

The Impact of Integrating Authentic Assessment in Developing Students' English Learning Outcomes: A Meta-Analysis

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ABSTRACT

Despite growing interest in authentic assessment as a learner-centered approach in English language teaching, empirical findings on its effectiveness in improving students' English learning outcomes remain inconsistent across contexts and assessment types. The absence of synthesized evidence makes it challenging for educators and policymakers to draw firm conclusions about its overall impact. Therefore, this study aims to systematically examine the effect of authentic assessment on students' English learning outcomes using a meta-analytic approach. This study employed a quantitative meta-analysis by synthesizing data from 25 empirical studies published between 2015 and 2025. The studies were retrieved from Google Scholar using the Publish or Perish application and selected based on predefined inclusion criteria. Effect sizes were calculated using Hedges' g , and a Random Effects Model was applied to estimate the pooled effect size while accounting for between-study variability. The results reveal a statistically significant positive effect of authentic assessment on students' English learning outcomes, with a pooled effect size of $g = 1.203$ ($z = 5.54$, $p < .001$). Substantial heterogeneity was observed, justifying the use of the random-effects model. Funnel plot analysis indicates no serious publication bias. Overall, the findings confirm that authentic assessment has a strong and meaningful influence on English learning outcomes and supports its integration into English language teaching practices.

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1. INTRODUCTION

In the era of the Industrial Revolution 4.0, English has increasingly served as a global language for international communication, higher education, and access to digital information [1]. In many Non-Native English Countries (NNEC), English proficiency is no longer optional but essential for participating in global academic and professional communities. Consequently, English teachers are encouraged to implement innovative

instructional approaches to improve students' learning outcomes [2]. However, assessment, an essential component that shapes learners' progress, motivation, and learning behavior, is often underemphasized in instructional practice [3]. Contemporary perspectives view assessment not merely as a tool for measuring learning outcomes but as an integral part of the learning process that supports engagement, reflection, and sustainable learning development [4].

One assessment approach that aligns with these principles is authentic assessment. Authentic assessment is defined as an evaluation process that requires learners to perform meaningful tasks reflecting real-world language use [5], [6]. This approach emphasizes performance-based, contextually relevant, and purposeful tasks, such as portfolios, self-assessment, peer-assessment, and project-based assignments [7]. Authentic assessment is inherently student-centered, as it encourages learners to actively evaluate their learning progress and use language meaningfully in communicative contexts [8], [9]. Moreover, authentic assessment integrates cognitive, affective, and psychomotor dimensions of learning, providing a holistic representation of learners' competencies and achievements [10].

Previous empirical studies have reported positive effects of various forms of authentic assessment on English language learning outcomes. Research has shown that self-assessment enhances learners' language proficiency, grammatical knowledge, and metacognitive awareness [11], [12]. Peer assessment has been found to improve speaking accuracy, particularly in grammar and pronunciation [13], while project- and performance-based assessments contribute significantly to the development of writing and speaking skills [14]. In addition to cognitive outcomes, authentic assessment has also been associated with improved motivation, engagement, and reduced learning anxiety among EFL learners [15], [16].

Despite these promising findings, the results across studies remain inconsistent due to differences in assessment types, instructional contexts, research designs, and learner characteristics. Most existing studies rely on small-scale experimental or quasi-experimental designs, which limit the generalizability of their conclusions. The variability of findings indicates the need for a comprehensive synthesis of empirical evidence to identify overarching patterns and determine the overall effectiveness of authentic assessment in English language learning contexts. Therefore, this study employs a meta-analytic approach to synthesize quantitative findings from previous studies.

2. METHOD

This study employed a meta-analytic design with a quantitative approach, using secondary data from previously published empirical studies. Meta-analysis is a systematic research technique used to synthesize quantitative findings from multiple studies that investigate similar research variables [17]. The procedures of this meta-analysis followed the guidelines proposed by DeCoster [18], including identifying the research topic, systematically searching and selecting relevant studies based on predetermined criteria, extracting and coding quantitative data, calculating effect sizes, and synthesizing the

results to draw comprehensive conclusions regarding the effectiveness of authentic assessment on students' English learning outcomes.

