INTERNATIONAL JOURNAL OF SOCIETY, CULTURE & LANGUAGE

Cultural Insights into Reading Learning Models: A Comprehensive Meta-Analysis

Suhendi Syam[1,2*], Andayani Andayani[1], Sarwiji Suwandi[1], Raheni Suhita[1]

[1]Universitas Sebelas Maret, Indonesia [2]Universitas Muhammadiyah Buton, Indonesia

Abstract This study aimed to thoroughly describe the reading learning models in junior high school through a careful meta-analysis and from a cultural perspective that affects student learning achievement. Articles selected for investigation were restricted from 2012 to 2021. Quantitative analysis encompassed essential measures such as sample size, standard deviations, and mean. The JASP software was used for analysis, which has various calculations, including population correlation means, variation coefficient of variance, sampling error variance, population correlation variance estimation, correlation-based interval calculation, and publication bias analysis. The findings revealed the existence of 12 heterogeneous articles, each displaying a solid effect size value. The identified effective reading learning models and strategies, namely Numbered Heads Together (NHT), Think Pair Share (TPS), Teams Games Tournament (TGT), Cooperative Integrated Reading and Composition (CIRC), and Team Assisted Individualization (TAI), highlighted the clear boundaries between conventional and non-conventional learning approaches. In addition, there was no visible publication bias, as evidenced by the funnel plot analysis. The findings were further bolstered in trustworthiness and reliability, making them suitable as references for instructional purposes.

Keywords: *Learning model, Meta-analysis, JASP software, Effective reading strategies, Publication bias*

[*]Corresponding Author:
Suhendi Syam
suhendisyam@student.uns.ac.id

Received: February 2024
Revised: April 2024
Accepted: May 2024
Published: May 2024

© 2025 Syam, Andayani, Suwandi, and Suhita.
This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY).

1. Introduction

A child's chances of success can be better if the child reads frequently and internalizes reading because reading should be the heart of education (Allen-Lyall, 2020). Therefore, the ability to read becomes a skill that must be considered because it is very complex, and one must pay attention to its many aspects. Many students find reading learning boring. Long, uninteresting, and difficult-to-understand texts are the reasons presented by students (Setyawati, 2011). Thus, there is a need for learning motivation to move students' hearts to want to read, which, of course, must be supported by the family environment and the proper reading material (Hasanudin & Puspita, 2017).

https://doi.org/10.22034/ijscl.2024.2027111.3465

The effectiveness of teaching reading literacy in schools depends on educators implementing exemplary teaching practices (Auzar, 2012). Previous research revealed that reading teaching in different countries exhibits different characteristics, with some approaches ignoring the development of children's visual representations. In contrast, others prioritize symbolic learning based on alphabetical order (Cho et al., 2021). Several studies highlight the low reading ability of students in various regions (Ajnani et al., 2019; Fatimah, 2017; Kholiq & Luthfiyati, 2018; Salsabila et al., 2020). These challenges are broader than specific countries, as reading skills are globally identified as serious problems that require immediate resolution (Abbas et al., 2020; Carver & Hoffman, 1981; Cromley, 2009; Wu et al., 2024). The United States places great emphasis on literacy skills, which enable individuals to engage critically and comprehensively with the diverse content of disciplines (Goldman, 2012). Similarly, in South Africa, literacy proficiency has become an essential concern in education, driving efforts to address challenges in literacy and transform research toward the development of local cultural and spiritual communities (Dyll, 2019).

Culture plays an essential role in students' reading learning, as mentioned by the various backgrounds and learning needs of students in EFL (English as a foreign language) classes. This is often the case for students whose cultural and linguistic backgrounds affect their reading ability (Nachmani, 2015). What is interesting is that cultural factors are very important but not the only determinant of reading success. This shows that the literacy program is highly structured and can have a substantial impact regardless of cultural background (Lestari & Astuti, 2023a, 2023b). The ecological perspective of literacy also considers the influence of culture on basic literacy skills and even the idea that culture can influence development (McBride-Chang, 2014). It can be concluded that culture is an important part of improving reading skills because culture can shape students' approaches and experiences toward improving literacy. There is even a study that shows that cultural background can influence educational interventions, such as in Indonesia with the school literacy movement program, which is very effective in improving the reading skills of diverse students (Lestari & Astuti, 2023a, 2023b). Therefore, policymakers and teachers should always consider cultural influences when developing reading improvement programs so that they meet the needs of students. Learning models that consider cultural knowledge essential to improving student reading skills have proven very effective. Some of these culture-based learning models always provide relevant reading materials based on students' needs for cultural experiences. They also adopt strategies that consider students' intercultural communication and self-reflection, influencing students' ability to interpret texts related to the cultural context. Although this approach has potential, significant research gaps remain, especially in implementing and evaluating long-term culturally responsive learning models. Therefore, these problems occur across various demographics and are worthy of research. This meta-analysis integrates previous studies' findings; the primary objective is to incorporate the findings and conclusions of earlier studies' findings, assess the effectiveness of learning strategies, provide recommendations for culturally inclusive curriculum development, and highlight future research directions that address these gaps.

2. Theoretical Framework

2.1. Effectiveness of Reading Learning Models

Many studies have mentioned that various aspects of reading knowledge and reading strategies of reading learning models are essential for every junior high school student. For example, Moral and Villarente (2024) showed the impact of teaching strategies on reading skills can improve students' reading skills. In addition, (2021) advocated mind mapping to improve traditional reading skills with the aim that students' reading skills improve. Furthermore, a qualitative study conducted by Tudtud et al. (2022) highlights the role of innovative teaching methods in overcoming reading comprehension barriers, which shows contradictory results and new facts from different research. At the same time, Moral & Villarente (2024) found no significant relationship between teaching strategies and post-intervention reading comprehension. However, this differs from Bakti (2018), who suggests that vocabulary acquisition strategies affect reading ability. In addition, the study also emphasized that various effective learning strategies, including vocabulary acquisition, contribute to improving reading skills.

The above studies show that various learning strategies and practical vocabulary can improve reading skills. It can be concluded that an appropriate reading learning model can improve the reading comprehension skills of junior high school students, and teachers should always consider various reading learning model inputs that suit the needs of diverse students to improve students' comprehension skills. The context of teaching reading in schools is still in a condition that is considered less than optimal, resulting in a lack of reading ability among the Indonesian population. Therefore, an in-depth understanding of effective reading teaching models and strategies is needed.

2.2. Comparative Analysis of Reading Models

In this case, the Numbered Heads Together (NHT) model appears superior to the Think-Pair-Share (TPS) strategy in fostering improved student reading comprehension skills. In addition, the NHT model has an inherent capacity not only to motivate students in their learning efforts but also to generate enhanced learning outcomes, fostering active participation in the teaching and learning process (Mokodompit, 2016; Mustami & Safitri, 2018; Pratiwi, 2019; Pujiati, n.d.; Purnomo, 2012; Rahmawati, 2014; Selong, 2019). The advantages of NHT are that it can overcome every challenge in implementing reading instruction. Among the advantages are creating concepts, improving the ability to understand narrative texts such as fables, and developing cognitive capacity by developing critical thinking skills.

