

# DEVELOPMENT AND IMPLEMENTATION OF RUBRICS ON STUDENT'S ASSESSMENT AND LEARNING OUTCOMES

Dr. Pankaja Pandey

Assistant Professor, Amity University, Noida, Uttar Pradesh, India

Dr. Ajay Pal Bhadu

TGT (P&He), Kendriya Vidyalaya Sangathan

Dr. (Mrs.) Vasanthi Kadhiravan

Professor & Head, Department of Physical Education, University of Mumbai

## ABSTRACT

*The quantitative study was designed to measure academic success and perspective on rubric use in Academic Assessment and Evaluation by Physical Education Teacher Students. The research was an individual work, utilizing two types of pretest-posttest architecture. The research was conducted in the Department of Physical Education and Sport Sciences, University of Amity, Noida. The study population consisted of 70 students from 2 classes of first year students in ASPESS. There were 2 student groups, one group being monitored and the other group being research society. Each group had a membership of 35. Such students had been trained on sporting rules. The study group was trained using rubrics, and the participants were taught in control group using traditional techniques. Methods like; survey questionnaire and assessment of achievements were used to gather information. The quantitative data collected from the questionnaire were analyzed and interpreted using inferential t-test tests with significance of  $p < 0.05$ , standard deviation and mean, in accordance with the accomplishment analysis. The study of test scoring data showed that the overall mean for the control group posttest was 21.52, while 25.40 was higher than the conventional method for the experimental group showing the learning performance of the students educated using rubrics. For addition, a research group students pre-and post-review is done to have a better understanding of the differences observed by the students owing to the rubrics model being used. The mean gap of 6 statements out of 15 survey questionnaire statements had a significant difference indicating that students from an experimental group had a positive opinion on the use of the rubric in Educational Evaluation and Appraisal. Results of the study showed that rubrics improved students' academic performance and that students had a positive view on the use of rubrics in assessing and analyzing schooling.*

*Keywords: Physical Education, Assessment, Rubrics Model*

## INTRODUCTION

The actual physical educators fully agree that evaluation can provide feedback to the teaching that focus on student learning, which is one of the benefits of assessment. Using assessment gives beginning and ending points to students and

related evaluation of their own success with goals, aspirations and student understanding. They acknowledged that evaluating student learning could improve teacher performance, because teachers can learn more about their students' strengths and weaknesses and teaching.

## Background of Study

"It's also motivational to help students monitor their progress regularly" (Martin, Kulinna, & Cothran, 2002, p. 18). This enhanced commitment and engagement could help students start becoming constructive partners as well as directing their own learning. In fact, the assessment opportunities could be used together with the instructor to construct much more interesting and challenging successor courses for the pupil. Assessment helps identify the deficiencies in the teaching methodology and gives information in which the student gets to know about his / her understanding of the topic and the places to be worked on. The professor can further correct students' better understanding of their training method, hence the students' outcomes of learning and teaching the instructors. Evaluation is said to be a three-way link between training, assessing, and teaching (Goode & Anderson, 1997, p. 48) and student learning evaluation also provides instructors with practical information and help in the future (Kuntzleman, Kokinakis & Dejong, 2002). In reality, assessment, learning, and teaching are interrelated. Solid theory requires strong assessment. It is clear that efficient teaching is dedicated to successful evaluation (Wiggins, 1993, p. 21.). A good assessment is simply a learning process for the students, colleagues and staff. "If evaluation is part of the teaching and learning cycle, its primary purpose should be to provide feedback to students and teachers" (Veal, 1995, p. 15).

