The Effects ofMonetary RewardsandGradePointsonStudentMotivation: An Experimental Analysis

ABSTRACT

This study aimed to determine whether there is a significant difference between monetary rewards and grade points rewards on student motivation among 40 undergraduate students from a university. Participants were divided into two groups: one group received ₱20 as a monetary reward, while the other earned 10 grade points. Teams engaged in an "act-it-out" game, and motivation levels were measured using self-made, validated questionnaires with excellent interrater reliability. A between-subjects design with standardized procedures ensured fairness, while ethical standards were strictly observed. Participants in the grade points reward condition reported higher mean motivation scores (M = 4.51, SD = 0.340) compared to those in the monetary reward condition (M = 3.78, SD = 0.661). An independent-samples t-test confirmed a significant difference in motivation scores between the two reward types (t (28.4) = 4.39, p = 0.001, d = 1.39), indicating a large effect size. These findings suggest that grade-based rewards enhance student motivation more than monetary rewards, promoting engagement and intrinsic motivation in learning. Future research could explore the impact of non-monetary incentives and examine how reward-based motivation generalizes across different cultural contexts and institutions.

Keywords:*money, grades, monetary, points, reward, incentives, motivation, student*

Comment [1]: Expand the abstract to include the research problem, significance, and methodological approach alongside the results

Comment [2]: The discussion mentions cultural influences but does not integrate this aspect into the analysis comprehensively.
Include a dedicated section analyzing how cultural factors might influence the preference for grade-based versus monetary rewards.

Comment [3]: Monetary Rewards, GradePoints, StudentMotivation, Experimental Analysis

INTRODUCTION

Imagine a classroom where the desire for a higher grade or the possibility of financial gain motivates every effort. Although both approaches encourage action, which one actually promotes more effective motivation?

One of the most studied ideas in educational psychology is motivation (Koenka, 2020). Motivation, from the Latin word *movere*, which means “to move,” captures the essence of what drives people to act and behave in certain ways (Jansen et al., 2022). According to Ryan and Deci’s Self-Determination Theory (2020), there are two main categories of motivation: intrinsic and extrinsic. Intrinsic is a type of motivation that results from an activity’s natural enjoyment or interest. Extrinsic, on the other hand, is a type of motivation that involves performing tasks in order to achieve external rewards or outcomes.

Action-oriented goals are shaped by different incentives, including the possibility of rewards, which stimulates motives, needs, desires, and emotions (Roeser, 2022). Particularly, according to Eisenberger & Aselage (2024), monetary rewards can increase performance pressure and goal commitment, promoting task engagement, higher-order skills, and increased motivation. In addition, external rewards, such as additional points being provided by teachers, were proven to be effective motivators in improving student performance and promoting better learning outcomes (Eikmeier, 2019).

A huge amount of money is spent annually on financial incentives for college students; in the US alone, undergraduate students receive over $20 billion in prizes each year. Other organizations offer incentives specifically designed to increase student motivation and, eventually, academic performance (Lintner, 2024). According to a study conducted in the United States of America, awarding extra credit or points has also been found to be a powerful factor in motivating students. Additional research showed that students’ motivation increased as they gained more extra credit points during a course (Eikmeier, 2019). Given the studies indicating that teachers have major influence on students’ motivation, it can be implied that giving extra credit or points for participation in extracurricular activities would be an effective way to encourage students (Foltz et al., 2021).

In contrast, students at the University of Amsterdam were split into two treatment groups at random. The low- reward group was promised a bonus of €227 for an accomplishment, while the high- reward group was offered €681 for the same. The results showed that the incentives had no remarkable impact on motivation (Lintner, 2024). Similarly, Moroccan high school students are under huge pressure to achieve high grades because admission to esteemed colleges and universities is largely determined by academic accomplishment. They further indicated that extrinsic rewards have the potential to undermine intrinsic motivation, especially when they are used to regulate behavior instead of recognizing effort or good work (Qasserras et al., 2023).

