

Evaluating the Correlation between the Formative and Summative Assessments

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Abstract – Assessment is one of the important aspect of management education for MBA program in order to evaluate the performance of management graduates in order to achieve the employability. This paper examines the strength of the relationship between the formative assessments which are evaluated on the continuous basis and the summative assessments i.e. end term assessments. The research design applied to this study is ex-post facto of sample size of 430 students of academic batch (2018-20) was used. The postgraduate students of various streams namely, marketing, operations, finance and human resource were assessed and the assessment data is the primary input for this study. Random sample of 5 management specialized courses were considered for various leading business schools of state universities in Maharashtra. Analysis of the data was done using statistical methods. The findings of the Pearson correlation test established the weak positive relationship between the continuous assessments and the end term examination. Thus one of the major recommendation of the management Professor's is that it is critical that the formative assessments need to continuously improve the quality of the assessment and ensure transparency while conducting the various tests of formative assessment.

Keywords: Evaluation, Formative Assessment, Correlation, Regression, End Term Examinations, Management Graduates.

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I. INTRODUCTION:

Assessment is an art and science of gathering student's qualitative and quantitative data to understand the ability of a student and what more can they do. Assessment plays a vital role in assessing the student's acquisition of knowledge and educational performance to improve the quality of education. The primary objective of assessment is to bridge the gap between students learning and faculty's method of delivering so as to achieve the learning goals. It is two-way communication between the students and a Professor. "Assessment qualifies the business school to achieve an overall objective of having as complete documentation of growth and progress of each and every student, with which it is possible in order to make unbiased judgements in the stakeholders and practitioners in the evaluation of the education sector".

(Adebowale, O. F., & Alao, K. A. 2008).[1]. The Assessment not only helps the graduates motivate to perform better, but also helps the professor on improving the content and delivery planning so that it helps students achieve learning goals.

Universities use both the methods Formative which is on continuous assessment and end term examination for each trimester to evaluate their students' performance and grade their graduates. Continuous assessment will be generally internal evaluation of the student or team of students by the respective professor which could be in any one or more forms i.e. quiz, multiple choice questions, assignments, projects, class test, midterm test and end term examination could be written examination / project evaluation / capstone project. The weightage of marks for internal assessments which are inside the classroom and the end term generally external is of the ratio 40:60 respectively. Recent Indian Newly released National Education Policy 2020, has proposed National Assessment Center (NAC), Performance Assessment, Review and Analysis of Knowledge for Holistic Development, (PARAKH) a standard setting body under MHRD that fulfills the basic objectives of setting norms, standards and guidelines for student's assessment and evaluation.

II. REVIEW OF LITERATURE:

According to William and Black 1998, Assessment for Learning (AFL) has indicated that "AFL can benefit all the student's but is not something added

to teaching, but is integral to it". Further Black and Harrison, (2004) stated that the assessment 'offer advice to lecturers on how effectively they need to interact with students, on a day-to-day basis, enhancing their learning'. Researcher Lindsay and Clarke (2001), has described formative assessment builds a 'constructivist' in which students are involved in 'creating and reflecting on their learning'. Past research studies have proved that there is high correlation between the continuous and summative assessments.

Continuous Assessment (CA):

Continuous assessment involves an- going process of collecting and analyzing and interpreting information about student learning and helps in decision making about the delivery of content and how well the students have learnt. The basic purpose of assessment is to achieve and develop effective learning and teaching. Several research studies are conducted to assess the correlation between continuous assessments scores and students. Findings have revealed that graduates rely a lot on the scores obtained in their continuous assessment which adds up in their examination score as the summative assessment. Formative as guided by government regulations constitutes 30% to 40% of each trimester's total examination score. The final grade is computed by summing up the cumulative scores from all the 6 trimesters of the program. Continuous assessment is an education policy of evaluating the students' progress and achievement in schools,

Summative Assessment

Summative assessments are usually conducted at the end period of a trimester in order to measure the outcome of student learning. Students being the major stake holders never the less this assessment data too would reflect on the concerned faculty's feedback, in sense of assessing teaching effectiveness. The summative assessments data would help in curriculum improvement. Summative Assessments are given periodically to determine at a particular point in time, generally termed as midterm or end term to assess about what students know and do not know. Formative Assessment is part of the instruction delivery process. When incorporated inside the classroom, it provides the information needed to Professors to adjust their levels of teaching and learning while they are happening.

Distinction between Formative and summative Assessment

One of the major distinction between the formative and normative is there is student's involvement in formative distinction. Formative assessment leads to summative assessment.

Feedback

Feedback is an act of assessing has impact on both the assessor as well as assessee. There are different ways of giving feedback. Feedback should be based on the situation and should always focus on positive things first. According to Piccinin (2003), student's feedback needs to be provided in a positive way so that student should take in a positive way. Yorke, (2003) stated that while giving feedback to the student's Assessors can learn that to what extent their students have learnt and can tailor their teaching modules. Another better way of giving feedback is involving peer so that there is serious element brought to the teaching and learning process.

