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Learning Strategies of Islamic Religious Education Teachers in Improving Qur'an Reading Skills among Deaf Students

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ABSTRACT

Purpose of the Study: This study aims to analyze the learning strategies employed by Islamic Religious Education teachers to improve Qur'an reading skills among deaf students at SLB Negeri 1 Makassar and identify factors supporting and hindering their implementation.

Methodology: This study employed a qualitative approach using normative, juridical, and pedagogical perspectives. Data were collected through observation, interviews, and documentation involving the school principal, curriculum coordinator, homeroom teachers, and Islamic Religious Education teachers. Instruments included interview guidelines, a camera, an audio recorder, and writing materials. Data were analyzed through data reduction, data display, and conclusion drawing.

Main Findings: The findings show that teachers employed personal approaches, adapted learning plans and materials, repeated previously taught materials, and selected creative and innovative methods. Qur'an learning utilized *hijaiyah* sign language progressively by pairing Arabic *hijaiyah* letters with corresponding signs and using visual media. Supporting factors included teacher competence, patience, and diligence, while challenges involved communication limitations, differences in students' comprehension, limited hearing aids, and the limited number of Islamic Religious Education teachers.

Novelty/Originality of the Study: The novelty lies in conceptualizing Qur'an learning for deaf students as an adaptive-integrative strategy that combines personal approaches, material adaptation, gradual repetition, visual media, and *hijaiyah* sign language. The findings demonstrate that effective learning depends not only on instructional methods but also on teachers' ability to adapt communication and instruction to students' individual characteristics and needs.

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1. INTRODUCTION

Islamic Religious Education (PAI) is an important component of the educational process for all students, including students with hearing impairments [1], [2]. Access to religious education needs to be provided through approaches that are appropriate to the communication characteristics and learning needs of deaf students [3]. In the context of Islamic education, Qur'an learning holds an important position because the ability to recognize and read *hijaiyah* letters serves as a foundation for accessing the primary source of Islamic teachings [4]. However,

conventional Qur'an instruction, which largely relies on verbal explanations, auditory input, and imitation of sounds, presents particular challenges for students with hearing impairments. This condition requires teachers to develop forms of communication and learning strategies that can be accessed visually. Research on deaf education indicates that sign language plays an important role in supporting language and literacy development, although this relationship is influenced by linguistic contexts and learner characteristics [5].

The need for accessible learning has become increasingly important in Qur'an education. Deaf students face limitations in receiving information through sound, whereas Qur'an reading generally involves the recognition of letters, *harakat*, pronunciation, and repetition of recitation. Therefore, instructional information needs to be transferred or reinforced through visual representations and sign-based communication [6]. Pamungkas and Hermanto demonstrated that Qur'an learning using *hijaiyah* sign language can be implemented through specific instructional stages, enabling students with hearing impairments to learn to read and memorize the Qur'an through sign-based representations [7]. These findings indicate that sign language functions not only as a means of communication but also as an integral part of the pedagogical process in Qur'an learning.

The development of sign-based learning can also be observed in research on the teaching of the Qur'an and Hadith to students with hearing impairments. Pamungkas, Wahab, and Suwarjo showed that Qur'an and Hadith materials need to be adapted to the communication conditions of deaf students and delivered through instructional practices that utilize sign language [7]. In another context, the implementation of the *kitabah* method for deaf students demonstrated that Qur'an reading instruction can be conducted progressively, beginning with the recognition of letters without *harakat*, followed by the recognition of letters with *harakat*, and subsequently connecting letters through sign language and writing [8]. These findings indicate that Qur'an learning for deaf students requires a gradual process that integrates symbols, written forms, movements, and repetition.

In addition to instructional methods, teacher competence and strategies are important factors in learning for deaf students. Bintoro et al., in their study of teacher strategies for teaching sign language to deaf students, found that teachers employed strategies adapted to students' communication needs, including verbal-sign approaches and manual approaches using sign language [9]. This study reinforces the view that teachers need to possess the ability to select and combine communication strategies according to students' characteristics. In Qur'an learning, this need becomes more complex because teachers are not only required to convey information but also to help students establish connections between *hijaiyah* letter symbols, their corresponding signs, and the stages of reading ability achieved by individual students.