Furthermore, Maman and Rajab (2016) stated that the NHT model can improve students' reading skills, for example, in identifying problems, distinguishing facts and opinions related to complex information, finding important information, and being able to formulate each problem coherently. In addition, some models can have a positive impact in providing a significant increase in reading comprehension of narrative text to students, namely the Games Tournaments (TGT), Student Team Achievement Division (STAD), and Teams Games Tournaments (TGT) models (Anggraeni, 2017; Hastuti & Yuliasri, 2015). Furthermore, Zarei (2012) mentioned that the learning model that can impact students' reading comprehension of narrative text is the Cooperative Integrated Reading and Composition (CIRC) model. Applying the Team Assisted Individual (TAI) method has emerged as a very effective strategy in teaching reading comprehension, particularly for identifying main ideas. As a result, strong arguments can be made for the superior efficacy of the TAI method compared to conventional approaches. In addition, a consistent pattern of improvement is seen in each learning cycle when using the technique (Hadi & Haryadi, 2017; Jullya et al., 2019).

A review of several reading models in different countries shows that culture significantly affects knowledge. In North America, cross-cultural education lacks conceptual clarity regarding cultural literacy competence; the critical culturalism model is not uniformly applied, leading to the curriculum (Reitmanova, 2011). Cultural differences should also be considered when reading learning models (Li, 2024). Culture can influence learning approaches; for example, the influence of culture on learning approaches has been proven, with English and Bangladeshi students showing deep preferences for reading learning approaches (Watson et al., 2006). Reading skills and cultural elements can also influence reading learning dynamically, which requires cross-cultural research to identify a comprehensive range of approaches in more specific contexts (Mendrofa et al., 2024). In education, modern technology is also inseparable from traditional culture, which shows the importance of innovative reading teaching models to preserve culture (Shen, 2024). The literature indicates that cultural factors affect reading models and the implementation of education. The complexity of cultural transmission of learning models. The complexity of cultural transmission of learning models determines a context. For example, in China, reading teaching methods were created through a blend of modernization and tradition, reflecting cultural evolution (Qi, 2024). Culturally responsive teaching is crucial for researchers, teachers, and policymakers to understand and address cultural diversity, which can determine the direction of education (Huang, 2023; Reisch, 2010; ZHAO, 2023). The results of a study reinforce this Abitoye et al. (2023), which showed that the effectiveness of culture-based teaching approaches can improve literacy in Nigeria.

2.3. Reading Relationship with Culture

Culture can influence the reading instruction model to improve student learning outcomes. Research conducted by Gusmalinda and Asnawi (2023) states that cultural stories of the Malay community can

be included in reading textbooks to improve student learning outcomes after the experimental class. In addition, Franklin et al. (1996) mentioned that the cultural identity development model can make reading and writing learning methods more responsive. This aligns with Reisch's (2010) opinion that cultural elements can be integrated into the reading learning model supported by responsive teaching practices that can improve student learning outcomes. These studies emphasize the importance of considering cultural influences in learning design models that suit students' needs. Reisch (2010) suggests that social and cultural backgrounds can influence children's reading motivation.

Similarly, Riches (2006) and Somé (2024) revealed that when teaching English reading and writing, they always consider cultural factors when providing instruction. In addition to socio-culture, it must also pay attention to the sociocultural of students. Wang (2024) discussed that cross-cultural learning can improve students' literacy skills, especially in English Education. Integrating cultural factors can also increase students' interest in reading in the classroom. Some of the findings from previous research contribute to a more complex understanding of how reading instruction can be adapted to the needs of students, diverse sociocultural backgrounds, and the global education situation.

Many literatures show that various kinds of learning models are compelling and unique. One example is the metacognitive Preview Question Read Reflect Recite Review (PQ4R) strategy, which has been proven effective in improving junior high school students' reading skills (Sarimanah, 2016). Gurses and Adiguzel (2013) emphasized that the academic language knowledge learning approach can positively impact students' reading comprehension in French as a foreign language. Furthermore, Wijaya (2021) stated that extensive reading can increase students' reading interest and ability to learn English (EFL) in Indonesia. Meanwhile, Song et al. (2022) focused on reading strategies for humanities scholars to improve knowledge, comprehension, decision-making, self-monitoring, and self-regulation. Some of these models and methods are adapted to different educational levels and contexts, thus reflecting the diverse goals and needs of students.

Language skills, especially reading, can be related to cultural and civic literacy, which is very important for Indonesian people to master because they have diverse ethnicities, cultures, languages, customs, and cultures. Jie and Jie (2021) said that to ensure national security and protect cultural diversity in the era of globalization. It is essential to link reading skills with cultural literacy skills. Damaianti et al. (2017) stated that culture-based reading learning will produce an established community culture because it prioritizes cultural elements and noble values. This will help literacy learners interpret written vocabulary and understand the meaning of each message in a nation's cultural heritage. Learning to read with a cultural literacy perspective is oriented toward overcoming the declining awareness of the community, especially students, regarding religious principles, traditions, and valued cultural practices. In addition, students will gain a critical understanding of reading materials containing cultural values.

A comprehensive understanding of various learning strategies is necessary to implement reading instruction effectively. In this regard, students' cognitive development, related to knowledge and motivation to learn, is an important aspect of reading instruction, significantly impacting students' emotional and social skills essential to navigating the changes in the era of the 21st century 5.0 society (Paris et al., 1983). Teaching the first or mother tongue can improve bilingual competence, phonological processing skills, and reading skills, a strategy successfully implemented in Italy and Europe (Stan, 2021). The role of culture in reading learning is significant but has not been fully integrated into curricula and teaching practices. Despite the awareness of the importance of culture in reading learning, there are still challenges in implementing a comprehensive and structured approach to integrating culture into English language teaching (Hermessi, 2017). To master literacy, language learners must engage with reading materials to understand the author's message. Therefore, reading comprehension Anggiasari et al., (2018) is essential for students to acquire. In addition, learning styles shape students' emotional intelligence, and kinesthetic learning is more effective than auditory learning. Therefore, teachers and schools must create a conducive learning environment (Leasa et al., 2017). Therefore, it is essential to strengthen teachers' curriculum knowledge through teacher education programs responsive to the sociocultural context in which they will teach reading materials (Bagherzadeh & Tajeddin, 2021).The effectiveness of the Brain-Based Learning Model in improving pupils' reading comprehension (Hussien, 2016). Creating interactive multimedia that is based on local knowledge has

the potential to help pupils become better readers. The Preview, Question, Read, Reflect, Recite, and Review (PQ4R) learning methodology is successful and efficient in junior high school. Especially in reading learning. In addition, instilling reading habits can significantly improve students' skills in Vietnam, allowing them to think critically, evaluate, adapt, and improve employability (Goncearenco et al., 2015; Kohar, 2022; Sarimanah, 2016; Siregar et al., 2020). From the preceding discussion, it is clear that several reading learning models have been recognized as effective in enhancing pupils' reading abilities.

