this paper will demonstrate effects of applying reward systems to students in different ages and unearth potential mechanism that support the entire systems.

In the main body part, this paper will first introduce the characteristics of students in different life stages, emphasizing the factors that may affect their growth. Then, this paper will discuss the flaws and benefits of rewards to students. Lastly, reasons will be listed and analyzed.

2. Characteristics of Students in Different Ages

This paper will mainly focus on stages from primary school to high school and will first introduce characteristics of primary school students, then middle school, and lastly high school.

2.1 Primary School Learners

Primary schoolers start to figure out who they are and what they want from the world. 6- to 8-year-old students may act under the impact of impulsive and irrational emotions because of their immature brain development [3]. As a result, students in this age range are very easy to do things without considering any consequences. This is corresponded to the results of a 2019 study proceeded by Chinese researchers [4]. In the study, researchers divided primary school learners into three

personality types based on Five-Factor analysis [4]. The resilient have the highest score, and the undercontrolled have the lowest score. There was an upward trend in undercontrolled students, and it reached the maximum level in grade 5 [4]. The reason why this trend took place is because primary school students have insufficient self-regulation, which means that they do not have the ability to control their feelings, emotions, and behaviors. However, since students in elementary schools show “unlimited trust” and “obedience” to teachers and parents, it is a crucial time for teachers or parents to promote their growth and teach them how to control themselves [3].

2.2 Middle School Learners

School work becomes a very important job for middle school learners to accomplish. Their cognitive abilities develop, their memory retention increase, and their learning capabilities evolve. Cognitively, their logical thinking swiftly enhances, so they gradually obtain the ability to think properly. The expanding memory retention is significant for them since many exams require students memorize the content in textbooks. At that time, middle schoolers seek for independence. They start to disagree with teachers’ or parents’ ideas and sometimes deem they are wrong. They are willing to accept new ideas, regardless of the quality. Also, in this age range, middle school learners confront peer pressure and become anxious about their school grades [5]. In order to solve problems of learning bad behaviors and overwhelming pressure, teachers could apply reward systems to encourage students perform good behaviors and correctly deal with peer pressure.

2.3 High School Learners

High school learners face enormous stress on their academic works. Nevertheless, there are several aspects of changes helping them to overcome certain difficulties. For example, their brains develop maturely. The development of forebrain enables students to think critically, evaluate consequences appropriately, regulate emotions properly, and memorize things efficiently [6]. Moreover, the well-established self-esteem may allow students to remain competitive at school [6].

3. Categories of Reward Systems

Reward systems are methods that teachers use to boost students’ good behaviors in classrooms. It can be divided into two categories: tangible reward systems and intangible rewards systems. Tangible reward systems, also called external reward systems, include rewards like stickers, hand stamps, small toys, crayons, and unbreakable mirrors [7]. Intangible reward systems, also called internal reward systems, include teachers’ appreciation toward students’ works, a positive relationship with teachers, and students’ senses of achievement [8].

4. The Influence of Reward Systems

4.1 The Positive Influence

Reward system stimulates students’ motivation to learn in both biological and psychological ways. Students’ poor performance at school may be described to a lack of motivation. When students get bad grades, they feel disappointed and do not know how to improve their grades. Without outside help, they may feel less motivated to find solutions, so they keep being underperformed. Nevertheless, when the teacher offers suggestions of improving grades and gives rewards after students are doing better, students’ performance enhances. A longitudinal study by the University of Illinois’s researchers has indicated that reward is a desirable thing for students, it can serve as an outside reinforcement to increase students’ motivation to complete assignments and maintain good grades [9]. Also, students could grasp a “healthy learning habit” by giving rewards properly [9]. Adrian Galvan from the University of California, Los Angeles explores the corresponding brain functions, and his finding suggests that students’ reward seeking behavior is highly correlated with hyper-responsive dopamine system, meaning that the more desired rewards are given, the better

performance students can achieve [10]. As a result, through the application of reward system, students could be highly responsive to the reward and will be motivated to reach a higher level of academic performance.

