Evaluation scores processing and interpretation techniques

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ABSTRAK

Pengolahan dan interpretasi skor evaluasi merupakan tahapan penting dalam penilaian pembelajaran karena menentukan validitas informasi mengenai pencapaian hasil belajar peserta didik. Perkembangan teknologi telah mendorong perubahan signifikan dalam teknik pengolahan data evaluasi, dari pendekatan manual menuju pemanfaatan teknologi digital. Artikel ini bertujuan untuk mengkaji teknik pengolahan skor evaluasi secara manual dan digital serta menganalisis proses interpretasi hasil evaluasi secara sistematis dan bermakna. Metode yang digunakan adalah studi kepustakaan dengan pendekatan deskriptif kualitatif melalui penelaahan berbagai buku teks, artikel jurnal, dan dokumen ilmiah yang relevan dengan evaluasi pendidikan dan pemanfaatan teknologi penilaian. Hasil kajian menunjukkan bahwa pengolahan data evaluasi berbasis digital memiliki keunggulan dalam hal efisiensi, akurasi, dan kemudahan analisis dibandingkan dengan teknik manual, meskipun pendekatan manual masih relevan pada kondisi tertentu. Analisis dan interpretasi hasil evaluasi yang dilakukan secara tepat dapat membantu pendidik memahami tingkat pencapaian belajar, mengidentifikasi kebutuhan remedial atau pengayaan, serta mendukung pengambilan keputusan pembelajaran yang objektif. Dengan demikian, penguasaan teknik pengolahan dan interpretasi skor evaluasi menjadi kompetensi penting bagi pendidik dalam meningkatkan kualitas penilaian dan proses pembelajaran.

Kata Kunci: pengolahan data evaluasi; teknik manual; teknik digital; analisis hasil evaluasi

ABSTRACT

The processing and interpretation of evaluation scores is a crucial step in learning assessment because it determines the validity of information regarding student learning outcomes. Technological developments have driven significant changes in evaluation data processing techniques, from manual approaches to the use of digital technology. This article aims to examine manual and digital evaluation score processing techniques and to analyze the process of interpreting evaluation results systematically and meaningfully. The method used is a literature study with a qualitative descriptive approach through a review of various textbooks, journal articles, and scientific documents relevant to educational evaluation and the use of assessment technology. The results of the study indicate that digital-based evaluation data processing has advantages in terms of efficiency, accuracy, and ease of analysis compared to manual techniques, although the manual approach is still relevant under certain conditions. Appropriate analysis and interpretation of evaluation results can help educators understand the level of learning achievement, identify remedial or enrichment needs, and support objective learning decision-making. Thus, mastery of evaluation score processing and interpretation techniques is an important competency for educators in improving the quality of assessment and the learning process.

Keyword: evaluation data processing; manual techniques; digital techniques; evaluation results analysis

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1. INTRODUCTION

Evaluation of learning outcomes plays a crucial role in the learning process because it provides educators with a means to determine the extent to which predetermined learning objectives have been achieved. Evaluation data presented numerically will not convey clear meaning if not processed and interpreted correctly. Therefore, mastery of data processing techniques and evaluation score interpretation is essential to ensure that assessment results accurately reflect student abilities.

Evaluation data processing can be done manually or with the aid of digital technology. Manual processing can train educators' accuracy, but it takes a relatively longer time and has a greater potential for error. In contrast, the use of digital technology such as Microsoft Excel or Google Forms allows for faster, more efficient, and more accurate data processing. After the data processing stage is complete, the next step is analyzing and interpreting the evaluation results. This stage aims to determine students' achievement levels against the Minimum Completion Criteria (KKM) and determine appropriate follow-up actions, such as implementing remedial or enrichment programs. Therefore, teachers' ability to process and interpret evaluation data is a crucial factor in making appropriate learning decisions and contributing to improving the quality of learning (Suryani, 2022).

In line with technological developments and increasing demands for teacher professionalism, mastery of evaluation score processing and interpretation techniques has become an indispensable competency. Teachers are not only required to be able to design assessment instruments but also to understand the procedures for systematically processing evaluation data, both through simple statistical calculations and utilizing digital technology. Errors in data processing and score interpretation can result in inaccurate assessments of student abilities and result in less objective learning decisions.

