

## CHAPTER III RESEARCH METHODOLOGY

### A. Research Method

When viewed from the subject and the main data source, this type of research is library research, which is research conducted by collecting data and information with the help of various materials contained in the literature, such as books, journal articles, papers, notes, and so on. The approach used in this research is a systematic review type of meta-synthesis. The systematic review is a review or review of the literature by collecting evidence following predetermined eligibility criteria to answer clear questions using a systematic, structured and transparent method.<sup>1</sup> The purpose of the systematic review is to identify, evaluate and summarize the results of relevant studies collected through the screening process to produce reliable and accurate conclusions.<sup>2</sup>

### B. Research Subjects

This research's subjects are studies in various databases in Publish or Perish software about the use of Mobile Assisted Language Learning (MALL) to improve L2 Learners' speaking skills. The selection of Publish or Perish software in this study's source of data search is motivated by the ease and completeness of accessing scientific articles from various academic databases. In addition, researchers can conduct a screening process based on relevant keywords to identify studies as a source of literature review data without losing the accuracy of the literature search process and minimizing the risk of missing relevant articles. The selected studies are publications in the last five years (2019-2023) to explore whether the study results are relatively stable with changes and whether the findings are relevant to this research gap.

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<sup>1</sup> Julian PT Higgins and Sally Green, "Cochrane Handbook for Systematic Reviews of Interventions : Cochrane Book Series," n.d.; David Gough et al., eds., *An Introduction to Systematic Reviews*, 2nd edition (Los Angeles London New Delhi Singapore Washington, DC Melbourne: SAGE, 2017).

<sup>2</sup> Adik Wibowo and Septiara Putri, *Pedoman Praktis Penyusunan Naskah Ilmiah dengan Metode Systematic Review* (Unpublished, 2021), <https://doi.org/10.13140/RG.2.2.17871.20640>.

### **C. Instruments and Data Collection Technique**

In this study, researchers used instruments and data collection techniques using the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) diagram reference systematically assisted by Publish or Perish software. PRISMA aims to filter and organize data sources whose results are further analyzed. The screening process in PRISMA identifies relevant publications, which publications will be included or excluded based on criteria. It presents reasons for exclusion by ensuring a systematic and transparent data collection approach.

The researcher used the help of Publish or Perish software and applied five steps in collecting data in this systematic review. The first step is to select the database of journal articles to be searched. In this research, Google Scholar was chosen to search for study sources. The next step is to enter the keywords Mobile Assisted Language Learning, MALL, Speaking skills, ELT, L2 learners and Indonesia. This was done to provide a limitation in finding article data and focusing the study on the scope of English language learning. The third step is to select the publication year range of the selected articles. In this study, the researcher chose publications from 2019 to 2023 to fit the study with the inclusion criteria.

The next step is to limit the type of literature to be included. The literature taken only includes full-access journal articles that match the topic of this research. Literature (books, book chapters, conference proceedings, thesis, dissertation, or denied access literature) are excluded from this research data sources. The last step is to re-select the selected study based on the title and abstract. The researcher screened the titles and abstracts relevant to the research topic to examine the purpose and results of the study and explore whether the findings are related to the use of MALL on L2 learners' speaking skills.

After screening and analyzing the synthesis study based on the items above, the researcher re-selected the data according to the inclusion and exclusion criteria. This selection criteria ensures that the data taken has met specific requirements and is

relevant to the research objectives.<sup>3</sup> The inclusion and exclusion criteria in this study are presented in the table below:

**Table 3. 1 Inclusion and Exclusion Criteria**

<b>Parameter</b>	<b>Inclusion</b>	<b>Exclusion</b>
Literature Type	Journal articles	Book, book chapters, conference proceedings, thesis, dissertation, access denied
Publication	Between 2019-2023 Published in official Indonesian journals	Before 2019, after 2023 Published by foreign journals
Language	English	Non-English
Focus Study	Studies must focus on using MALL to enhance L2 learners' speaking skills.	Did not focus on the use of MALL for enhancing L2 learners' speaking skills
Sample	Indonesian L2 learners/teachers	Other than Indonesian L2 learners/teachers
Methods	Qualitative, quantitative, or mixed	Meta-analysis, systematic review, literature review

