



# The Use of Scoring Rubrics in University

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**ABSTRACT:** This study examines the application of scoring rubrics as an evaluative instrument in higher education environments. Specifically, it explores the advantages, validity, and reliability associated with their use. Scoring rubrics provide a systematic and unbiased methodology for assessing various academic assignments, assisting educators in delivering constructive feedback and promoting student development. The study delves into the benefits associated with the utilization of rubrics, which encompass improved levels of transparency, uniformity, and fairness in the grading process. Furthermore, it investigates the validity and reliability of rubrics, ensuring the precision and consistency of evaluation outcomes. Moreover, this study explores the utilization of holistic and analytic rubrics within Malaysian universities, providing an analysis of their individual applications and advantages in the evaluation procedure. In the pursuit of improving assessment methods, institutions are increasingly recognizing the significance of including scoring rubrics as a valuable instrument to facilitate high-quality education and foster student achievement.

**KEYWORDS:** Holistic score; analytic score; reability; assessment tool

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## 1. Introduction

The evaluation of learning stands as a critical component within the educational system, aimed at enhancing student learning outcomes through the provision of feedback and guidance throughout their educational journey [1]. In this regard, rubrics are acknowledged as highly valuable tools for the purpose of assessment for learning. Rubrics serve as evaluative instruments that provide clear criteria and defined levels of achievement for a given task or assignment [2, 3]. Educators utilize rubrics to furnish students with explicit performance standards and constructive feedback, enabling them to comprehend the necessary steps for improving their academic progress. Rubrics offer a versatile approach to evaluation, applicable to a wide range of assessments, including essays, projects, presentations, and performances. One of the primary advantages of employing rubrics in assessment for learning is their capacity to promote transparency and consistency in the grading process. By providing explicit and precise assessment criteria, rubrics ensure fair and impartial grading for all students. This approach mitigates the risk of subjective biases influencing the grading process, guaranteeing that students are evaluated solely on their academic achievements, free from extraneous factors like personal connections or teacher preconceptions [4].

Another advantage associated with the use of rubrics is their ability to facilitate student self-assessment and reflection. Rubrics encourage students to engage in self-reflection and identify areas for improvement by offering explicit criteria and levels of achievement. This approach fosters a growth mindset and prioritizes knowledge acquisition over a sole focus on grades [1]. Rubrics also serve as a means to provide effective feedback to students. By delineating explicit criteria and levels of achievement, they offer students comprehensive feedback on their performance. This feedback not only enhances student motivation but also fosters a sense of ownership and accountability for their educational progress [4]. When utilizing rubrics to assess student learning, it is essential to ensure their alignment with designated learning objectives and established curriculum standards. Involving students in the collaborative development of rubrics helps them better understand the criteria and levels of achievement. Regular reviews and revisions of rubrics are imperative to maintain their relevance and effectiveness for specific tasks or projects [2]. Additionally, allowing students to employ rubrics for self-evaluation and peer assessment fosters a collaborative and supportive educational environment, motivating students to take responsibility for their own learning. Peer assessment also provides valuable feedback and contributes to a deeper understanding of the criteria and levels of achievement [5].

Inter-rater reliability, or the degree of agreement among different raters or judges in their evaluation of an assessment, plays a significant role in subjective scoring tasks, such as evaluating essays or artistic performances. To assess inter-rater reliability, researchers often calculate a correlation coefficient that quantifies the relationship between the ratings assigned by each rater. A high correlation coefficient indicates strong agreement among the raters, while a low coefficient suggests discordance or variability. Numerous scholarly investigations have explored inter-rater reliability in various contexts. For instance, one study examined the inter-rater reliability of an Objective Structured Clinical Examination (OSCE) used to evaluate clinical skills in medical students. The research revealed a notable level of inter-rater reliability, suggesting that the OSCE is a dependable and consistent approach for assessing clinical skills [6]. In another study, the consistency among raters was assessed when evaluating essays using two distinct methodologies: holistic scoring and analytic scoring [4, 7] (Figure 1).

