Grade Inflation: Comparison of Competencies Among Public Schools Before and During The COVID-19 Pandemic

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Abstract
The aim of this study is to find traces of grade inflation during the pandemic on selected public schools in the Division of Bulacan. This phenomenon has been an issue across educational institutions since there was an implemented leniency on assessments during this period. The researchers focused on the average performance of the schools in the mathematics subject, which came from two different school years: prior and during the pandemic. Data was analyzed using frequency distribution and descriptive statistics. Then, the grade differences between the two time periods were analyzed using a paired t-test. Findings reveal a significant increase in the general average of the mathematics subject per school, which jumped from 87.93 to 91.7. Implications include a possible existence of grade inflation towards the public schools. The researchers suggest that students that will graduate during the pandemic period may not be as competent as their previous predecessors.

Keywords: Grade Inflation, Pandemic, Mathematics, Average Performance

Introduction

The advent of the pandemic has increased the burden on teachers in conducting several types of classes. At the start of the unprecedented event, there have been many challenges in the implementation of remote learning across the globe. Institutions have made innovations soon after, but some countries have been suffering its effect on the education sector.

Particularly, in the Philippines, there has been a problem regarding the ever-evolving educational system, which has strained students and teachers alike. Ever since the Department of Education implemented the new K-12 curriculum, lots of overhaul in terms of grading system, merit system, and content was applied quickly. In emphasis, the Department of Education in the country has introduced a series of orders that would mandate these changes. For instance, DepEd Order (DO) No. 36 s. 2016 cited new policies in recognizing students who have shown competence per grading period (Department of Education, 2016). The old system, which introduced an ordinal list of top achievers, was abolished, `and replaced by a merit system based on a specific range of grades. However, there were changes brought on the DO No. 018, s. 2021 version suspended some awards that are meant to be awarded in a face-to-face setting (Department of Education, 2021).

On the other hand, these changes that have been presented would lead to another problem, which is grade inflation. Many factors have been identified by researchers, including the Students Evaluations of Teaching (SETS). Stroebe (2020) noted that these tools do not assess teaching performance, and university administrators' extensive use in hiring, promotion, and merit increases choices encourages ineffective teaching and grade inflation. Students must earn high grades, and faculty members must earn high SETs. In the Philippines' case, grade inflation has been prevalent since private schools tend to change their teaching roster every school year because of the implementation of SETs.

Nordin, Heckley, and Gerdtham (2019) emphasized that grade inflation is unjust and may imply poor human resource allocation. They have noted that its possible explanation is the difficulty quantifying and predicting causal grade inflation effects. They find that grade inflation affects earnings mostly through the university and field of education chosen rather than through enrollment itself because attending higher-quality colleges and pursuing high-paying fields of education significantly affect earnings. On the other side, this culture harms high-skilled students enrolled in upper secondary schools without grade inflation and, surprise, low-skilled women enrolled in "lenient" schools. This act results in widespread inequity and, possibly, adverse welfare implications.

Literature Review

The phenomenon of grade inflation occurs when students are not given grades based on their merit, knowledge, or effort but rather are given greater grades than what they deserve or should receive. Also, there is an upward trend in awarded grades with the absence of a matching improvement in academic excellence over some time (Khan, Munir, & Afzal, 2021). Chowdury (2018) emphasized that grades or marks are crucial for sorting and signaling pupils in academic institutions worldwide, from primary schools to colleges. Students' grades should be indicative of their learning outcomes. However, during the pandemic, most teachers have become lenient on tasks because of the policies implemented by different institutions, which contributed to the false sense of students that they have been performing well. Baglione and Smith's (2022) research revealed that students believe

that *A* grades are not given excessively; yet they believe that some students earn higher grades than they deserve. Thus, grades are viewed as a reliable indicator of accomplishment. There were no significant differences in perceptions of grade inflation by gender or GPA. However, women believe instructors give higher grades for greater student assessments (Baglione & Smith, 2022).

On the same token, researchers conducted a similar study that highlighted the consequence of the pandemic on higher education. The researchers used interviews, weekly diaries, and documentation about the course's transition to the online environment to collect data. The findings of their study indicate that there were disparities in instructors' ability to migrate online, available technology, course delivery issues and modifications, and communication with students. Students' reactions to transferring online were similar, with minor grade inflation (Vigil, Marian, & Szabo, 2020; Schwartz, Szabo, & Mahiko, 2020).

