



The Implementation of Sign Language (BISINDO) within a Bilingual Instruction Model on the English Vocabulary Mastery of Deaf Students at SLBN Tobadak

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Article Info	Abstract
Received: 2026-05-11 Revised: 2026-09-10 Accepted: 2026-09-14 Keywords: BISINDO; bilingual instruction; deaf students; English vocabulary mastery; visual learning DOI: 10.24256/ideas.v14i2.10528 Corresponding Author: Namirah namirahmirah26@gmail.com English Language Education Study Program, Postgraduate Program, Universitas Negeri Makassar	<i>This study investigated the implementation of Indonesian Sign Language (BISINDO) within a bilingual instruction model to support the English vocabulary mastery of deaf students at SLBN Tobadak. Vocabulary mastery is a fundamental component of English as a Foreign Language (EFL) learning, yet deaf students often experience specific challenges because conventional English instruction relies heavily on auditory and written input. This study employed a qualitative descriptive design supported by descriptive quantitative data. The participants were two English teachers and three deaf students at SLBN Tobadak, Central Mamuju Regency, West Sulawesi. Data were collected through classroom observation, student questionnaires, English vocabulary pre-test and post-test, and semi-structured interviews with teachers and students. The data were analyzed through data condensation, data display, conclusion drawing, and cross-instrument triangulation. The findings revealed that BISINDO was implemented as an access language to introduce, clarify, and reinforce English vocabulary. Teachers used visual input, BISINDO signs, written English words, Indonesian explanations when needed, imitation, repetition, and visual corrective feedback. Observation results showed that Teacher G1 obtained 68 out of 72 points, or 94.44%, categorized as very good, while Teacher G2 obtained 63 out of 72 points, or 87.50%, categorized as good. Students' questionnaire responses were positive to very positive, with an average score of 84.67. Vocabulary test results increased from an average pre-test score of 38.33 to an average post-test score of 75.00, showing an average gain of 36.67 points. The study concludes that BISINDO-based bilingual instruction meaningfully supports deaf students' English vocabulary mastery when implemented consistently through visual mediation, written-word reinforcement, repeated practice, and corrective feedback.</i>

1. Introduction

English vocabulary mastery is an essential foundation for language learning because vocabulary provides learners with the basic linguistic resources needed to understand and produce language. In English as a Foreign Language (EFL) contexts, vocabulary is not merely a list of words to memorize; it is the basis for reading comprehension, writing development, classroom communication, and access to academic information. Without adequate vocabulary knowledge, students may face difficulties in understanding texts, expressing ideas, following classroom instruction, and participating in broader educational activities. Nation (2021) argues that vocabulary knowledge is central to second language learning because it connects form, meaning, and use. Similarly, Schmitt (2021) emphasizes that vocabulary mastery involves not only knowing the meaning of a word but also recognizing its written form, grammatical use, collocation, and contextual function.

For deaf students, vocabulary learning presents additional challenges. Most conventional English instruction is designed for hearing learners and assumes that students can access spoken input, pronunciation modeling, and incidental vocabulary exposure through listening. Deaf students, however, rely more strongly on visual channels to receive and process information. This means that oral explanations, pronunciation-based drills, and purely written instruction may not fully support their learning needs. Knoors and Marschark (2020) explain that deaf learners require pedagogical approaches that recognize visual learning modalities and provide accessible language input. When English vocabulary is presented only through speech or written words without meaningful visual mediation, deaf students may struggle to connect English forms with concepts they already understand.

At SLBN Tobadak, Central Mamuju Regency, deaf students experience difficulties in mastering English vocabulary. The thesis data show that students who are fluent in BISINDO may still struggle to remember and use simple English words in written form. For example, students can communicate effectively using signs but may find it difficult to remember English vocabulary such as concrete nouns or simple action words when asked to write or recognize them. Teachers also reported that traditional teaching methods relying mainly on verbal and written instruction made students frustrated because they could not easily connect English vocabulary with their visual experiences. This condition shows that the issue is not simply students' lack of ability, but the mismatch between instructional methods and students' language access needs.

