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The Use of Technology Bloom's Taxonomy in Formative and Summative Evaluation: A Systematic Literature Review

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ABSTRACT

Objective: *This study aims to systematically examine the use of Bloom's Taxonomy in formative and summative evaluations as an important instrument for measuring student learning outcomes. The revised Bloom's Taxonomy offers a systematic cognitive framework from levels C1 (remembering) to C6 (creating), which can be used as a basis for developing valid and meaningful evaluations.* ***Method:*** *This study was conducted using a systematic literature review method on 30 articles published between 2020 and 2025. The analysis results indicate that the application of Bloom's Taxonomy in formative evaluations is still dominated by lower cognitive levels (C1-C2), despite efforts to strengthen the approach to higher-order thinking. Meanwhile, Bloom-based summative evaluations have demonstrated increased validity and alignment with learning outcomes, particularly through the use of rubrics and authentic assessments.* ***Results:*** *This study also identified various challenges, such as low teacher competency in developing taxonomy-based instruments and the suboptimal integration of technology, including artificial intelligence, to support adaptive evaluation. Nevertheless, several practical strategies were identified, such as teacher training, the use of competency-based question banks, and the development of digital-based project evaluations.* ***Novelty:*** *The integration of Bloom's Taxonomy into learning evaluation has significant potential to improve assessment quality, mainly if supported by systemic policies, ongoing training, and technological innovation. This research provides a conceptual contribution to the development of an evaluation system that is fair, objective, and relevant to the needs of 21st-century education.*

INTRODUCTION

Technology is increasingly advancing, requiring human cognitive systems to evolve to adapt to rapid change. While basic reading, writing, and arithmetic skills were considered sufficient in the past, in the digital era and the Fourth Industrial Revolution, humans are required to master critical thinking, complex problem-solving, creativity, and digital literacy (Kennedy & Sundberg, 2020; Le et al., 2022; Lintangesukmanjaya et al., 2025). Technological developments such as artificial intelligence, big data, and the Internet of Things require more analytical, systematic, and flexible thinking, requiring continuous updating of human cognitive systems. This means that outdated thinking patterns can no longer limit human cognitive capacity but must be able to absorb, process, and apply information in accordance with technological demands to remain relevant in today's globalized social, economic, and educational life.

Learning evaluation is an integral part of the educational process, aiming to determine the extent to which students have achieved the established competencies. Formative and summative evaluations are the two main approaches to measuring the

learning process and outcomes. Formative evaluations are conducted during the learning process as a diagnostic tool, while summative evaluations are conducted at the end of a learning phase to assess overall learning outcomes (Sari & Putra, 2023). Both types of evaluation are crucial in helping teachers and lecturers provide feedback, adjust learning strategies, and determine the effectiveness of the teaching process.

In developing evaluation instruments, a systematic framework is essential to ensure objective measurability of learning outcomes. The revised Bloom's Taxonomy developed by Anderson and Krathwohl (2001) provides a hierarchical framework for understanding and developing learning objectives, encompassing six cognitive thinking categories: Remembering (C1), Understanding (C2), Applying (C3), Analyzing (C4), Evaluating (C5), and Creating (C6). This taxonomy emphasizes not only factual knowledge but also conceptual, procedural, and metacognitive knowledge. The application of this framework allows for a more comprehensive evaluation and provides opportunities for students to demonstrate higher-order thinking skills (Ramlan, 2020).

Despite its high urgency, many teachers and lecturers still develop evaluation instruments without considering the alignment between learning objectives and the cognitive level to be achieved. Evaluations are often dominated by questions at the C1 and C2 levels, such as remembering and understanding, while analytical, evaluating, and creative abilities are rarely measured consistently (Fitriani et al., 2025). As a result, the evaluations conducted do not reflect students' critical and creative thinking skills, even though these competencies are the primary demands of 21st-century education (Effendi, (2017). To address this problem, researchers and education practitioners recommend integrating the revised Bloom's Taxonomy into learning evaluation practices, both formative and summative. Teacher training and curriculum development based on learning outcomes measured through cognitive dimensions C1-C6 are strategic solutions to improve evaluation quality (Rozi, 2023). With proper implementation, this taxonomy can be used to develop evaluation instruments oriented toward strengthening higher-order thinking skills and minimizing biased and superficial evaluation practices.

