

Sewing Training for Students with Hearing Disabilities: A Vocational Approach to Enhancing Work Transition Readiness

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Abstract: This study aimed to explore the implementation of sewing training as a vocational strategy to support work transition readiness among students with hearing disabilities. The research was conducted at SLB Negeri 1 Bireuen, Indonesia, using a qualitative descriptive approach. Data were collected through semi-structured interviews with three vocational teachers and five deaf students, supported by classroom observations and analysis of student-produced sewing products. The results showed that teachers employed adaptive instructional strategies such as visual demonstrations, step-by-step modeling, and nonverbal communication to address the students' needs. Students demonstrated increased confidence, motivation, and technical competence in sewing, particularly in creating jilbab products. Product assessments revealed proficiency in stitching quality, accuracy, and finishing. Despite communication challenges, both teachers and students viewed sewing as a meaningful and relevant skill for future employment or entrepreneurship. The study concluded that visually adapted vocational training contributed significantly to both skill development and psychosocial growth. It highlighted the importance of integrating practical, student-centered programs within special education to prepare learners with disabilities for independent and inclusive work participation.

Keywords: hearing disabilities; sewing training; vocational education; work transition readiness; special education.

Pelatihan Menjahit untuk Siswa dengan Disabilitas Pendengaran: Pendekatan Vokasional untuk Meningkatkan Kesiapan Transisi Kerja

Abstrak: Penelitian ini bertujuan untuk mengeksplorasi implementasi pelatihan menjahit sebagai strategi vokasional untuk mendukung kesiapan transisi kerja pada siswa dengan disabilitas pendengaran. Penelitian dilaksanakan di SLB Negeri 1 Bireuen, Indonesia, dengan pendekatan deskriptif kualitatif. Data dikumpulkan melalui wawancara semi-terstruktur dengan tiga guru keterampilan dan lima siswa tunarungu, didukung dengan observasi kelas dan analisis terhadap produk menjahit yang dihasilkan siswa. Hasil penelitian menunjukkan bahwa guru menggunakan strategi pembelajaran adaptif seperti demonstrasi visual, pemodelan langkah demi langkah, dan komunikasi nonverbal untuk menjawab kebutuhan belajar siswa. Siswa menunjukkan peningkatan kepercayaan diri, motivasi, dan keterampilan teknis dalam menjahit, khususnya dalam pembuatan produk jilbab. Hasil penilaian produk menunjukkan tingkat kemahiran dalam kualitas jahitan, ketepatan, dan kerapian akhir. Meskipun terdapat tantangan komunikasi, baik guru maupun siswa menilai keterampilan menjahit sebagai kemampuan yang bermakna dan relevan untuk masa depan, baik untuk bekerja maupun berwirausaha. Studi ini menyimpulkan bahwa pelatihan vokasional berbasis visual berkontribusi signifikan terhadap pengembangan keterampilan sekaligus pertumbuhan psikososial. Penelitian ini menegaskan pentingnya integrasi program praktik yang berpusat pada siswa dalam pendidikan khusus guna mempersiapkan peserta didik disabilitas menuju kemandirian dan partisipasi kerja yang inklusif.

Kata kunci: disabilitas pendengaran; pelatihan menjahit; pendidikan vokasional; kesiapan transisi kerja; pendidikan khusus.

1. Introduction

Children with hearing disabilities face persistent barriers in accessing equitable vocational education, particularly in contexts where inclusive teaching practices and resource availability are limited (Oreshkina et al., 2019;

Mastam & Zaharudin, 2024; Muksalmina et al., 2024). The transition from school to work is especially challenging due to a lack of adapted instruction, limited career guidance, and stigmatization in the labor market (Muchtar et al., 2021; Mohamad & Sudana, 2024). Many deaf students experience emotional distress and self-doubt linked to their perceived lack of future opportunities (Yanling & Hock, 2023; Mendoza et al., 2023). In the Indonesian context, while inclusive education has been formally adopted, its implementation particularly in vocational skill-building, remains fragmented and under-resourced in many SLB (Sekolah Luar Biasa) institutions (Ediyanto et al., 2017; Pasaribu & Harfiani, 2021; Istiarsyah et al., 2024; Normawati et al., 2024).