Objectives of the Study

The general aim of the study is to present evidence of the grade inflation phenomenon in the Division of Bulacan using the average competencies of schools in terms of their student's performance in the Grade 10 Mathematics before and during the pandemic.

Specifically, the researchers sought to attain the following objectives:

- To present distribution of the schools' average grades in Mathematics before and during the pandemic;
- To present descriptive statistics that would emphasize the grade inflation before and during the pandemic, and
- To compare the competencies of the schools using their students' average Grade 10 Mathematics performance before and during the pandemic.

Methods

In order to know if there is indeed an instance of grade inflation in the public high schools of Bulacan, Philippines, the researchers pooled data from the schools which are under the jurisdiction of the Division of Bulacan. Overall, there were 86 schools in the division. The researchers have sought permissions from the institution they are connected to and wrote a letter of permission to the said division and were handed a data containing the average performance of the students in the Grade 10 Mathematics subject per school.

Moreover, the researchers used cross-sectional data that was taken from two points in time. Particularly, the researchers were given the data from two (2) school years, SY 2019 – 2020 and SY 2020 – 2021 which captured the average performance of the students per school in Grade 10 mathematics before and during the advent of the pandemic.

Consequently, the data was analyzed using various statistical methods and with the aid of computer software. The average grades among the schools were analyzed using grouped frequency distribution and descriptive statistics such as the measures of central tendency and variability. Finally, in order to know if there is a presence of possible grade inflation, the researchers used an independent samples t-test to compare the performance of the schools in terms of their students' competencies in Grade 10 Mathematics before and during the pandemic.

Results

The researchers presented the following findings sequentially to attain the research objectives.

Frequency Distribution of the Schools' Mathematics Performance.

There are five schools in the SY 2019-2020 with an average grade equal to or less than 79.73, equivalent to 5.8% of the distribution. However, no schools obtained such average grades for SY 2020-2021.

Moreover, sixteen schools in the SY 2019-2020 obtained an average grade within the class interval of 79.74-84.32, equivalent to 18.6% of the distribution. A major decrease has been seen in the succeeding school year as there are only two schools (2.3%) with average grades falling within the range. Thirty-two schools in the SY 2019-2020 obtained an average grade within the class interval of 84.33-88.98, equivalent to 37.2% of the distribution. A major decrease has been seen in the succeeding school year as there are only 11 schools (12.8%) with average grades falling within the range. For SY 2019-2020, this is the median class interval.

Next, nineteen schools in the SY 2019-2020 obtained an average grade within the class interval of 88.99 - 93.64, equivalent to 22.1% of the distribution. A major increase has been seen in the succeeding school year as there are 53 schools (61.6%) with average grades falling within the range. The class interval is noted as the modal class for the two school years. Furthermore, for SY 2020-2021, this is the median class interval. Ten schools in the SY 2019-2020 obtained an average grade within the class interval of 93.65 - 97.71, equivalent to 11.6% of the distribution. An increase has been seen in the succeeding school year as there are 19 schools (22.1%) with average grades falling within the range.

Furthermore, there are four schools in the SY 2019-2020 with an average grade greater than or equal to 97.72, equivalent to 4.7% of the distribution. However, there is only a single school (1.2%) that obtained such an average grade for SY 2020-2021.

Learner performance was different when the average grades in Mathematics for 2019-2020 and 2020-2021 were compared. This pattern could be affected by the Department of Education's grade policies. The grading systems used in the two school years were different, with SY 2019-2020 using DepEd Order No. 8 S. 2015, and SY 2020-2021, on the other hand, used Deped Order No. 31 S. 2020. The quarterly assessment component was removed during the pandemic, which was a significant shift in the grade systems. This result may be due to the Answer keys being provided at the end of each self-learning module in all academic disciplines. This notion could be one of the reasons for the improvement in math skills among students. The answer keys' main purpose is to assist parents in helping their children answer activities.