Nationally, reward systems are a great way to acknowledge student accomplishments and promote positive student behavior. Giving rewards in the classroom motivates students to work together on academic and social learning tasks (Viray-Castillejos, 2022). According to Dean (2019), teachers frequently use incentive systems to raise students' academic performance and/or appropriate behavior. In addition, teachers in public elementary schools that use the reward/token system constantly use extrinsic motivation for their students, with the majority of the rewards being additional points for grades (Capuyan et al., 2024).

While numerous studies have explored the impact of rewards on student motivation (Ryan & Deci, 2020), a significant gap remains in understanding the comparative effects of monetary and grade-based (points) rewards, particularly in collaborative learning contexts. Research indicates that extrinsic rewards, such as grades and money, can sometimes undermine intrinsic motivation (Ryan & Deci, 2020). However, the specific effects of these rewards on student motivation in group activities remain unclear. To address this gap, this study aims to investigate the differential effects of monetary and grade-based (points) rewards on student motivation in group activities. By understanding how these rewards influence student behavior, educators can develop more effective instructional strategies to optimize learning outcomes.

This study aimed to investigate the comparative impact of monetary rewards and grade-based (points) rewards on student motivation in an academic setting. Specifically, it sought to answer the following questions: (1) Is there a significant

difference in the motivation levels of students who are incentivized by money versus those incentivized by grade points? (2) Does receiving monetary rewards enhance students' motivation more effectively than grade points rewards? (3) How do these two types of rewards influence students' perceived value of the task, effort, and engagement during collaborative activities?

This study benefits schools by offering insights to help teachers, administrators, and students develop effective reward programs that enhance learning outcomes and classroom engagement. External incentives, whether monetary or grade-based (points) rewards, can help motivate students in doing challenging or less appealing tasks. On top of that, these findings can guide organizations in designing skill-building incentive programs that can use either monetary or grade-based (points) rewards to maximize participant motivation.

METHODS

Participants

The participants in the study were 40 undergraduate students from the university. The monetary reward group consisted of 20 second-year students (15 males, 2 females, and 3 who preferred not to disclose their gender), with 19 participants from Bachelor of Science in Criminology and 1 from Bachelor of Science in Information Technology. The grade points reward group was made up of 20 first-year students (6 males, 12 females, 1 who preferred not to disclose their gender, and 1 who identified as non-binary/other), all of whom were enrolled in Bachelor of Science in Psychology.

Comment [4]: Which method did you use to determine this sample used? Clearly state. How did you arrive at 40 participant?

To decide which group session would be conducted first, the researchers used cluster randomization through a random lottery process by drawing out a rolled piece of paper from a box containing two pieces of paper, one of which is marked with a monetary-reward group and the other with a grade-reward group. The monetary-reward group was picked as the first session to be conducted, and the grade-reward group was automatically the second session of the experiment. In the "Act-It-Out" game, cluster randomization made it easy for participants to collaborate with peers.

Simple randomization was then applied within each session by having participants draw numbers from a box to assign them to groups, ensuring equal chances and comparable groups. This true experimental design controlled confounding factors through random assignment.

Instrument

The study used two self-made questionnaires to assess participants' motivation levels in the Monetary Reward Group and the Grade-Points Reward Group. Each questionnaire utilized a 5-point Likert Scale (1 = *Strongly Disagree* to 5 = *Strongly Agree*) to measure various aspects of motivation, including excitement, perceived task value, effort, enjoyment, and overall satisfaction with the rewards.

The questionnaires were reviewed and validated by three licensed psychometricians, ensuring alignment with the study's objectives and adherence to psychological measurement standards. To assess the reliability of the questionnaires, interrater reliability was calculated using a Kappa Calculator. Since all three raters provided the same ratings for each item, the agreement was 100%, resulting in a Kappa value of 1, indicating perfect agreement and strong consistency among the raters. The game activity procedure, used as the experimental basis for the study, was standardized to ensure consistency across both groups in terms of task type, difficulty, instructions, and duration. Content validity was ensured through the expert review process, confirming that the items accurately reflect the study's objectives, and construct validity was supported by the alignment of questionnaire responses with observed participant engagement during the task.