3. Methodology

3.1. Eligibility Criteria

This study used a quantitative meta-analysis approach (Hunter & Schmidt, 2004). The main objective was to systematically integrate and statistically analyze diverse research findings regarding students' reading learning models and reading skills. This research focused explicitly on synthesizing insights from previously published studies to comprehensively understand the abovementioned subjects. The selected articles adhered to specific inclusion criteria set for publication. The requirements were as follows.

Inclusion Criteria:

1. *Publication Period*: This study includes articles published between 2012 and 2021, ensuring a focused examination of the relevant literature within a given time frame.
2. *Language*: Articles are limited to articles written in the UN language to ensure uniformity and accessibility of content for analysis.
3. *Content focus*: The main focus of selected articles is the reading learning model in junior high school, which aligns with the study's specific objectives.
4. *Quantitative analysis*: Only articles that use quantitative analysis are included, ensuring a standardized approach to data evaluation.
5. *Key metrics*: Articles must provide essential metrics, such as sample size, average, and standard deviation, to ensure the availability of crucial data for meta-analysis.
6. *Source Selection*: Articles reviewed are reputable articles indexed by reputable platforms—for example, Google Scholar, Sinta Kemendikbud RI, Science Direct, DOAJ, and Scopus. The selected articles can be ensured to be credible and reliable.
7. *The participants* of the study were junior high school students ranging in age from 12 to 15 years.

The studies selected for the meta-analysis were grouped based on the identified reading learning models and strategies. Effective models, namely Numbered Heads Together (NHT), Think Pair Share (TPS), Teams Games Tournament (TGT), Cooperative Integrated Reading and Composition (CIRC), and Team Assisted Individualization (TAI), were used as the basis for categorization. The impact of each model on student learning outcomes was assessed through careful quantitative analysis, enabling a comprehensive synthesis of diverse studies. Including critical metrics such as effect and size values facilitated a different understanding of the relative efficacy of each model. This grouping ensured a systematic approach to analyzing the impact of various reading learning methods that are effective and appropriate to the needs of students. In this research, cultural functions are systematically assessed from the selection of studies related to the cultural context to the interpretation of the results. Data related to cultural factors, such as population and research location, were collected based on the criteria of this study. Furthermore, this research is expected to provide in-depth and comprehensive knowledge regarding the influence of culture on reading learning.

3.2. Search Strategy

Careful analysis was required when researching reading learning models for junior high school students. Several databases, websites, organizations, and various references were used for this research. The primary data sources used were Scopus, Google Scholar, Sinta Ministry of Education and Culture, Sains Direct, and DOAJ. Then, a search was carried out carefully based on keywords and vocabulary in accordance with the research theme.

The selection method was appropriate in deciding which articles met the inclusion criteria. Two independent reviewers selected and screened each selected record and report at the initial stage. This was done to maintain reliability in the selection process and minimize the risk of inappropriate research. Independent reviews and consensus discussions were conducted in the event of discrepancies. We used the evidence facility to maintain the screening process's transparency. Confidence created a simple workflow in screening methods suitable for the research concept. Elements of data collection included study design, participant characteristics, interventions, and outcomes. Furthermore, to increase the reliability of the data collected, information was confirmed with the researchers if necessary.

The data collection process used technology automatically; for example, distiller technology was utilized to extract and organize data from each report systematically. This technology tool speeds up the data extraction and can prepare a structured framework for reviewing articles. This technology also maintains the consistency of data collection and reduces the possibility of errors.

Data collection, transparency, and reliability were prioritized at each screening phase. Furthermore, detailed documentation of the disbursement strategy, methods used, and inclusion criteria were always considered in every screening and data collection to ensure reproducibility and were systematically reviewed. This rigor was undertaken to ensure the reliability of the results of the entire study. It can be said that the review process was rigorous and transparent.

The results of the initial data collection obtained a total of 100,456 articles. There were 38 articles related to reading skills in junior high school. Some articles that did not fit the predetermined criteria were not processed. Furthermore, after rigorous screening based on the specified criteria, there were finally 12 published articles to be used as the basis for this meta-analysis methodology. A random effects model was chosen to generalize the results from the whole population. The selected meta-analyses followed a group contrast approach, ensuring a systematic and comprehensive synthesis of the collected information. In addition, the collected data had to show variation intervals for effective standardization in subsequent analyses. Determination of the mean/sample effect size (d) involved standardization through the following formula:

$$d = \frac{\bar{X}_1 - \bar{X}_2}{S_{within}}, S_{within} = \sqrt{\frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{(n_1-1)(n_2-1)}}$$

Furthermore, the formula for calculating the standard deviation d (SEd) was as follows:

$$SE_d = \sqrt{V_d}, with\ V_d = \frac{n_1+n_2}{n_1 n_2} + \frac{d^2}{2(n_1+n_2)}$$

However, Borenstein et al. (2021) note a slight bias in the d obtained. To reduce this bias, the transformation to g was performed using the following formula:

$$g = J \times d, with\ J = 1 - \frac{3}{4df-1}$$

$$df = degree\ of\ freedom\ (n_1 + n_2 - 2)$$

$$SE_g = \sqrt{V_g}, with\ V_g = J \times V_d$$

Next, the researchers proceeded to the analysis stage using JASP software. The data set included the variable' g,' which represented the effect size, and Seg generated plots that produced standardized interval and error values for each conclusion and aspect of the study. JASP software has a dual purpose: to calculate heterogeneity and overcome publication bias. Therefore, researchers could conclusively state that contextual learning models were more effective in improving student learning outcomes.

3.3. Synthesis Methods

The analysis framework included several main steps, including calculating the mean of population correlation, calculating the correlation coefficient of variance, determining sampling error variance, estimating population correlation variance, calculating intervals based on correlation, and examining publication bias. Advanced software (i.e., JASP 0.16.3) was used to facilitate this comprehensive analysis.

The techniques employed to calculate or visually present the findings of individual investigations and synthesis were meticulously implemented. Visual representations, such as forest plots, were created to illustrate each study's effect magnitude and confidence interval, thus facilitating a clear and concise representation of the data. In order to understand the study results and identify trend patterns from all the selected studies, visual aids were required.