Therefore, studying evaluation score processing and interpretation techniques is crucial to providing educators with a comprehensive understanding of how to transform raw evaluation data into meaningful information. Mastering these techniques will enable evaluation results to serve not only as a tool for measuring learning outcomes but also as a basis for reflection and ongoing learning improvement efforts.

2. RESEARCH METHOD

This study employs a library research approach with a qualitative descriptive approach. The choice of this method is based on the research objective, which focuses on the study and presentation of concepts, procedures, and techniques for processing and interpreting evaluation scores in education, both manually and digitally, without involving empirical data collection in the field. The data used in this study are sourced from secondary data, obtained through various references such as educational evaluation textbooks, scientific journal articles, and other academic documents relevant to the topic of evaluation data processing, learning outcome analysis, and score interpretation.

Data collection was carried out using documentation techniques, namely reviewing, scrutinizing, and grouping important information from library sources that are in accordance with the focus of the study. The data analysis process was carried out descriptively and analytically by systematically outlining the stages of evaluation data processing, both manually and digitally, starting from the process of data collection, scoring, value processing, to analysis and interpretation of evaluation results.

Furthermore, this study examines the advantages and limitations of each data processing technique, as well as their impact on decision-making in learning activities. The results of this analysis are then synthesized to provide a comprehensive understanding of the critical role of evaluation score processing and interpretation techniques in supporting objective, accurate, and meaningful learning outcome assessment in the context of educational evaluation.

3. RESULTS AND DISCUSSION

A. Definition of Evaluation Data Processing

Evaluation data processing is a systematic process of transforming raw assessment data into meaningful information through manual and digital compilation, grouping, calculation, and analysis. The primary goal is to obtain an objective picture of learning outcomes, instructional effectiveness, and the quality of the evaluation instruments used (Hase & Kuhl, 2024).

In line with the objectives stated in the *Introduction* chapter, this section is expected to provide a conceptual foundation that supports the presentation of findings in the *Results and Discussion* chapter, thereby ensuring coherence between the research objectives and the outcomes discussed. Moreover, this discussion also highlights the potential for further development of research results and the application prospects of subsequent studies based on the findings presented in the *Results and Discussion* chapter.

In the context of educational evaluation, evaluation data processing includes checking data accuracy, assigning scores to student learning outcomes or responses, tabulating data, conducting statistical analysis, and interpreting the results to determine the level of achievement of learning objectives. This process can be

conducted manually, using hand calculations or simple spreadsheets, or digitally, using software such as Excel, SPSS, or computer-based evaluation systems. According to Sugiyono (2023), evaluation data processing aims to produce valid, reliable, and meaningful information so that evaluation results can be used as a basis for educational decision-making. This means that raw data obtained from the evaluation process must be processed using appropriate procedures to accurately reflect the actual conditions of the participants being evaluated. In general, digital evaluation data processing helps teachers and educational researchers assess student development efficiently, objectively, and transparently (Anghel, 2024).

Thus, evaluation data processing can be defined as the process of compiling, analyzing, and interpreting evaluation results to provide a clear picture of the effectiveness of an activity or the level of student achievement toward learning objectives.

Evaluation data processing is divided into two types:

1) Manual Evaluation Data Processing

Manual evaluation data processing is the process of managing, calculating, and analyzing learning evaluation results using traditional methods without the aid of computer software. This process is performed by hand or using a calculator, and recording is done in writing on paper or in a simple Excel spreadsheet. Manual processing focuses on adding raw scores, calculating averages, and grouping scores based on the minimum passing grade (KKM) to determine student learning outcomes (Arbeni, 2024).

Stages of manual processing include:

a) Checking answer sheets by reviewing the completeness and accuracy of student responses.
b) Scoring, in which each answer is assigned a value according to the answer key (correct = 1, incorrect = 0 for objective tests).
c) Adding raw scores by calculating the total score for each participant.
d) Calculating the final score using a simple formula: Final Score = Score Obtained / Maximum Score × 100.
e) Conducting simple analysis, including calculating the class average, highest score, lowest score, and score distribution.

2) Digital Evaluation Data Processing

Digital evaluation data processing is the process of collecting, cleaning, analyzing, and presenting evaluation data using technologies such as online platforms, applications, and software to obtain more efficient and objective insights. In a digital context, evaluation data processing is carried out with the help of software such as Google Forms, Excel, SPSS, or a Learning Management System (LMS), which enables fast, accurate, and real-time analysis (Wahyuni, 2024).