Reward system can also reduce absenteeism. A study of Dagatan National High School demonstrated that strategic reward intervention could effectively decrease students' absenteeism [1]. Moreover, many teachers express positive perceptions toward the reward system. A study elicited that all teachers agreed that reward have positive influence to students' learning [2]. Those teachers found that rewards help establish a positive learning atmosphere, increase students' participation, and realize learning goals [2]. Furthermore, the study justified that students are happy to receive reward from their teacher, and those rewards motivated them to study harder. When they got rewards, they not only got recognition from teachers, but also obtained positive feedbacks that encouraged them to inspire their spirits [2].

Overall, reward system is advantageous in increasing students' motivation, fostering healthy learning habits, and promote students' developmental growth. By applying reward system like behavioral charts or small toys to students, teachers could achieve their teaching goals efficiently. Therefore, reward system is a powerful tool to develop students' abilities. Importantly, the appropriate use of reward systems can help students reach their potentials.

Moreover, reward systems have different functions toward students in different ages, and for students in different ages, teachers tend to use distinctive categories of reward systems. For primary schoolers, reward systems can shape their appropriate behaviors, help them generate happy feelings like a sense of pride and achievement, and increase their self-esteem [11]. In addition, they are more likely to be motivated by external rewards like toys or stickers. But for middle school and high school students, rewards are more likely to boost their academic performance and external motivations [12]. Moreover, they are more likely to be spurred by internal or intangible rewards like happiness caused by their good exam scores.

4.2 Negative Influence

As teachers continuously use rewards in the teaching context, students could develop reward addiction. It means that after repetitious exposure to rewards, students become reliant on them and may not perform well if teachers stop giving rewards. This kind of addiction has several negative effects. For example, a 2018 study revealed that reward addiction would increase students' sensitivity to punishment [13]. By implementing path analysis on the model constructed by several factors of reward overdose and allergy to punishment, researchers discovered that the reward overdose variables tremendously and positively affected students' level of fear to punishment [13]. Consequently, the level of students' dependence on reward had a positive correlation with students' level of allergy to punishment. The higher the addiction to reward, the more intense students' reaction to punishment. The obvious outcome of increasing sensitivity to punishment is that students' self-esteem is damaged when they are punished [13]. Another harmful impact of reward addiction is losing control. While gaining rewards from teachers, students feel delighted, and because they become dependent on rewards, they will become out of control in exchange for the transient feeling of pleasure created by reward systems [13]. The addiction will be intensified if the feeling of losing control continues, so students will fall into a vicious cycle.

Additionally, most parents hold an opposing attitude toward the reward system in the classroom because it brings increasingly competing pressure and inhibits intrinsic motivation. Some parents state that reward system produces competing pressures, which causes children to be anxious and "become overly critical" to themselves [14]. The behavior charts or color charts let students compete and rank the performance of different students. Once students are behind others, and they do not earn rewards, they may feel grieved and become afraid of not getting rewards in the future. This exerts huge pressure on students and may destroy students' confidence. Another reason parents demurring reward system is that it impedes the development of intrinsic motivation [14]. This is due to the reward addiction. Constant needs for reward have caused students to treat reward as a signal to

perform well in class. Without the signal, students may question whether they should do those previous behaviors, and eventually abandon those good behaviors. They just focus on the reward, not themselves. They have lost the ability to intrinsically motivate themselves.

In addition, there is no age difference for the negative influence of reward system on students' development. For instance, for primary school, middle school, and high school students, they all will develop addiction of reward and lower intrinsic motivations [11,12].