In combining the effect sizes from all these quantitative studies, it was necessary to synthesize the results with methodological rationale and then conduct a meta-analysis. The random effects model was chosen for this meta-analysis, as it provides a more conservative estimate that always considers the potential heterogeneity between studies. The presence of statistical heterogeneity was assessed using the Q statistic and the I2 index. The software used to perform the analytical procedures and ensure accuracy and efficiency in the synthesis process was state-of-the-art tools such as ReyMan and Comprehensive Meta-Analysis.

Subgroup analysis and meta-regression were performed to explore potential causes of heterogeneity in the study results. Participant demographics, or intervention type, were conducted based on relevant study characteristics to identify potential sources of variability for subgroup analyses. Meta-regression explains the impact of continuous variables on effect size and provides knowledge of various potentially moderating factors that impact the study results.

4. Results

4.1. Effect Size Across Studies

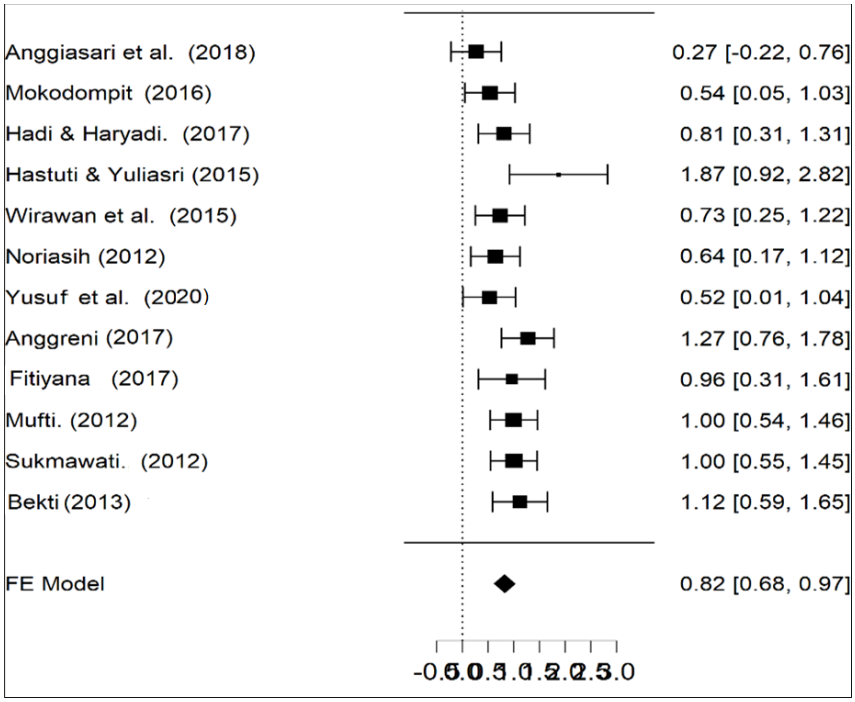
The researchers selected and specified articles that fit the predetermined inclusion criteria to have an effect size from each study. JASP 0.16.3 software was used to calculate the effect size. The results can be seen in Table 1.

Table 1
The Effect Size (ES) and Standard Error (SE)

NO	Author	Year	Treatment			Control			ES	SE
			Mean	SD	n1	Mean	SD	n2		
1	Anggiasari et al. (2018)	2012-2021	62.65	13.90	32	59.46	9.2	32	0.267358	0.249612
2	Mokodompit (2016)		86.33	6.26	34	81.0645	12.34757	32	0.53695	0.249316
3	Hadi & Haryadi (2017)		80.41	9.44	34	73.187	8.098	32	0.810138	0.254911
4	Hastuti & Yuliasri (2015)		82.00	2.86	12	76.4615	2.857	12	1.871725	0.486326
5	Wirawan et al. (2015)		76.71	12.03	35	68.23	10.77	35	0.734504	0.245778
6	Noriasih (2012)		57.50	10.00	35	51.59	8.07	35	0.643223	0.243923
7	Yusuf et al. (2020)		79,90	6.87	30	76.2	7.081	30	0.52359	0.260989
8	Anggreni (2017)		30.57	5.64	35	23.914	4.6676	35	1.272058	0.261147
9	Fitiyana (2017)		78.00	7.58	20	70.25	8.18	20	0.963265	0.331432
10	Mufti (2012)		34.61	4245	36	30.53	3229	36	1.00107	0.234432
11	Sukmawati (2012)		22.34	2441	38	20.64	2.140	36	1.000961	0.231361
12	Bekti (2013)		22.97	2.56234	31	19.5484	3.4043	31	1.12065	0.271961

Based on Table 1, researchers found that of the 12 effect sizes obtained from the research compiled, the lowest effect size was 0.267, while the highest effect size was 1.871, with a confidence level of 95%. According to the classification of Cohen and Wartofsky (Greco, 2011), one effect size (n = 1) is categorized as a small effect, three effect sizes (n = 3) as a medium effect, six effect sizes (n = 6) as a significant effect, and one effect size (n = 1) as a substantial effect. The impact is huge. A summary of the impact measures for each study is also displayed in the forest plot (see Figure 1).

Figure 1
Forest Plot



4.2. Test of Heterogeneity and Combined Effect Size

In meta-analysis studies, heterogeneity tests determine the appropriate model for estimating the combined effect size, also known as the summary effect, representing the overall measurement of the effect's magnitude. Within this framework, the study employed the Q and I2 methods to assess heterogeneity, and the findings are briefly presented in Table 2.

Table 2
Heterogeneity Test Summary

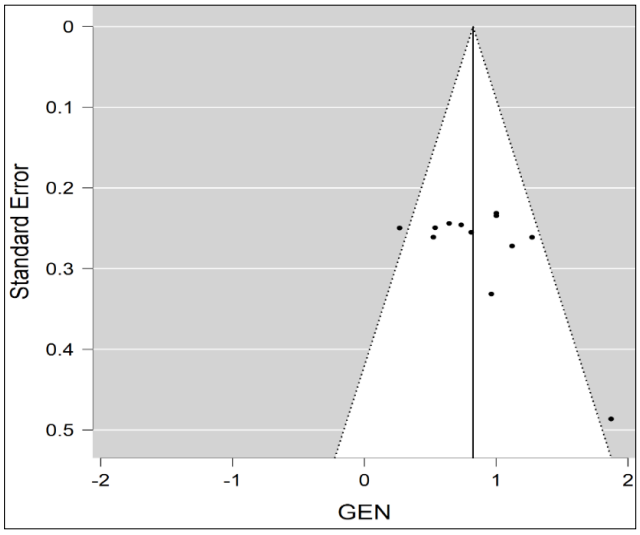
Model	k	Effect Size (d)	P	Df	Heterogeneity		
					Q	P	I^2
Random Effects	12	0.84	< 0.001	14	73.28	< 0.001	82.26%
Fixed Effects	12	0.83	< 0.001	14			

As shown in Table 2, the Q value obtained at 18.42 is smaller than the chi-square value (df = 11) with a value of 0.072. These results confirmed the homogeneity of the effect size. Furthermore, the I^2 value of 34.70% indicates low heterogeneity (Higgins, 2003). Given the homogeneous figure of the study, fixed effect estimation is most expected to calculate the combined effect size. According to this model, the combined effect size was determined as (d = 0.83; p <0.001), belonging to the significant effect category (Borenstein et al., 2021). As a result, these findings collectively reveal that reading skills significantly contribute to the achievement of students' learning goals.

