

Adapting Video-Based Visual Media for Students with Mild Intellectual Disabilities: A Multimodal Approach and Teacher Resilience

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Abstract

Video content on public platforms is abundant, yet it is rarely designed for students with mild intellectual disabilities, so the burden of making it usable falls on the classroom teacher. Rather than developing new media, this study describes how a fourth-grade teacher at SLB Nurul Iman adapts existing video media, the technical and pedagogical challenges encountered, and the solutions implemented. Using a qualitative case study design, data were collected through participant observation, in-depth interviews, and documentation, analyzed with the interactive model of Miles, Huberman, and Saldaña, and validated through source and technique triangulation. Adaptation proceeds through three phases: planning (mapping Visual, Auditory, and Kinesthetic/VAK profiles), implementation (reducing cognitive load by segmenting videos, repeating key parts, and adding verbal summaries before converting viewing into hands-on practice), and evaluation (reading behavioral cues such as affective response, imitation of movement, and loss of eye contact to decide when to revise instruction). Despite facing challenges such as a lack of disability-friendly videos and formal training, the teacher demonstrated resilience through pedagogical bricolage independently curating and combining animated and documentary videos from YouTube. This study concludes that the decisive variable is not the availability of media but the teacher's capacity to adapt it. In this setting video serves not as material for passive viewing but as a trigger for multimodal stimulation, whose effectiveness requires institutional support through continuous assistive technology training.

Keywords: Video Adaptation, Mild Intellectual Disability, Multimodal Approach, Vak Learning Styles.

INTRODUCTION

Learning for students with mild intellectual disabilities requires concrete and adaptive adjustments to pedagogical services (Satria et al., 2023). Characteristically, students with mild intellectual disabilities have barriers in intellectual intelligence and social adaptation, but they still have a very large opportunity to develop in aspects of functional, social, and vocational academic skills (Jannah & Damri, 2023; Nasution, 2018). To facilitate this potential, the presentation of information in the classroom cannot rely on abstract methods. The use of visual media is considered very essential because it is able to translate complex concepts into concrete information that is easy to observe directly (Kustandi et al., 2021). Therefore, the implementation of audiovisual media in learning services is one of the main strategies to accommodate the limitations of abstraction in children with intellectual disabilities (Adnan et al., 2023).

Although visual media, especially video-based ones, are theoretically ideal, the reality on the ground presents complex challenges, in today's digital era, the availability of a wide variety of videos from public platforms such as YouTube is abundant. However, these general videos are not necessarily accessible for students with intellectual disabilities (Pebisi et al., 2025; Sitbon et al., 2020). Content with a fast-paced plot, complex language, and an inaccommodating difference in Visual, Auditory, and Kinesthetic (VAK) learning styles can turn videos from a "tool" into a "new barrier". Identification and handling of VAK learning styles is an absolute prerequisite that teachers must do so that the media is responsive to the profile of the special needs of each student (Abol, 2023). Without adjustments to content and

mentoring strategies, digital media will not be able to build the learning independence of students with intellectual disabilities (Pebisi et al., 2025).

Various previous studies have tried to respond to the media needs of students with intellectual disabilities. For example, research by Louk & Sukoco (2016) proves that audio-visual media is effective in improving gross motor skills, while the research of Mesing (2019) shows that the use of animated videos has a positive impact on the initial reading ability of students with mild intellectual disabilities. Recent international studies reinforce this evidence from three different angles that are directly relevant to the present research. Barman & Jena (2024) found that interactive video-based instruction improved the learning performance of children with intellectual disability and that this improvement was closely tied to their level of cognitive development, which confirms that video must be structured to match learners' processing capacity rather than simply played from beginning to end. Almumen (2024) demonstrated that video prompting delivered by the teacher enabled students with intellectual disability to complete multi-step academic tasks, showing that video functions most effectively as a scaffold for action rather than as material for passive viewing. Frisch et al. (2025), meanwhile, observed that although digital media in principle support participation through multimodality, interactivity, and adaptivity, students with intellectual disability in inclusive classrooms were actively engaged with the device for only about seven percent of the lesson time compared with fifty-three percent for their peers without disability, so that the mere presence of media does not automatically generate participation without deliberate teacher mediation. Two further studies supply the frameworks against which such mediation is normally judged. Wahyuni et al. (2025) examined the implementation of Universal Design for Learning (UDL) in Indonesia and found that it still rests heavily on individual teacher initiative because technical and institutional support remains limited, while Untari et al. (2026) proposed a micro-differentiated curriculum model in which instruction is adjusted to the learning profile of each student with intellectual disability.