Vocational education serves as a critical tool to equip students with disabilities with marketable skills, self-reliance, and a sense of agency (Dong et al., 2023; Zafar, 2023; Shamas, 2024). Oreshkina et al. (2019) argue that psychological readiness for work among students with hearing impairments is shaped not only by cognitive development but also by confidence and motivation, factors that can be cultivated through hands-on, structured vocational training. Sewing, as a vocational skill, offers strong pedagogical alignment for deaf learners because of its reliance on visual-spatial reasoning, tactile engagement, and sequential task execution (Sidiq et al., 2019; Nella Kusuma, 2020). Sewing activities allow students to develop technical competence while also exercising creativity, patience, and precision (M. Santuzzi et al., 2022; Lee et al., 2023).

Empirical findings suggest that when adapted instructional strategies are used, such as demonstration-based learning, visual aids, and scaffolded repetition students with hearing disabilities show meaningful progress. Scott and Kasun (2021) documented how teachers in a bilingual deaf education setting employed multimodal strategies to engage learners, while Parmankulova et al. (2023) confirmed the success of web-quest and case-based learning in teaching sewing to deaf vocational students. Similarly, Amila and Ostadmohamadi (2024) highlight the importance of combining visual media with gesture-based teaching methods to facilitate comprehension among deaf learners.

Yet, despite growing attention to inclusive methods, there remains a notable absence of qualitative research that documents how sewing is implemented in actual classroom environments, especially from the dual perspective of teachers and students. Iswari

(2017) and Afdal et al. (2019) stresses the importance of career guidance in special education but does not explore how such guidance is practically integrated through vocational skills like sewing. Moreover, while Saad et al. (2023) identify sewing as a promising domain within creative industries for students with hearing impairments, their study stops short of evaluating learning processes and outcomes in real-time classroom scenarios.

This gap is particularly concerning given the increasing emphasis on performance-based learning. Permai Sari (2020) demonstrate that video-assisted sewing instruction can significantly improve technical precision among deaf students, while Rosnadia et al. (2020) argue that product-based assessment is an effective way to track vocational progress and creativity. Product evaluation offers a tangible lens through which student development, both technical and emotional can be interpreted, yet few studies have applied this method alongside narrative inquiry.

To address these gaps, this study explores how sewing training is implemented for students with hearing disabilities in a special education school in Bireuen, Aceh. It integrates three qualitative data sources, such as teacher interviews, student interviews, and product analysis. The novelty of this research lies in its triangulated approach, which not only captures the instructional and experiential dimensions of sewing training but also evaluates learning outcomes through the products created by students.

This study differs from previous research by grounding its inquiry in real classroom dynamics, capturing both the voices of educators and learners, and applying authentic assessment methods to measure vocational competency. It contributes to the broader discourse on inclusive vocational education by offering practice-based recommendations that are grounded in evidence from the field. The study seeks to explore how adapted sewing instruction can support the development of work-readiness among deaf learners, and how this experience informs broader curriculum, policy, and professional development efforts in the field of special education.

The objective of this research is to investigate the experiences of teachers and deaf students involved in sewing training, and to assess the quality of sewing products as indicators of student learning. The findings are expected to provide insights for improving inclusive vocational practices and contributing to the

design of more effective, skill-based education models that support students with hearing disabilities in preparing for life beyond school.

2. Materials and Methods

This research is a qualitative descriptive study conducted to explore the implementation of sewing training for children with hearing disabilities in a special education context. The study took place at SLB Negeri 1 Bireuen, Aceh, Indonesia, from January to March 2025. The research aimed to investigate how sewing training was delivered by teachers, experienced by students, and reflected through the products produced, positioning vocational training as a tool for enhancing students' readiness to transition into the world of work.