More specific studies on Qur'an learning have also identified challenges related to communication. Arif and Lessy found that Qur'an reading instruction for deaf individuals encountered obstacles related to differences in the sign language systems used by teachers and students, psychological factors, and limitations in retaining sign movements in memory [10]. Nevertheless, the use of sign language can still facilitate Qur'an reading instruction when it is adapted to learners' needs. These findings indicate that the use of sign language alone is insufficient; the effectiveness of learning also depends on teachers' ability to adapt forms of communication, instructional materials, and learning strategies to students' conditions.

Another study on Qur'an learning strategies for deaf children indicates that attention to teacher strategies is required not only at the reading stage but also in the memorization process. Nabila and Rahmanto found that Qur'an memorization learning for deaf children requires strategies and instructional processes adapted to students' characteristics and supported by an adequate learning environment [11]. Research on Islamic Religious Education learning models for deaf children also indicates that learning models need to be designed so that students can understand religious materials and relate them to their everyday lives [12]. Thus, previous studies have demonstrated the importance of adapting Qur'an learning for deaf students, although their research focuses vary across learning models, instructional methods, communication, and memorization.

Recent research has further strengthened the direction toward visual pathway-based Qur'an learning, demonstrating that sign language can serve as the primary medium of communication in instruction, while visual recognition, repeated writing, memory reinforcement, *hijaiyah* letter recognition, and recognition of words or verses are conducted progressively [13]. This study demonstrates that a *visual pathway* enables Qur'an learning to be adapted to the communication characteristics of deaf students. However, the study focuses primarily on the implementation of sign language-based learning and the *kitabah* method rather than on the construction of teachers' strategies as a comprehensive pedagogical process. Based on the results of bibliometric mapping using VOSviewer of research developments over the past five years, as presented in the following figure.

