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Variation in the Grading System: Boon or Bane

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Abstract – Affiliate colleges of their State Universities have been provided autonomy to run their courses and assess the Management graduates. As a result Universities, adapt various methods of assessment, most of them use either regression method or interpolation method to estimate the percentages or grades. Although by the method of grading students for their assessment, instead of actual marks it has increased many students' confidence level, but it has led to variations and hence creating ambiguity, when a third party wants to assign a rank or percentile for large number of students. Input data used for the study is different mark sheets from which the grades of two different universities with same grade are this variation due to the grading of students will not be able to make out the actual marks obtained by the individual student. Due to this approximation of estimating the total marks obtained by a student leads to variation which is boon for few and bane for others. This paper address the nuances faced by the students due to variation while converting grades into actual marks obtained by the students, when not mentioned explicitly in the student's report card. One of the suggested measures is to standardize the assessment reports across the Country which serves not only all the stakeholders of education industry, but also to the third party.

Keywords – Assessment, Grades, Variation, Affiliation, Higher Education, Regression Method, Interpolation Method

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INTRODUCTION

Indian education caters to a large number of students through a multidimensional system of 756 universities, 35,500 affiliated colleges and more than 20 million enrolled students. Due to the 'affiliation' as well as a mix of aided and self-financed Institutions, the operating structure of degree granting institutions is very complex. Around 37% students are enrolled in Arts, 18% each in science and commerce/management and 16% engineering and technology and a small percentage in the other disciplines.

During Early times, marking was done by the educators. Adapting to the global Culture Now the Educational Performance of graduate is measured by the yardstick of "Grades". The system of Grading is a technique used by the professor's to assess the student's educational performance. The system generally followed by the institutes is by allocating grades like O, A+, A, A- , A+, B+ ,B, B- , and so on to evaluate the performance of a student in internal tests in any one or more of the forms of Multiple Choice questions, quiz, assignments, projects , student presentation, etc. and written examination as the final Examination.

The affiliate colleges are given autonomy to conduct the exams under the broader guidelines of their affiliated university for the students enrolled in these colleges. Though the grading system is worthy to motivate students but when it comes to assigning final marks obtained out of the total marks, it is quite ambiguous. This is because even though the ratio of internal to external is 40:60 usually fixed by the university granting the autonomy, what is observed by some institutes is quite different like 65:35, 75: 25 etc. It leads to inordinate confusion when there is requirement of ranking on their merit list.

Unless the documents are verified sometimes it is not even clear as to how the marks have been calculated making it difficult to understand the actual marks obtained by the graduate. This paper brings out the existing technical methods of how the college grades are calculated. This study highlights the variation within and between the grades amongst the colleges, and suggests a standard method of grading across the country so that the students can be given a fair chance of taking part in the higher education admission process. The major focus of the study is to bring out the consequences of the grading system and the challenges faced by the students when

applying for higher education. These issues arise since different colleges use different varieties of mark sheets with different grade points including 4 point scale, 5 point scale, 7 point and 10 point scale and follow diverse grading systems without clearly mentioning the range for the grades. This variation shoes the ugly face when the students appear for common entrance exam like CAT, CET MHCET, and GMAT etc. This variation of marks is a boon for few students whilst a bane for the others.

LITERATURE REVIEW

According to Schneider and Hutt (2013) Grades were one of the primary means of Communication between the institutions and the distant third parties. Grading students on 100 Point scale was generally adapted from Harvard University. Harvard University rated as rank 1 in the USA was the initial origin of the grading system from the "A"–"F" which is familiar to most of the faculty. "F" indicate Fail and E below 75%. Starch (2013) argued that grading on 100 point scale found to be highly unreliable as there was variation observed amongst the teachers which maintaining consistency on the language and technical subjects. Palmer (2013) stated that it was decided to drop during 20th century Grade " E " was dropped from the scale as there is possibility that third party interpreted as Excellent instead worst performer. Thus Researcher Finkelstein felt that 100 point scale works while dropping E and the new scale retained "F "to indicate "Fail". Kohn (1999) grades are psychologically harmful. Jaschik (2009) grading systems remain controversial and are in debate till today. He further added that many colleges have rejected numerical and categorical grading altogether; adding written evaluations by faculty will serve as feedback for students in their development. Yale University (2013) is still considering changes to its grading system. Nicol and Macfarlane-Dick, 2006, crisp, 2007 points out the fact that there could be increased pressure for faculty to grade and to provide written feedback while grading. In general Feedback is categorized into two ways (1) Evaluative Feedback and Descriptive Feedback. Evaluative feedback graded in terms of letter evaluates student work, whereas according to Brookhart (2008) descriptive feedback gives information to a student to become more competent. Further results of comparative study done by the Butler and Nisan (1986) on the students achievement found that students who received descriptive feedback with written statements outperform the students who received evaluative feedback and no feedback. Also, evaluative feedback did not show any evidence in enhancing the students' performance in the Problem solving skills.