Holistic Scoring	Analytic Scoring
<ul style="list-style-type: none"> <li>• Holistic scoring involves evaluating the overall performance or outcome of the task as a whole, without breaking it down into specific criteria or components.</li> <li>• The evaluator assesses the performance based on a general impression, considering the overall quality, effectiveness, or achievement of the task.</li> <li>• It provides a broad and global assessment, focusing on the end result rather than individual elements.</li> <li>• Holistic scoring is often used for tasks or assignments that are complex or when specific criteria cannot be easily identified.</li> <li>• It is relatively quicker and easier to apply, as the evaluator does not need to score individual aspects separately.</li> </ul>	<ul style="list-style-type: none"> <li>• Analytic scoring involves breaking down the assessment task into specific criteria or components, each with its own predefined scoring scale.</li> <li>• The evaluator assesses each criterion separately and assigns scores based on the performance level achieved for each criterion.</li> <li>• It provides more detailed and specific feedback, allowing students to understand their strengths and areas for improvement in each aspect of the performance.</li> <li>• Analytic scoring is often used when the assessment requires multiple skills or competencies, and the goal is to evaluate each skill independently.</li> <li>• It may take more time and effort to apply because the evaluator needs to score and analyze each criterion separately.</li> </ul>

**Figure 1.** The difference of holistic scoring and analytic scoring.

The study's findings revealed that both approaches exhibited a substantial level of inter-rater reliability, signifying their consistency and dependability as viable means of evaluating student writing. In addition to inter-rater reliability, internal consistency is another method employed to assess the precision and coherence of scoring. This method focuses on assessing the degree of agreement among various items or questions within a single assessment. In simpler terms, it evaluates whether a specific assessment accurately captures a consistent underlying construct across all its components. To assess internal consistency, scholars often use a reliability coefficient, such as Cronbach's alpha, which quantifies the extent to which the items within a particular assessment are correlated with each other [4, 7, 8].

Numerous research projects have explored the concept of internal consistency within various evaluation environments. For instance, one study examined the internal reliability of a survey used to assess the quality of life among patients [9]. The researchers found that the questionnaire exhibited a level of internal consistency ranging from moderate to high. This indicates that all items within the questionnaire effectively measured the same underlying concept, namely, the quality of life. This research underscores the importance of ensuring the relevance of all components within an assessment and their ability to measure the same underlying construct to enhance internal consistency. Another examination aimed to evaluate the internal consistency of a questionnaire used to assess students' motivation within online learning settings. The researchers discovered that the questionnaire demonstrated a notable degree of internal consistency, suggesting that all items effectively assessed the identical underlying concept of motivation [10]. The evaluation of scoring accuracy and consistency can be achieved through the utilization of test-retest reliability as a methodological approach. This method focuses on assessing the level of agreement between scores derived from administering the same assessment on two distinct occasions. To examine test-retest reliability, researchers commonly administer the identical assessment to a consistent group of individuals on two separate occasions, subsequently calculating a correlation coefficient between the scores obtained at each time point [11]. Numerous investigations have been conducted to examine test-retest reliability across various assessment contexts. In the context of this study, we explore the utilization of scoring rubrics as a systematic and impartial means of evaluating diverse academic assignments within a university setting.

## **2. Rubric as Assessment Tool**

Rubrics have been widely recognized as a valuable instrument for evaluating student achievement and delivering constructive feedback to both students and educators. The framework offered facilitates a systematic and succinct assessment of student work by delineating explicit criteria, performance levels, and descriptions. This essay examined the advantages of utilizing rubrics, the process of constructing a rubric, and strategies for proficiently executing a rubric.

### *2.1. Benefits of using rubrics.*

Rubrics offer a simple and uniform approach to assessing student work, enabling educators to furnish constructive criticism that facilitates students' educational progress. Furthermore, rubrics have the potential to enhance student involvement and responsibility through the establishment of explicit standards and objectives for their academic endeavors. One of the primary advantages associated with the utilization of rubrics is their ability to offer a lucid and