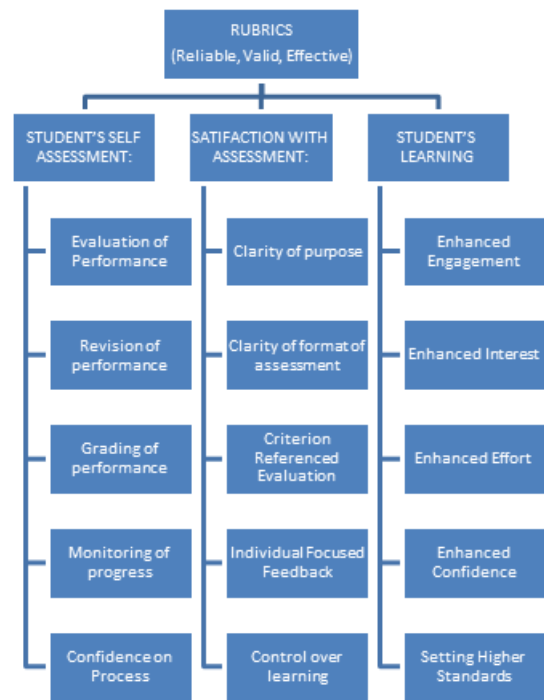
## Proposed Methodology

The Rubrics model presents students with a course for learning, reflecting students' interest in the subject and its key issues. It thus helps to reduce the stigma toward teachers when assessing pupils. The appraisal requires students to provide an answer that can be quantified according to the point allocation method. In many years of training, the use of rubrics to assess learning performance is well established. Rubrics are identified as a critical method for measuring a student's consistency of the pupil program, instructor efficacy, and

efficiency. Teachers in different subject fields have also used the rubrics to accomplish educational goals. Recent physical educators have grown more eager to use rubrics in teaching skills. Rubrics are used for analysis and student learning. Throughout fact you will consider limitless possibilities to allow use of rubrics for actual physical educators. Using rubrics promotes student learning, which improves the quality of teaching. The use and creation of instructional rubrics provides real physical educators with an ability to access information that is invaluable for a student's success that cannot be obtained by traditional assessment approaches; and the attribute feedback given to children are also much more valuable and precise. Rubrics is a bonding tool that helps children understand what they really need to do (Gireeshan, 2015, p 52). All assignment and rubric can help them stay centered on specific work variables. In addition, rubrics enable the professor to easily measure a student's success that would normally be difficult to assess or even identify. Rubrics are developed based on learning goals, student abilities and experiences in all three areas (affective, emotional and psychomotor). We could also be individualized and process-oriented.

Used in a student-centered evaluation approach, the rubrics help students define both learning objectives and contextual criteria for a particular project and accurately determine their own results, which can be informed and updated quickly.

The objectives of the sections are to discuss the aspects of self-learning, self-regulation, rubrics, standardized responses and performance. The literature review provides for the development of open, accurate and student information on credible and relevant sections (Gireeshan, 2015, p 86.). The study conceptualizes the use of rubrics in order to provide feedback on clear and objective analysis, according to current literature, rubrics not only provide complete satisfaction with assessments, but would also promote the self-assessment procedure of the students. The aspects of self-assessment, primarily assessing, evaluating as well as revising the features together with testing their own success and combined with enhanced satisfaction of appraisals will favorably affect pupil learning. The numerous other aspects of student performance, such as motivation, practicing self-regulation as well as self-efficacy, would be expanded apart from better qualifications.



## MATERIALS AND METHODS

Quantitative approach has been used for the study. It was targeted at figuring out Physical Education students' academic performance and opinion regarding rubric use in Academic Assessment and Evaluation. The data were gathered through a questionnaire, post-test and pre-test. The research sample group consisted of 70 students from 2 groups of graduate students from Amity University in a random sampling process. There were 2 classes of pupils, one group being instructed by rubrics and the second group being instructed by traditional method. Any party had 35 members. In the lecture, the empirical rubrics were structured and used to examine the impact of using rubrics on the academic performance of students. The study presented rubrics to the students in the experimental group and then explained how to use rubrics to understand principles in curriculum assessment and measurement. Researcher presented rubrics with the subject of track and field to students. Participants were advised to use rubrics. Rubrics had a summary of the principle predicted outcomes. Rubrics helped students to reach their learning outcomes. Teacher used rubrics to help, monitor and scaffold when students learned the subject. Teacher ensured that students had links to all the facilities, including the internet, textbooks and journals.

The Historically the control group has been instructed by way of a demonstration system in which teachers have used power points, textbooks and tables. In order to collect quantitative data, post-test and pre-test is carried out both in the control group and within the experimental group. Thirty multi-choice issues have been altered for student assessment from track and field events in athletics.

For the study, questionnaire used consisted of 15 questions divided in three different categories comprising five question each on which five-point Likert scale were applied to the test group in order to assess students' comprehension both before and after using the rubric.