RESEARCH OBJECTIVES:

- To study the consequences of the different methods of Gradation adopted by the state universities of the management graduates on the third party.
- To analyze the impact of variation between the grades of the management graduates.
- To study the impact of variation within the grades of the management graduates variation on the third party.

RESEARCH METHODOLOGY:

Research design is well crafted to explore the consequences of the grading system of the state universities. The study of population includes major grading system of Indian universities and their respective affiliated colleges. Sampling unit consists management graduates of 20 leading universities of Maharashtra and their affiliated Colleges. The type of research used for the study is Causal. The quantitative method of research is used for this study. The sampling technique used is probability sampling- Multiple stage sampling. The data type is secondary in nature. The mark sheets and the corresponding grading system is analyzed in detail of various Universities / Colleges. Statistical techniques namely Correlation, Percentile, Regression are used for analyzing the data. Microsoft Excel solver is used for computing Correlation and Regression. The research Process followed to answer the question how to calculate percentiles of a graduate when the candidate applies to a higher education, where the students' percentile needs to be worked out.

STUDY HYPOTHESIS

H01 There is no significant difference between the grading systems employed by different methods adopted by the Universities.

H11 There is a significant difference between the grading systems employed by different methods adopted by the Universities.

DATA ANALYSIS AND INTERPRETATION:

Data is analyzed using extensive literature review as grading system is more of qualitative study.

Data Analysis and Interpretation

Universities are given autonomy for conducting exam and grading their students. Students are evaluated by conducting internal assessments by one or more of the following forms, Multiple Choice Questions, quiz exams, assignments which has 40% weightage and end term written or Projects of 60%. The ratio of Internal / External could be 75%: 25% and 65%: 35%. Further the universities choose different grade points to grade their students. This study demonstrates the two methods used by universities. Interpolation

Method is used by University A and Regression Method by University B.

Universities vary in various grade point scales namely 4 Point scale, 5point scale , 7 point Scale and 10 Point scale etc. To prove this hypothesis two grading systems of two different institutions have been analyzed for University A and University B.

University B uses Regression method of grading by deriving regression equation and documented in their examination Department. However this equation is not made available on the mark sheet where the grades have been allotted. Neither there is clear mention of Marks obtained and the grading system. Here we will take an example in 7 point scale(Case A) and 10-point scale (Case B) and see how GPA (Grade Point Average) and CGPA (Cumulative Grade Point Average) are calculated.

Case University A

Method 1 (A) Grading on 7 Point Scale

A) GPA –Grade Point Average

Grade Point Average for each term will be calculated by dividing the weighted aggregate of the grade points (weight of Ci='3' is assigned to full credit course and Ci='1.5' is assigned to half credit course) obtained by a student in various courses of a term divided by the total number of course credits in the term.

If Ci denote the credit point of the course, and Gi denote the grade point (value of the Grade assigned) of a course in a term then

$$GPA = \frac{\sum Ci * Gi}{\sum Ci} \text{ for the term. (Semester-I)}$$

B) CGPA – Cumulative Grade Point Average

Cumulative Grade point Average at the end of term / year is the weighted average of the grade points obtained for all the courses registered up to and including that term / year, the weights being the respective course credits.

Table 1 Calculation of CGPA/ SGPA for 7 Point Scale

Range of percentage of Marks	Letter Grade	Grade Point	Performance	SGPA / CGPA Range
75 and above	O	7	Outstanding	6.50 – 7
70-74.99	A	6	Excellent	5.50 – 6.49
65-69.99	B	5	Very Good	4.50 – 5.49
60-64.99	C	4	Good	3.50 – 4.49
55-59.99	D	3	Fair	2.50 – 3.49
50-54.99	E	2	Average	2.00 – 2.49
Below 50	F	1	Fail	< 2
Absent	AB	0	Fail	

The number of subjects for the course in each Semester could vary but the point of scale for Gradation is kept same in this case 7 and will be fixed and followed as point 7 throughout the semester. Below table shows the actual calculation of GPA and CGPA.