Participants

The study involved two participant groups: (1) five students with hearing disabilities who had completed the sewing training sequence, and (2) three vocational instructors who facilitated the sewing learning process. A purposive sampling technique was used to ensure the selection of participants with rich, relevant experiences in the program.

Student Participants

The student participants were in grades 11 and 12 (see Table 1). Each had participated in sewing activities that included fabric measuring, pattern cutting, machine sewing, and finishing touches on clothing products such as jilbabs. To maintain confidentiality, student identities are represented using initials.

Table 1. Deaf Student Participants

No.	Initial	Grade	Description
1.	I	11	Participated in full sewing training
2.	AR	11	Participated in full sewing training
3.	RA	11	Participated in full sewing training
4.	MFR	12	Participated in full sewing training
5.	RM	12	Participated in full sewing training

Teacher Participants

The sewing training was guided by three instructors with vocational teaching backgrounds (see Table. 2). They were responsible for lesson planning, delivery, mentoring, and evaluating students' sewing skills.

Table 2. Teacher Participants

No.	Name	Role	Description
1.	IA	Main Instructor	Led the instructional design and sewing sessions
2.	KH	Assistant Instructor	Assisted in student practice and evaluation
3.	PTM	Supporting Instructor	Facilitated group work and reinforced instructions

Data Collection Techniques

To obtain rich and credible data, this research employed four complementary data collection techniques: semi-structured interviews, observation, product analysis, and photo documentation. Each technique served a specific function in triangulating the findings. Interviews were conducted with both teachers and students to capture their perspectives and experiences throughout the sewing training. Observations were carried out in a non-participant manner to record the flow of instruction and student engagement during practical sessions.

Meanwhile, product analysis provided a means to objectively assess the sewing outputs produced by the students in terms of technical accuracy and creativity. Finally, photo documentation was used to visually support the qualitative data by capturing learning activities and completed products in real time. An overview of the techniques, participants involved, and instruments used is presented in Table 3.

Table 3. Overview of Data Collection Techniques and Tools Used in the Research

No	Technique	Description	Participants	Instrument/Tool Used
1.	Semi-structured Interviews	Explored instructional strategies, learning experiences, and perceived outcomes	Teachers, Students	Interview guides (oral, written prompts, sign language support)
2.	Observation	Non-participant observation of teaching and learning activities during sewing sessions	Whole class context	Field notes and observation checklist
3.	Product Analysis	Evaluated final sewing products for skill quality and independence	Student products	Rubric-based assessment sheet
4.	Photo Documentation	Captured learning activities and completed products for contextual evidence	Whole activity setting	Camera/smartphone (with consent)

Data Analysis

All interview data were transcribed and analyzed using thematic analysis following the steps outlined by Braun and Clarke (2023), including: (1) data familiarization, (2) initial code generation, (3) theme identification, (4) theme refinement, and (5) report writing. Observational and visual data were coded alongside interview transcripts to ensure triangulation. Product assessment results were organized in tables and interpreted as part of the triangulated findings. Visual documentation was not analyzed as standalone data but served as contextual and confirmatory evidence of student learning and instructional practices.

Ethical Considerations

Ethical approval was granted by the school administration. All participants and guardians signed informed consent forms prior to data collection. Pseudonyms or initials were used to protect student identities. Interviews with deaf students were conducted with respect to their communication needs, ensuring accessibility and psychological safety throughout the process.

3. Result and Discussion

This study aimed to explore the implementation and impact of sewing training for students with hearing disabilities in a special education setting. The results are presented in five interrelated themes derived from interviews with teachers and students, field observations, product analysis, and visual documentation, such as (1) visual-adaptive instructional strategies, (2) student engagement and emotional response, (3) product-based learning outcomes, (4) instructional challenges, and (5) vocational aspirations and relevance.

Visual-Adaptive Instructional Strategies

The sewing training program applied a range of visual, tactile, and demonstration-based techniques that proved effective for deaf students. Teachers emphasized that conveying instructions through PowerPoint visuals, hand gestures, and repeated demonstration allowed students to follow the learning sequence more clearly and independently. According to one instructor:

"Visual demonstration is the most effective method for my students. When I show them each step slowly, they understand much better than when I explain verbally. They remember better when they can see and practice it directly."