4.3. Publication Bias Evaluation

The purpose of evaluation bias is to guarantee the impartiality of the carried-out meta-analysis. This evaluation employed a document funnel methodology and conducted an Egger test. Figure 2 depicts the key findings of the funnel plot.

Figure 2
Funnel Plot



After analyzing the funnel plot (see Figure 2), it became clear that conclusive determination of the symmetry of the data distribution was a challenge. As a result, the rank correlation approach was applied for further investigation, as described in Table 3.

Table 3
Funnel Plot Asymmetry Rank Correlation Test

	τ Kendall	**P**
Ranking test	0.212	0.381

The Rank Correlation Test results, as presented in Table 3, indicated a p-value of 0.381, which surpasses the significance level of 0.05. This suggests that the meta-analyses were scientifically justified and not influenced by publication bias. After analysis, it turns out that cultural factors have a very significant contribution to the improvement of students' reading skills. The effect size analysis data from 12 compiled articles shows that learning models that consider cultural factors consistently substantially improve students' reading comprehension skills. In addition, the use of culturally consistent subject matter was also shown to increase student engagement and comprehension. This confirms the effectiveness of learning models in taking into account students' different sociocultural backgrounds, which results in students being more active in the lesson.

5. Discussion

To give instructors a reference for the learning models that have been analyzed, this research can offer a variety of descriptions of reading learning models in junior high school students that are effective and can increase student learning outcomes.

Learning uses a reading textbook based on cultural literacy. Similar findings in Barry et al.'s (2013) study suggest that literacy activities and additional social studies are created to improve peer interaction. This component will be required for future programs. This is consistent with studies by Bailey et al.

(2006), who found that education develops a character that aims to enhance moral principles, civic responsibility, respect, social skills, etc. Learning that pays attention to cultural background can also teach multicultural competencies, which are increasingly needed along with ethnic and racial development in diverse schools so that it can reduce peer bullying that spreads in schools.

After analyzing the research data and engaging in subsequent debates, it can be inferred that the NHT, TPS, TGT, CIRC, and TAI models and their corresponding learning methodologies demonstrate significant effectiveness in reading instruction. This assertion derives strength from measurements of heterogeneous effect sizes obtained from combining 12 published articles, each showing a substantial effect size. The reliability of these results is further confirmed by the absence of publication bias, as seen through careful analysis of the Funnel Plot. In addition, the clear distinction between conventional and non-conventional learning models is unmistakable, emphasizing the impartiality inherent in non-conventional learning models. As a result, it is imperative to prioritize integrating NHT, TPS, TGT, CIRC, and TAI learning models, recognizing their essential role in improving students' reading proficiency. This is in line with Hadi and Haryadi, (2017), Jullya et al. (2019), Mokodompit (2016), Mustami and Safitri (2018), Pratiwi (2019), Pujiati (n.d.), Purnomo (2012), Rahmawati (2014), and Selong (2019).

It was revealed that the role of culture is crucial in improving students' reading skills in a diverse and significant way. Cultural narratives can connect every material contained in each text and are also influenced by cultural approaches. The library's availability of texts concerning cultural diversity will help foster students' interest in reading. The impact of cultural environment influences the student learning environment, which allows students to develop reading skills. The role of culture in developing students' reading skills is dynamic and affects social change. Cultural integration of reading instruction is essential in creating an effective learning environment. It would be better to combine traditional cultural elements and modern technology platforms.

The role of a culture strongly influences various learning models that can improve students' reading skills synergized with Numbered integrated Together (NHT), Think Pair Share (TPS), Teams Games Tournament (TGT), cooperative integrated reading and composition (CIRC), and team assisted individualization (TAI) models. These models incorporate various cooperative and collaborative learning strategies in fostering a learning environment conducive to improving students' reading comprehension. These models also provide insight into the effectiveness of learning in improving students' reading skills—the TPS models students' reading skills and solving math problems. The CIRC model has been proven to increase critical understanding of reading in various studies. The NHT model is most effective in improving students' argumentation skills related to essential reading skills. The success of improving students' reading skills cannot be separated from the influence of cooperative learning models that emphasize group or collective learning.

Subsequent research can have a broader scope for implementing reading learning models throughout all levels of student education, including elementary school, high school, and college. Additionally, future studies could further investigate additional language proficiencies, such as written expression, auditory comprehension, and oral communication. The results of this study strongly emphasize the essential critical role of culture in the development of students reading skills and also show the effectiveness of learning models that are responsive to the needs of students' backgrounds, such as NHT, TPS, TGT, CIRC, and TAI. After an in-depth analysis, it was concluded that this approach helps students' academic achievement and adds to their understanding of culture. This is especially important for students' diverse cultural backgrounds. It can improve social interaction and create inclusive and practical learning. This can enhance social interaction and create inclusive and practical learning; this is also supported by the research results measured by funnel plot analysis, with no publication bias. This strengthens the validation of the findings.

Disclosure Statement

The authors claim no conflict of interest.

Funding

The researchers wish to extend heartfelt appreciation to the Indonesia Endowment Fund for Education Agency (LPDP), overseen by the Ministry of Finance of the Republic of Indonesia, for granting scholarships and offering research support for the doctoral program at Universitas Sebelas Maret (UNS).

References

Abbas, F., Farid, M. F., Iqbal, A., & Parveen, S. (2020). Impact of using newspapers reading in improving English reading proficiency: A study of Pakistani university students. *International Journal of Innovation, Creativity and Change*, *14*(10), 223–232.

Abitoye, O., Onunka, T., Oriji, O., Daraojimba, C., & Shonibare, M. A. (2023). A review of practical teaching methods and their effectiveness for enhanced financial literacy in Nigeria. *International Journal of Management & Entrepreneurship Research*, *5*(12), 879–891. https://doi.org/10.51594/ijmer.v5i12.623

Adhityani, M., Shalwan, M. M., Zahra, P. F., & Waroka, T. S. (2021). *Using mind mapping to teach reading comprehension in junior high school*. https://doi.org/10.35194/cp.v0i0.1364

Ajnani, S., Dantes, N., & Artawan, G. (2019). Pengaruh implementasi gerakan literasi sekolah terhadap minat baca dan kemampuan membaca pemahaman siswa kelas v sd gugus II kuta utara [The influence of the implementation of the school literacy movement on the reading interest and reading ability of class v students at gugus II sd kuta utara]. *PENDASI: Jurnal Pendidikan Dasar Indonesia*, *3*(2), 74–83.