Several recent studies have emphasized the strategic role of Bloom's Taxonomy in developing learning evaluations. Research by Pratiwi et al. (2022) found that implementing Bloom's Taxonomy in formative evaluations positively impacted students' metacognitive awareness. With an evaluation design that encompasses multiple cognitive levels, students are more motivated to reflect on their understanding and take corrective action throughout the learning process. Meanwhile, developed a summative evaluation tool based on a Bloom's Taxonomy assessment map and found that this approach improved construct validity and item reliability (Effendi, 2017). The developed instrument not only measured learning outcomes quantitatively but also qualitatively through project-based assignments that reflected students' thinking processes. This demonstrates that the use of Bloom's Taxonomy extends beyond the

development of multiple-choice questions to encompass more meaningful, authentic assessments.

Research by Maulida et al. (2024) shows that integrating Bloom's Taxonomy with learning technology platforms provides a solution to the challenges of the digital era. In the context of online learning, technology-based evaluation using the taxonomy framework can prevent students from manipulating learning outcomes. Furthermore, an adaptive evaluation system developed based on cognitive levels can provide more accurate and personalized assessment results.

Based on a review of national literature over the past five years, there is a tendency for research on Bloom's Taxonomy to focus on the development of teaching tools or implementation case studies limited to a single form of evaluation, either formative or summative (Halim, 2024). Studies integrating both types of evaluation within a systematic framework are still minimal. However, the relationship between formative and summative evaluation is crucial for creating continuity and consistency of assessment throughout the learning cycle. Furthermore, the rapid development of technologies such as artificial intelligence (AI) has not been widely discussed in relation to the implementation of Bloom's Taxonomy in learning evaluation. However, the use of technology in online learning opens up new opportunities and challenges in designing valid and fair evaluation systems. The lack of studies examining the integration of Bloom's Taxonomy with AI-based evaluation systems indicates a research gap that needs to be filled, particularly in the context of digital education in Indonesia.

This study aims to present a systematic literature review (SLR) examining the use of Bloom's Taxonomy in formative and summative evaluation across elementary and higher education levels. This research will map implementation strategies, effectiveness, and the challenges and opportunities emerging from integrating Bloom's Taxonomy into learning evaluation. The novelty of this study lies in its approach, which not only examines formative and summative evaluation separately but also examines their comprehensive integration within the context of utilizing the revised Bloom's Taxonomy. Furthermore, the focus on technological and artificial intelligence aspects of learning evaluation makes this study relevant to the dynamics of today's digital education. The scope of this study includes national scientific articles and scientific conference proceedings from the past five years (2020-2025) that discuss the integration of Bloom's Taxonomy in formative and summative evaluation, both in conventional and technology-based learning contexts. This study is expected to serve as a strategic reference for educators and educational researchers in developing fair, valid, and modern evaluation systems. Based on these problems, this study aims to conduct an SLR to identify and analyze the use of Bloom's taxonomy in formative and summative evaluations. Using the SLR approach, this study seeks to answer the following main questions:

1. How is the implementation of the revised Bloom's Taxonomy in formative evaluation at various levels of education in Indonesia?

2. What is the strategy for implementing the revised Bloom's Taxonomy in compiling summative evaluations that reflect students' cognitive achievements through the use of technology?
3. What are the challenges and obstacles faced by educators in integrating Bloom's Taxonomy with technology-based learning evaluation and artificial intelligence?
4. What evaluation strategy is most effective according to the literature in utilizing the revised Bloom's Taxonomy to improve the accuracy of learning evaluation results?

RESEARCH METHOD

This study uses the SLR method with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach to identify, evaluate, and synthesize relevant literature (Fountoulakis et al., 2025). That is related to the use of Bloom's taxonomy in formative and summative evaluations.

Research Stages

1. Literature Identification and Search

The literature search was conducted using Publish or Perish software, using the Google Scholar database as the primary source. The keywords used were "Bloom's Taxonomy," "Formative Evaluation," and "Summative Evaluation," with publication years between 2020 and 2025. Initial results yielded a total of 500 publications, including scientific articles, proceedings, and other relevant sources.