uniform approach to assessment. Rubrics serve as a valuable tool for educators to assess student work by employing a standardized set of criteria, thereby guaranteeing equitable and uniform grading practices among all students. The maintenance of consistency holds significant value for students, as it facilitates their comprehension of the anticipated requirements and enables them to discern the specific domains necessitating improvement in their academic endeavors. Rubrics might additionally assist educators in delivering substantial feedback to their students [2, 12]. Teachers can utilize a rubric as a tool to furnish precise feedback regarding the extent to which a student has fulfilled each criterion. This enables the student to gain insight into areas that require concentrated attention in order to enhance the quality of their work. This feedback holds greater significance compared to a mere numerical evaluation, as it affords the learner a comprehensive comprehension of their strengths and areas requiring improvement. In addition to facilitating precise and consistent assessment, rubrics can also foster active student participation and responsibility. Rubrics establish explicit criteria and objectives for students, facilitating their comprehension of the anticipated requirements and the necessary actions to attain a favorable academic evaluation. This approach has the potential to enhance students' level of involvement in their academic tasks, as it provides them with a comprehensive comprehension of the necessary steps required to achieve success. In addition, rubrics can facilitate student autonomy by affording them increased agency in evaluating their own performance. When students possess a clear comprehension of the expectations placed upon them, they are empowered to assume accountability for their own educational endeavors and strive towards the attainment of their objectives. This intervention has the potential to enhance students' ability to be self-directed and motivated learners, hence resulting in improved academic achievements. Ultimately, rubrics can also yield advantages for the broader educational system. The utilization of rubrics enables educators to deliver evaluations of student work that are both more significant and consistent, so facilitating informed decision-making regarding curriculum and instructional methodologies. Rubrics can additionally facilitate students' increased engagement in their learning endeavors and foster a sense of responsibility for their academic achievements, ultimately resulting in enhanced outcomes for all stakeholders within the educational sphere [2, 4]. Previous research conducted revealed that the utilization of rubrics yielded enhancements in the caliber of students' work and facilitated their comprehension of the anticipated requirements. Moreover, the research revealed that the utilization of rubrics facilitated educators in delivering more substantial feedback to learners, resulting in enhanced outcomes for all participants engaged in the educational endeavor [13].

## *2.2. Developing a rubric.*

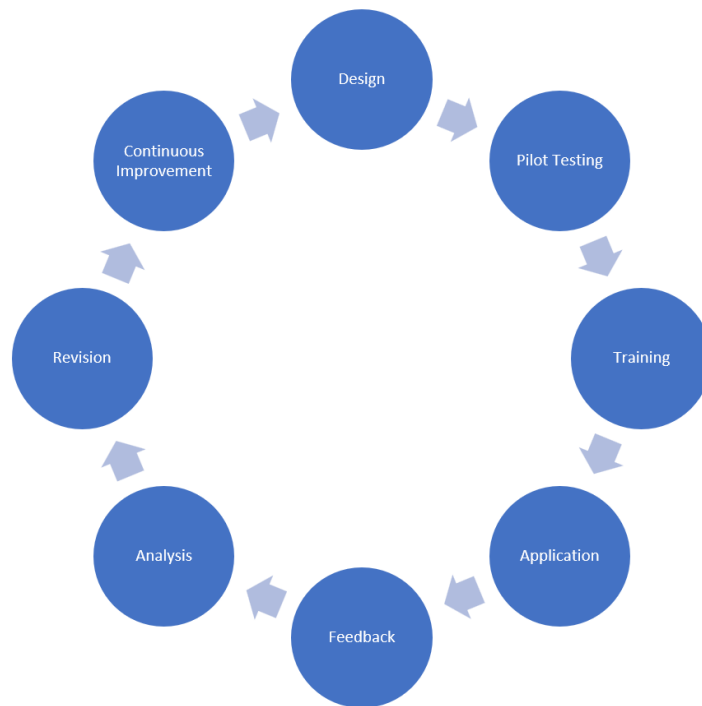
The initial stage in the construction of a rubric is the precise articulation of the learning objectives and outcomes pertaining to the work under evaluation. The objectives ought to be congruent with the overarching course goals and should possess the characteristics of being specific, measurable, attainable, relevant, and time-bound, sometimes referred to as SMART [14]. After the establishment of the learning objectives, it becomes crucial to ascertain the criteria and standards that will be employed for the evaluation of student performance. The criteria utilized should be grounded in the learning objectives and should possess clear and observable definitions. The subsequent phase is ascertaining the levels of performance associated with each criterion. This entails the formulation of evaluative criteria for each tier of achievement, spanning from outstanding to unsatisfactory. The descriptors utilized should

possess specificity, observability, and measurability, while also effectively distinguishing between varying degrees of performance. Ensuring alignment between descriptors and learning objectives and evaluation criteria is of paramount importance [12, 15].