This process involves using digital tools to collect responses, perform automated scoring—especially for multiple-choice and short-answer questions—and present results in easily understandable formats such as graphs and tables. Digital evaluation allows for automated score calculation, reliability analysis, validity analysis, and rapid interpretation of results through real-time data visualization (Anisa, 2024).

Stages of digital processing include, Data Collection

The initial stage in digital processing is data collection. Data are obtained from various sources, such as computer-based tests (CBT), online quizzes in an LMS (e.g., Moodle, Google Classroom, or Kahoot), or answer sheets scanned using Optical Mark Recognition (OMR).

B. Analysis of Results and Interpretation

Evaluation analysis refers to the activities undertaken after an evaluation to collect, process, and interpret student learning outcome data. The goal is to generate useful information regarding students' level of success in understanding the learning material. This process includes processing data in both numerical and qualitative forms to measure student achievement against established standards. In this analysis, qualitative data, such as observations or interviews, and quantitative data, such as exam or test scores, are combined to provide a more comprehensive picture. The results of this analysis serve as the basis for decision-making related to improving the teaching and learning process, both in determining more effective teaching strategies and in formulating more appropriate educational policies (Sari, 2023).

1) Numerical Data (Quantitative)

Quantitative data were obtained from the results of a digital test for seventh-grade Mathematics, consisting of 20 multiple-choice questions. The test was administered using Google Forms, and the results were automatically recorded in a Google Spreadsheet.

The highest score was 95, the lowest score was 70, and the range of scores was 25. This quantitative data shows that two out of three students (66.7%) achieved scores above the Minimum Competency Criteria (KKM) of 75. Thus, it can be concluded that the class learning completion rate reached 66.7%, while 33.3% of students had not yet achieved completion. This quantitative analysis indicates that the level of effectiveness

of digital learning is relatively high; however, there is still a need to improve learning strategies for a small number of students.

2) Categorical Data (Qualitative)

Based on the categorical data, it can be seen that most students are classified in the good category or above, indicating a relatively high level of understanding of the learning material. This analysis provides a qualitative description of students' level of mastery, which teachers can use to determine appropriate follow-up learning actions. According to Arbeni (2024), qualitative analysis in the evaluation of learning outcomes helps educators understand student achievement characteristics based on descriptive categories rather than solely numerical values.

Based on the quantitative and qualitative analyses above, the following interpretations can be drawn:

1. The learning process is effective, as the class average score exceeds the Minimum Competency Criteria (83.3 > 75).
2. The majority of students demonstrate a good understanding of the material, particularly Saupy and Arifin, who achieved high scores.
3. One student, Surya, still requires additional assistance or remedial learning, indicating that digital evaluation can help teachers identify students who need more focused support.
4. The use of digital technology, such as Google Forms and Google Spreadsheets, enables teachers to process and interpret evaluation data quickly, accurately, and transparently.

These interpretations are consistent with Arifin's (2022) view that the interpretation of evaluation data represents the stage of understanding the meaning behind analytical results, enabling educators to make appropriate decisions to improve the teaching and learning process.

4. CONCLUSION

"Evaluation Score Processing and Interpretation Techniques" concludes that evaluation score processing and interpretation are essential components of the learning outcome assessment process because they play a role in indicating the level of achievement of learning objectives. Data processing can be carried out using either a manual or digital approach. Manual processing requires high accuracy and is suitable for limited data volumes, although it takes longer and has the potential to cause errors. In contrast, digital processing using technologies such as Google Forms, Microsoft Excel, or SPSS allows the assessment process to be faster, more accurate, more efficient, and easier to present in visual form.

The stages of evaluation data processing include data collection, data cleaning, scoring, analysis, and interpretation of results. Data analysis, both quantitative and qualitative, provides a comprehensive picture of student learning outcomes and serves as the basis for determining follow-up learning activities, such as remedial or enrichment programs. Interpretation of evaluation results serves to provide meaning to the data obtained so that scores are not understood merely as numbers, but as information that reflects the success of the learning process. Therefore, mastering evaluation score processing and interpretation techniques is crucial for educators to be able to produce objective and accurate assessment decisions that contribute to improving the quality of learning.

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