Comment [5]: The study uses self-made questionnaires, which, despite validation, may lack the robustness of established instruments. Consider adopting standardized motivation scales or validate the self-made questionnaires with a larger expert panel and pilot study.

Procedure and Design

The 40 participants were randomly assigned to two groups: the money-reward group and the grade-reward group, with 20 participants in each. The experiment was conducted in two separate sessions: the first session for the money-reward group and the second session for the grade-reward group. To ensure the validity of the experiment and eliminate selection bias, cluster randomization was implemented. Through a random lottery process, the first session was assigned as the money-reward group, and the second session was assigned as the grade-reward group. Despite the sessions being conducted at different time frames, both sessions were

scheduled in the morning to maintain fairness and prevent bias and other extraneous variables.

Each session began with the participants being provided with a brief overview of the experiment, after which they were asked to sign an informed consent form. The 20 participants were then randomly split into two groups through simple randomization by drawing a number from the box. As the participants were seated comfortably, one of the researchers held a box containing ten #1s and ten #2s, and each participant drew a number to determine their group. This method of random assignment ensured that each participant had an equal chance of being placed in either group. Once all participants had drawn their numbers, they were directed to their designated sides of the room and asked to settle comfortably.

The researchers introduced themselves, welcomed the participants, and revealed the name of the game to be played. Participants were then asked for consent to document the whole activity or experiment. One researcher consistently explained the game instructions to ensure uniformity across both groups. Participants were informed that the winning team would receive a monetary reward (₱20) or grade points reward (an additional 10 points from the teacher), depending on which session they belong to.

The activity played was an “act-it-out” game. The speaker would announce a word or setting for the participants to act out. Participants were given 10 seconds to perform their actions, then 1 minute to explain their scenario. The game was repeated for four times.

After the game, participants completed a self-made questionnaire designed to assess their motivation levels in response to the potential rewards. Depending on the session, participants filled out either the Self-Made Questionnaire on Monetary Reward or the Self-Made Questionnaire on Grade Points Reward. After all questionnaires were completed, one of the researchers conducted the debriefing. The purpose and whole nature of the study were explained, and the researcher revealed that all members of both groups would actually receive rewards (monetary or grade points) regardless of the game’s outcome. Finally, the researchers thanked the participants for their cooperation and provided them with sweets as a token of appreciation.

This study used a true experimental design with random assignment. In a true experimental design, often considered the “gold standard” of research designs, the researcher(s) manipulate one or more independent variables, randomly assign subjects to different treatment levels, and observe the effects of the treatments on outcomes (DeCarlo et al., 2022). In this case, each cluster was placed in either the monetary-reward or grade-reward condition, and each participant within the two groups was further randomized into different subgroups. This study also implemented a between-subjects design. In this design, each participant is placed in one treatment condition, and the researchers analyze the participants’ responses to assess the differences between the groups (Simkus, 2024). The post-activity evaluation scores of monetary-reward and grade-reward groups were compared using an independent samples t-test.

Ethical Considerations

Participants were provided with an informed consent form outlining the study’s purpose, procedures, potential risks, and their right to withdraw at any time. Consent was obtained before the experiment began. Participant data were anonymized, and all personal information was kept confidential. Only collected data were reported in research findings, and secure methods were used to store all data.

After the experiment, participants were debriefed for clarifications, for them to understand the purpose and the nature of the reward conditions. They also had the opportunity to ask questions and express concerns. Participation was voluntary, and participants could withdraw at any time without penalty. All collected data were purely for the purpose of this study, and no personal identifiers were included.

Comment [6]: Although ethical practices are described, there is no mention of approval from an institutional ethics board.
Clearly state whether ethical approval was obtained, specifying the approving body of the institution you used.

RESULTS

Table 1. Normality Test (Shapiro Wilk)

	W	p
Monetary Reward – Grade Points Reward	0.891	0.001

Note. A low p-value suggests a violation of the assumption of normality

Table 1 shows that Shapiro-Wilk test was conducted to assess the normality of the data. For the types of reward, the results indicated a significant deviation from normality, W = 0.891, p = 0.001. These results suggest that the assumption of normality was violated for this variable.