Allen-Lyall, B. (2020). Empowering students to make their own reading choices: A teaching framework. *Reading Improvement*, *57*(1), 1–10.

Anggiasari, N. A., Asrori, M., & Sarosa, T. (2018). Comparative study between using cooperative learning model Teams-Games-Tournaments (TGT) and Direct Instructional method (DI) to teach students' reading comprehension. *English Education*, *6*(3), 367-378. https://doi.org/10.20961/eed.v6i3.35903

Anggraini, M. (2017). *The effect of Teams Games Tournament (TGT) method on students' reading comprehension of recount text*. *Repository Universitas Jambi*, *4*, 9–15.

Auzar, A. (2012). Keberkesanan penggunaan perisian asas membaca [The effective use of basic reading software]. *GEMA Online Journal of Language Studies*, *12*(2), 629–644.

Bagherzadeh, R., & Tajeddin, Z. (2021). Teachers' curricular knowledge in teacher education programs: A case of Iran's sociocultural context. *International Journal of Society, Culture and Language*, *9*(1), 43–57.

Bakti, K. N. N. (2018). Vocabulary learning strategies used by junior high school students. *Indonesian Journal of English Language Studies (IJELS)*, *3*(2), 44–59. https://doi.org/10.24071/ijels.v3i2.1064

Barry, A. L., Rice, S., & McDuffie-Dipman, M. (2013). Books with potential for character education and a literacy-rich social studies classroom: A research study. *Journal of Social Studies Research*, *37*(1), 47–61. https://doi.org/10.1016/j.jssr.2012.12.002

Bekti, A. (2013). *Keefektifan penggunaan strategi* [Effectiveness of strategy use] [Unpublished bachelor's thesis]. Yogyakarta State University.

Borenstein, M., Hedges, L. V, Higgins, J. P. T., & Rothstein, H. R. (2021). *Introduction to meta-analysis* (2nd ed.). John Wiley & Sons.

Carver, R. P., & Hoffman, J. V. (1981). The effect of practice through repeated reading on gain in reading ability using a computer-based instructional system. *Reading Research Quarterly*, *16*(3), 374-390. https://doi.org/10.2307/747408

Cho, Y., Kim, D., & Jeong, S. (2021). Evidence-based reading interventions for English language learners: A multilevel meta-analysis. *Heliyon*, *7*(9), e07985. https://doi.org/10.1016/j.heliyon.2021.e07985

Cromley, J. G. (2009). Reading achievement and science proficiency: International comparisons from the programme on international student assessment. *Reading Psychology*, *30*(2), 89–118. https://doi.org/10.1080/02702710802274903

Damaianti, V. S., Damaianti, L. F., & Mulyati, Y. (2017). Cultural literacy based critical reading teaching material with active reader strategy for junior high school. *International Journal of Evaluation and Research in Education*, *6*(4), 312-317. https://doi.org/10.11591/ijere.v6i4.10775

Dyll, L. (2019). Methods of "literacy" in indigenising research education: Transformative methods used in the Kalahari. *Critical Arts*, *33*(4–5), 122–142. https://doi.org/10.1080/02560046.2019.1704810

Fatimah, A. (2017). *Kemampuan membaca pemahaman cerita rakyat soppeng dalam pembelajaran bahasa daerah siswa kelas VIII SMP negeri 4 Liliriaja kabupaten Soppeng* [Reading ability, comprehension of soppeng folklore in regional language learning for class VIII students of SMP negeri 4 Liliriaja, Soppeng regency] [Diploma thesis]. FBS. http://eprints.unm.ac.id/id/eprint/5740

Fitiyana, M. (2017). *Pengaruh pembelajaran membaca pemahaman dengan menggunakan model jigsaw learning dan index card martch (icm) terhadap keterampilan pemahaman comprehension skill siswa smp darul muqomah* [The effect of learning reading comprehension using the jigsaw learning model and index card march (ICM) on the comprehension skills of Darul Muqomah Middle School students. Sultan Ageng Tirtayasa University]. Universitas Sultan Ageng Tirtayasa.

Franklin, M. E., James, J. R., & Watson, A. L. (1996). Using a cultural identity development model to plan culturally responsive reading and writing instruction. *Reading & Writing Quarterly*, *12*(1), 41–58. https://doi.org/10.1080/1057356960120104

Goncearenco, A., Shaytan, A. K., Shoemaker, B. A., & Panchenko, A. R. (2015). Structural perspectives on the evolutionary expansion of unique protein-protein binding sites. *Biophysical Journal*, *109*(6), 1295–1306. https://doi.org/10.1016/j.bpj.2015.06.056

Greco, J. (2011). *The Oxford handbook of skepticism*. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195183214.001.0001

Gurses, M. O., & Adiguzel, O. C. (2013). The effect of strategy instruction based on the cognitive academic language learning approach over reading comprehension and strategy use. *Journal of Education and Learning*, *2*(2), 55-68. https://doi.org/10.5539/jel.v2n2p55

Gusmalinda, I., & Asnawi, A. (2023). Efektivitas buku ajar pembelajaran membaca bermuatan cerita rakyat Melayu Riau [Effectiveness of reading learning textbooks containing Riau Malay folk stories]. *J-LELC: Journal of Language Education, Linguistics, and Culture*, *3*(2), 98–104. https://doi.org/10.25299/j-lelc.2023.12740

Hadi, E. Z., & Haryadi, H. (2017). Keefektifan metode pembelajaran kooperatif tipe Tai dalam pembelajaran membaca pemahaman untuk menemukan gagasan utama [The effectiveness of the Tai type cooperative learning method in learning reading comprehension to find the main idea]. *Diksi*, *25*(2), 191-200.

Hasanudin, C., & Puspita, E. L. (2017). Peningkatan motivasi dan keterampilan membaca permulaan siswa kelas I melalui media aplikasi Bamboomedia BMGames apps [Increasing motivation and beginning reading skills of class I students through the Bamboomedia BMGames apps media application]. *Pedagogia : Jurnal Pendidikan*, *6*(1), 1–13. https://doi.org/10.21070/pedagogia.v6i1.618

Hastuti, D., & Yuliasri, I. (2015). The effectiveness of Stad and Tgt to enhance narrative text reading comprehension of the students with high and low achievement. *English Education Journal*, *5*(2), 46–52.