After screening using the inclusion and exclusion criteria, the researcher again selected the study by downloading and reading it. This serves to get search results that allow eligibility criteria that do not match the specific research criteria so that the study has a chance to be excluded. To organize the search results and study selection process, researchers used PRISMA 2020, a development of PRISMA 2009.<sup>4</sup>

In the PRISMA 2020 template, there are several changes to the previous PRISMA flowchart. These changes include: (1) records excluded before the screening process are more specific

<sup>3</sup> Adik Wibowo and Septiara Putri.

<sup>4</sup> Neal R. Haddaway et al., "PRISMA2020: An R Package and Shiny App for Producing PRISMA 2020-compliant Flow Diagrams, with Interactivity for Optimised Digital Transparency and Open Synthesis," *Campbell Systematic Reviews* 18, no. 2 (June 2022): e1230, <https://doi.org/10.1002/cl2.1230>.

such as duplicate records and ineligible records; (2) determining the number of full-text studies included and excluded; (3) if there is an update in the review, researchers have the option to determine how many studies were selected in the previous version of the review which is then transferred to the latest review; (4) researchers can illustrate a separate flow of records based on the type of study sources such as databases, websites, organizations, and citation searches.<sup>5</sup> In addition to the four changes above, PRISMA 2020 changed the phrase ‘studies included qualitative synthesis’ to ‘studies included in review’ and removed the flow diagram showing the number of quantitative syntheses.



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<sup>5</sup> Matthew J. Page et al., “The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews,” *International Journal of Surgery* 88 (April 2021): 105906, <https://doi.org/10.1016/j.ijvsu.2021.105906>.

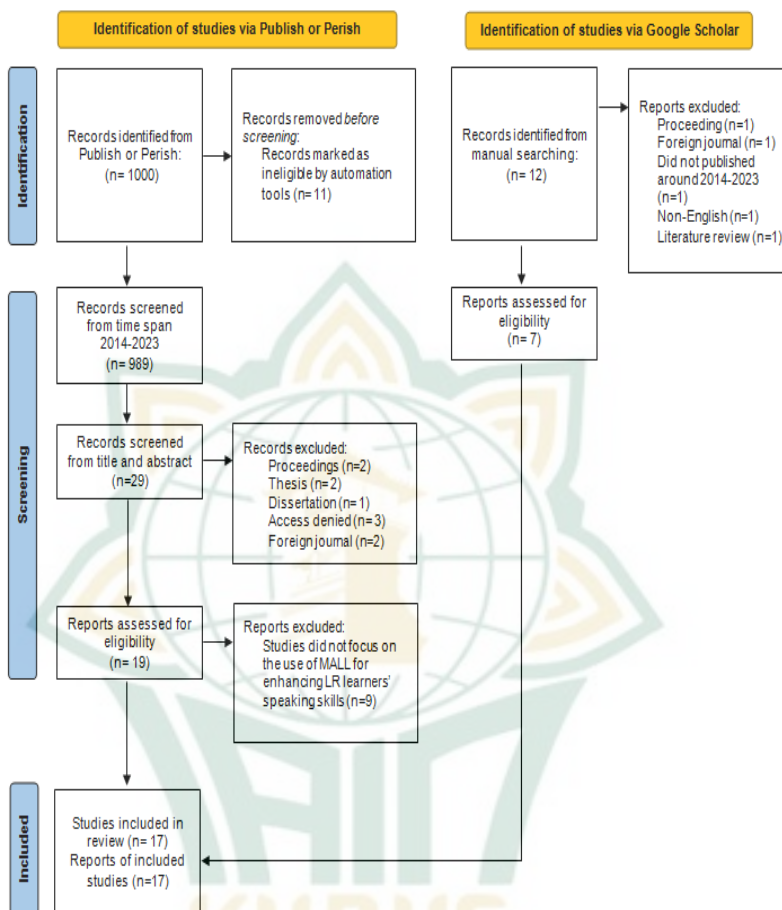
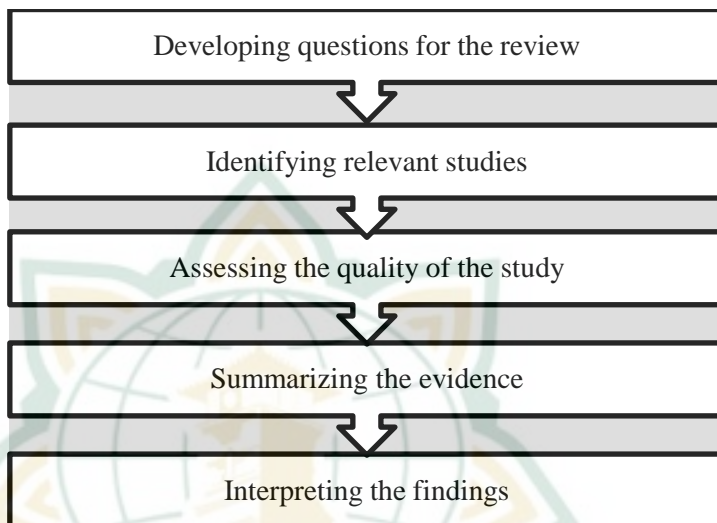