Once the descriptors have been developed, it becomes crucial to allocate a weight or value to each criterion. This measure will aid in guaranteeing that every criterion is accorded suitable deliberation throughout the evaluation of student achievement. The determination of weights or values should be grounded in the relative significance of each criterion in relation to the comprehensive evaluation of the task at hand [16, 17]. The process of developing rubrics often encompasses a series of processes as seen in Figure 2:

- **Design:** In the design phase, the scoring rubric is created by defining the criteria for evaluation. This involves identifying specific aspects or dimensions of performance that will be assessed. Each criterion is described in clear and measurable terms, ensuring that it aligns with the learning objectives or goals of the assessment. Additionally, the rubric designers determine the levels of performance or proficiency that will be used to rate each criterion. These levels typically range from low to high, with specific descriptors for each level to provide clarity on what constitutes successful performance at each level.
- **Pilot Testing:** Before implementing the rubric on a larger scale, it undergoes pilot testing with a small sample of students or participants. During this phase, the rubric's clarity, effectiveness, and practicality are assessed. The aim is to identify any ambiguities or potential issues with the rubric's design. Feedback from both evaluators and students is collected to make necessary adjustments and improvements to the rubric.
- **Training:** Teachers or evaluators who will be using the rubric receive training on its proper application. This training ensures that all evaluators have a shared understanding of the rubric's criteria and levels and can apply it consistently and fairly across different assessments. Training sessions may include practice scoring exercises to familiarize evaluators with the rubric and its application.
- **Application:** In the application phase, the rubric is used to assess the performance of students or participants in the actual evaluation setting. Each criterion is evaluated, and scores are assigned based on the level of performance demonstrated by each individual. The rubric's clear criteria and descriptors help ensure a standardized and objective evaluation process.
- **Feedback:** After the assessment, students or participants receive feedback on their performance based on the rubric's scoring. The feedback outlines their strengths and areas for improvement, providing specific guidance on how to enhance their performance. This feedback is essential for promoting learning and growth.
- **Analysis:** The data collected from the rubric's application are analyzed to gain insights into overall performance trends and identify areas that may require instructional adjustments. The analysis may involve comparing scores across different criteria or levels and identifying patterns in student performance.
- **Revision:** Based on the pilot testing, feedback, and analysis, the rubric may undergo revisions to improve its validity and reliability. This may include clarifying language, refining criteria, or adjusting level descriptors to better align with actual performance.
- **Continuous Improvement:** The scoring rubric is considered an evolving tool. Continuous improvement is emphasized, and ongoing feedback and evaluation from both evaluators and students are solicited to enhance the rubric's effectiveness over time. Regular updates and

revisions are made to reflect changes in learning objectives, instructional practices, and assessment needs.



**Figure 2.** The cycle of rubric development step.

The utilization of a meticulously constructed rubric for the evaluation of student performance yields numerous advantages. Firstly, it establishes explicit guidelines for students, facilitating their comprehension of the anticipated requirements and the manner in which their performance will be evaluated. This phenomenon has the potential to result in heightened levels of motivation and engagement among students, as they are more inclined to allocate their time and exert their efforts towards assignments when they possess a clear comprehension of the anticipated outcomes. Furthermore, the utilization of rubrics can contribute to enhancing the uniformity and equity of evaluations. Rubrics offer a consistent method of assessment by establishing explicit criteria and performance levels. This serves to mitigate the potential influence of subjective bias and guarantees that all students are evaluated based on identical standards. Thirdly, the utilization of rubrics has the potential to enhance the educational outcomes of students. Rubrics have the potential to assist students in recognizing their strengths and weaknesses by offering explicit feedback. This feedback enables students to pinpoint areas for improvement and facilitates the establishment of learning objectives for subsequent endeavors. Rubrics offer a valuable means for educators to enhance efficiency and streamline the evaluation process, hence resulting in time savings. Instead than allocating effort towards the creation of unique tests for each student, rubrics offer a standardized method of assessment that may be universally applied to all students [4, 18].