2. Literature Selection

From the total search results, an initial selection was conducted focusing only on relevant scientific journal articles, resulting in 100 articles. Further screening based on relevance to the study focus (using Bloom's taxonomy in formative and summative evaluations) yielded 45 articles that met the inclusion criteria. Further screening based on topic suitability resulted in 30 articles for further processing.

Table 1. Inclusion and exclusion criteria

Category	Inclusion Criteria	Exclusion Criteria
Year Range	Published between 2020-2025	Published before 2020.
Main Topics	Focus on formative and/or summative evaluation with the revised Bloom's Taxonomy framework.	Learning evaluation studies that do not use the Bloom's Taxonomy framework or only focus on affective and psychomotor evaluation without cognitive aspects.
Educational Context	Conducted in the context of primary, secondary, or higher education in Indonesia.	Studies conducted solely in the context of non-formal or overseas education without any connection to the Indonesian curriculum.

3. Data Extraction and Syntesis

Data from 30 selected articles were analyzed using a table-based data extraction technique, which included author information, year, primary findings, and answers to the research questions. This process was carried out to identify patterns, trends, and key

findings related to the study topic. Synthesis was carried out narratively by grouping articles based on central themes and their contribution to the use of Bloom's taxonomy in formative and summative evaluation.

4. PRISM Visualization

The PRISMA flowchart was used to visualize the process of article identification, screening, eligibility, and inclusion. The diagram lists the number of articles at each selection stage, including the reasons for exclusion of articles that did not meet the criteria, as shown in Figure 1.

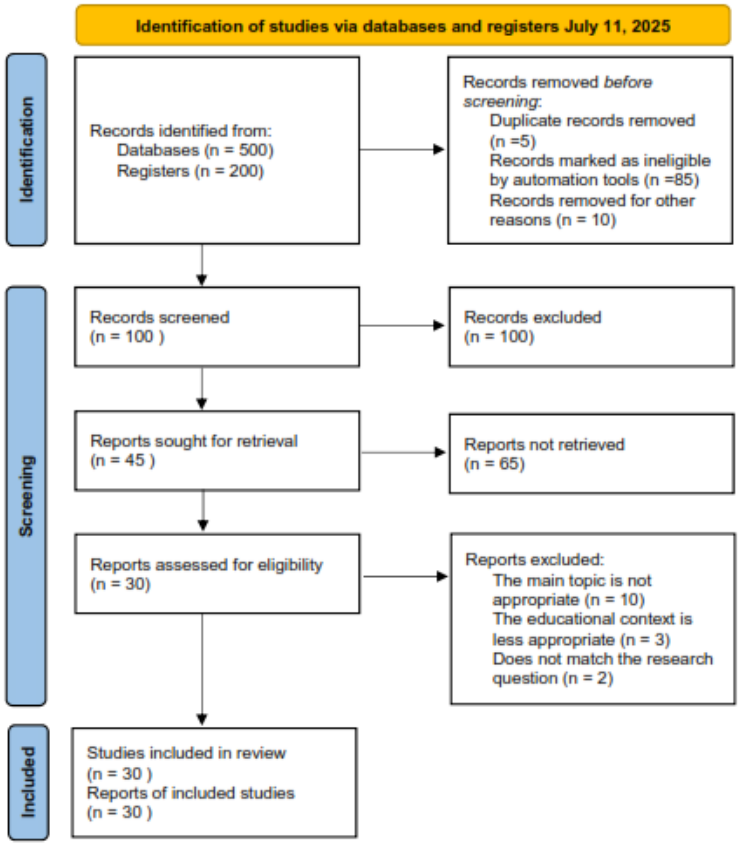

Figure 1. PRISMA diagram of the number of articles at each selection stage

RESULTS AND DISCUSSION

Results

Below, we present 30 articles relevant to the use of Bloom's Taxonomy in formative and summative evaluation. Complete details of these articles can be found in Table 1, which includes the author, year of publication, title, key findings, and the research questions addressed in each article.