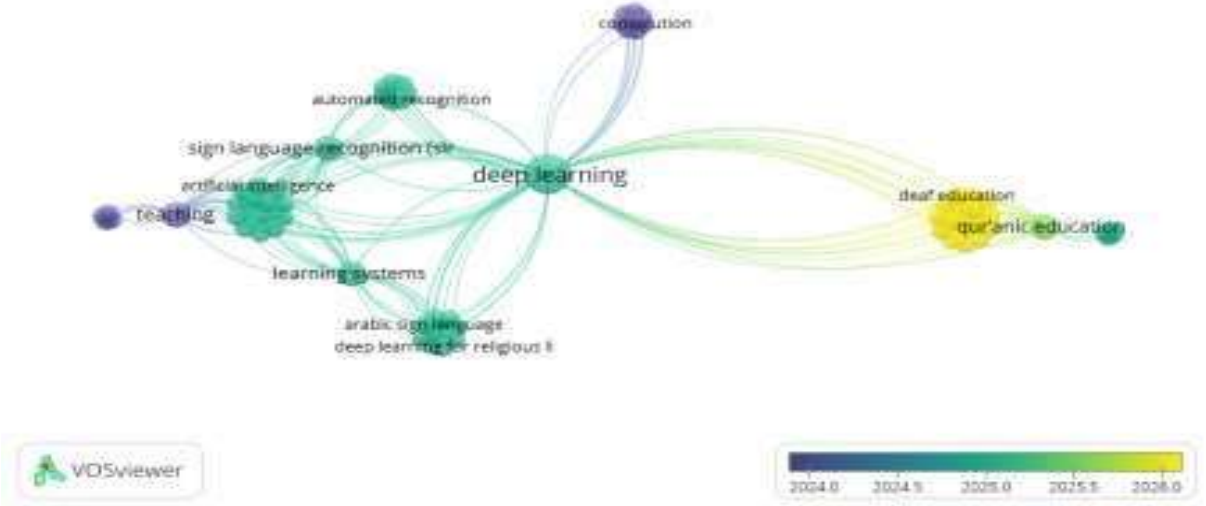


Figure 1. Research Gap

The development of research on deaf education demonstrates connections among *deaf education*, *Qur'anic education*, *sign language*, and *Arabic sign language* [14] as well as technology-based learning [15], [16] and *deep learning* [17]. The mapping indicates that recent studies have increasingly focused on sign language recognition, technology-based learning systems, and the use of artificial intelligence, while the pedagogical aspect of how teachers integrate various strategies in Qur'an learning has not yet emerged as a primary focus. Previous studies have addressed the use of *hijaiyah* sign language, sign language, the *kitabah* method, Islamic Religious Education learning models, and Qur'an learning strategies for deaf students [7]. However, studies that specifically conceptualize Islamic Religious Education teachers' strategies as a series of pedagogical decisions integrating personal approaches, adaptation of learning plans and materials, visual media, *hijaiyah* sign language, repetition, and reinforcement based on students' diverse abilities remain limited. Therefore, this study positions teacher strategy as the primary focus of analysis to understand how Qur'an reading instruction is adapted to the characteristics and individual needs of deaf students.

This research gap highlights the novelty and urgency of the present study. While previous research has increasingly addressed sign language, technology-based learning, and Qur'anic education for deaf students, limited attention has been given to how PAI teachers integrate multiple pedagogical strategies into an adaptive learning process. Therefore, this study is important because it examines teacher strategies as an integrated pedagogical process that connects personal approaches, adaptation of learning plans and materials, visual media, *hijaiyah* sign language, repetition, and reinforcement. This perspective provides a more comprehensive understanding of how Qur'an learning can be adapted to the communication characteristics and individual learning needs of deaf students.

On the basis of this research gap, this study views *hijaiyah* sign language as one component of teachers' learning strategies rather than as the sole instructional method. Learning strategies are understood more broadly through the integration of personal approaches, adaptation of learning plans and materials, gradual repetition, the use of visual media, and communication through *hijaiyah* sign language. This integrative perspective enables the study to provide a more comprehensive account of how teachers adapt Qur'an learning to the individual characteristics and abilities of deaf students. Accordingly, the novelty of this study lies in mapping Islamic Religious Education teachers' learning strategies as an adaptive-integrative approach to Qur'an reading instruction for deaf students. This novelty does not rest on a claim of developing a new instructional method, but rather on the way this study connects various pedagogical practices including personal approaches, material adaptation, repetition, visual media, and *hijaiyah* sign language as an integrated learning strategy. This perspective suggests that the accessibility of Qur'an learning for deaf students depends not only on the use of sign language but also on teachers' ability to adapt the overall learning process to students' individual needs.

2. RESEARCH METHOD

This study employed a descriptive qualitative approach to gain an in-depth understanding of the learning

strategies used by Islamic Religious Education (PAI) teachers to improve Qur'an reading skills among deaf students at SLB Negeri 1 Makassar. This approach was selected because it enables the researcher to describe learning phenomena based on actual field conditions through direct interaction with the research subjects and to understand the processes, strategies, and experiences that occur during learning [18], [19]. The data sources in this study are presented in Table 1.

Table 1. Data Sources

Informant/Document	Data Collection Technique	Data Obtained
Principal of SLB	Interview	Information regarding policies and the implementation of learning for students
Vice Principal for Curriculum Affairs	Interview and documentation	Information regarding learning planning and curriculum adaptation
Homeroom Teacher	Interview and observation	Information regarding students' characteristics, abilities, and learning development
Islamic Religious Education (PAI) Teacher	Interview and observation	Learning strategies, methods, materials, media, *hijaiyah* sign language, and supporting and inhibiting factors
School documents and learning materials	Documentation	Supporting data in the form of learning materials, instructional documents, and documentation of learning activities

Source: Researcher's data

The research subjects consisted of the principal, the vice principal for curriculum affairs, homeroom teachers, and Islamic Religious Education (PAI) teachers at SLB Negeri 1 Makassar. The primary research instrument was the researcher as a human instrument [20], [21] supported by interview and observation guidelines, a camera, an audio recorder, and writing materials. The research procedures involved preparation of the research instruments and identification of relevant informants, followed by data collection through classroom observations, in-depth interviews, and documentation. Observations focused on Qur'an reading instruction and teacher–student interactions, while interviews explored teachers' learning strategies, communication approaches, material adaptation, instructional methods, media use, *hijaiyah* sign language, and supporting and inhibiting factors. Documentation was used to complement the observational and interview data. The collected data were analyzed qualitatively through data reduction, data display, and conclusion drawing and verification. The analysis focused on learning planning, teachers' personal approaches to students, material adaptation, instructional methods, visual media, implementation of *hijaiyah* sign language, repetition and reinforcement, and supporting and inhibiting factors. To ensure the credibility and *trustworthiness* of the findings, source and technique triangulation were employed by comparing information obtained from different informants and from observations, interviews, and documentation [22], [23].