Table 2 illustrates GPA /CGPA calculation for 7 point scale for Semester 1

	GPA Calculation SEMESTER –I					
Sr. No	Course	Credits Col 1 Ci	Marks obtained	Grade	GP earned (col 2) Gi	GP=Ci*Gi Col 1 * Col 2
1	Economics	3	76	O	7	21
2	Statistics	3	82	O	7	21
3	English	3	63	C	4	12
4	Costing	1.5	29	D	3	4.5
	Total Credits Earned	10.5	250			58.5
	% marks	71.4				

Calculation of GPA / CGPA for 10 point scale is illustrated in the Table 3

Range of percentage of Marks	Letter Grade	Grade Point	Performance	SGPA / CGPA Range
80 and above	O	10	Outstanding	9.51 – 10
75-79.99	A+	9	Excellent	8.51 – 9.50
70-74.99	A	8	Very Good	7.51 – 8.50
65-69.99	B+	7	Good	6.51 – 7.50
60-64.99	B	6	Fair	5.51 – 6.50
55-59.99	C	5	Average	4.51 – 5.50
50-54.99	P	4	Pass	4.0 – 4.50
Below 50	F	0	Fail	< 4
Absent	AB	0	Fail	

In both the above cases, we find that the students percentage falls in the same range of marks (70 -74.99) and the actual % scored by student is 74. % obtained in 7 Point Scale is 71.8 and 10-point scale is 73.15. Whatever may be the grading system the result percentage range for CGPA in most of the cases will remain the same. Hence our suggestion is that there should be a uniform Grading system across the globe. This will enable the comparison of student's performance easier. Otherwise we need to find the equivalence between the different grading systems which is very rarely available.

Null Hypothesis H02: There is insignificant variation between the grades of the students.

Alternate Hypothesis H13: There is a significant variation between the grades of the students.

DATA ANALYSIS AND INTERPRETATION:

To prove the hypotheses (H02), input data is student's assessment data of, two state universities. As discussed, the two universities are adopting two different methods either regression or interpolation method. The following is the detailed discussion.

Calculation of GPA/CGPA to percentage by interpolation method Table 4:

Calculation of the individual student percentage using the Regression equation Method. The following Solver output depicts the regression model used by university A and Interpolation method used by University-B.

Let Y be the Percentage of Marks and GPA be the X, the independent Variable .The following Table 4 shows the actual percentages calculated both by the regression method and interpolation method given GPA.

	P		Y Regression Equation	X Interpolation
Sr, No	Percent	GPA	Y=28.52632 + 5.523711 GPA	X
1	72.00	7.87	72.00	71.80
2	67.07	7.07	67.58	67.80
3	66.13	7.13	67.91	68.10
4	69.60	7.53	70.12	70.10
5	69.07	7.20	68.30	68.45
7	68.80	7.33	69.02	69.10
8	76.27	8.40	74.93	74.45
9	70.00	7.53	70.12	70.10
10	7 4.00	8.07	73.10	72.80
11	78.00	8.67	76.42	75.80
12	76.40	8.67	76.42	75.80

Output Of solver
Regression Statistics
Multiple R
R Square
Adjusted R Square
Standard Error
Observations

ANOVA								
	df	SS	MS	F	Significance			
Regression	1.00	2061.68	2061.68	3190.46	0.00			
Residual	107.00	69.14	0.65					
Total	108.00	2130.82						
	Coefficients	Standard	t Stat	P-value	Lower 95%	Upper	Lower	Upper
Intercept	28.53	0.73	38.99	0.00	27.08	29.98	27.08	29.98
7.87	5.52	0.10	56.48	0.00	5.33	5.72	5.33	5.72

We have observed that the regression equation and interpolation method both give good estimates of the actual percentage. Bur interpolation method can be directly used across any program where as regression equation will have to be fitted for every program or discipline and has to be stated in the grade card otherwise computation of grade point average to percentage cannot be found. Thus there is a variation between the students grade when used for common ranking. We Reject H02, and conclude that there is a significant variation in their grading system.