Table 2. Article findings based on SLR (2020–2025)

No	Authors	Year	Article Topic	Fidings	Research Questions
1	Winarti et al.	2023	Efforts to Implement Reading Evaluation in Higher Grades	Evaluation does not include HOTS; dominant C1–C2	Q1, Q4
2	Fitriani et al.	2025	Development and Role of Measurement	Valid measuring tools increase the objectivity of	Q2, Q4

			Tools	evaluation	
3	Astuti et al.	2024	Problems with Independent Curriculum Assessment	Teachers find it difficult to differentiate between formative and summative	Q3, Q5
4	Nurhijrah	2023	Bloom's Taxonomy-Based Flipped Classroom	Effective integration of formative and summative evaluation	Q1, Q2
5	Fauzi	2023	Formative Evaluation in Islamic Education Learning	Formative increases learning effectiveness	Q1
6	Sudianto	2021	Implementation of Bloom in Social Studies Learning	Bloom's Taxonomy strengthens cognitive evaluation	Q1, Q4
7	Nurhayati	2020	Formative and Summative Evaluation: Theory-Practice	The combination of evaluations results in a comprehensive assessment.	Q2, Q4
8	Amrizal	2021	Development of Bloom's Evaluation Instrument	The validity of the instrument increases	Q2
9	Latifah	2023	Effectiveness of Authentic Assessment	Authentically assessing comprehensive learning outcomes	Q5
10	Ashari	2022	Evaluation in the Independent Curriculum	Evaluation must be contextual & digital-adaptive	Q3
11	Putra et al.	2023	Bloom-Based Evaluation Rubric	Rubrics clarify student achievement levels	Q2, Q5
12	Suarni et al.	2024	Authentic Evaluation of P5 Project	Teachers consider project assessments like regular tests.	Q3, Q5
13	Kurniawan et al.	2022	Evaluation in Digital Learning	Adaptive and data-driven evaluation	Q3, Q4
14	Asrul et al.	2021	Teacher Competence in Summative Evaluation	Teachers need to improve their evaluation competencies	Q2, Q4
15	Rosidah et al.	2021	Teacher Challenges in Authentic Assessment	Rubrics are difficult for teachers to use	Q3
16	Mustika et al.	2021	Evaluation of Effective Learning	Evaluation requires analysis and follow-up	Q2
17	Rahmah & Nasryah	2019	Competency-Based Assessment	Assessment focuses on competency, not memorization.	Q1
18	Bonita & Amini	2020	Authentic Evaluation of the Independent Curriculum	Supporting meaningful & reflective learning	Q5
19	Ibrahim	2012	Evaluation vs Measurement and Assessment	Evaluation is broader in scope	Q2
20	Zainul & Nasution	2001	Evaluation Instruments in	Observation instruments are important for evaluation	Q2

			Indonesia		
21	A'zima Fauzi	2025	Mathematics Formative Evaluation	C4–C6 based essays yield in-depth evaluations	Q1, Q2
22	Afrida et al.	2020	Evaluation of Geometry Problems	Still dominant in C1–C2	Q1
23	Zuhri & Fauzi	2020	Bloom and Mathematics Learning	Taxonomy helps structure learning & assessment	Q1, Q4
24	Halim	2024	Effectiveness of Summative Assessment	Project-based summative delivers valid results	Q2
25	Isropil et al.	2025	Formative & Summative Effectiveness	Combination of evaluations results in objective achievements	Q2
26	Maulida et al.	2024	Evaluation of the Independent Curriculum for Elementary Schools	Contextual evaluation helps validate learning outcomes	Q3, Q4
27	Makbul et al.	2022	Integrated Formative-Summative Evaluation	Integrated results in comprehensive measurements	Q2
28	Jamaluddin et al.	2022	Non-Test Evaluation Instruments	Non-test evaluation is suitable for digital assessment	Q3, Q5
29	Wahyuni	2023	HOTS in Evaluation	Evaluation must involve C4–C6 for meaningful results.	Q1, Q5
30	Ratna Wulan	2023	Revised Bloom's Taxonomy	Bloom revision is suitable for digital evaluation design	Q1, Q3, Q5

Discussion

The following is the discussion section of the systematic review "Using Bloom's Taxonomy in Formative and Summative Evaluation," developed based on 30 analyzed articles, addressing the five main research questions (Q1–Q5) as formulated in the introduction:

Q1: Implementation of the revised Bloom's Taxonomy in formative evaluation at various levels of education in Indonesia?