3. RESULTS AND DISCUSSION

The findings indicate that the learning strategies employed by Islamic Religious Education (PAI) teachers to improve Qur'an reading skills among deaf students at SLB Negeri 1 Makassar are adaptive, involving adjustments to students' communication characteristics, ability to comprehend learning materials, and individual learning needs. These strategies are reflected in the use of personal approaches, adaptation of learning plans and materials, the use of visual methods and media, implementation of *hijaiyah* sign language, and gradual repetition of learning materials. These findings demonstrate that Qur'an learning for deaf students cannot be fully implemented using the same instructional patterns applied to students with typical hearing abilities.

3.1. Learning Strategies of Islamic Religious Education Teachers in Qur'an Learning

The personal approach serves as the initial step taken by teachers to establish students' attention and communication. Teachers attempt to ensure that students pay attention to movements, written text, pictures, facial expressions, or signs before instructional materials are presented. This approach also takes into account differences in students' abilities, allowing the pace and form of material delivery to be adjusted accordingly. This finding is consistent with Bintoro et al., who demonstrated that learning for deaf students requires specific communication strategies through the use of manual communication and *speech-reading* adapted to students' characteristics [9].

Adaptation is also applied to learning planning and instructional materials. Teachers do not immediately direct students toward the ability to read complete Qur'anic verses but begin with the basic abilities of recognizing and remembering *hijaiyah* letters. The materials are presented gradually according to the students' actual abilities. This pattern is consistent with Pamungkas and Hermanto, who demonstrated that Qur'an learning using *hijaiyah* sign language for children with hearing impairments can be implemented through systematic instructional stages [7]. Pamungkas et al. also emphasized the need to adapt Qur'an learning to the language, speech, and communication conditions of students with hearing impairments [24].

In its implementation, teachers utilize visual methods and media. Written text, pictures, demonstrations, and signs are used to help students establish connections between letter symbols and their meanings during the learning process. The use of a visual pathway has a strong basis in the education of deaf students. Through a research synthesis and meta-analysis, Zhang et al. identified an association between sign language competence and the language and literacy development of students [5]. In the context of Qur'an learning, Fajrah et al. also demonstrated that the recognition of letters, written forms, *harakat*, and sign language can be integrated progressively in learning for deaf students [8].

The most prominent strategy is the use of *hijaiyah* sign language. Teachers introduce Arabic *hijaiyah* letters and then connect them with the corresponding signs used in the learning process. The letters are introduced gradually and associated with visual forms that can be observed by students. Thus, *hijaiyah* sign language functions as a bridge between Arabic written symbols and students' visual communication system. This finding directly reinforces the study by Pamungkas and Hermanto [7] concerning the use of sign language or *hijaiyah* signs in Qur'an learning for students with hearing impairments.

Recent research also indicates a similar tendency. Arman and Hasanah demonstrated that Qur'anic literacy learning for deaf students can be developed through a visual pathway by utilizing sign language and strengthening visual recognition [13]. Accordingly, *hijaiyah* sign language in the present study is not merely a form of translating letters into movements but functions as a communication mediation strategy that enables students to access Qur'anic symbols through a communication system that is more appropriate to their characteristics.

3.2. Repetition and Reinforcement Methods in Qur'an Learning

Repetition is one of the methods employed by teachers to help deaf students master *hijaiyah* letters [25], [26]. The material presented is not delivered only once but is reviewed repeatedly in subsequent learning sessions. Before introducing new material, teachers first remind students of or re-present the letters that have already been learned. This approach is used to strengthen students' memory while also assessing the extent to which previously taught material has been mastered. Repetition is also conducted through gradual practice. Teachers provide a set of letters for students to learn and repeat them until students are able to recognize and remember their forms. In this process, teachers combine Arabic *hijaiyah* letters with their corresponding *hijaiyah* signs so that students not only remember the written symbols but also establish connections between these symbols and the signs used in instructional communication.