III. PURPOSE OF THE STUDY

The main purpose of this study is to assess the association between students' performance in the Formative assessment and the end term examination scores of the management education courses.

IV. RESEARCH HYPOTHESIS

The following Null hypotheses are tested for the study:

Ho1 There is no significant association between continuous assessment scores and end term examination scores of post graduate Management students for the Marketing specialization course of the B schools of Mumbai.

Ho2. There is no significant association between continuous assessment scores and the end term examination scores of post graduate Management students for the Finance specialization course of the B schools of Mumbai.

Ho3 There is no significant association between continuous assessment scores and examination scores of post graduate Management students for the HR specialization course of the B schools of Mumbai.

Ho4. There is no significant association between continuous assessment scores and examination scores of post graduate Management students for the Operations specialization course of the B schools of Mumbai.

V. RESEARCH METHODOLOGY

Research Design was well crafted for this paper to meet the research objectives.

The researchers employed ex-post-facto research design to assess the association between the continuous assessment scores and the end term examination scores. The area of sampling is

Mumbai. The probability sampling namely, stratified random sampling is used for the study. Examination data is the primary data where formative scores are obtained by various methods of assessments namely quiz, mcq, assignments, student's presentation, case study evaluation etc. The sample size is 671 students of the state university and the affiliate colleges. The end term scores are the scores of written examination scores or project viva/report evaluation scores. The type of research is causal cum descriptive. Quantitative data is analyzed using Statistical software IBM SPSS for computing various descriptive statistics namely, average marks, standard deviation and Karl Pearson's correlation Coefficient.

VI. DATA ANALYSIS

The assessment data from continuous assessment and the end term scores are analyzed using descriptive statistics to compute to fetch their average marks, marks, and standard variation. Also in order to understand the association between formative assessment and summative assessment, testing of hypothesis for correlation is used.

Ho1: To test the Null hypothesis, students continue assessment scores and end term examination scores of post graduate management marketing specialization students.

The students continuous assessment data (tests, mcq, and many more) and the end term exam (written exam and project evaluation) scores are analyzed using statistical software IBM SPSS version 25 to compute descriptive statistics and later were correlated to obtain the Karl Pearson's Moment Correlation Coefficient (r), and the output is as presented in table 1 given below.

Table 1: Output of Descriptive Statistics and Correlation

Program MBA Marketing	Sample Size 229	
	Continuous Assessments Disc Assessment	End Term Scores Summative Assessment
Statistics (scores)		
Mean	28.41048035	35.21397
Standard Deviation	5.128786512	13.23647
Correlation between continuous & end term		
Continues Continuous & End Term	0.01642	

The results of the Table 1 above indicates a neutral relationship as correlation coefficient =0.01642, (which is very close to 0) between Continuous assessment and end term examination scores of postgraduate students. In other words in this case there is no association between the formative and summative assessments for a sample of 229 post graduate management students of marketing specialization. The analysis shows that the Post graduate management students on average

obtained 28% out of 40% on their continuous assessment, and 35% out of 60% on their end of semester examination. Therefore from the analysis above the result (r) is significant ($P < .05$), the null hypothesis H01 is therefore rejected and concluded that there is a significant relationship between continuous assessment scores and the end term written examination scores of post graduate management students specialized in Marketing.

Ho2: To test this Null hypothesis, continue assessment scores and end term examination scores of post graduate management Finance specialization students.

Table 2: output of Descriptive Statistics and Correlation

Program -MBA Finance	Sample Size 148	
	Continuous assessment	End Term Scores Summative Assessment
Statistics (scores)		
Mean	26.72	31.5
Standard Deviation	6.40	14.74
Correlation between continuous & End Term	0.48	

The results of the Table 2 above indicates a moderate positive relationship as correlation coefficient =0.48, (which is very close to 0.5) between Continuous assessment and end term examination scores of postgraduate students. In other words in this case there is moderate relationship between the formative and summative assessments for a sample of 148 post graduate management students of Finance specialization. The analysis shows that the Post graduate management students on average obtained 26% out of 40% on their continuous assessment, and 31% out of 60% on their end of semester examination. Therefore from the analysis above the result (r) is significant ($P < .05$), the null hypothesis is therefore rejected and concluded that there is a significant relationship between continuous assessment scores and the end term written examination scores of post graduate management students specialized in Finance.

Ho3: To test the Null hypothesis Ho3, continue assessment scores and examination scores of post graduate management of HR specialization students.