Figure 3. 1 PRISMA 2020 Flow Diagram

#### D. Data Analysis Technique

This study uses descriptive analysis in data analysis techniques. Data extraction was carried out to bring up evidence, which was then described and analyzed systematically according to the systematic review stages. To conduct the systematic review process, researchers followed Khan's systematic review steps guide. The five main steps are visually presented in figure 3.2. These steps consist of developing questions for the review, identifying relevant

studies, assessing the quality of the study, summarizing the evidence, and interpreting the findings.<sup>6</sup>



**Figure 3. 2 The Process of Systematic Review by Khan**

1. Developing questions for the review

The initial stage in conducting a systematic review is to determine research questions that are clear, specific, unambiguous, logical, structured, and well-defined. This aims to provide a more direct picture of the research objectives to be carried out. The more precise the research formulation, the more directed the steps in implementing systematic review. In formulating questions, several criteria called FINER criteria need to be considered. These criteria include feasibility, interesting, novel, ethical, and relevant.<sup>7</sup>

<sup>6</sup> Khalid S Khan et al., “Five Steps to Conducting a Systematic Review” 96 (2003).

<sup>7</sup> Caio Vinicius Regatieri, Augusto Vieira Alves, and Eduardo Rocha, “Medical Acumen and Scientific Approach Meet the FINER Method,” *Arquivos Brasileiros de Oftalmologia* 82, no. 4 (2019), <https://doi.org/10.5935/0004-2749.20190069>.

## 2. Identifying relevant studies

This stage is the process of searching and selecting literature following several predetermined points. These points include the focus of the literature taken, the publication period, language restrictions, and inclusion and exclusion criteria. In this study, PRISMA 2020 was used by the author as a reference for the search and study selection process. The literature search process uses the Publish or Perish software, which is included in the Google Scholar database ([scholar.google.com](https://scholar.google.com)). In addition, researchers used the keywords mobile-assisted language learning, MALL, speaking skills, ELT, and L2 learners to conduct the literature search process.

In the initial round of searching, the researcher obtained a total of 1000 literature by entering specific keywords relevant to the research topic in the Publish or Perish software. Furthermore, the first screening process was carried out by limiting the publication year period. The literature selected had a publication range of the last five years, namely 2019 to 2023. A total of 11 pieces of literature were excluded because they did not match the required publication year. Literature that met the publication period criteria was then re-selected based on the title and abstract of the study. The type of literature was also considered in this process. Only full-access journal articles relevant to this study's topic were retrieved. Literature such as books, book chapters, conference proceedings, thesis, dissertation, and denied access literature were excluded from the records, resulting in 29 articles.