The implementation of the revised Bloom's Taxonomy in formative evaluation has significantly contributed to the effectiveness of learning at various levels of education. Pratiwi et al. (2022) demonstrated that formative evaluation utilizing various cognitive levels within this taxonomy successfully increased students' metacognitive awareness. Similar findings were presented by Fauzi (2023), who stated that formative evaluation based on Bloom's Taxonomy significantly improved conceptual understanding in Islamic Religious Education (PAI) learning in junior high schools..

Furthermore, Sudianto (2025) emphasized the importance of teacher training in developing formative assessment questions according to cognitive levels. During the training, teachers demonstrated improvements in their question-designing skills, from the basic level (C1-C2) to the intermediate and advanced levels (C4-C6), demonstrating the success of the teacher capacity-building strategy. However, A'zima Ashari Fauzi

(2025) also identified challenges in implementation, including teachers' limited time to revise and validate assessment questions, as well as limited question variety based on student characteristics. This demonstrates the need for a differentiated approach in formative assessment design, as supported by Nurhijrah (2023) through the integration of the flipped classroom model.

Q2: What strategies can be used to implement the revised Bloom's Taxonomy in developing summative evaluations that reflect students' cognitive achievements?

Summative evaluations based on Bloom's Taxonomy offer a systematic structure for measuring final learning outcomes. Developed a Bloom-based assessment map that enhances construct validity and strengthens authentic assessment, particularly through projects and final assignments (Ramdani et al., 2021). These findings are supported by Latifah (2023), who revealed the effectiveness of authentic assessments in assessing students' holistic achievements.

The importance of using a Bloom-based evaluation rubric to clarify competency indicators at each cognitive level, enabling teachers to develop evaluations that measure not only factual knowledge but also critical thinking and creative skills (Putra et al., 2023). These findings align with Ashari (2022), who recommends alignment between summative evaluations and learning outcomes in the Independent Curriculum. However, many teachers lack sufficient competency to consistently develop summative evaluations based on Bloom's Taxonomy (Asrul et al., 2021). Therefore, ongoing training strategies and the use of competency-based question banks are recommended.

Q3: What challenges and obstacles do educators face in integrating Bloom's Taxonomy with technology-based learning evaluations and artificial intelligence (AI)?

Integrating Bloom's Taxonomy-based evaluations in the context of educational technology faces several key challenges. Research by Andriani & Fauzan (2020) states that the limitations of digital-based evaluation systems lead to the potential for manipulation of learning outcomes in online assessments. Although digital platforms such as LMSs allow the use of automated quizzes for different cognitive levels, the personalization of evaluations remains limited.

Kurniawan et al. (2022) suggested that digital assessments be adaptive, tailored to students' cognitive profiles. However, only a few local platforms implement such systems. Teachers still perceive the P5 project assessment solely as a final test, without a thorough understanding of the use of Bloom-based evaluative technology (Suarni et al., 2024). Furthermore, limited training in the use of technology for evaluation, particularly in AI integration, also hampers the optimization of digital evaluation systems (Jamaluddin et al., 2022). Evaluation tools that can analyze open-ended responses, creative projects, and taxonomy-based reflective thinking, as developed in non-test evaluation contexts, are needed.

Q4: What evaluation strategies, according to the literature, are most effective in utilizing the revised Bloom's Taxonomy to improve the accuracy of learning evaluation results?

The effectiveness of an evaluation strategy is determined by the integration between learning objectives, learning activities, and evaluation instruments (constructive alignment). Research by Fauzi (2025) confirms that adjusting question complexity to student abilities, along with regular reviews of instrument effectiveness, improves the accuracy of formative evaluation results. Another proven effective strategy is the use of authentic project-based assessments (Latifah, 2023; Bonita & Amini, 2020), which allow students to demonstrate higher-order thinking skills through tangible products. This type of assessment covers levels C4-C6 and is significantly more reflective of actual abilities than multiple-choice questions (Nurhayati, 2023).

Meanwhile, to recommend designing standardized measurement tools with Bloom-based rubrics as a primary strategy for increasing evaluation reliability (Fitriani et al., 2025; Makbul et al., 2022). This instrument also makes it easier for teachers to identify student achievement gaps based on the taxonomy.

Q5: How are the cognitive levels in Bloom's Taxonomy related to authentic assessment forms used in digital learning?