Data Sources and Collection

The data were collected through documentation analysis of empirical research articles published in national and international scientific journals. A systematic literature search was conducted using Google Scholar and the Publish or Perish application. Several keywords were employed during the search process, including *authentic assessment*, *self-assessment*, *peer-assessment*, *project-based assessment*, and *English learning outcomes*. The initial search yielded 60 potentially relevant articles.

Subsequently, the identified articles were screened based on their titles, abstracts, and full texts. Duplicate studies and articles that did not meet the inclusion criteria were excluded. The inclusion criteria were as follows: (1) the study employed a quantitative research design, including true experimental, quasi-experimental, or pre-experimental designs; (2) the study investigated the implementation of authentic assessment in English language learning contexts; (3) the study reported sufficient quantitative data such as means, standard deviations, sample sizes, or pre-test and post-test scores; (4) the studies were conducted in various countries; and (5) the articles were published between 2015 and 2025. Based on these criteria, 25 studies were selected for inclusion in the meta-analysis.

Data Extraction and Coding

Data extraction and coding were conducted for each selected study using a structured coding sheet. The coded information included the authors and year of publication, sample size, type of authentic assessment implemented as the independent variable, English learning outcomes as the dependent variable, research design, study context, and relevant statistical data such as mean scores and standard deviations. This coding process ensured consistency and accuracy in data organization prior to statistical analysis.

Data Analysis Procedures

The data were analyzed using quantitative meta-analytic techniques to calculate the effect sizes of the included studies. Hedges' g was used as the standardized effect size measure, as it provides a more accurate estimation for studies with small sample sizes [19]. A Random Effects Model was applied to estimate the pooled effect size, considering the potential variability across studies [20]. The statistical analyses were conducted using JASP to compute the pooled effect size and examine potential publication bias using funnel plot analysis.

3. RESULTS AND DISCUSSION

In this section, the results of the research are presented and, at the same time, a comprehensive discussion is given. Results can be presented in figures, graphs, tables, and other formats that make the reader understand easily [14], [15]. The discussion can be organized into several subsections.

3.1. Results

This meta-analysis aims to determine the combined effect of using authentic assessment on students' English learning outcomes. Based on the screening results, 25 articles met the inclusion criteria. These studies were published in national and international journals between 2015 and 2025.

Table 1. Characteristics of Studies Included in the Meta-Analysis

Study	Researchers' name/ Year	Type of Authentic Assessment	Learning Outcome Measured	Research Design	Country
1	Almahasneh & Hamid (2019)	Peer Assessment Training	Writing	Quasi-experimental	Malaysia
2	Firuz (2024)	Self-Assessment	Grammar	Quasi-experimental	Iran
3	Aghayani & Hajmohammadi (2019)	Project-Based Learning	Writing	Quasi-experimental	Iran
4	Pratiwi et al. (2024)	Speaking Application	Speaking	Quasi-experimental	Indonesia
5	Korosidou & Griva (2015)	Content-Based Instruction	Project-Based Learning	Quasi-experimental	Florina
6	Fajria et al. (2025)	Self-Assessment	Grammar	Quasi-experimental	Indonesia
7	Vangah et al. (2016)	Portfolio Assessment	Writing	Quasi-experimental	Iran
8	Kashi et al. (2024)	PBL Writing Model	Writing	Quasi-experimental	Iran
9	Irwandi et al. (2024)	PBL + Digital Media	Writing	Mixed-method	Indonesia
10	Wangmo & Wangchuk (2023)	Project-Based Learning	Academic Achievement	Mixed-method	Bhutan
11	Alotaibi (2020)	Project-Based Learning	Writing	Quasi-experimental	Saudi Arabia
12	Mila Rosita (2025)	Self-Assessment	Vocabulary	Quasi-experimental	Indonesia
13	Mina Homayouni (2022)	Peer Assessment	Vocabulary	Quasi-experimental	Iran
14	Ghanbari et al. (2015)	Peer Assessment	Vocabulary	Quasi-experimental	Iran
15	Sianna et al. (2018)	Authentic Video	Writing	Quasi-experimental	Indonesia
16	Luo & Chen (2025)	Project-Based Learning	ESP	Quasi-experimental	Taiwan
17	Asrul et al. (2021)	Project-Based Learning	Writing	Quasi-experimental	Indonesia
18	Hamdanat et al. (2025)	Project-Based	PBL Outcome	Quasi-experimental	Morocco