Table 2. Group Descriptives

	N	Mean	Median	SD	SE
Monetary	20	3.78	3.93	0.661	0.148
Grade Points	20	4.51	4.67	0.340	0.0760

Table 2 shows that the mean of the **monetary reward type** was M = 3.78 (SD = 0.661, SE = 0.148), while the mean of **grade points reward type** was M = 4.51 (SD = 0.340, SE = 0.0760). Each condition included N = 20 participants.

Table 3. Independent Samples t-Test/Welch's t

	Statistic	df	p		Effect Size
Student's t	4.39	38.0	<.001	Cohen's d	1.39
Welch's t	4.39	28.4	<.001	Cohen's d	1.39

Note. H_a μ Monetary ≠ μ Grade Points

[a] Levene's test is significant (p < .05), suggesting a violation of the assumption of equal variances

Table 3 shows that independent-samples t-test was conducted to compare **student motivation** after exposure to **monetary reward** and **grade points reward**. The results indicated a statistically significant difference in student motivation scores between the two reward conditions, t (28.4) = 4.39, p = .001, d = 1.39. Participants exposed to grade points reward (M = 4.51, SD = 0.340) reported higher motivation scores compared to those exposed to monetary reward (M = 3.78, SD = 0.661). The effect size, as measured by Cohen's d, suggests a large effect of reward types on motivation. Since the p-value was less than .05, the null hypothesis, which stated that there is no difference in student motivation between monetary rewards and

grade points rewards, was rejected. These findings suggest that the difference is not only statistically significant but also meaningful in practical terms.

DISCUSSION

The study found that students who received grade points as a reward had significantly higher motivation levels (M = 4.51, SD = 0.340) compared to those who received a monetary reward (M = 3.78, SD = 0.661), with the statistical analysis confirming a significant difference (t (28.4) = 4.39, p = 0.001) and a large effect size (d = 1.39). This suggests that, **grade points were a more effective motivator than monetary rewards** for student motivation.

The findings align with several studies suggesting that **intrinsic motivation** (e.g., motivation driven by personal achievement, learning, or recognition) is often more impactful than **extrinsic motivation** (e.g., monetary rewards). In particular, research on the **self-determination theory** (Ryan & Deci, 2020) supports the idea that rewards tied to competence or achievement (like grade points) can have a stronger influence on intrinsic motivation, compared to external rewards like money, which are considered extrinsic motivators. For example, Zhong & Yang (2021) examined this effect in workplace environments, showing that when employees were regularly rewarded for tasks they initially enjoyed, their long-term motivation and engagement decreased. This aligns with earlier research but highlights the real-world implications in professional settings, where intrinsic motivation is often necessary for long-term job satisfaction and creativity.

Comment [7]: The discussion lacks depth in explaining why grade-point rewards are more effective. The connection to intrinsic motivation is mentioned but not fully explored.
Deepen the discussion by elaborating on the psychological mechanisms (e.g., competence, relatedness) that might explain the observed results.

The study adds weight to the findings of Ryan & Deci (2020), which suggest that rewards aligned with an individual's personal goals and values (like academic performance) are more likely to foster long-term motivation. In the context of students, grade points serve as a direct link to academic achievement, which is a high priority for many students.

According to a related study by Lai (2022), non-monetary incentives—in particular, social rewards and recognition—are essential for raising motivation in both teachers and larger educational contexts. According to the study, these incentives are typically more powerful and long-lasting than monetary awards, which might not have a big impact on academic achievement or long-term motivation.

Grade points are more motivating than monetary rewards, according to the studies, but this is not always the case. Other research, like Abela et al. (2020), emphasize that financial incentives can be more motivating when they are linked to more immediate, realistic goals, particularly for students who are more concerned with their financial well-being.