Table 3: output of descriptive statistics and correlation

Program -3 MBA HR	Sample Size 118	
Statistics	Continuous Assessment	End Term Scores Summative Assessment
Mean	26.4104	31.21397
Standard-Deviation	4.6728	11.23647
Correlation between continuous & End Term	0.35	

The results of the Table 3 above indicates a weak positive relationship as correlation coefficient=0.35, between Continuous assessment and end term examination scores of the postgraduate management students. In other words in this case there is a weak positive association between the formative and summative assessments for a sample of 118 post graduate management students of marketing specialization. The analysis shows that the Post graduate management students on average obtained 26% out of 40% on their continuous assessment, and 31% out of 60% on their end of semester examination. Therefore from the analysis above the result (r) is significant ($P<.05$), the null hypothesis is therefore rejected and concluded that there is a significant relationship between continuous assessment scores and the end term written examination scores of post graduate management students specialized in HR students.

Ho4To test the Null hypothesis Ho4, continue assessment scores and examination scores of post graduate management of operations specialization students.

Table 4: Output of descriptive statistics and correlation

Program -4 MBA Operations	Sample Size 176	
Statistics (scores)	Continuous Assessment	End Term Scores Summative Assessment
Mean	25.4104	32.1397
Standard Deviation	4.545	12.48
Correlation between continuous& End Term	0.30642	

The results of the Table 4 above indicates a weak positive relationship as correlation coefficient =0.30, between Continuous assessment and end term examination scores of postgraduate students. In other words in this case there is no association between the formative and summative assessments for a sample of 176 post graduate management students of operations specialization. The analysis shows that the Post graduate management students on average obtained 26% out of 40% on their continuous assessment, and 32% out of 60% on their end of semester examination. Therefore from the analysis above the result (r) is significant ($P<.05$), the null hypothesis Ho4 is therefore rejected and concluded that there is a significant relationship between continuous assessment scores and the end

term written examination scores of post graduate management students specialized in operations.

VII. FINDINGS RESULTS AND DISCUSSION

This paper tries to establish and assess the correlation between continuous assessments and end term examinations scores of post graduate in management courses.

Null Hypothesis H01 which states that there is no significant relationship between continuous assessment and end term examination scores of post graduate students' for marketing specialization was rejected and the rejection implies that there is any relationship between continuous assessment scores and end term examination scores of the post graduate management students.

Null Hypothesis Ho2 which state that there is a moderate relationship is not accepted this implies a there is a not strong evidence that there is no strong relationship between continuous assessment scores and examination scores of post graduate management students who opted Finance.

Similarly Null HypothesisHo3 which states that there is a weak positive relationship between continuous assessment scores and examination scores of postgraduate students in HR was also rejected from this, it could be inferred that there is significant relationship between postgraduate management students' score in continuous assessment and final examination scores in education courses. Thus the overall result is in agreement of results that there is a significant relationship between the Continuous Assessment Score and the overall performance of the students in the MBA final written examination.. The results of all the four hypotheses further agrees with the earlier submission of that continuous assessment played the role of feedback to both students and teachers in teaching and learning process. Similarly it also confirmed the assertion of that continuous assessment is used to find out what their students have gained from the learning activities.

VIII. CONCLUSION AND RECOMMENDATIONS

The study attempts to evaluate the relationship between the formative assessment and the summative assessment, which is the basis for predicting student's performance.

One of the major conclusions from the Testing of hypothesis of correlation at 5% level of significance show the extent to which continuous assessment scores and the end term examinations scores are weakly related for the various specialization streams. The normal range of correlation coefficient is -1 to +1 , but the correlation , coefficients for this

study lie between 0 and 0.4, implied that all the coefficients are very weak and positive and all of them are found to be significant at 0.05 level of significance. It is therefore concluded that continuous assessment is very important in teaching and learning of management education courses of the universities and the affiliated institutes because it influenced students' performance in the final examinations. The result further revealed that the continuous assessment practices in education courses at the university is guided and well prepared in line with the best practices. Very important conclusion for professors is as per the Karl Pearson's coefficient results indicated that there is scope to improve the quality of instruction delivery and or curriculum. The students in the marketing specializations look like focus more on end term exams as the correlation coefficient is neutral, which means continuous assessment needs serious attention. As being established by this study that the continuous assessment has a significant influence on the overall performance of post graduate management students in the management education courses.

RECOMMENDATIONS:

1. Continuous assessment is very critical, so that the teaching fraternity and associated university administrators should be given utmost attention. Further Formative assessment needs improvement by using alternate forms of assessment i.e. quiz, tests, assignments and or real world project, in order to improve the quality of the assessment methods.
2. Transparency plays a key role in continuous assessment since it explains and predicts the future academic performances of post graduate management students.
3. Continuous assessment should be made compulsory for all students and it should cover all the three domains of learning, namely acquiring of knowledge, assimilating of knowledge and application to the real world.
4. Students should be allowed to have access to their test scores in continuous assessment; this will help the students to know their weakness and strength in the course and make adequate preparation needed for end term examination.
5. Feedback should be given in a positive way which helps the student to enhance the learning.
6. Peer feedback also plays a vital role for student to be keep motivated and hence can achieve the learning goals of the course.

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