The learning needs of deaf students should be understood from both linguistic and educational perspectives. Deafness affects access to auditory information, but it does not reduce students' capacity to learn language when instruction is delivered through accessible modes. Marschark and Hauser (2021) argue that deaf learners should not be viewed through a deficit model, but rather as learners who process language and information through visual-spatial modalities. Therefore, English vocabulary instruction for deaf students should be adapted to their visual strengths. Such adaptation requires the use of sign language, pictures, objects, written words, gestures, repetition, and contextual practice.

Indonesian Sign Language, known as BISINDO, has an important role in this context. BISINDO is not simply a set of gestures that translate Indonesian word by word. It is a natural sign language used by deaf communities in Indonesia and has its own visual-gestural structure. As a language of access, BISINDO enables deaf students to understand information, interact with teachers and peers, and construct meaning in the classroom. Marsaja (2020) explains that BISINDO has systematic linguistic features, including handshape, movement, location, palm orientation, facial expression, and body movement.

Because of these characteristics, BISINDO can support conceptual understanding in ways that are accessible to deaf learners.

In English vocabulary learning, BISINDO can function as a bridge between students' existing conceptual knowledge and the new English words they are expected to learn. For example, when a teacher introduces the English word "eat," students may first see a picture or object, then observe the BISINDO sign, then read the written English word, and finally imitate or practice the sign-word connection. This process helps students connect meaning, sign, and written English form. Vygotsky's (1978) sociocultural theory supports this instructional logic because learning develops through mediated interaction and scaffolding. In this study, BISINDO becomes a mediational tool that helps students move from visual understanding to written English vocabulary recognition and use.

The bilingual instruction model is also relevant for deaf education. In this model, sign language is used as the first or access language, while written or spoken language is developed as an additional language. In the case of this study, BISINDO functions as the accessible language, while English vocabulary becomes the target language. Mayer and Akamatsu (2021) state that bilingual instruction for deaf students should recognize sign language as a legitimate language of learning and use it to support literacy development in another language. This model is aligned with the principle of additive bilingualism, in which the second language is developed without replacing or weakening the first language (Bialystok, 2022). In other words, BISINDO is not treated as an obstacle to English learning but as a foundation that can support English vocabulary development.

The use of bilingual instruction is important because deaf students often need explicit mapping between sign language and written language. English vocabulary may be unfamiliar not only because of its meaning but also because of its spelling, word form, and difference from Indonesian or BISINDO structures. Nation (2021) notes that vocabulary learning requires repeated exposure, meaningful use, and attention to form and meaning. For deaf students, repetition must be supported by visual reinforcement. Written words, pictures, objects, and BISINDO signs need to appear together repeatedly so that students can form stable associations between English vocabulary and its meaning.

Previous studies have shown that sign-based bilingual education can support deaf students' academic and language development. Knoors and Marschark (2020) argue that bilingual approaches can lead to stronger literacy outcomes when sign language is used consistently and teachers are competent in visual communication. Hauser et al. (2021) also suggest that a strong sign language foundation contributes positively to students' later literacy development. In the Indonesian context, studies on BISINDO are still developing, and more classroom-based research is needed to understand how BISINDO is used in actual English learning practices. This research addresses that need by focusing on the implementation of BISINDO within a bilingual instruction model at SLBN Tobadak.

The research gap lies in the limited exploration of how BISINDO is practically implemented in English vocabulary learning for deaf students in Indonesian special schools. Many studies discuss the importance of vocabulary, bilingual education, or deaf students' learning needs, but fewer studies provide detailed classroom descriptions of how teachers combine signs, written English words, pictures, repetition, feedback, and student participation. In addition, much research on bilingual deaf education comes from international contexts that use different sign languages, such as American Sign Language or British Sign Language. Therefore, the implementation of BISINDO in an Indonesian SLB context requires specific investigation.

This study is significant theoretically, practically, and socially. Theoretically, it contributes to the discussion of bilingual education, second language vocabulary learning, and deaf education by positioning BISINDO as an access language for English vocabulary mastery. Practically, it provides teachers with a classroom-based description of how visual signs, written words, pictures, repetition, and corrective feedback can be combined to support deaf students. Socially, the study supports educational equity by emphasizing that deaf students need accessible language instruction to participate meaningfully in English learning.