Comparative statistical analysis was conducted using an

individual t-test sample and mixed t-test samples and the study of post-test data together with a pre-test. A systematic statistical analysis was performed using a generalized model t approach for each group. Comparability of the post-test and pre- test outcomes of 2 classes was accomplished by carrying out impartial t tests for both experimental and control groups, and measured the academic performance. In this study, T-test inferential statistics of  $p < 0.05$  meaning, a standard deviation and average were used to predict the results. The total mean and norm discrepancy have been calculated and evaluated by tables and by questionnaire, analysis of the opinions of students against rubric usage was calculated.

## RESULT

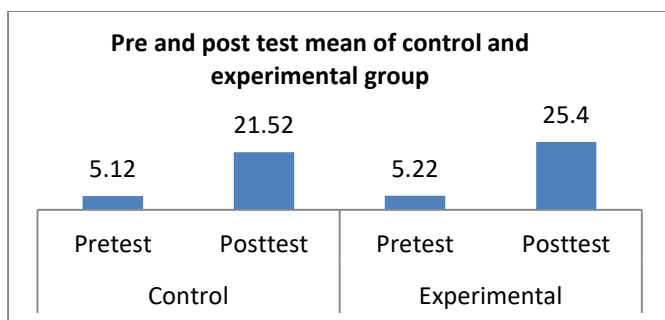
### Analysis of Test Scores (Learning Achievement test)

1. Comparison of posttest and pretest scores of experimental along with control group (Paired sample t-test)

Table 1: Comparison of posttest and pretest scores within the group (the experimental along with control group).

Group	Test	Mean	Mean Difference	Standard Deviation	Sig. (2 tailed)
Control	Pretest	5.12	16.40	2.41	0.000*
	Posttest	21.52		2.52	
Experimental	Pretest	5.22	20.18	2.43	0.000*
	Posttest	25.40		2.11	

\* Significant ( $P < 0.05$ )



The contrasting ( $p$ ) mean value, standard deviation and mean was obtained in comparison to pretest findings in these categories as shown in table 1. 21.52 and 5.12 for the control group were posttest and pretest mean values. The median and mean for the experimental group are 25.40 and 5.22. 16.40 was the mean discrepancy between the posttest control group and the pretest group, while the experimental group was 20.18. 0.000 was the significance value ( $p$ ) for both classes, which is essentially smaller than 0.05 ( $p < 0.05$ ). It indicates that the grades of students in posttest in both classes have been significantly improved as opposed to pretest.

2. Comparison of posttests and pretests scores among these groups (Independent Sample t-test)

Table 2: Comparison of pretests and posttests between the group (the control and the experimental group).

Tests	Group	Mean	Mean Difference	Standard Deviation	Sig (2 tailed)
Pretest	Control	5.12	0.10	2.41	0.91
	Experimental	5.22		2.52	
Posttest	Control	21.52	3.88	2.43	0.00*
	Experimental	25.40		2.11	

\* Significant ( $p < 0.05$ )

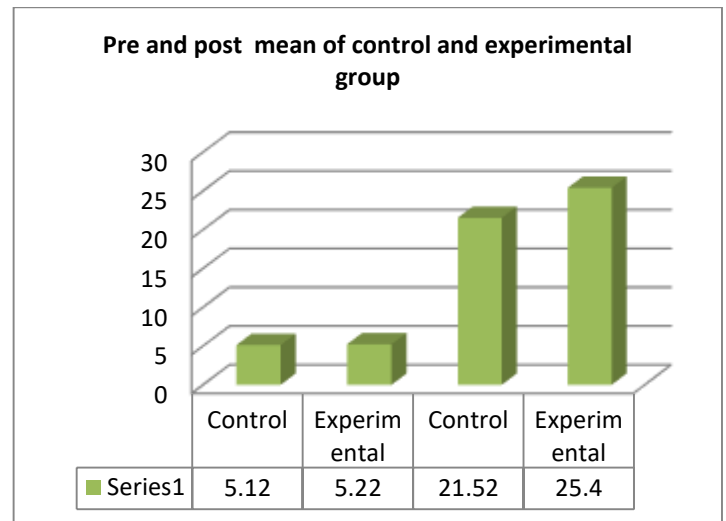


Table 2 indicates 0.10 mean difference between the two classes in the pretest, and 0.91 mean difference between the two tailed significance values ( $p$ ) over 0.05 ( $p > 0.05$ ). It means that, for both classes, the pretest test score was not significantly changing. It indicates that the students had an equivalent learning ability in both classes. 3.88 was a major posttest mean gap between these classes, and 0.00 was a substantial  $p$  value less than the relevant  $p < 0.05$  value. This reveals a statistically significant difference between these two classes. This turned out that the posttest scores were extremely high for the experimental group compared to the control group. Researchers required that the students be trained in the test group using rubrics to produce better results than the students tested by a traditional method in the control group.