Hermessi, T. (2017). *An evaluation of the place of culture in English education in Tunisia*. In S. Hidri & C. Coombe (Eds.), *Evaluation in foreign language education in the Middle East and North Africa*. Springer. https://doi.org/10.1007/978-3-319-43234-2_12

Higgins, J. P. T. (2003). Measuring inconsistency in meta-analyses. *BMJ*, *327*(7414), 557–560. https://doi.org/10.1136/bmj.327.7414.557

Huang, M. C. (2023). Anthropological dimensions of modern educational culture: Theoretical analysis. *Journal of Contemporary Philosophical and Anthropological Studies*, *1*(1), 29-42. https://doi.org/10.59652/jcpas.v1i1.58

Hunter, J. E., & Schmidt, F. L. (2004). *Methods of meta-analysis: Correcting error and bias in research findings* (2nd ed.). Sage.

Hussien, H. A. H. (2016). A suggested teaching model based on brain-based learning to develop secondary stage students' critical reading skills and self-efficacy. *CDELT Occasional Papers in the Development of English Education*, *61*(1), 65–108.

Jie, Y., & Jie, L. (2021). Foreign language moral education under the guidance of cultural security approach BT. In M. Z. Bin & N. A. Ghaffar (Eds.), *Proceedings of the 2021 4th International Conference on Humanities Education and Social Sciences* (pp. 2662–2665). Atlantis Press. https://doi.org/10.2991/assehr.k.211220.460

Jullya, J., Oktavia, W., & Yanti, L. (2019). Peningkatan keterampilan membaca intensif menggunakan model kooperatif tipe Team Assisted Individualization (TAI) pada siswa kelas VIII D SMPN 8 Singkawang tahun ajaran 2017/2018 [Improving intensive reading skills using the Team Assisted Individualization (TAI) cooperative model for class VIII D students of SMPN 8 Singkawang 2017/2018 academic year]. *Cakrawala Linguista*, *2*(1), 9–17.

Kholiq, A., & Luthfiyati, D. (2018). Tingkat membaca pemahaman siswa sman 1 Bluluk Lamongan [Level of reading comprehension of Bluluk Lamongan sman 1 students]. *Reforma: Jurnal Pendidikan Dan Pembelajaran*, *7*(1), 1–11.

Kohar, D. (2022). Measuring the effectiveness of the brain-based learning model on the level of reading comprehension based on exposition reading structures in junior high school. *Educational Sciences: Theory and Practice*, *22*(1), 78–89.

Leasa, M., Corebima, A. D., & Suwono, H. (2017). Emotional intelligence among auditory, reading, and kinesthetic learning styles of elementary school students in Ambon-Indonesia. *International Electronic Journal of Elementary Education*, *10*(1), 83–91. https://doi.org/10.26822/iejee.2017131889

Lestari, T., & Astuti, R. (2023a). Boosting grade I students' reading skills: A school literacy movement analysis. *Indonesian Journal of Education Methods Development*, *18*(3). https://doi.org/10.21070/ijemd.v21i3.754

Lestari, T., & Astuti, R. (2023b). Impact of the school literacy movement on reading skills of grade I students. *Indonesian Journal of Education Methods Development*, *21*(3). https://doi.org/10.21070/ijemd.v21i3.762

Li, M. (2024). Integrating models in education: evaluating strategies and enhancing student learning through advanced analytical methods. *Lecture Notes in Education Psychology and Public Media*, *51*(1), 29–35. https://doi.org/10.54254/2753-7048/51/20240560

Maman, M., & Rajab, A. A. (2016). The implementation of cooperative learning model 'Number Heads Together (NHT)' in improving the students' ability in reading comprehension. *International Journal of Evaluation and Research in Education*, *5*(2), 174-180. https://doi.org/10.11591/ijere.v5i2.4536

McBride-Chang, C. (2014). *Children's literacy development*. Routledge. https://doi.org/10.4324/9780203783887

Mendrofa, R. N., Dewi, I., & Simamora, E. (2024). Philosophy-infused culture-based learning models in mathematics education. *Mathline : Jurnal Matematika Dan Pendidikan Matematika*, *9*(1), 47–62. https://doi.org/10.31943/mathline.v9i1.562

Mokodompit, P. L. (2016). Enhancing Students' reading comprehension ability through comparison study between cooperative learning Numbered Heads Together (NHT) and thin-pair-share strategies (TPS). *Acuity: Journal of English Language Pedagogy, Literature and Culture*, *1*(2), 1–12. https://doi.org/10.35974/acuity.v1i2.599

Moral, R., & Villarente, M. D. (2024). Teaching strategies and their effects on reading comprehension performance of junior high school students in inclusive classroom setting. *EIKI Journal of Effective Teaching Methods*, *2*(1). https://doi.org/10.59652/jetm.v2i1.138

Mufti, E. O. (2012). Keefektifan penggunaan prep technique dalam meningkatkan keterampilan membaca pemahaman pada siswa kelas vii smp pgri 23 bantarsari kab [The effectiveness of using prep technique in improving reading comprehension skills in class VII students at SMP Pgri 23 Bantarsari district]. *Acta Materialia*, *33*(10), 348–352.

Mustami, M. K., & Safitri, D. (2018). The effects of numbered heads together-assurance relevance interest assessment satisfaction on students' motivation. *International Journal of Instruction*, *11*(3), 123–134. https://doi.org/10.12973/iji.2018.1139a

Nachmani, L. (2015). Cultural aspects of EFL reading acquisition. *Procedia - Social and Behavioral Sciences, 209*, 351–357. https://doi.org/10.1016/j.sbspro.2015.11.248

Noriasih, N. K. (2012). Pengaruh model pembelajaran reciprocal teaching terhadap pemahaman bacaan ditinjau dari konsep diri akademik siswa [The influence of the reciprocal teaching learning model on reading comprehension in terms of students' academic self-concept]. *Jurnal Pendidikan Dan Pembalajaran Bahasa Indonesia Universitas Ganesha, 1*(2), 1–16. https://doi.org/10.23887/jurnal pendidika.v1i2.356

Paris, S. G., Lipson, M. Y., & Wixson, K. K. (1983). Becoming a strategic reader. *Contemporary Educational Psychology*, *8*(3), 293–316. https://doi.org/10.1016/0361-476X(83)90018-8

Parrish, P., & Linder-VanBerschot, J. (2010). Cultural dimensions of learning: Addressing the challenges of multicultural instruction. *The International Review of Research in Open and Distributed Learning*, *11*(2), 1-19. https://doi.org/10.19173/irrodl.v11i2.809

Pratiwi, I. (2019). Improving students' learning with NHT model of teaching in natural science courses. *International Journal of Trends in Mathematics Education Research, 2*(3), 153-156. https://doi.org/10.33122/ijtmer.v2i3.120

Pujiati, P. (2019). Increasing short functional reading competencies using Numbered Head Together (NHT) in junior high school. *Paedagogia*, *22*(1), 81–90.