Based on this background, the present study aims to describe how BISINDO is implemented within a bilingual instruction model in English vocabulary learning at SLBN Tobadak, to examine how the implementation influences deaf students' English vocabulary mastery, and to identify the supporting and inhibiting factors in its implementation. The study is expected to offer practical recommendations for English teachers, special schools, and curriculum developers in designing more inclusive and visually accessible English vocabulary instruction for deaf students.

2. Method

This study employed a qualitative descriptive design supported by descriptive quantitative data. The qualitative descriptive approach was selected because the study aimed to describe the process, meaning, and classroom experience of implementing BISINDO within a bilingual instruction model. The study did not seek broad statistical generalization, but focused on understanding how the instructional model was implemented in a specific educational setting. Qualitative description is appropriate when researchers aim to present a clear and direct account of educational phenomena in natural contexts (Creswell, 2014). In this study, descriptive quantitative data from observation scores, questionnaire results, and vocabulary tests were used to support the qualitative interpretation.

The research was conducted at SLBN Tobadak, Central Mamuju Regency, West Sulawesi Province. The school was selected because it provides education for students with special needs, including deaf students, and because English vocabulary learning in this context requires accessible visual and sign-based instruction. The participants consisted of two English teachers and three deaf students. To protect confidentiality, the teachers were coded as G1 and G2, while the students were coded as S1, S2, and S3.

The research focused on three main areas. The first was the implementation pattern of BISINDO within bilingual instruction. The second was the influence of the implementation on students' English vocabulary mastery. The third was the supporting and inhibiting factors that affected the effectiveness of the implementation. These areas were aligned with the research questions and instruments.

The data consisted of classroom observation results, student questionnaire responses, English vocabulary pre-test and post-test scores, and semi-structured interview data. Observation was conducted to identify how teachers used BISINDO, visual media, written English words, classroom interaction, repetition, and feedback during vocabulary learning. The observation checklist used a four-point scale ranging from not implemented to well implemented.

The student questionnaire was administered to examine students' perceptions of the clarity, usefulness, and accessibility of BISINDO-based bilingual instruction. It measured students' responses to BISINDO use, visual support, written English words, repetition, feedback, and perceived vocabulary improvement. The English vocabulary test was used to compare students' vocabulary mastery before and after the instruction. The test focused on

vocabulary recognition, meaning, and written-word understanding. Semi-structured interviews were conducted with teachers and students to obtain deeper explanations of classroom strategies, learning experiences, benefits, barriers, and suggestions for improvement.

Data analysis followed the interactive qualitative procedures of data condensation, data display, and conclusion drawing, as suggested by Miles, Huberman, and Saldaña (2014). Quantitative data were analyzed descriptively by calculating observation percentages, questionnaire averages, pre-test and post-test means, and score gains. To strengthen trustworthiness, the study used triangulation across instruments and participants. Observation, questionnaire, test, and interview data were compared to ensure that the findings were consistent and credible. Ethical considerations were addressed by using participant codes and maintaining the confidentiality of all participants.

3. Result

The findings of this study are presented based on the three research focuses: the implementation of BISINDO within the bilingual instruction model, the influence of the implementation on students' English vocabulary mastery, and the supporting and inhibiting factors affecting the implementation.

The first finding concerns the implementation of BISINDO within bilingual instruction. The classroom observation showed that teachers implemented BISINDO as an access language in English vocabulary learning. Rather than presenting English vocabulary only through speech or written words, the teachers used a sequence of visual input, BISINDO signs, written English vocabulary, Indonesian explanation when necessary, student imitation, repetition, and corrective visual feedback. This sequence created a multimodal learning pattern that matched the visual learning needs of deaf students.

