

Relationship between Continuous and Final Examination Assessment Marks in Computer Faculty - Case Study

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Abstract

Assessment strategy is a very important component of education institutes. In this study we analyze the continuous and final marks by the students of the Computer faculty. To this end, 31 students were selected through random sampling from computer faculty at General Sir John Kotelawala Defence University, Sri Lanka. Herein, we analyze the continuous and final marks obtained by the students and compared by correlation matrix. We have analyzed two subjects and observed positive correlation between continuous and final examination marks. Consequently, we conclude that continuous assessment gives practically the same pass/fail rates as the final exam, which indicates that there exists an influence of continuous assessment marks for the end semester marks of the students.

Key words – Assessment methods, continuous, final, examination

INTRODUCTION

The ultimate goal of teaching is understanding. If we, as teachers, do not teach properly students will not be able to understand the lesson. In such bad situations, students may tend to bend for self-teaching methods, they will read more books, do searching in the Internet, have peer discussions so that they could be able to avoid or escape from bad teaching (Race P. 2001). But can they escape from bad assessment? Therefore assessment should be taken very seriously. Because teaching and most importantly assessments decide student's future.

Assessment in the field of education can be defined in many ways. Simply we can define it as the wide variety of methods or tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of students (Gronlund NE. and Linn RL. 1990). Many people assume that 'assessment' means taking a test, but assessment is broader than that. Assessments are typically designed to measure specific elements of learning. These evaluation methods can also use to test individual student strengths and weaknesses, and so the teachers can provide appropriate support or use specialized teaching methods for them.

Learner Centered assessment can be considered as the most effective way of assessment, since whole teaching and learning processes are there to encourage learners. Learner centered assessment will provide opportunity to both teachers and students to evaluate learning together. Figure 1 summarizes how teachers or evaluators can handle this type of assessment. There are four fundamental elements as:

1. *Formulate statements of intended learning outcomes* - Teachers should have a clear idea at the beginning of the course what they want for their students. For that, it is essential to define clear and precise learning outcomes at the beginning.
2. *Development or Selecting Measures* -The measure should depend on the intended learning outcomes. That is the measures are appropriate for the intended learning objectives.
3. *Learning Experiences leading to Outcomes* -The learning experience of the students should lead to fulfill the outcomes of the study. Students must practice how to apply gained knowledge to real life situations.
4. *Discussion* - At the end, the assessments should be useful to improve performance. Teachers can use the results collected from assessments to determine whether students have achieved learning outcomes or not.

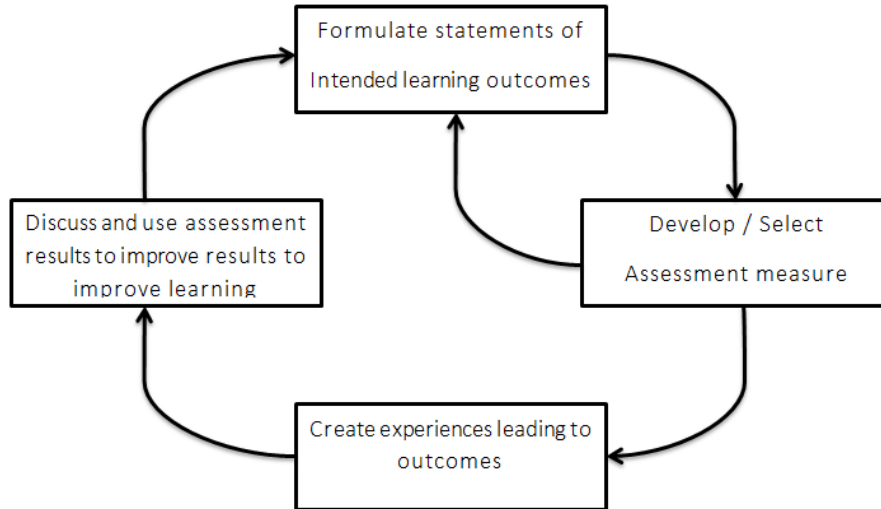


Figure 1: Four fundamental elements of learner-centered assessment

We may need to know the level of the students or we may need to rank the students for a selection. Assessments also help in planning further study material. It determines the value of learning and training programs and acts as blueprints for judgment and improvement. (Rossett, Sheldon, 2001). Normally we hold assessments to measure the progress of the students (Cole PG. and Chan LKS. 1994). Also we conduct assessments in order to motivate the students. According to the objective, we can categorize assessments into two categories as summative and formative. These are sometimes referred to as assessment of learning and assessment for learning, respectively. At some level, both happen in almost all classrooms. The key to good assessment practice is to understand what each type contributes and to build the practice to maximize the effectiveness of each.