Null Hypothesis Ho3: There is no significant impact of variation within the grades of the management graduates on the third party.

Alternative Hypothesis: H13: There is a significant impact of variation within the grades of the management graduates on the third party.

In the Education system the grading System is used to assess the educational performance of a student which is based on either the points, or range of marks. This grading system although has numerous advantages ,but does not provide an opportunity to make the student think out of the box or in other words students do not know “how to think “.The earlier type of appraisal was by the marks where the marks for all the questions were totaled to obtain the grand total marks. Universities vary in defining the grades as defined below:

- Percentage Grading – From 0 to 100 Percent.
- Alphabet grading and variations – From “A “Grade to “F” Grade.
- Norm-referenced grading – Comparing students to each other usually by Alphabet grades.
- Mastery grading – Grading students as “masters” when the student’s attainment reaches a prespecified level.
- Fail / Pass – The Common Scale to indicate success or failure.
- Standards grading – Comparing student performance to a pre-established standard of performance.
- Narrative grading -Writing qualitative statements about the student in the form of feedback.

As discussed here as there are lot of variations could arise in deciding eg passing weightage could be 50%, 55%, exceptionally grace marks passing 49% etc. Also in few instances, E grade could mislead third party whether “Excellent or Poor Grade “etc. Narrative Grading is not usually used by the universities, as the complexity increases due to large number of students undergoing assessment, specifically in India. Apart from these variations when third party wishes to know the correct percentage of a student when applied for higher education will not be able to make it. The reasons behind the same is one there is no clarity and method indicated in the student’s report card for a third party to calculate and interpret the actual marks obtained by the candidate. Secondly it is difficult for a common man to interpret the regression equation and or interpolation method. Thus there is significant variation between the grades and difficult to interpret the student’s report card by the third party.

H03 is rejected and conclude that there is a significant impact of variation within the grades of management graduates on the third party.

FINDINGS AND CONCLUSIONS:

- Every University has their own way of grading system for the graduates enrolled in the University.
- Due to variation in scales in the grading system of different universities make the third party to read and understand the real capability of the graduate.
- Grading system helps to motivate students with low IQ.
- Grading does not necessarily motivate the student with higher IQ.
- Not only the variation exists between the Universities grading system of graduates, but there exists variation within the students due to assignment of grades in a range of marks.
- Some universities divide the grade point average by the max grade point which usually under estimates/ over estimates the actual performance of the student. This causes great disadvantage during selection process.
- Grading system employs either different grade point scales or the regression equation method to calculate the grades of the individual systems
- Grading system is based more on quantitative range of scores and may not reflect true capability of a student.
- Since the Grading system is very complex to calculate and interpret as stated by the stake holders of the education,
- The grading system often creates ambiguity about what exactly is the students' position for calculating a common platform merit list.
- Few Universities have relative ranking which is again debatable.

RECOMMENDATIONS:

1. Standardize the Grading system across the country.
2. Grading system should address the needs of third party.
3. Variation between the grading systems of the institutions needs to be bare minimum.
4. Variation within the grading systems of the institutions needs to be the least.
5. Grading systems followed by the OECD countries should be implemented in order to be a global Player.
6. National Education Policy should incorporate the stakeholder's views on grading system to ensure student a "Global Citizen"

BIBLIOGRAPHY:

Jaschik, S. (January 22, 2009). Imagining college without grades. *Inside Higher Ed*

Schinske, J. Tanner, K. (2014). Teaching more by grading less (or differently). *Life Sciences Education, 13*(2), pp. 159-166

Thomas Wanner& Edward Palmer (2018) Formative self-and peer assessment for improved student learning: the crucial factors of design, teacher participation and feedback, Assessment & Evaluation in Higher Education,43:7,1032-1047,DOI: 10.1080/02602938.2018.1427698

Teaching more with grading less by Schnider and Hutt (2013)

Brookhart SM (2008). How to Give Effective Feedback to Your Students. Alexandria, VA: Association for Supervision and Curriculum Development.

Schneider J, Hutt E. (2013). Making the grade: a history of the A–F marking scheme. J Curric Stud.: pp. 1–24.

Kohn A. (1999). Punished by Rewards: The Trouble with Gold Stars, Incentive Plans, A's, Praise, and Other Bribes. New York: Houghton Mifflin Harcourt.

Starch D. (1913). Reliability and distribution of grades. Science; 38: pp. 630–636.

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