The reinforcement method is implemented through examples, practice, and repetition of materials that students have not yet mastered. When students encounter difficulties, teachers provide additional examples and guide them through further practice. Thus, reinforcement is not limited to verbal explanations but is implemented through direct demonstration and hands-on practice. This finding is consistent with Sabdan et al., who showed that Qur'an learning using *hijaiyah* sign language is conducted through systematic and repetitive stages, enabling students to recognize and remember the letters being learned [27]. Similar studies have also demonstrated that visual pathways, letter recognition, writing exercises, and repetition constitute important components in developing Qur'anic literacy among deaf students [28], [29]. Therefore, repetition in the present study is not merely the reiteration of the same material but constitutes an integral component of an adaptive learning strategy. Repetition functions to strengthen visual memory, consolidate letter recognition, and assess students' mastery of previously taught material [30]. This strategy is relevant to the learning characteristics of deaf students, who require visual access and consistent practice.

3.3. Supporting and Inhibiting Factors in Learning

The successful implementation of learning strategies is influenced by various factors that either support or hinder the learning process [31]. Based on the research findings, one of the main supporting factors is teacher competence in conducting instruction for deaf students. Teachers are required to adapt learning materials, utilize appropriate instructional media, and establish forms of communication that can be understood by students.

In addition to competence, teacher patience and diligence are important factors. Differences in students' abilities and levels of comprehension require teachers to provide individual attention. Teachers cannot apply the same approach to all students but need to adjust the delivery of instructional materials according to each student's responses and abilities. Teachers' creativity in using visual media and diverse forms of communication also supports the implementation of learning. This finding is consistent with Rasyid et al., who identified teachers'

ability to employ communication strategies as an important component of learning for deaf students [32]. Similarly, Abdulrahim et al. demonstrated that adapting Qur'an learning through sign language requires teachers to adjust the learning process to students' conditions [33].

On the other hand, the study identified several inhibiting factors. The first concerns communication limitations associated with students' hearing conditions. Differences in communication abilities may result in instructional messages not always being received in the same way by every student [34]. Communication barriers can become more complex when students have different levels of proficiency in understanding sign language, creating an additional challenge for teachers in conducting classroom instruction.

Another inhibiting factor is differences in students' comprehension and learning abilities [25]. Previous research has indicated variations in the cognitive abilities and learning attitudes of deaf students, requiring the implementation of adaptive instructional approaches [35]. Differences in levels of material mastery require teachers to adjust the level, form, and duration of instruction according to each student's abilities. Therefore, Qur'an learning for deaf students needs to be conducted progressively through repetition and reinforcement to help maintain mastery of the learning materials [36], [37]. Limited availability of appropriate learning facilities and instructional media also constitutes a challenge in supporting the learning process [38]. In addition, limited learning resources and communication barriers may affect the optimization of learning for deaf students [39].

These findings regarding communication barriers are consistent with Hala et al., who reported that Qur'an reading instruction for deaf individuals encounters communication barriers, including differences in sign language systems and factors related to students' ability to understand and retain learning materials [27] Therefore, the supporting and inhibiting factors identified in this study demonstrate that successful learning is determined not only by the methods employed but also by teacher readiness, instructional media, communication, and students' individual conditions.