(a) Summative assessment:

In this type of assessments, the objective is to evaluate student learning and marks are taken for decision making. A summative assessment can be a midterm exam, a final project or a paper. A summative evaluation takes place at a complete other time. Not during the process, but after it. The evaluation takes place after a course or unit's completion.

(b) Formative assessment:

The main objective of formative assessment is to monitor student learning. In this type of assessments, the teacher's intention is to provide ongoing feedback which can be used both teaching and learning of teachers and students. The marks of formative assessments are not taken for grade calculations. More specifically, formative assessments help students identify their strengths and weaknesses and target areas that need work (Van Duzer E. and McMartin F. 2003) and help faculty to recognize where students are struggling and address problems immediately. As the definition already gave away, formative assessment is an ongoing activity. The evaluation takes place during the learning process. Not just one time, but several times.

Another good point on assessments is when to conduct the assessments. It may depend on the objective of conducting the assessment. For an example if you need to know the level of knowledge students have in a particular subject, then you can have an assessment even before starting the lesson. If not you can have one or more assessments during the course period or you can have one final exam. Normally a mix of these happens. Figure 2 shows the idea clearly.

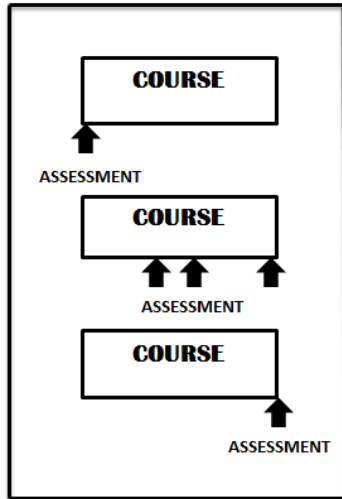


Figure 2: When to conduct an assessment

In this study we have checked whether teachings are aligned with the assessment process. Also we tried to figure out the ability of the intermediate assessments to influence the final exam marks. An analysis was carried out to check whether there is a correlation between continuous assessments and final marks of the students for two selected subjects.

METHODOLOGY

Research Design

In this study, we have examined General Sir John Kotelawala Defence University's (KDU's) cadet and civilian students' response to assessment, especially whether there is a correlation between continuous and final examination results platform in the Defence university system. This topic was judged to be extremely important to have a conceptual understanding of what is teaching methods and to find out whether it involves in evaluation by examination. The study design in this study is presented in the Figure 3. Approval for the study was obtained from the Staff Development Center. Target population of this study represents 11 cadet and 20 civilian students following a Computer Science undergraduate course. All students assessed considering the results of their continuous and final examination marks. Thirty-one students, which participated in the study and gave their consent, were included in the study. The purpose of the study was explained to the students at the beginning of collecting data. The cadet students who consented to participate in the study were individually tagged and given them a tag. ($n=31$).

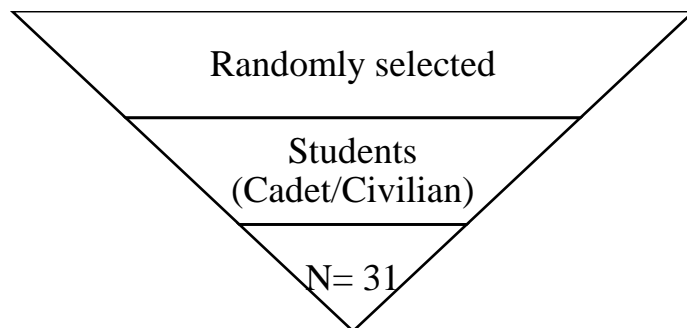


Figure 3: Study Design

Research Context and Participants

Thirty-one cadet and civilian students took part in this study. All cadet students were employed at the university as cadet officers enrolled as students. The civilian students were second year Computer Science students. KDU's student population is a socially and economically diverse community in Western Province of the country in the one and only Defence University in Sri Lanka.

Continuous and Final assessment

Continuous evaluation consisted of two different parts: the first one corresponded to open exercises in the classroom and homework; the second one consisted of individual tests, performed in a Web self-assessment tool, using Moodle. To conduct these intermediate assignments, we have used the Learning Management System (LMS) of the KDU.

The final exam was the same and was held at the same time for all the students independently whether the student is following or not the continuous evaluation process. Three hour written examination paper with four questions was given and analyzed the results.

Data Presentation and Analysis

To analyze the questions, we compared informal reasoning displayed by individuals representing high and low level of understanding of teaching methods. The validity of the translation was independently assessed by two observers competent in the English language. We analyzed our data as a balanced figure in a percentage of application. For statistical analysis, we transformed all our data using the basic statistical analysis package.