Authentic evaluations, such as project-based assessments and self-reflection, are closely related to the higher cognitive levels in Bloom's Taxonomy. Research by Winarti et al. (2023) shows that in-depth reading evaluation should include analytical (C4) and evaluation (C5) skills, not just understanding the content of the text (C2). Authentic evaluation in digital learning allows for the flexible integration of various cognitive levels. In the context of a flipped classroom, Nurhijrah (2023) suggests that students can be given project assignments before face-to-face sessions to practice planning (C6) and evaluation (C5) skills. This supports more profound and more reflective learning.

However, evaluation rubrics needed to assess higher cognitive achievement are often considered complex and challenging for teachers to master (Rosidah et al., 2021). Therefore, it is necessary to develop rubric templates and technology-based support tools to facilitate consistent, authentic assessment. Overall, this study confirms that the revised Bloom's Taxonomy is a strategic framework for improving the quality of formative and summative evaluation. The use of this taxonomy encourages a shift from memory-based evaluation to in-depth and contextual evaluation. However, optimal implementation still requires support from teacher training systems, the development of adaptive evaluative technology, and systemic integration between formative and summative learning. This study's contribution provides strategic direction for curriculum designers, teachers, and educational technology platform developers to develop learning evaluation systems that are fair, meaningful, and relevant to current demands.

CONCLUSION

Fundamental Findings: This literature review found that the implementation of the revised Bloom's Taxonomy significantly improves the quality of learning assessment in Indonesia. However, the majority of educators still predominantly use lower cognitive levels (C1–C2) in formative evaluation. There is a positive trend towards the use of

higher levels (C4–C6) through authentic and project-based assessments. **Implications:** These findings emphasize the need for teacher training in developing evaluation instruments that cover all cognitive levels. The integration of digital technology and AI has the potential to strengthen adaptive and personalized assessments. The implementation of Bloom's Taxonomy can improve the validity, reliability, and fairness of national assessments. **Limitations:** This study is still limited to literature analysis without empirical field data. Most of the reviewed articles focus on traditional evaluations, so the use of AI has not been comprehensively described. Limited teacher competency is also a factor inhibiting full implementation. **Future Research:** Empirical studies are needed to test the effectiveness of AI-based assessments that adopt Bloom's Taxonomy in local contexts. Research should also explore strategies for increasing teacher capacity in digital evaluation design. In addition, the development of adaptive Bloom-based question banks can be a focus for further research.

AUTHOR CONTRIBUTIONS

Dwi Pangga contributed to the conceptual framework, research design, and validation process; **I Gede Ratnaya** was involved in methodology development and data analysis; **I Gusti Lanang Agung Parwata** sourced references and drafted the manuscript; **I Dewa Ayu Made Budhyani** handled data management, project coordination; **Salma Hasna Hamiydah** was manuscript drafting. All listed authors have reviewed and approved the final version of this submission.

CONFLICT OF INTEREST STATEMENT

No conflict interest.

ETHICAL COMPLIANCE STATEMENT

This manuscript complies with research and publication ethics. The authors affirm that the work is original, conducted with academic integrity, and free from any unethical practices, including plagiarism.

STATEMENT ON THE USE OF AI OR DIGITAL TOOLS IN WRITING

The authors acknowledge the use of digital tools, including AI-based technologies, as support in the research and writing stages of this article. Specifically, GPT-AI generated was employed for making correct writing, Grammerly for a writing aid that offers various advantages, especially in terms of improving the quality and clarity of writing in English. All outputs generated with digital assistance were critically evaluated and revised to ensure academic rigor and ethical standards were upheld. The final responsibility for the manuscript rests entirely with the authors.

REFERENCES

Adinda, A. H., Supiana, R., & Darman, D. (2021). Penilaian sumatif dan penilaian formatif pembelajaran online. *Report of Biology Education (ROBE), 2*(1), 1–10. https://doi.org/10.31004/robe.v2i1.229

Afrida, Y. R., Sa'o, S., & Dhiki, Y. Y. (2020). Penerapan Taksonomi Bloom dalam kemampuan berpikir menyelesaikan soal geometri pada kelas VIII. *JUPIKA: Jurnal Pendidikan Matematika, 3*(2), 121–130.

Amrizal. (2021). Pengembangan instrumen evaluasi berdasarkan Taksonomi Bloom. *Jurnal Evaluasi Pendidikan, 11*(2), 90–100.