Study	Researchers' name/ Year	Type of Authentic Assessment	Learning Outcome Measured	Research Design	Country
19	Meletiadou (2021)	Learning Peer Assessment	Writing	Quasi-experimental	UK
20	Pohan (2020)	Project-Based Learning	Writing	Quasi-experimental	Indonesia
21	Purna (2023)	Peer Assessment	Writing	Quasi-experimental	Indonesia
22	Tia & Wangid (2024)	Project-Based Learning	PBL Outcome	Quasi-experimental	Indonesia
23	Widyawati & Trisanti (2018)	Peer Assessment	Writing	Quasi-experimental	Indonesia
24	Abo (2025)	Teacher-Assisted Peer Assessment	Writing	Quasi-experimental	Ethiopia
25	Hu (2023)	Authentic Assessment	Student Learning Skills	Quasi-experimental	China

Table 1 summarizes the characteristics of the 25 studies included in this meta-analysis. The studies employed various authentic assessment methods to measure English learning outcomes, including writing, grammar, vocabulary, speaking, academic achievement, ESP, and learning skills. Most studies used a quasi-experimental design, while a few adopted a mixed-methods approach. The studies were conducted in diverse EFL and ESL contexts across several countries, indicating the wide applicability of authentic assessment in English language learning.

Table 2. Summary of Study Data and Effect Sizes

Researchers' name/Year	Mean (Exp)	SD (Exp)	n ₁	Mean (Control)	SD (Control)	n ₂	g	SEg
Almahasneh & Hamid (2019)	13.07	0.83	60	10.53	1.56	60	2.0199	0.22412
Firuz (2024)	16.4667	1.5698	30	15.0167	1.7145	30	0.8705	0.268613
Aghayani & Hajmohammadi 2019	17.9286	1.54244	14	15.7143	1.68379	14	1.33037	0.41384
Pratiwi et al. (2024)	14.12	2.33	25	10.36	1.73	25	1.80317	0.334323
Korosidou & Griva (2015)	73.20	24.818	10	87.25	38.255	12	-0.4113	0.4326
Fajria et al. (2025)	61.67	19.571	21	36.22	19.75	18	1.267	0.3474
Vangah et al. (2016)	88.3667	6.05176	15	66.3333	12.96929	15	2.118	0.4549
Kashi et al. (2024)	6.33	2.10	30	2.5	2.8	30	1.528	0.2916
Irwandi et al. (2024)	73.02	9.306	59	67.75	9.611	59	0.553489	0.186496
Wangmo & Wangchuk	26.05	3.74	36	14.86	2.65	29	3.35	0.3836

Researchers' name/Year	Mean (Exp)	SD (Exp)	n ₁	Mean (Control)	SD (Control)	n ₂	g	SEg
(2023)								
Alotaibi (2020)	20.62	2.33	29	10.32	3.2	30	3.64	0.4223
Mila Rosita (2025)	77.79	16.569	34	68.27	22.058	37	0.4798	0.2384
Homayouni (2022)	11.5	4.65	20	6.47	2.34	17	1.30413	0.3566
Ghanbari et al. (2015)	17.58	2.208	33	16.33	2.131	33	0.569302	0.248436
Sianna et al. (2018)	81.45	7.715	20	74.67	10.721	21	0.708999	0.316736
Luo & Chen (2025)	4.06	0.45	43	3.81	0.463	40	0.543	0.224
Asrul et al. (2021)	80.159	8.7281	22	74.055	97.393	22	0.256	0.2974
Hamdanat et al. (2025)	15.869	1.258	46	10.55	2.229	40	2.961	0.3114
Meletiadiou (2021)	11.73	3.01	100	11.73	3.01	100	0	0.1409
Pohan (2020)	82.88	4.807	25	76.8	5.439	25	1.165948	0.302766
Purna (2023)	85.6	6.54	20	79	8.78	20	0.8355	0.3244
Tia & Wangid (2024)	84.625	1.9831	40	76.825	1.69293	40	4.18974	0.401952
Widyawati & Trisanti (2018)	80.33	5.313	30	74.17	5.76	30	1.097869	0.274401
Abo (2025)	3.7987	0.52433	30	3.464	0.55422	30	0.61235	0.26111
Hu (2023)	3.15	0.29	40	3.44	0.63	40	0.58564	0.226359

Table 2 presents summary statistics for the 25 studies included in the meta-analysis, including mean scores, standard deviations, sample sizes, and calculated effect sizes (Hedges' *g*) with their corresponding standard errors. The effect sizes vary across studies, suggesting differences in the magnitude of authentic assessment's impact on English learning outcomes. The distribution of these effect sizes is further illustrated in the forest plot.