Several factors explain the differences observed in this study. First, the type of task could play a role: the "act-it-out" game is a more intrinsic task, where students are motivated by personal challenge and achievement rather than external rewards. Research suggests that creative tasks, such as role-playing, often benefit more from intrinsic rewards, which makes academic rewards like grade points more relevant in such settings. Second, individual differences in how students value rewards might affect the results. Some students might place higher value on monetary rewards for spending on leisure or necessities, which could influence their motivation. This might be more pronounced if the sample is relatively homogenous in terms of academic priorities (Ryan & Deci, 2020). Lastly, cultural context could also contribute to the observed differences. In collectivist societies like the Philippines, where educational success is highly valued, academic rewards may be perceived as more meaningful than monetary ones. In contrast, individualistic cultures might place greater emphasis on financial rewards (Maurya & Sahu, 2021).

Comment [8]: Cultural context

Comment [9]: The discussion mentions cultural influences but does not integrate this aspect into the analysis comprehensively.
Include a dedicated section analyzing how cultural factors might influence the preference for grade-based versus monetary rewards.

The study implies that grade points rewards are a more effective way to increase student motivation than monetary rewards. This is consistent with the Self-Determination Theory (SDT), which claims that rewards from outside sources affect motivation according to how well they fit with people's values and long-term goals (Ryan & Deci, 2020). Grade point rewards that are linked to academic accomplishment serve to maintain motivation and engagement by strengthening intrinsic goals and task value.

These results are in line with Eisenberger and Aselage (2024), who pointed out that financial incentives frequently aim for short-term objectives, and Eikmeier (2019), who emphasized the motivational impact of grade-based incentives like extra credit. Grade-based rewards, in contrast, effectively support intrinsic motivation when associated to academic accomplishment.

There are few limitations to this study, and it is important to acknowledge them. First, the researchers aimed to include undergraduate students from all year levels; however, due to time constraints and differences in availability, only first-year and second-year students participated. Second, although both sessions were conducted in the morning, there are other factors, such as participants' schedules, energy levels, and morning routines that were overlooked and may have caused variability. Third, the reliance on self-made questionnaires was a major challenge since it was difficult to find valid and reliable pre-existing questionnaires relevant to the study. To address this, the researchers went through two rounds of validation of the self-made questionnaires before they were finalized and approved by licensed psychometricians.

The limitations of this study should be addressed in future research to improve its rigor and generalizability. First, to guarantee a more representative sample and explore if year level affects the effectiveness of reward kinds, future research could involve participants from all undergraduate year levels. Second, to reduce variability and guarantee consistent contexts, researchers should think about adjusting for other variables like participants' schedules, energy levels, and morning routines. Third, the dependability of the results would be increased by using well accepted and pre- validated questionnaires. If appropriate pre-existing tools are not available, researchers should devote enough time and money to creating and thoroughly validating new instruments, possibly engaging a larger panel of experts and piloting them with a wider population. In addition, broadening the study to include a more varied sample of individuals from various institutions or cultural backgrounds may provide information on how broadly applicable the results are in different educational settings. Lastly, non-monetary benefits like recognition or social incentives may be included in future research.

CONCLUSION

The results of this study revealed the reward types' significant deviation from normality (W = 0.891, p = 0.001) using the Shapiro-Wilk Test, demonstrating that there is violation in the normality assumption. In addition, participants in the grade (points) reward condition reported a higher mean motivation score (M = 4.51, SD = 0.340) than those in the monetary reward condition (M = 3.78, SD = 0.661). The two

reward types' motivation scores also differed significantly, according to an independent-samples t- test (t (28.4) = 4.39, p =.001, d =1.39). Based on the huge effect size, grade (points) reward notably enhances student motivation more than monetary reward do.

The results answered that there is a significant difference in the motivation levels between students incentivized by money and those incentivized by grade points, receiving monetary rewards does not enhance students' motivation more effectively than grade points rewards, and it emphasized the importance of aligning students' priorities with appropriate incentives. Compared to monetary rewards, which prioritizes immediate gains, grade point rewards that are linked to long-term academic goals appear to be more effective at raising motivation. These findings indicate that grade- based (points) rewards can promote engagement and intrinsic motivation in learning environments. Furthermore, these insights can be applied by educators to create incentive programs that enhance student motivation. Educational institutions could encourage consistent effort and better achievement by using grade- based (points) reward systems in classroom activities or assignments.