Anderson, L. W., & Krathwohl, D. R. (2015). *Kerangka landasan untuk pembelajaran, pengajaran, dan asesmen: Revisi Taksonomi Bloom*. Yogyakarta: Pustaka Pelajar.

Andriani, N., & Fauzan, A. (2020). Integrasi Taksonomi Bloom dan teknologi digital dalam pembelajaran daring. *Jurnal Teknologi Pendidikan, 22*(3), 241–255.

Ariana, I. M., Prahani, B. K., Dwikoranto, D., & Kurtuluş, M. A. (2025). Literature review: The effect of science, technology engineering, arts, and mathematics (STEAM)-based LKPD to improve learners creativity in physics learning. *Journal of Innovative Technology and Sustainability Education*, *1*(1), 46-46. https://doi.org/10.63230/jitse.1.1.46

Asrul, A., Sari, D. F., & Prasetyo, B. (2021). Peningkatan kompetensi guru dalam evaluasi sumatif. *Jurnal Pendidikan dan Pembelajaran, 7*(1), 37–46.

Astuti, T. R., & Rahayu, S. (2024). Permasalahan asesmen dalam kurikulum merdeka. *Cetta: Jurnal Ilmu Pendidikan, 7*(1), 21–30.

Azhari, A. (2022). Evaluasi dalam kurikulum merdeka. *Jurnal Ilmu Pendidikan, 10*(2), 134–143.

A'zima, A. F. (2025). Efektivitas evaluasi formatif dalam pembelajaran matematika di MAN 2 Kota Padang. *Pentagon: Jurnal Ilmiah Pendidikan Matematika, 3*(2), 245–252.

Bonita, R., & Amini, F. (2020). Evaluasi otentik dalam kurikulum merdeka. *Cetta: Jurnal Ilmu Pendidikan, 3*(2), 91–98.

Effendi, R. (2017). *Pengembangan evaluasi dan penilaian dalam pembelajaran*. Yogyakarta: UNY Press.

Fauzi, M. (2023). Evaluasi formatif dalam pembelajaran PAI di SMP. *Jurnal Ilmiah Pendidikan Agama Islam, 6*(2), 151–160.

Fitriani, H., Rifai, I., & Zulkarnaen, M. (2025). Development and role of measurement tools in educational evaluation. *Jurnal Evaluasi Pendidikan, 15*(1), 42–52.

Fountoulakis, K. N., Saitis, A., & Schatzberg, A. F. (2025). Esketamine treatment for depression in adults: a PRISMA systematic review and meta-analysis. *American Journal of Psychiatry*, *182*(3), 259-275. https://doi.org/10.1176/appi.ajp.20240515

Halim, A. (2024). Efektivitas asesmen sumatif dalam pengukuran capaian pembelajaran. *Journal of Comprehensive Science, 3*(6), 2072–2081. https://doi.org/10.59188/jcs.v3i6.776

Haryati, S. (2007). *Evaluasi pembelajaran dalam pendidikan Islam*. Malang: UIN Press.

Ibrahim, M. (2012). Evaluasi, pengukuran, dan penilaian dalam pendidikan. *Jurnal Evaluasi Pendidikan, 5*(1), 1–10.

Isropil, S., Malik, M., & Amin, K. (2025). Analisis efektivitas evaluasi formatif dan sumatif dalam proses evaluasi pembelajaran. *KJISE, 1*(1), 115–125. https://doi.org/10.61227/arji.v7i1.301

Jamaluddin, A., Fajrin, F., & Mulyani, S. (2022). Instrumen evaluasi non-tes dalam pembelajaran era digital. *Jurnal Pendidikan dan Teknologi, 4*(1), 30–39.

Kennedy, T. J., & Sundberg, C. W. (2020). 21st Century Skills. In B. Akpan & T. J. Kennedy (Eds.), Science Education in Theory and Practice: An Introductory Guide to Learning Theory (pp. 479–496). *Springer International Publishing*. https://doi.org/10.1007/978-3-030-43620-9_32

Kurniawan, A., Wulandari, R., & Fitri, M. (2022). Peran evaluasi dalam pembelajaran digital. *Jurnal Evaluasi Pembelajaran, 13*(1), 55–63.