(Teacher Interview-T2)

This aligns with research by Scott and Kasun (2021), who argue that teaching deaf students through sign-rich, visual-first methods enhances concept retention and autonomy. Similarly, Amila and Ostadmohamadi (2024) support the need for multimodal delivery in special schools, especially for practical skills like sewing.

Classroom observations revealed that most sessions began with visual demonstrations of sewing steps such as pattern cutting, pinning, and operating the sewing machine. Students then engaged in hands-on replication of these steps. This method reflects the principles of contextual and scaffolded learning, as advocated by Parmankulova et al. (2023), who emphasize the value of task-based instruction for vocational learners with hearing impairments. Figure 1 illustrates students collaboratively pinning fabric patterns, while Figure 2 captures male students working together during the layout and cutting stage.



Figure 1. Students collaboratively pinning fabric patterns on cloth



Figure 2. Male students working together during the layout and cutting process

Student Engagement and Emotional Response

The data show that the sewing program did not only develop technical skills but also fostered emotional growth and motivation among students. Some students reported initial anxiety when using sewing machines or handling sharp tools. However, through repeated practice and visual reinforcement, students gained confidence.

A Grade 11 student shared during the interview:

"I was nervous at first to touch the sewing machine. But after watching my teacher and trying it slowly, I began to enjoy it. Now I can sew a hijab by myself."

(Student Interview-S3).

This quote illustrates the developmental nature of both skill acquisition and self-efficacy. Similar findings were reported by Mendoza et al. (2023), who noted that students with hearing impairments often build confidence and agency through repeated success in vocational learning tasks. Figure 3 shows the final layout step before students transitioned to machine sewing, while Figure 4 documents a student operating a sewing machine independently, reflecting increased confidence and autonomy.



Figure 3. Final layout step before fabric stitching



Figure 4. A student operating a sewing machine independently

Product-Based Learning Outcomes

Analysis of the student-produced jilbab items demonstrated varying degrees of competency across several criteria: stitching precision, symmetry, finishing neatness, and fabric handling. All five student participants achieved at least a *proficient* rating on the product evaluation rubric, and two students

demonstrated *advanced* outcomes in finishing and detail accuracy.



Figure 5. Completed jilbab products displayed in various colors and finishing styles

As illustrated in Figure 5, the jilbab products produced at the end of the program were cleanly finished, symmetrical, and visually marketable. This confirms earlier findings by Permai Sari (2020), who concluded that video- and visual-based sewing instruction can lead to notable improvements in technical precision and creativity among deaf learners. Product-based assessment in this context serves not only as an evaluation tool but also as evidence of real-world readiness, echoing the work of Rosnadia et al. (2020), who advocate for product authenticity in vocational assessment.

Instructional Challenges

Although the program was largely successful, several challenges were reported by instructors. The absence of trained sign language interpreters in the classroom made it difficult to convey complex technical terms such as "seam allowance" or "reverse stitching." Teachers relied heavily on peer modeling and simplified gestures to bridge these gaps.

Additionally, some students had varied levels of background knowledge, which required instructors to provide differentiated pacing and reinforcement. This reflects observations by Ediyanto et al. (2017) and Istiarsyah et al. (2019) who noted that inclusive teaching often requires personalized learning pathways to accommodate

different cognitive and communication needs. Despite these limitations, the commitment of the instructors and the supportive learning environment enabled students to remain engaged and motivated.

Vocational Aspirations and Relevance

The interviews also revealed that both students and teachers viewed the sewing training as relevant to future work opportunities. Some students expressed a desire to open a tailoring service at home, while others imagined continuing training after graduation. A teacher reflected:

"Sewing is not just a school task for them. Some have asked how to make different designs and even discussed selling what they make. This means they see it as useful for their lives."