In the classroom, vocabulary was commonly introduced through pictures, objects, or visual examples. The teacher then provided the BISINDO sign to clarify the meaning. After students understood the meaning through sign and visual support, the teacher wrote the English word and asked students to observe, imitate, repeat, and practice. This instructional process helped students connect the English written form with the concept they had already understood through BISINDO. When students made errors, the teacher provided corrective feedback through signs, gestures, or written correction rather than relying only on oral explanation.

Observation results showed that the implementation quality was good to very good. Teacher G1 obtained 68 out of 72 points, equivalent to 94.44%, categorized as very good. Teacher G2 obtained 63 out of 72 points, equivalent to 87.50%, categorized as good. These results indicate that both teachers were able to implement the main components of BISINDO-based bilingual instruction. G1 showed stronger consistency in combining visual media, BISINDO signs, written English words, and feedback, while G2 also demonstrated good implementation but with slightly less consistency in some observed indicators.

The second finding concerns students' responses to the instruction. The questionnaire results showed that students responded positively to very positively toward BISINDO-based bilingual instruction. The average questionnaire score was 84.67. This indicates that students perceived the use of BISINDO, pictures, written English words, and repeated practice as helpful for learning vocabulary. Students felt that BISINDO made the meaning of English words clearer and helped them remember vocabulary more easily. They also responded positively to visual feedback and classroom interaction.

The questionnaire results are important because they show that the implementation did not only improve test performance but also created a more accessible and meaningful learning experience. Deaf students often experience learning barriers when instruction is dominated by oral explanation. In this study, students' positive responses suggest that BISINDO-based bilingual instruction reduced communication barriers and increased their participation in English vocabulary learning.

The third finding concerns students' vocabulary test results. The pre-test and post-test data showed improvement in students' English vocabulary mastery. The average pre-test score was 38.33, indicating that students' initial vocabulary mastery was still low. After the implementation of BISINDO-based bilingual instruction, the average post-test score increased to 75.00. The average gain was 36.67 points. This improvement suggests that the bilingual instruction model supported students in recognizing, understanding, and remembering English vocabulary.

The improvement was found across all students, although the degree of improvement may have varied depending on students' literacy ability, attention, and familiarity with the vocabulary items. The results show that the combination of BISINDO, pictures, written words, and repetition helped students build stronger vocabulary associations. Concrete nouns and simple action words were easier for students to understand because these words could be directly represented through pictures, objects, or signs. For example, vocabulary related to objects or actions was more easily remembered when students saw the picture, watched the BISINDO sign, and then copied or identified the written English word.

Interview data supported the observation, questionnaire, and test findings. Teachers reported that BISINDO helped students understand vocabulary more quickly because the signs connected the words with familiar visual meanings. Teachers also noted that repetition was essential because students needed repeated exposure to remember spelling and word forms. Students stated that they understood vocabulary better when the teacher used signs, pictures, and written English words together. They also reported that they felt more confident when they could ask questions or respond through BISINDO.

The interviews further revealed that BISINDO helped make English learning less intimidating. Since English was not directly accessible through sound for deaf students, the use of BISINDO created a bridge between students' existing language and the new English vocabulary. Students could first understand the meaning through a language they knew, and then connect that meaning to English. This process helped reduce confusion and increased students' willingness to participate.

The fourth finding concerns the supporting factors of implementation. Several factors supported the effectiveness of BISINDO-based bilingual instruction. The first factor was teacher clarity. Teachers who used clear BISINDO signs, simple written words, and repeated explanations helped students understand the vocabulary more easily. The second factor was the use of visual media. Pictures, objects, written cards, and visual examples made vocabulary more concrete and accessible. The third factor was repeated practice. Students needed repetition to remember the meaning, spelling, and form of English words. The fourth factor was corrective visual feedback. When students made mistakes, teachers corrected them using signs and written support. The fifth factor was active student participation. Students became more engaged when they could respond using BISINDO.

The fifth finding concerns inhibiting factors. The first inhibiting factor was English spelling. Students often understood the meaning of vocabulary through BISINDO but still had difficulty remembering the written spelling. This shows that vocabulary mastery for deaf students involves not only meaning recognition but also orthographic learning. The second inhibiting factor was abstract vocabulary. Words that could not be easily

represented through pictures or concrete signs were more difficult to explain and remember. The third inhibiting factor was limited visual media. Teachers needed more picture cards, visual dictionaries, posters, and sign-supported materials to vary instruction. The fourth inhibiting factor was limited practice time. Students needed more time to repeat, review, and use vocabulary in context.