### Analysis of the Survey Questionnaire

Table 3: Illustration of the mean, standard deviation and students' level of opinion towards rubric usage in Teaching Physical Education, Assessment and Evaluation.

Table 3: Student perspective on assessment before and after use of rubrics Pre and Post means and t-tests.

Items	Mean (SD) at Pre	Mean (SD) at Post	t-value
<b>STUDENT SELF ASSESSMENT</b>			
Regular feedback through assessment may help in improving the performance.	3.73 (.94)	4.00 (.76)	2.03*
Routine revision due to assessment may foster better engagement and improved performance.	3.76 (0.93)	3.96 (1.06)	0.32
Grading of performance can help in setting benchmark any gaps in fulfilling goals & achievements and improving the performance over time.	4.20 (.71)	4.22 (.82)	0.15
Assessment helps in monitoring the progress through the course and helps in achieving continuous improvement.	2.25 (.94)	3.58 (.88)	1.89*
As a result of the assessment, students are more confident than before in understanding of the skill.	3.54 (.83)	3.54 (.93)	0.00
<b>SATISFACTION WITH ASSESSMENT</b>			
The awareness of the purpose of the assessment can help in performing better.	4.00 (0.87)	4.78 (0.89)	1.87*
Clarity in Format of the assessment to everyone helps in focusing on the task at hand and in performing better.	3.52 (.87)	3.64 (1.08)	0.45
The assessment followed by criterion referenced evaluation might help in realizing the understanding of the level of skill set and knowledge.	4.24 (1.05)	4.52 (0.71)	1.23
The assessment provided feedback at an individual level thereby may help each student realize their current level and how to prepare for future.	3.68 (.99)	4.46 (1.21)	1.91*
Based on the results of the assessment, one can gain better control of their learning process and became aware of the areas to focus for improvement.	2.56 (1.04)	3.12 (1.09)	1.84*
<b>STUDENT'S LEARNING</b>			
The level of engagement in the assessment process was better than before.	3.35 (0.76)	4.33 (0.96)	2.09*

The assessment process ensures that one can be more interested in participating in the process and take it seriously.	4.16 (0.80)	4.88 (.83)	1.43
The amount of effort put in can be significantly improved by regular assessment.	3.67 (1.08)	3.83 (0.89)	0.70
The assessment process and the results may boost the level of confidence.	2.96 (1.10)	3.20 (1.26)	1.54
we were able to gauge our present level and there was motivation to set higher standards as a result of the assessment process.	3.88 (0.93)	3.88 (1.01)	0.00

## DISCUSSION

### a. Learning Achievement Test

The first finding was an examination of the pupils' performance tests, which together with the control group is the posttest and pretest of the experimental group.

The results showed no major difference between the average experimental performance of students and the control group in the pre-test before giving some attention. Nonetheless, the mean score for both the sample and the control group in a post-test was a big difference. There was a high mean value in posttest in contrast with the control group in an experimental group. This indicates that experimental students in the class increased their success compared to the control group. The investigator then claimed that the assessment and appraisal rubrics increased the academic performance of the graduates.

The study was compatible with Uddin's (2014) assertion that rubrics had a significant impact on academic performance of students. The results were also consistent with Jonsson (2014) and Howell (2011) observations that rubrics have been significant contributors to healthy academic performance. It also was close to Panadero and Jonsson (2013), who noticed that rubrics could have a positive effect on student learning after researching 21 rubrics. Nevertheless, Santos and Pinto (2006) argued that effective learning effects cannot be achieved exclusively with evaluation rubrics.

Generally speaking, a much more comprehensive solution was needed to ensure students' own experience. Egodawatte (2010) recognized that handling and educating divisions leads to minimizing disparities and thus making it possible for students to use them for learning. Andrade (2001) also notes that giving students a section alone is incongruously distinguishable from far better functionality and that students need to actively engage in the sections perhaps by co-creating and updating them as they have done in Vrchota, Svendsen and Reitmeier work (2004).