REFERENCES

Abela, J. R. Z., et al. (2020). The impact of monetary rewards on academic motivation: A study on university students. Journal of Behavioral Education, 29(4), 675- 692.

Capuyan, V., Caramto, A., Dionisio, J., Dionesio, M., Galangey, I., Pasion, M. (2024). Extrinsic and Intrinsic Motivation and Academic Performance of Pupils at Quezon District Public Elementary Schools. Cognizance Journal of Multidisciplinary Studies, Vol.4, Issue.5, May 2024, pg. 54-66

Dean, M. (2019). Why is it important to have a classroom reward system? – Classcraft Blog. Resource Hub for Schools and Districts.

DeCarlo, M., Cummings, C., & Agnelli, K. (2022, October 9). True experimental design. Social Sci LibreTexts. https://socialsci.libretexts.org/Under_Construction/Graduate_research_methods_in_social_work_

Eikmeier, A. (2019). To Give or Not to Give: The Influence of External Rewards on Student Motivation and Performance. https://scholarworks.calstate.edu/downloads/qf85nb63r

Eisenberger, R., & Aselage, J. (2024). Incremental effects of reward on experienced performance pressure: Positive outcomes for intrinsic interest and creativity. Journal of Organizational Behavior. 30. 95 - 117. 10.1002/job.543.

Foltz, K.A., Clements, M., Fallon, A., & Stinson, A. (2021). Extra credit and decision-making: Understanding college students' motivation to attend on-campus events. Journal of Campus Activities Practice and Scholarship, 3(2), 5-15. https://doi.org/10.52499/2021018

Jansen, T., Meyer, J., Wigfield, A., & Möller, J. (2022). Which student and instructional variables are most strongly related to academic motivation in K-12 education? A systematic review of meta-analyses. Psychological Bulletin, 148(1-2), 1–26. https://doi.org/10.1037/BUL0000354

Koenka, A. C. (2020). Academic motivation theories revisited: An interactive dialog between motivation scholars on recent contributions, underexplored issues, and future directions. Contemporary Educational Psychology, 61, 101831. https://doi.org/10.1016/j.cedpsych.2019.101831

Lai, E. (2022). The role of non-monetary incentives in educational motivation. Journal of Educational Psychology, 114(4), 732–744.

Lintner, T. (2024). Effects of performance-based financial incentives on higher education students: A meta-analysis using causal evidence. Educational Research Review, Volume 44, 100621, ISSN 1747-938X. https://doi.org/10.1016/j.edurev.2024.100621.

Maurya, U. S., & Sahu, P. K. (2021). The role of national culture in innovation and socioeconomic development: Comparing individualistic and collectivist

orientations. International Journal of Innovation and Development, 16(3), 202218.

Qasserras, L., Asmae, A., Qasserras, M., & Anasse, K. (2023). The effects of grades on the motivation and academic performance of Moroccan high school students. International Journal for Multidisciplinary Research, 5(2). https://doi.org/10.36948/ijfmr.2023.v05i02.2341

Roeser, R. W. (2022, September 30). Education and the Heart of Social Change - Mind & Life Institute. Mind & Life Institute. https://www.mindandlife.org/insight/education-and-the-heart-of-social-change/

Ryan, E., & Deci, E. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: definitions, theory, practices, and future directions. Contemporary Educational Psychology, Volume 61, Article ID: 101860. https://doi.org/10.1016/j.cedpsych.2020.101860

Simkus, J. (2024, June 10). Between-Subjects Design: Overview & Examples. https://www.simplypsychology.org/between-subjects-design.html

Viray-Castillejos, B. (2022). Teachers' Use of Reward System: Inputs for Students Motivation Enhancement. https://ejournals.ph/article.php?id=18290

Zhong, J., & Yang, Y. (2021). The impact of external rewards on intrinsic motivation in the workplace: A longitudinal study. Journal of Applied Psychology, 106(7), 1100-1113.