The triangulation of observation, questionnaire, test, and interview data showed consistent findings. Observation confirmed that teachers implemented BISINDO-based bilingual instruction through visual and sign-supported strategies. Questionnaire results showed positive student perceptions. Vocabulary tests showed score improvement from pre-test to post-test. Interviews confirmed that BISINDO, pictures, written words, and repetition helped students understand and remember vocabulary. Therefore, the findings indicate that BISINDO-based bilingual instruction meaningfully supported students' English vocabulary mastery at SLBN Tobadak.

4. Discussion

The findings of this study indicate that the implementation of BISINDO within a bilingual instruction model had a positive role in supporting the English vocabulary mastery of deaf students at SLBN Tobadak. The improvement in students' vocabulary scores, the positive questionnaire responses, and the interview findings all suggest that deaf students benefit from English instruction when it is mediated through an accessible visual language. This result is consistent with the principle that deaf learners require instruction that is aligned with their visual learning modalities (Knoors & Marschark, 2020).

The implementation pattern found in this study shows that BISINDO functioned as an access language. Teachers did not use BISINDO as a replacement for English, but as a bridge to help students understand English vocabulary. This distinction is important. In bilingual instruction for deaf students, sign language is not a barrier to second language acquisition. Instead, it provides a strong conceptual foundation for understanding new language forms. Bialystok (2022) explains that additive bilingualism allows a second language to develop while maintaining the strength of the first language. In this study, BISINDO supported English learning by helping students connect signs, concepts, pictures, and written English words.

The role of BISINDO as a conceptual bridge was particularly visible in the learning of concrete vocabulary. When students learned words that could be represented through pictures, objects, or actions, they were able to understand and remember them more easily. This supports Nation's (2021) view that vocabulary learning requires meaningful connections between word form and word meaning. For deaf students, these connections are strengthened when English words are presented together with visual signs and images. Written English alone may remain abstract, but when supported by BISINDO and pictures, the word becomes meaningful.

The improvement in students' test scores from 38.33 to 75.00 indicates that BISINDO-based bilingual instruction contributed to vocabulary development. Although the number of participants was small, the score gain shows a meaningful classroom improvement. The increase suggests that the students were able to recognize and understand more English vocabulary after receiving instruction through visual and sign-supported strategies. This finding supports Mayer and Akamatsu's (2021) argument that sign language can mediate the development of literacy and vocabulary in another language.

The positive student questionnaire results also deserve attention. Students' average response score of 84.67 indicates that they perceived the learning process as helpful and accessible. This is important because students' affective response can influence engagement, confidence, and willingness to participate. Deaf students who often face communication barriers may become passive when instruction is not accessible. However, when teachers use BISINDO, visual media, and repetition, students can participate more actively. This finding is consistent with Vygotsky's (1978) sociocultural theory, which emphasizes that learning occurs through interaction and mediation.

The observation results also demonstrate that teacher competence is a key factor in implementation. G1 obtained 94.44%, while G2 obtained 87.50%. Both results were categorized positively, but the difference suggests that consistency and clarity in using BISINDO, visual media, and feedback may influence instructional quality. Knoors and Marschark (2020) emphasize that the success of bilingual instruction for deaf students depends heavily on teacher competence in sign language and visual pedagogy. In this study, teacher clarity helped students follow the lesson, understand instructions, and connect vocabulary with meaning.

Repeated practice was another important factor. Vocabulary learning does not occur instantly. Students need repeated exposure to word forms, meanings, and usage. For deaf students, repetition is especially important because they may not receive incidental auditory exposure to language outside the classroom. Hearing students may learn vocabulary from conversations, media, or environmental sound-based input, while deaf students often need more intentional and structured exposure. Therefore, repeated practice through BISINDO signs, written words, and visual examples is essential for retention.