Latifah, N. (2023). Efektivitas asesmen otentik dalam pembelajaran tematik. *Jurnal JRPK, 5*(1), 19–26.

Le, S. K., Hlaing, S. N., & Ya, K. Z. (2022). 21st-century competences and learning that Technical and vocational training. *Journal of Engineering Researcher and Lecturer, 1*(1), 1–6. https://doi.org/10.58712/jerel.v1i1.4

Makbul, M., Musthofa, M., & Izzati, N. (2022). Pengembangan evaluasi formatif dan sumatif. *HAWARI: Jurnal Pendidikan Agama Islam, 3*(1), 96–106. https://doi.org/10.35706/hw.v3i1.6788

Maulida, P. L., Dewi, R. R., & Pratama, A. (2024). Keberhasilan evaluasi pembelajaran dalam kurikulum merdeka di SD. *Jurnal Ilmiah PGSD FKIP, 10*(3), 420–428. https://doi.org/10.36989/didaktik.v10i3.4336

Mustika, E., Handayani, D., & Utama, D. (2021). Langkah-langkah evaluasi pembelajaran efektif. *Jurnal Pendidikan Inovatif, 3*(2), 60–70.

Nurhayati, S. (2023). Evaluasi hasil belajar siswa berdasarkan Taksonomi Bloom. *Cendikia: Jurnal Ilmu Pendidikan, 3*(3), 25–38.

Nurhijrah, H. (2023). Pengembangan flipped classroom sebagai model pembelajaran di era digital. *MediaTIK: Jurnal Teknologi Informasi dan Komunikasi, 4*(2), 55–63.

Pratiwi, R., Sumarni, S., & Lestari, I. (2022). Penerapan Taksonomi Bloom pada evaluasi formatif dan dampaknya terhadap metakognisi siswa. *Jurnal Pendidikan Modern, 10*(2), 188–198.

Putra, A. H., & Sari, M. (2023). Penggunaan rubrik evaluasi berbasis Bloom. *Jurnal Evaluasi dan Pengukuran Pendidikan, 13*(2), 109–120.

Rahmah, F., & Nasryah, E. (2019). Konsep asesmen berbasis kompetensi. *Jurnal Evaluasi Pendidikan, 6*(1), 15–22.

Ramlan, E. (2020). Perubahan paradigma Taksonomi Bloom dan implikasinya. *Jurnal Evaluasi Pendidikan, 4*(1), 67–74.

Ratna Wulan, A. (2023). *Taksonomi Bloom Revisi*. Bandung: FPMIPA UPI.

Rozi, I. (2023). Konsep evaluasi pembelajaran berbasis afektif dan kognitif. *Jurnal Evaluasi Pendidikan Islam, 5*(1), 15–28.

Rosidah, R., Yuliana, D., & Farid, H. (2021). Tantangan guru dalam asesmen otentik. *Jurnal Ilmu Pendidikan, 9*(2), 99–106.

Sudianto, E., & Mahmudin, D. (2025). Peningkatan kompetensi guru dalam penyusunan soal berdasarkan Taksonomi Bloom. *SANISKALA: Jurnal Pendidikan dan Teknologi, 3*(1), 35–42.

Suarni, N., Pertiwi, F., & Alfian, R. (2024). Evaluasi autentik pada proyek P5. *Cetta: Jurnal Ilmu Pendidikan, 7*(1), 60–68.

Wahyuni, D. (2023). Implementasi higher order thinking skills (HOTS) dalam evaluasi. *Jurnal Inovasi Pendidikan, 11*(2), 98–106.

Winarti, E., Nurhidayah, L., & Aslamiah. (2023). Upaya penerapan evaluasi membaca di kelas tinggi. *Cendikia: Jurnal Ilmu Pendidikan, 3*(2), 45–55.

Zainul, A., & Nasution, F. (2001). Instrumen evaluasi dalam konteks pendidikan Indonesia. *Jurnal Evaluasi Pendidikan, 2*(1), 1–12.

Zuhri, M., & Fauzi, A. M. (2020). Peran Taksonomi Bloom dalam merancang pembelajaran abad 21. *Prosiding Seminar Nasional Tadris Matematika (SANTIKA), 3*(1), 258–265.

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