Table 1. *Grouped Frequency Distribution of Schools' Average Grades in Mathematics 10*

School Year	Grades (Classes)	Frequency	Percent
2019 – 2020	<= 79.73	5	5.8
	79.74 - 84.32	16	18.6
	84.33 - 88.98	32	37.2
	88.99 - 93.64	19	22.1
	93.65 - 97.71	10	11.6
	97.72+	4	4.7
	Total	**86**	**100**
2020 – 2021	79.74 - 84.32	2	2.3
	84.33 - 88.98	11	12.8
	88.99 - 93.64	53	61.6
	93.65 - 97.71	19	22.1
	97.72+	1	1.2
	Total	**86**	**100**

Average Grades in Mathematics.

In terms of the mean, the year 2021 has a greater average grade in Mathematics 10 across 86 sampled schools, with a value of 91.7019, compared to the mean for 2019, which is 87.9343. Under DO 8 s., 2015 and DO 31 s., 2020, the average grade of schools for 2019 can be classified as Very Satisfactory, while an Outstanding rating for 2021.

The average grades for 2021 are more bunched together than 2019, as attested by the standard deviation for both years. The higher the SD, the more dispersed the data appears.

Since the skewness for both periods is in a negative value, the distribution is negatively distributed or skewed to the left, implying a satisfactory performance within the groups, as the higher valued scores congregate on the right side of the distribution. Furthermore, since the mean is less than the median, the distribution graphs adhere to the skewness value, implying a negatively distributed distribution. Since both values for kurtosis are < 3, it implies that the distribution is platykurtic.

Table 2. *Descriptive Statistics of Schools' Average Grades in Mathematics*

Descriptive Statistics	***SY 2019 – 2020***	***SY 2020 – 2020***
Mean	87.9343	91.7019
Median	88.055	91.795
Std. Deviation	5.52005	3.19296
Variance	30.471	10.195
Skewness	-0.129	-0.405
Kurtosis	0.152	0.988
Range	27.64	17.37

Comparison of Competencies.

To validate the significant increase in the average grades in mathematics across two time periods, the researchers used a two-tailed independent samples t-test. The previous section

showed that the mean grade from SY 2019 – 2020 is 87.93, and the mean grade from SY 2020 – 2021 is 91.7.

A preliminary test was done to choose whether equal variances should be assumed. Upon looking at the p-value of Levene's Test for Equality of Variances, the assumption that there are unequal variances is assumed since its value is less than 0.05, which is the significance level.

A closer look at the independent samples t-test revealed a computed t-value of -5.479 with a p-value of 0.000. Since the t-value exceeded the confidence interval of (-5.12741, -2.40771), the researchers present sufficient evidence that there is a significant difference in the Mathematics average grade of schools across the two different periods. It means that the researchers could also conclude that there was a significant increase in the competency of the public schools before and during the pandemic. However, a possible phenomenon of grade inflation might be taking place.

Table 3. *Comparison of Schools' Average Grades in Mathematics*

Independent Samples t-test	**Statistics**		**Grades**	
			Equal variances assumed	***Equal variances not assumed***
Levene's Test for Equality of Variances	F		17.444	
	Sig.		.000	
t-test for Equality of Means	t		-5.479	-5.479
	df		170	136.153
	Sig. (2-tailed)		.000	.000
	Mean Difference		-3.76756	-3.76756
	Std. Error Difference		0.68765	0.68765
	95% Confidence Interval of the Difference	Lower	-5.12499	-5.12741
		Upper	-2.41013	-2.40771

Discussion

The study's findings indicate that the average grade in Grade 10 Mathematics increased by approximately 3.77 points before and during the pandemic. However, there is a growing suspicion of grade inflation. As Khan, Munir, and Afzal (2021) stated, grade inflation occurs when students are not assigned grades based on their merit, knowledge, or effort but are instead assigned higher grades than they deserve or should earn. With that considered, this study has a disadvantage in that no follow-up interviews with public-school teachers were conducted due to the pandemic's limits and their calendar constraints.

Consequently, the researchers propose that future research should focus on private schools, as most of them use SETS. Strobe (2020) elaborates that these instruments do not evaluate teaching performance, and their widespread usage by university administrators in determining hiring, promotion, and merit increase decisions promote inadequate teaching and grade inflation.

Conclusion

In conclusion, the researchers are in the affirmative to find traces of grade inflation in the Division of Bulacan. Moreover, they also suspect that the lenient practices of teachers have led to this phenomenon. While there is no suspicion about the students' competencies, the researchers reiterate the importance of upholding integrity while considering the needs of the students during the pandemic.

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