The study also shows that English spelling remains a challenge. Students could understand vocabulary meanings through BISINDO but still had difficulty remembering written English forms. This finding indicates that vocabulary mastery among deaf students involves two related but different abilities: semantic understanding and orthographic recognition. A student may know what a word means through sign language but still struggle to write or spell it correctly. Therefore, English instruction for deaf students should include explicit spelling practice, visual word cards, tracing activities, matching exercises, and repeated written exposure.

Abstract vocabulary was another challenge. Concrete nouns and simple verbs were easier to teach because teachers could use pictures, objects, or direct action. Abstract words, however, required more explanation and contextualization. This finding aligns with Schmitt's (2021) view that vocabulary depth involves not only basic meaning but also contextual and conceptual understanding. For deaf students, abstract vocabulary may require additional strategies such as storytelling, visual scenarios, examples, contrastive signs, and repeated contextual use.

Limited visual media also affected implementation. Teachers needed more resources such as BISINDO-English picture cards, visual dictionaries, vocabulary posters, and short sign-language videos. The findings suggest that accessible English learning for deaf students cannot depend only on teacher explanation. It requires a learning environment rich in visual input. Visual media help reduce cognitive load because students can see the concept, sign, and English word at the same time. This supports the idea that deaf students benefit from multimodal and visual learning environments (Marschark & Hauser, 2021).

The discussion also shows that bilingual instruction is not merely a language choice but a pedagogical system. It requires planning, teacher competence, suitable materials, student participation, repetition, and feedback. BISINDO-based bilingual instruction works

best when all these elements are present. If BISINDO is used only occasionally, or if written English words are not reinforced through practice, the effect may be limited. Therefore, implementation should be consistent and systematic.

The findings have practical implications for English teachers of deaf students. Teachers should use BISINDO as an access language in every stage of vocabulary instruction: introduction, explanation, practice, correction, and review. Teachers should also connect BISINDO signs with pictures and written English words. For spelling development, teachers should provide repeated visual exposure to word forms. For abstract vocabulary, teachers should use examples, visual contexts, and simple explanations. Schools should also support teachers by providing visual teaching materials and training in BISINDO-based bilingual pedagogy.

In general, the findings confirm that deaf students can develop English vocabulary when instruction is accessible, visual, repetitive, and meaningful. The problem is not deaf students' inability to learn English, but the need for teaching methods that match their language access. BISINDO-based bilingual instruction provides such access. It allows students to begin from a language they understand and move toward English vocabulary mastery through guided visual learning.

5. Conclusion

This study examined the implementation of Indonesian Sign Language (BISINDO) within a bilingual instruction model on the English vocabulary mastery of deaf students at SLBN Tobadak. The findings show that BISINDO was implemented as an access language in English vocabulary learning. Teachers introduced vocabulary through visual input, BISINDO signs, written English words, Indonesian explanations when needed, student imitation, repeated practice, and visual corrective feedback. This instructional sequence helped students connect English words with meanings they could understand through visual and sign-based mediation.

The implementation of BISINDO-based bilingual instruction contributed positively to students' English vocabulary mastery. The students' average vocabulary score increased from 38.33 in the pre-test to 75.00 in the post-test, with an average gain of 36.67 points. Students also showed positive to very positive responses toward the instruction, with an average questionnaire score of 84.67. These results indicate that BISINDO, pictures, written words, repetition, and visual feedback helped students understand and remember English vocabulary more effectively.

The study also identified several supporting and inhibiting factors. Supporting factors included teacher clarity, visual media, repeated practice, corrective feedback, and active student participation. Inhibiting factors included students' difficulty with English spelling, abstract vocabulary, limited visual media, and limited practice time. Therefore, BISINDO-based bilingual instruction should be implemented consistently and supported by adequate visual resources, structured repetition, and explicit spelling practice.

Overall, this study concludes that BISINDO-based bilingual instruction is an effective and accessible approach for supporting English vocabulary learning among deaf students. It is especially useful for concrete vocabulary and meaning recognition. Further instructional development is needed for abstract vocabulary, spelling accuracy, and sentence-level vocabulary use.

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