3.4. Adaptive-Integrative Learning Model

Based on the overall findings, the learning strategies employed by Islamic Religious Education (PAI) teachers to improve Qur'an reading skills among deaf students can be conceptualized as an adaptive-integrative learning strategy. This strategy does not rely on a single instructional method but integrates several interconnected learning components. The first component is the personal approach [40], [41], which is used to gain students' attention and establish communication with them. The second component is the identification of students' abilities [42], which serves as the basis for teachers to determine the level and form of instructional materials to be provided. The third component is the adaptation of learning plans and materials [43], [44], particularly by providing materials according to students' basic abilities, such as the recognition and mastery of *hijaiyah* letters. The next components are the use of visual media [45] and *hijaiyah* sign language [46], which provide visual access to Qur'anic learning materials. Furthermore, teachers apply repetition and reinforcement to help students maintain mastery of previously learned letters [25], [26]. All of these components are directed toward improving students' ability to recognize, remember, and read *hijaiyah* letters as the foundation for Qur'an reading skills. The model can be illustrated as follows:



Figure 2. Adaptive-Integrative Qur'an Learning Model

Based on Figure 2, the main contribution of this study lies not in the use of *hijaiyah* sign language as an entirely new method, but in illustrating how Islamic Religious Education (PAI) teachers integrate personal approaches, material adaptation, visual communication, *hijaiyah* sign language, repetition, and reinforcement into a single adaptive learning strategy. This strategy demonstrates that Qur'an learning for deaf students requires teacher flexibility in connecting learning objectives with students' individual characteristics and needs.

Accordingly, the adaptive-integrative learning strategy can serve as a conceptual framework for understanding Qur'an learning practices for deaf students, particularly in the context of special education. These findings further reinforce the view that access to Qur'an learning for deaf students requires a transformation from predominantly verbal-auditory instruction toward learning that is more visual, communicative, gradual, repetitive, and oriented toward students' individual needs.

4. CONCLUSION

Based on the research findings, the learning strategies employed by Islamic Religious Education (PAI) teachers to improve Qur'an reading skills among deaf students at SLB Negeri 1 Makassar are implemented in an adaptive and integrative manner through personal approaches, adaptation of learning plans and materials, the use of visual media and *hijaiyah* sign language, as well as gradual repetition and reinforcement. These strategies help students recognize and remember *hijaiyah* letters as the foundation of Qur'an reading skills. Their implementation is supported by teachers' competence, patience, diligence, and creativity, while the main challenges include communication limitations, differences in students' abilities and comprehension levels, limited availability of hearing aids, and the limited number of teachers. The findings confirm that Qur'an learning for deaf students requires strategies that are flexible, visual, gradual, repetitive, and oriented toward individual student needs.

Based on these findings, PAI teachers are recommended to continuously develop adaptive Qur'an learning strategies by strengthening their competence in sign language, visual instructional media, and differentiated learning approaches. Schools are encouraged to support this process by providing appropriate visual learning resources, accessibility facilities, including hearing-support equipment, and adequate PAI teachers. At the institutional level, the findings suggest the need to strengthen inclusive Qur'an learning policies and teacher professional development programs for deaf students. Future research should examine the effectiveness and applicability of the adaptive-integrative strategy across different special education settings and with a broader range of students with hearing impairments.

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AUTHOR CONTRIBUTIONS

Conceptualization, R.H. and J.J.; Methodology, R.H. and J.J.; Validation, J.J. and Z.N.M.Z.; Formal Analysis, R.H. and J.J.; Investigation, R.H. and A.I.P.W.; Resources, R.H. and G.D.A.W.; Data Curation, R.H.; Writing – Original Draft Preparation, R.H.; Writing – Review & Editing, J.J., Z.N.M.Z., A.I.P.W., and G.D.A.W.; Visualization, R.H. and Z.N.M.Z.; Supervision, J.J.; Project Administration, R.H.; Funding Acquisition, J.J.

INFORMED CONSENT STATEMENT

Informed consent was obtained from all participants involved in the study. Prior to participation, each participant was provided with an explanation of the research objectives, procedures, the nature of their participation, and the use of the information provided for research purposes. Participation was voluntary, and all participants provided written informed consent before taking part in interviews, observations, and other data collection activities. The confidentiality of participants' identities and information was maintained throughout the research process.

CONFLICTS OF INTEREST

The authors declare no conflict of interest. The authors confirm that there were no personal, professional, or financial interests that could have influenced the conduct, interpretation, or reporting of this research. No funding sponsor was involved in the study design, data collection, data analysis, interpretation of the results, manuscript preparation, or the decision to submit the manuscript for publication.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

During the preparation of this manuscript, the authors used ChatGPT (OpenAI) to assist with language this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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