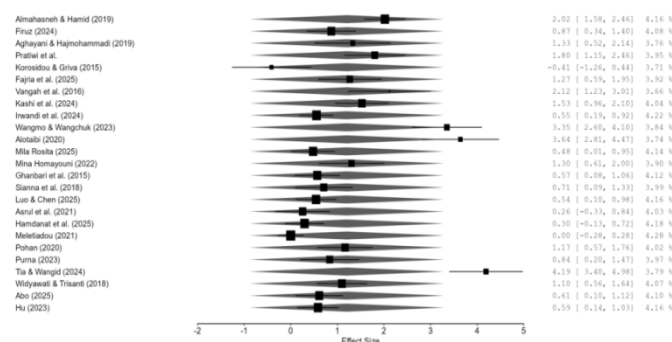


Figure 1. Forest Plot

Figure 1 presents the forest plot illustrating the individual and pooled effect sizes of the 25 studies included in the meta-analysis. Most studies report positive effect sizes, as indicated by estimates located to the right of the zero line, suggesting that authentic

assessment generally improves students' English learning outcomes. The magnitude of effect sizes varies considerably across studies, ranging from a small negative effect ($g = -0.41$) to very large positive effects ($g > 3.0$), reflecting substantial differences in research contexts, assessment types, and instructional implementations.

Several studies demonstrate strong effects of authentic assessment, particularly those employing project-based and peer-assessment approaches, while others show moderate to small effects. One study reports a slightly negative effect, indicating that the effectiveness of authentic assessment may depend on appropriate design and implementation. Overall, the pooled effect size ($g = 1.203$) indicates a large and statistically significant positive impact of authentic assessment on English learning outcomes. The wide dispersion of confidence intervals across studies further supports the presence of heterogeneity, justifying the use of a random-effects model.

Table 3. Meta-Analytic Tests

Test	Statistic	p
Heterogeneity	$Q_c(24) = 275.58$	$< .001$
Pooled effect	$z = 5.54$	$< .001$

Table 3 presents the results of the meta-analytic tests. The heterogeneity test shows a significant Q value ($Q_c(24) = 275.58$, $p < .001$), indicating substantial variability among the included studies and supporting the use of a random-effects model. In addition, the pooled effect test yields a z-value of 5.54 ($p < .001$), demonstrating that authentic assessment has a statistically significant positive effect on English learning outcomes. These results confirm that implementing authentic assessment meaningfully improves students' English learning performance across studies. Further details of the overall effect are presented in Table 4.

Table 4. Result of the implementation of authentic assessment

	Estimate	95% CI		95% PI	
		Lower	Upper	Lower	Upper
Pooled effect	1.203	0.778	1.629	-0.879	3.286
τ	1.040	0.795	1.517		
τ^2	1.082	0.632	2.300		

Table 4 shows that the pooled effect size is 1.203 (95% confidence interval: 0.778-1.629), indicating a significant positive effect of authentic assessment on English learning outcomes. The prediction interval (-0.879 to 3.286) reflects variability across studies. The heterogeneity statistics $\tau = 1.040$ and $\tau^2 = 1.082$ suggest considerable between-study dispersion, supporting the use of a random-effects model.

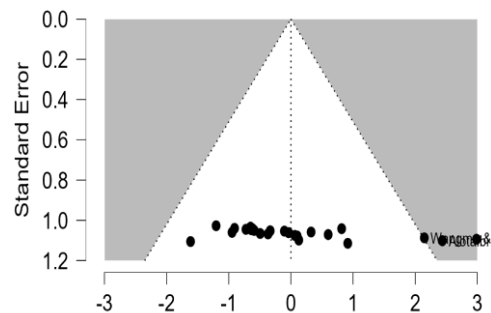


Figure 2. Forest Plot

Figure 2 presents the funnel plot used to examine potential publication bias among the included studies. The plot displays effect sizes on the X-axis and standard errors (SE) on the Y-axis. Overall, the distribution of studies appears relatively symmetrical around the central vertical line, with most points located within the triangular confidence region.