5. Reasons

5.1 Reasons of Positive Influence

5.1.1 Dopamine responsive

When a person is exposed to a rewarding stimulus, people's brain areas will release a neurotransmitter called dopamine [15]. Dopamine can be transferred in the brain, and through the process of transportation, the level of dopamine increases. Since dopamine is related to reward and pleasure, the increasing level of dopamine leads to people's increasing satisfaction and happiness created by rewards [15]. Thus, the more desired rewards are given, the better performance students could achieve. In this way, reward is directly associated with students' positive performance.

5.1.2 Operant conditioning

Operant conditioning is the theory behind the reward systems. It was proposed by B.F. Skinner [16]. The mechanism of this theory is that "the consequences of a response" decide whether it will be repeated [16]. Thus, theoretically, a behavior will be repeated if it is reinforced (rewarded) [16]. In this way, desired behaviors can be achieved by giving rewards repetitively. In real-world situation, for instance, if a teacher wants her students to actively participate in class, she can say "well done" or "good job" every time after students answering her questions.

5.2 Reasons of Negative Influence

5.2.1 Reward addiction

Reward addiction is a phenomenon that people develop dependence upon both tangible rewards and intangible rewards. The reason why it happens is that people's dopamine system is highly responsive to reward stimuli. When teachers give rewards to students, students' dopamine system will detect the intense stimuli and generate a sense of pleasure after receiving rewards [17]. Once teachers continuously use reward systems, students' dopamine systems will respond to stimuli that "immediately precede and reliably predict the reward," forming a strong association between predictors and rewards [17]. In a long run, students' responses to reward become reflexive and eventually end with addiction.

5.2.2 Intrinsic motivation

Intrinsic motivation is a kind of motivation that do not require external rewards, which means that people perform certain behaviors because they are enjoyable and meaningful [18]. The thing that can destroy students' intrinsic motivation is reward addiction, especially for tangible or external rewards. Based on overjustification effect, when people are rewarded for doing something indeed "diminishes intrinsic motivation to perform that action" [19]. As a result, an already internally rewarding activity could turn to a less intrinsically motivated one [19]. Students gradually fixate on the external rewarding motivation but ignore their ability to self-motivate.

6. Summary

Reward systems are instruments that teachers use at school. Tangible rewards like stickers and behavioral charts and intangible rewards like students' positive relationship with teachers are frequently employed by teachers. This paper focuses on how reward systems at school can inflict

effects on students and how they will affect students' development. Students in different ages have different education backgrounds, possess distinctive levels of learning abilities, and will be affected by reward systems to different extent. For example, reward systems help elementary school students construct good behaviors and habits, but they assist middle schoolers to improve academic performance. The application of reward systems to students in different ages have both positive and negative effects. The positive effects contain healthy learning habits, positive learning environment, and increasing motivations. The negative effects incorporate reward addiction, sensitivity to punishment, diffidence, and lower intrinsic motivation. The mechanisms behind the positive influence of reward system are operant conditioning and dopamine systems, which can reinforce students' good behavior, enhance their academic performance, and foster healthy learning habits. Reward systems' negative influences are caused by addiction and dopamine's responsive feature with rewards. By using reward systems, students may become dependenable on rewards for long-term positive performance and lose their capabilities to motivate themselves. The significance of this paper is alerting some educators and parents certain potential side effects of reward systems in classrooms and encouraging scientists to conduct studies to overcome those problems and find ways to maximize the efficiency of reward systems. Current studies lack exploration of the impact of students' personalities on the implementation of reward systems. In addition, the measurement of the level of reward overdose and fear to punishment is absent. Therefore, future studies should focus on how students' personalities can be affected by reward systems, figure out the basic patterns of the influence and the potential benefits or risks of those influences, and form solutions or theories that can be applied to take advantage of benefits or avoid risks. Additionally, it is crucial to create measurement of students' obsession with reward and avoidance to punishment since these two elements are related to students' development. If teachers could accurately measure students' reliance of reward and their susceptibility to punishment, reward systems will escalate to a new level and function better in the field of education.

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