The following screening process is to select journal articles based on this study's inclusion and exclusion criteria. The inclusion and exclusion criteria for this study are listed in table 3.1. A total of 19 articles were obtained in this process, and as many as 10 articles were excluded from the records because there was no match for the inclusion criteria. After that, the researchers conducted the last screening process by assessing the eligibility of the selected articles. The article eligibility was evaluated by downloading and reading the entire article content to get the possibility of opportunities for some inappropriate articles to be excluded

from the records. Ultimately, the researcher obtained 10 articles after four rigorous screening processes.

Besides searching using the Publish or Perish software, researchers also used other sources with manual techniques to search for data. The keywords Mobile Assisted Language Learning, MALL, Speaking skills, ELT, L2 learner, and Indonesia were used to access several journal articles in the journal search database. We found a total of 12 journal articles whose titles and abstracts matched the topic of this study. After that, the studies were filtered based on the inclusion and exclusion criteria, resulting in 7 relevant studies. A total of 5 studies were excluded because they fell under the exclusion criteria. Overall, the number of studies to be reviewed in this study based on Publish or Perish software and other sources amounted to 17 studies. The process of searching and selecting studies in this study is reported in PRISMA 2020 in figure 3.1.

### 3. Assessing the quality of the study

After identifying relevant studies, the eligibility assessment process was carried out to assess the quality of the study before the data extraction process was applied. This aims to make it easier for researchers to consider and assess the important points that hinder the quality of the study. In assessing the quality of the study, researchers used the critical analysis assessment guidelines by several experts:<sup>8</sup>

- a. What is the research question?
- b. Is the study type/design relevant to the research objectives and questions?
- c. What methodology is being used?
- d. How were the study's factors/outcomes/variables/parameters collected and measured?
- e. Is the measurement method valid and reliable?
- f. Is there any potential bias?

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<sup>8</sup> Khan et al., "Five Steps to Conducting a Systematic Review"; Gough et al., *An Introduction to Systematic Reviews*; Azzam Al-Jundi, "Critical Appraisal of Clinical Research," *Journal of Clinical and Diagnostic Research*, 2017, <https://doi.org/10.7860/JCDR/2017/26047.9942>.

- g. What are the results and conclusions?
  - h. Are there any issues related to ethics
4. Summarizing the evidence

The evidence summarization stage in the systematic review method is known as data extraction. At this stage, essential information and characteristics in each selected article are summarized following the research objectives or based on the framework of the research question. All data extraction components are entered into a spreadsheet in a well-organized, systematic manner. After the data extraction process or summarizing the evidence was carried out, the researcher synthesized the data to draw conclusions from all the articles taken. The purpose of data synthesis is to summarize information related to overall evidence in the data, consistency of findings and conclusions from each study, and the effects and impacts of a phenomenon under study.

5. Interpreting the findings.

Interpretation of findings is the last stage in conducting a systematic review. At this stage, researchers need the skills to pour information systematically and present new knowledge to readers. In addition, several things need to be considered when interpreting the findings, namely statements on the results of the systematic review, analysis of the study results, strengths and weaknesses, statements that are evidence of the findings, balance between the objectivity of the review description, and provide a statement of the relevance of the results and the possibility of practical implications.<sup>9</sup>

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<sup>9</sup> Centre for Reviews and Dissemination, *Systematic Reviews (CRD's Guidance for Undertaking Reviews in Health Care)* (University of York: CRD, 2009); Sarah M Yannascoli et al., "How to Write a Systematic Review: A Step-by-Step Guide" 23 (2013); Higgins and Green, "Cochrane Handbook for Systematic Reviews of Interventions : Cochrane Book Series."