Most studies are clustered in the lower part of the plot, indicating comparable standard errors and relatively balanced study weights across the included studies. Although one or two studies appear on the right side of the plot with relatively large effect sizes, no substantial asymmetry is observed. The funnel plot shows no strong evidence of publication bias or small-study effects in the present meta-analysis.

3.2. Discussion

The primary objective of a meta-analysis is to examine the influence of an independent variable on a dependent variable by synthesizing quantitative findings from multiple empirical studies. Meta-analysis allows researchers to integrate effect sizes across studies, enhance statistical power, and identify consistent patterns of effectiveness across diverse educational contexts [16], [17], [18]. Accordingly, this study examined the overall effect of authentic assessment on English learning outcomes in EFL and ESL contexts. The findings indicate that authentic assessment produces a strong, statistically significant positive effect, supporting its relevance within learner-centered, outcome-based educational frameworks [19].

The results of this meta-analysis are consistent with previous studies reporting that authentic assessment enhances students' academic achievement, engagement, and language proficiency. Performance-based tasks such as projects, portfolios, and peer assessment encourage meaningful language use and active learner involvement, which contribute to improved learning outcomes [20], [21]. These findings reinforce the view that assessment should function not only as a measurement tool but also as an integral component of the learning process.

However, substantial variation in effect sizes was observed across the included studies. While several studies reported very large positive effects, one study demonstrated a small negative effect. This variation suggests that contextual factors, including assessment design, instructional alignment, and learner characteristics, influence the effectiveness of authentic assessment. Similar findings have been reported in previous

research, indicating that authentic assessment must be carefully designed and appropriately implemented to achieve optimal results [22].

The observed heterogeneity justified the use of a random-effects model, as true effect sizes were assumed to vary across studies conducted in different educational contexts. Differences in educational level, assessment type, and instructional duration may account for the dispersion of effect sizes, as noted in prior meta-analytic studies in language education [23]. These findings highlight the importance of contextual sensitivity when implementing authentic assessment practices.

From a pedagogical perspective, the results provide strong support for integrating authentic assessment into English language teaching. English teachers are encouraged to adopt assessment practices that reflect real-world language use and promote higher-order thinking skills, learner autonomy, and meaningful engagement. For higher education institutions, the findings support the incorporation of authentic assessment into competency-based and outcome-oriented curricula, particularly in EFL and ESL settings [24].

Despite its contributions, this study has several limitations. The included studies varied in research design, sample size, and types of authentic assessment, contributing to heterogeneity. Additionally, the analysis relied on reported quantitative data, which may be affected by reporting bias. Future research is encouraged to examine moderator variables, such as educational level, assessment type, and implementation duration. Further meta-analyses may also include unpublished studies to minimize potential publication bias and strengthen the robustness of the findings [25].

4. CONCLUSION

This meta-analysis demonstrates that authentic assessment has a significant and positive influence on students' English learning outcomes. The synthesized findings indicate that various forms of authentic assessment, including performance-based tasks, portfolios, self-assessment, peer assessment, and project-based assignments, consistently improve students' English language proficiency across diverse learning contexts.

The findings of this study support previous empirical research that highlights the effectiveness of authentic assessment in enhancing meaningful learning, learner engagement, and real-world language use in English language education. The consistency of the results across multiple studies strengthens the evidence that authentic assessment is a valuable assessment approach for English language teaching.

Furthermore, the overall stability of the findings suggests that the conclusions drawn from this meta-analysis provide a reliable representation of existing research. These results offer important pedagogical implications for English teachers, curriculum developers, and educational institutions, particularly in encouraging the integration of authentic assessment into English language learning and assessment practices.

Future research is encouraged to explore moderating variables such as educational level, type of authentic assessment, instructional duration, and learning context. Further studies may also employ mixed-method approaches or include unpublished research to

provide deeper insights into the implementation and effectiveness of authentic assessment in different educational settings.

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AUTHOR (S) CONTRIBUTION

All authors contributed significantly to this study. Putry Syeril conceptualized and designed the study, conducted the meta-analysis, and drafted the manuscript. The supervisors, Nur Sehang Thamrin, Mafulah, and Konder Manurung, critically reviewed the manuscript for intellectual content, provided valuable input, and approved the final version for publication. Furthermore, all authors agree to be accountable for all aspects of the work, ensuring the accuracy and integrity of the study.

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