(Teacher Interview -T1)

This resonates with the findings of Rahmawati and Basith (2023), who argue that vocational education aligned with local excellence and student interests can create sustainable economic pathways for learners with disabilities. The students' interest in turning their training into entrepreneurial ventures supports the role of vocational education as a bridge to social inclusion (Iswari, 2017; Saad et al., 2023; Yanling & Kway, 2023).

The sewing training process was documented visually from initial pattern layout to final product presentation. These images illustrate the progression of skill development and collaborative learning among the students. Figure 1 to Figure 3 depict the preparation stages, while Figure 4 captures the use of the sewing machine during independent practice. The final result of the training student-produced jilbab products with diverse designs and neat finishes is shown in Figure 5.

The findings of this study collectively affirm that adapted sewing training for students with hearing disabilities is not only feasible but also effective in developing both technical and psychosocial skills that contribute to work transition readiness. Through the integration of visual-based instruction, personalized support, and hands-on practice, students demonstrated increased confidence, motivation, and independence evidenced by both their reflections and the quality of their sewing products. Teachers played a critical role in facilitating inclusive learning, despite facing limitations in communication resources. These results suggest

that vocational training, when grounded in accessibility and real-world relevance, holds strong potential as a transformative educational pathway for deaf learners. The following section presents the conclusions drawn from these findings, along with recommendations for educators, institutions, and policymakers to further strengthen vocational inclusion in special education settings.

This study has several limitations. First, the research was conducted in a single special education school with a limited number of participants, which may affect the generalizability of the findings to broader contexts. Second, communication with deaf students relied heavily on written prompts and basic sign-supported instructions due to the absence of a professional sign language interpreter, which may have limited the depth of responses during interviews. Third, the duration of the training and observation period was relatively short, which restricted the ability to assess long-term skill development and post-training impact. Future studies are encouraged to include larger and more diverse participant groups, involve certified interpreters, and extend the research timeline to capture long-term vocational outcomes.

4. Conclusion and Suggestions

This study explored the implementation of sewing training as a vocational strategy to enhance work transition readiness among students with hearing disabilities at SLB Negeri 1 Bireuen. The findings indicate that visual-based and adaptive instructional strategies, such as demonstration, visual aids, and guided practice, significantly support the learning process of deaf students. Students not only acquired technical sewing competencies but also demonstrated increased self-confidence, motivation, and independence. The resulting products, particularly jilbabs, showed satisfactory levels of quality in terms of stitching, symmetry, and creativity, affirming the effectiveness of product-based learning as a tool for authentic assessment.

Teachers played a vital role in adjusting instruction to student needs, though challenges such as communication barriers and varying levels of student readiness were noted. Despite these obstacles, the overall training experience was meaningful for both teachers and students. Importantly, students expressed vocational aspirations beyond the classroom, indicating that the sewing training was perceived as relevant, practical, and empowering for future employment or entrepreneurship.

These findings imply that vocational training for deaf learners should not be seen as a supplementary program but as an integral part of inclusive education policy, curriculum development, and transition planning. The study confirms that skill-based learning grounded in student strengths and visual pedagogy has the potential to support long-term inclusion and independence for children with hearing disabilities.

Schools and vocational training centers should integrate visual-first, skill-based programs like sewing into their regular curriculum for deaf students. Teachers should receive training in adaptive instruction and be provided with appropriate teaching aids and resources to deliver vocational content effectively. Collaboration with parents and local industry partners can further extend the relevance of the training beyond school.

This study contributes to the growing body of literature on inclusive vocational education by offering a practice-based model of how product-oriented training can be used as both a pedagogical and evaluative tool for students with hearing impairments. The integration of student voice, product analysis, and observational data demonstrates the value of triangulated qualitative research in understanding the depth of inclusive practice.

Further research can expand the scope by involving longitudinal tracking of students after graduation to measure the long-term impact of vocational training on employment outcomes. Comparative studies between different vocational skills (e.g., tailoring, culinary, or woodworking) could also provide a broader perspective on which types of training best support deaf learners' strengths and aspirations. Additionally, future studies may explore the integration of digital tools or multimedia resources to enhance accessibility and instructional effectiveness in special education settings.

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