Purnomo, S. (2012). Improving the students' reading comprehension through Numbered Heads Together technique. *Journal on English as a Foreign Language*, *2*(2), 37-44. https://doi.org/10.23971/jefl.v2i2.55

Qi, S. (2024). Analysis of the effects of cultural differences on teaching and learning styles and the impact on teaching and learning in China. *International Journal of Education and Humanities*, *12*(2), 40–43. https://doi.org/10.54097/3v9yjf79

Rahmawati, D. (2014). The effectiveness of using cooperative learning type Number Heads Together (NHT) improving reading comprehension of the students at SMP N 20 Tangerang. *Jurnal Asy-Syukriyyah*, *12*(1), 57–71. https://doi.org/10.36769/asy.v12i1.58

Reisch, M. (2010). Social and cultural influences on children`s motivation for reading. In D. Wyse, R. Andrews, & J. Hoffman (Eds.), *The Routledge International Handbook of Social Justice* (pp. 1–534). https://doi.org/10.4324/9781315857534

Reitmanova, S. (2011). Cross-cultural undergraduate medical education in North America: Theoretical concepts and educational approaches. *Teaching and Learning in Medicine*, *23*(2), 197–203. https://doi.org/10.1080/10401334.2011.561761

Riches, C. (2006). Literacy: Instructional issues. In F. Genesee, K. Lindholm-Leary, B. Saunders, & D. Christian (Eds.), *Educating English language learners* (pp. 109–175). Cambridge University Press. https://doi.org/10.1017/CBO9780511499913.005

Salsabila, R. Y., Lestari, S., & Budiarti, M. (2020). Analisis kemampuan membaca siswa kelas II sekolah dasar [Analysis of reading ability of second grade elementary school students]. *Prosiding Konferensi Ilmiah Dasar*, *2*, 339–344.

Sarimanah, E. (2016). Effectiveness of PQ4R metacognitive strategy based reading learning models in junior high school. *International Journal of Language Education and Culture Review*, *2*(1), 74–81. https://doi.org/10.21009/IJLECR.021.018

Selong, Y. (2019). Improving students' reading comprehension through the use of Numbered Head Together (NHT) technique. *Journal of English Educational Study*, *2*(2), 78–86. https://doi.org/ 10.31932/jees.v2i2.500

Setyawati, C. K. (2011). Pengembangan pembelajaran keterampilan membaca melalui penerapan teknik tari bambu [Development of reading skills learning through application of bamboo dance techniques]. *Jurnal Ilmiah Guru Caraka Olah Pikir Edukatif*, *15*(2), 17-23. https://doi.org/ 10.21831/jig cope.v15i02.5513

Shen, Y. (2024). A music teaching model combining deep learning in the perspective of ecological aesthetic education: The integration of traditional music culture. *Applied Mathematics and Nonlinear Sciences, 9*(1). https://doi.org/10.2478/amns-2024-0880

Siregar, N. H. O., Adisaputera, A., & Saragih, A. (2020). Development of interactive multimedia in learning to read genre text with local wisdom for students junior high school Silangkitang. In R. Husein (Ed.), *Proceedings of the 4th Annual International Seminar on Transformative Education*

and Educational Leadership (pp. 600–603). Atlantis Press. https://doi.org/10.2991/aisteel-19.2019.136

Song, N., Liu, J., Wang, X., Duan, Q., & Weng, M. (2022). Chinese humanities scholars' reading of academic E-books: A survey on reading strategies and tasks. *Learned Publishing*, *35*(4), 625–639. https://doi.org/10.1002/leap.1490

Stan, I. S. (2021). *The effects of bi-literacy on phonological awareness and reading ability in L2 Italian and L3 English-A study on young heritage speakers of Romanian in Italy* [Doctoral thesis, Ciclo, Anno Accademico]. IRIS Institutional Research Information System - AIR Archivio Istituzionale della Ricerca. https://air.unimi.it/handle/2434/819434

Sukmawati, S. (2012). *Keefektifan model pengalaman berbahasa terkonsentrasi dalam pembelajaran membaca pemahaman karya prosa* [The effectiveness of the concentrated language experience model in learning reading comprehension of prose works] [Unpunlished bachelor's thesis]. Yogyakarta State University.

Tudtud, L. F., Ceniza, A. M. B., Fernandez, A., & T. Ignacio, J. (2022). Barriers to the reading comprehension of public junior high school students. *International Journal of Science and Management Studies (IJSMS)*, *5*(5), 256–260. https://doi.org/10.51386/25815946/ijsms-v5i5p120

Wang, M. (2024). Exploring the integration of excellent traditional Chinese culture into higher vocational English education from a cross-cultural perspective. *Studies in English Language Teaching*, *12*(1), 96. https://doi.org/10.22158/selt.v12n1p96

Watson, J., Chapman, J., Adams, J., & Nila, U. H. (2006). Occupational therapy students' approaches to learning: Considering the impact of culture. *British Journal of Occupational Therapy*, *69*(12), 548–555. https://doi.org/10.1177/030802260606901203

Wijaya, K. (2021). The important role of extensive reading strategy in Indonesian EFL learning contexts. *Acuity: Journal of English Language Pedagogy, Literature and Culture*, *6*(2), 107–117. https://doi.org/10.35974/acuity.v6i2.2482

Wirawan, K., Suharsono, D. N., Kirna, D. I. M., & Si, M. (2018). Pengaruh Model Know Want Learned (KWL) Terhadap Keterampilan Membaca dan Menulis Bahasa Inggris Pada Siswa Kelas VIII SMP Negeri 3 Abang [The influence of the Know Want Learned (KWL) model on English reading and writing skills in class VIII Students of SMP Negeri 3 Abang]. *Jurnal Teknologi Pembelajaran Indonesia*, *8*(1). https://doi.org/10.23887/jtpi.v8i1.2249

Wu, X., Liang, J., Chen, J., Dong, W., & Lu, C. (2024). Physical activity and school adaptation among Chinese junior high school students: Chain mediation of resilience and coping styles. *Frontiers in Psychology*, *15*, 1376233. https://doi.org/10.3389/fpsyg.2024.1376233

Yusuf, R., Sanusi, S., Razali, R., Maimun, M., Putra, I., & Fajri, I. (2020). Tinjauan literasi budaya dan kewargaan siswa sma se-kota Banda Aceh [Review of cultural literacy and citizenship of high school students in Banda Aceh City]. *Jurnal Pendidikan Kewarganegaraan Undiksha*, *8*(2), 91–99.

Zarei, A. A. (2012). The effects of STAD and CIRC on L2 reading comprehension and vocabulary learning. *Frontiers of Language and Teaching*, *3*(5), 161–173.

Zhao, Q. (2023). Interdisciplinary approaches and teaching models in English reading instruction. *Region - Educational Research and Reviews*, *5*(5), 192. https://doi.org/10.32629/rerr.v5i5.1473