Board Unit Rubrics-oriented thinking was based on theory, constructivism and action of self-regulation. Rubrics allowed students to manipulate their emotions, behaviors and expectations effectively. Cheng and Huang (2014) observed that the beneficial effect of self-regulated learning on the academic performance of students. The integration of rubrics

into student performance and appraisal had also encouraged constructivist learning models in which learners built their own skills on the basis of common rubric criteria. Several studies have confirmed the increase in academic performance amongst students in constructivist theory (Qarareh, 2016; Akanwa and Ovute, 2014). The claim in the sections relies on the behaviorist leading philosophy that claims that the learner is influenced by positive feedback. The encouragement has facilitated student learning. The findings of Gbollie and Keamu (2017) reinforced this by showing that creativity had a significant impact on student academic performance.

### **Survey Questionnaire**

Both remarks were included in three opinions: student self-assessment, happiness with evaluation and understanding of students. Following pre- and post-evaluation the questionnaire was filled out.

### **Reactions of students to college self-assessment statements**

*Question:* Daily input through assessment may help improve productivity, and appraisal can monitor progress throughout the course and has shown a significant statistical effect in continuous improvement, which suggests students agree that daily feedback via rubric evaluation helped improve professional performance and surveillance.

### **Students' responses to the statements of satisfaction with assessment**

*Question:* The awareness of the purpose of the assessment can help in performing better.

The appraisal input produced at the individual level therefore enables any student to consider their current level and how they can prepare for the future, reflect on examination outcomes, encourage students to better understand their process and become aware of fields in which they operate. The appraisal provided feedback at the individual level, and helps them explain their current level and how to prepare for the future on the grounds of the results of the tests.

### **Students' responses to the statements of student's learning**

*Question:* The level of engagement in the assessment process. It showed statistically significant difference which denoted that the students felt that their level of engagement in the assessment has been increased.

Although only six out of 15 items demonstrated significant variations, a possible reason for this could be that the study was conducted for just four weeks because first time they used rubrics, it was not easy for them in a short time to gain confidence. Nevertheless, the score average for all the components indicates that both the optimistic and constructive interpretation of the rubric use in educational appraisal and evaluation by experimental group pupils. The results of the study were based on this observation where Poku and Eshun (2013) found that around 86 percent of the students had a good idea to use rubrics for their learning process in classroom-based learning jargon, while Du and Andrade (2005) realized that students had not only a good idea of rubrics but agreed with the assumption that rubrics supported the school. About one student in three (72.4 per cent) was satisfied with the use of rubric in Raposo-Rivas study (2016). Similarly, Kulprasit (2016) also noticed

students to be optimistic in writing rubrics when using rubrics as an assessment of foreign language (EFL).

The learner influence, direction and less disruptive learning environment provided by the rubrics may lead students to a positive opinion on the use of the rubric. As Moni's (2008) found that students preferred the rubrics highly, most experimental students strongly agreed that rubrics used in Educational Assessment and Evaluation were of importance to students, received instruction and input, and gained confidence in studying Educational Assessment and evaluation principles using rubrics. Another reason student viewed rubric favorably was that they thought it was important and valuable.

### **CONCLUSION**

The study of learning outcomes showed that the members of the experimental group trained with rubrics performed better than the students in the control team trained by a traditional method. The survey questionnaire data analysis suggested that students had positive opinions in Assessment and Appraisal of rubric use. It suggested that the students strongly agreed that the rubrics used in Assessment and Evaluation were of value to them, received input and suggestions, and improved the level of confidence in the curriculum. The study finding was also compatible with earlier research performed on similar subjects. The study concluded that the rubrics improved learning achievement for the student. Throughout Assessment and Review, more students had positive opinions regarding rubric use. Thus, rubrics have positive effects of Assessment and Performance on the academic success of pupils.

### **RECOMMENDATIONS**

1. Since it was observed that teaching rules for athletics in the appraisal and assessment module use of rubrics increased both academic achievement and positive points of view on the use of rubric between students, rubrics was recommended for practical teaching and strategies in other sports.
2. Students will engage in the rubric formation. The students' involvement in rubric development allows them to contribute and to become more involved in their own learning. It is to be expected that the joint development of the segment would address the difficulties students have for understanding instructor expectations that can lead to better learning outcomes (Marie, 2013).
3. More research is needed to figure out how beneficial the use of instructor insights is.

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