RESULTS

In statistics, the correlation coefficient 'r' measures the strength and the direction of a linear relationship between two variables on a scatter plot. The correlation value is always between +1 and -1. The correlation between continuous assessments (CAS) and end semester (END S) marks for the course Computer Security is 0.78 (Fig 4). This indicates that there is a strong uphill (positive) linear relationship between two components. That is, the student performance for both CAS and END S is somewhat equal. Standard deviation for CAS is 11:34004237 and for END S, it is 10:31174139. These indicate that the performance of the students for CAS and end semester is mostly equal.

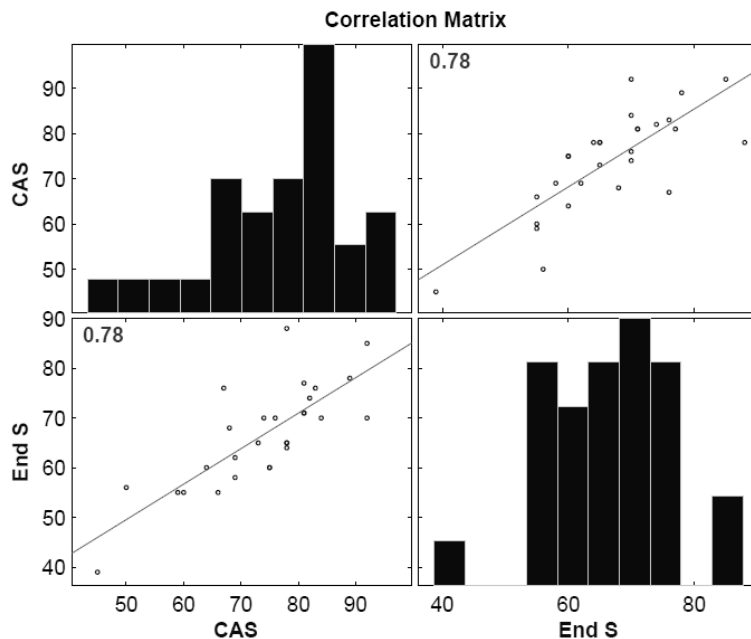


Figure 4: Correlation Matrix between CAS and End semester marks for the course Computer Security

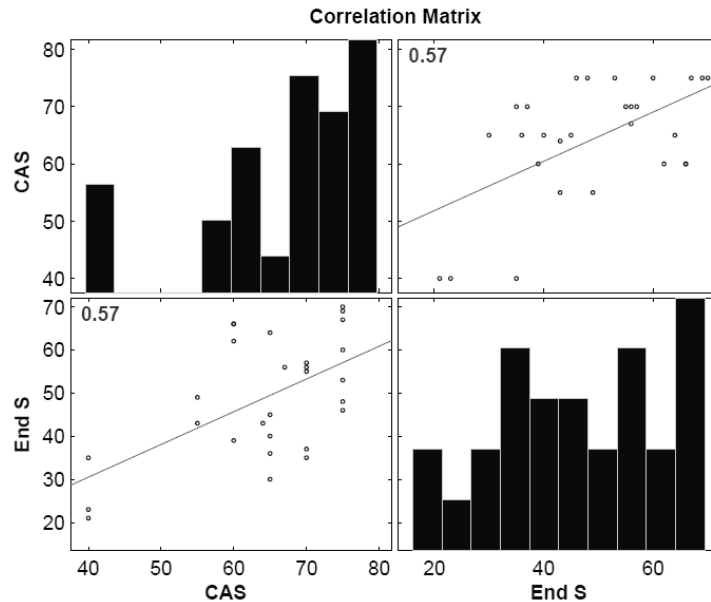


Figure 5: Correlation Matrix between CAS and End semester marks for the course Intelligent Systems

For the course unit Intelligent Systems, the correlation between CAS and end semester marks is 0.57 (Fig 5). This indicates a moderate uphill (positive) relationship, which means the two are not having a good relationship. The standard deviations 10:52705006 and 13:98009734 also verify the above decision.

CONCLUSIONS

Overall there is a positive correlation between continuous assessment and final assessment. For the Computer security course students have performed equally for CAS and end semester. The reasons can be

1. CAS included a mid-semester examination. Therefore there can be some similarity between the assessments methods used.
2. Students learning abilities may not much improved during the course.
3. Students' different learning styles lead them to grab the course differently.

For the Intelligent System course there is no such strong relationship. The reasons can be

1. Having used take home assignments for CAS and therefore most of the students scored better for CAS and comparably less marks to the written exam for the end semester.
2. Different assessment method may lead them score differently. Or students may pay less interest to the subject.

Since the results obtained suggest a strong relationship of continues assessments with the final marks conclusions can be made such as assignments should discuss in the class and the assignment marks should be given before the final exam, so that students have time to understand their levels and improve themselves. Also it is good to have formative assessments as time permits so that the teachers can monitor how the learning is going on.

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