### *2.3. Implementing a rubric effectively.*

The successful use of a rubric can yield positive effects on student learning results. To effectively utilize rubrics, it is imperative to take into account several crucial criteria. To enhance students' comprehension of the criteria for their assignments, it is crucial to engage them in the process of rubric building [2, 13]. This approach can moreover facilitate students

in assuming greater responsibility for their learning and comprehending strategies for enhancing their future academic endeavors. Furthermore, it is imperative that rubrics are effectively presented to students in advance, allowing them to comprehend the specific criteria that will be used to assess their work. Furthermore, maintaining consistent utilization of the rubric throughout the grading procedure is of utmost significance in order to guarantee equitable and precise evaluation of grades [19, 20]. In addition, it is advantageous to furnish exemplars of exemplary work that align with the stipulations delineated in the rubric, as this aids students in gaining a clearer comprehension of the anticipated standards for their own work. It is imperative to offer students feedback utilizing the rubric as a means to facilitate their comprehension of their areas of proficiency and areas for improvement, as well as to guide their future endeavors [20, 21]. In a study conducted by McMillan and Hearn (2015), it was discovered that the implementation of rubrics can enhance student learning outcomes, particularly among students facing academic challenges. The findings of the study indicate that students who were provided with feedback utilizing a rubric exhibited more substantial enhancements in their writing abilities compared to their counterparts who got generic comments without a rubric. In a separate investigation conducted by Brookhart and Chen (2015), it was discovered that the use of rubrics can enhance the precision of teacher grading and diminish the amount of time required for grading. The utilization of rubrics by teachers in the evaluation of essays resulted in enhanced accuracy and efficiency in the grading process, as evidenced by the findings of the study [22, 23].

### **3. Rubric Validity and Reability**

Rubrics are commonly used in educational and assessment settings to provide a structured and transparent method of evaluating student performance. However, it is essential to ensure that the rubric being used is both reliable and valid to ensure accurate and consistent assessment results. Reliability refers to the consistency of scores given by different assessors or the same assessor on different occasions. If a rubric is reliable, it should produce similar results when used by different assessors to evaluate the same work or when used by the same assessor to evaluate the same work at different times [24, 25]. One common method of assessing reliability is through inter-rater reliability, which refers to the degree of agreement between different raters or judges when scoring a given assessment. On the other hand, validity refers to the extent to which a rubric measures what it is intended to measure. A valid rubric should accurately assess the skills or knowledge being evaluated and ensure that students are being assessed based on the intended learning outcomes. One way of assessing validity is to compare rubric scores to scores obtained through other methods of assessment, such as standardized tests or exams. It is important to ensure that rubrics are both reliable and valid to provide accurate and consistent assessments. Poor reliability can lead to inconsistent or inaccurate evaluations, while poor validity can lead to assessments that do not accurately measure the intended learning outcomes [26]. Several studies have explored the reliability and validity of rubrics in various contexts. For instance, in a study conducted by Rezaei and Lovorn (2010), the reliability and validity of rubrics in assessing students' written responses to a social science "writing prompt" were examined. The findings revealed that raters were notably influenced by the mechanical aspects of students' writing, rather than focusing on the content, even when employing a rubric. Furthermore, this study underscored that the use of rubrics might not necessarily enhance the reliability or validity of assessments unless raters are adequately

trained in their effective design and utilization [27]. In another investigation by Jonsson and Svingby (2007), various advantages of incorporating scoring rubrics in performance assessments were proposed. These advantages encompass heightened scoring consistency, the potential to facilitate valid evaluations of intricate competencies, and the promotion of learning. It is worth noting that the dependable scoring of performance assessments can be significantly improved through the use of rubrics, especially when they are analytic, tailored to specific topics, and accompanied by exemplars and/or rater training. However, it should be emphasized that rubrics alone do not inherently ensure valid assessments of performance. Valid assessment, on the other hand, could be advanced by employing a more comprehensive validity framework when validating the rubric. Additionally, it is noteworthy that rubrics demonstrate the potential to enhance learning and instructional improvement [28].

#### **4. Use of Holistic and Analysis Rubric in Malaysia's Universities**

Holistic rubrics are widely used in higher education institutions around the world to assess students' performance in various fields of study. In Malaysia, universities have also adopted this approach in their assessment practices. Holistic rubrics evaluate the overall quality of students' work by providing a global score based on a set of general criteria, rather than breaking down each criterion into individual scores [29, 30]. One of the main benefits of using holistic rubrics in Malaysian universities is that they allow for a more efficient assessment process. Holistic rubrics provide a straightforward and simple approach to grading that allows assessors to quickly evaluate a large number of assignments. This is especially important in Malaysian universities, where class sizes can be quite large. By using a holistic rubric, assessors can grade a large number of assignments in a short amount of time while maintaining consistency and accuracy in their evaluations. Another benefit of using holistic rubrics in Malaysian universities is that they provide a clear understanding of what is expected of students. Holistic rubrics usually include general descriptions of the performance levels for each criterion, which can help students to better understand what is required to achieve a high score. This can lead to improved student learning outcomes, as students are better able to focus on the key skills and knowledge needed to succeed. However, there are also some limitations to using holistic rubrics in Malaysian universities. One of the main limitations is that they may not provide detailed feedback to students. Since holistic rubrics provide a global score rather than individual criterion scores, students may not receive detailed feedback on areas where they need to improve. This can be problematic for students who are seeking to improve their performance and may need more specific feedback to guide their efforts. Another limitation of using holistic rubrics in Malaysian universities is that they may be less reliable than analytic rubrics. Analytic rubrics break down each criterion into individual scores, which allows for a more detailed and specific evaluation of students' work. This can lead to more reliable assessments, as assessors can more accurately evaluate each criterion separately. In contrast, holistic rubrics may be less reliable because they rely on a single score that is based on general impressions of the work rather than specific evaluations of each criterion [31].

Analytic rubrics have become increasingly popular in Malaysia universities as a means of evaluating student work. Unlike holistic rubrics, which provide an overall score for the assignment, analytic rubrics break down the assignment into specific criteria and provide a separate score for each one. This approach allows for more detailed feedback and helps students understand their strengths and weaknesses in each area. One example of the use of analytic



rubrics in Malaysian universities is in the evaluation of student writing. In a study conducted by Bukhari et al. (2021), the effectiveness of various assessment rubrics was explored within the context of a research writing course at a Malaysian university. The research findings indicated significant enhancements in the quality of students' writing across three successive drafts. Both students and their supervisors acknowledged these improvements, particularly after the introduction of a departmental rubric. Notably, the revised rubric contributed to additional and more specific improvements, especially in areas such as literature searches, problem statement formulation, research question development, and operational definitions of variables. Furthermore, there was a broader improvement in writing clarity, with students incorporating examples and offering relevant explanations tailored to their research topics [32]. In another study by Darmi et al. (2022), a rubric was proposed for the assessment of innovation teaching practicum. This rubric was developed through the review and analysis of three documents, focusing on the alignment between learning and innovation constructs. The outcome of this analysis resulted in an eight-construct rubric that aligns seamlessly with the learning objectives, national content and learning standards, and assessment criteria set forth by the Ministry of Education in Malaysia [33].

## **5. Conclusion**

Rubrics emerge as invaluable tools for fostering assessment for learning. They provide a structured framework with explicit criteria and levels of attainment, streamlining the assessment process and enabling educators to offer constructive feedback, ultimately advancing students' educational development. Constructing an effective rubric begins with a meticulous articulation of learning objectives, aligning them with overarching course goals and adhering to SMART criteria. The successful implementation of rubrics can yield substantial benefits for student learning outcomes. In this endeavor, involving students in the rubric-building process can enhance their understanding of assignment criteria, fostering a sense of ownership in their own learning. However, it is paramount that rubrics are both reliable and valid to ensure consistent and accurate assessment results. Reliability ensures that different assessors and the same assessor at different times yield similar results when evaluating the same work. Holistic rubrics, widely adopted in higher education institutions worldwide and in Malaysia, evaluate overall work quality by providing a global score based on general criteria, simplifying the assessment process. In embracing rubrics as a cornerstone of effective assessment, educators can guide students toward academic excellence, fostering a deeper understanding of course objectives and facilitating their journey towards achieving higher learning outcomes.

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## **Competing Interest**

All authors declare no competing interest.

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