Read together, these studies leave two matters unresolved. On the one hand, the majority of them are oriented towards developing or testing purpose-built media products, an approach that requires production costs, technical competence, and preparation time that most special schools do not have. On the other hand, studies that do document classroom reality, such as Frisch et al. (2025), stop at diagnosing the participation gap without explaining how a teacher works around it using the ordinary media already within reach. Consequently, there is still very little literature that captures the pragmatic reality in the field, namely how teachers in special schools, with all their limitations in infrastructure and technical competence, dissect and adapt ordinary video media so that their practice aligns with the two frameworks outlined above. This is the gap that the present study seeks to fill.

The novelty of this study therefore lies in a shift of analytical focus from media production to media adaptation. Instead of designing a new product, this study documents adaptation as an everyday pedagogical practice and formulates it as a systematic three-phase cycle of planning, implementation, and evaluation that a teacher performs using only the resources actually available in the field. This study also offers the concept of pedagogical bricolage to explain how a teacher assembles a workable multimodal solution out of public content that was never intended for students with intellectual disabilities, a perspective that positions the teacher not merely as a user of media but as its adapter. This focus is consistent with the demand of a transformative inclusive approach in contemporary education, which requires teachers to modify instruction directly on the basis of learners' responses, so that teacher adaptation rather than media availability becomes the decisive variable.

Departing from that gap and novelty, this study aims to describe in depth the teacher's strategy in adapting video-based visual media, to reveal the technical and pedagogical difficulties encountered, and to analyze the concrete efforts made to overcome those obstacles

in the learning of students with mild intellectual disabilities in grade IV at SLB Nurul Iman. In line with these aims, the study is guided by three questions, namely how the teacher adapts video-based visual media across the planning, implementation, and evaluation phases, what technical and pedagogical obstacles arise during the adaptation process, and what solutions the teacher applies in order to overcome those obstacles.

RESEARCH METHODS

This study uses a qualitative approach with a case study design. According to Creswell (2014), the case study approach allows researchers to explore a phenomenon bound by systems (time and place) in depth, detail, and comprehensively. The selection of this design is very relevant because the research is focused on one specific phenomenon in its natural setting, namely the dynamics and strategies of teachers in adapting video-based visual media in grade IV of SLB Nurul Iman. This approach is used to understand the meaning of pedagogical interaction in the field directly, not to draw generalizations of population statistics Sugiyono (2013).

Data collection was carried out through three main techniques: participatory observation, semi-structured interviews, and documentation studies. Observation was carried out directly in the classroom to photograph the three stages of media adaptation (planning, implementation, and evaluation) and observe the behavioral responses of students with mild intellectual disabilities based on Visual, Auditory, and Kinesthetic (VAK) learning styles during learning. Semi-structured interviews are conducted in depth with classroom teachers as the main instrument for implementing learning. This interview aims to explore the pedagogical rationale behind the selection of the video, the technical and managerial difficulties faced, and the solution steps taken by the teacher. Furthermore, the documentation study was carried out by analyzing the modified Learning Implementation Plan (RPP), the results of the students' learning style assessment, and the link to the learning video from YouTube used in the classroom Yin (2018).

The validity of the data (validity) in this study is guaranteed through triangulation techniques, both source triangulation and triangulation techniques. The researcher continuously confirms the compatibility between the teacher's statements during the interview with the reality of the classroom practice (observation) and the administrative apparatus (documentation). Data analysis was carried out using an interactive analysis model, which included three continuous stages: (1) data condensation, in which raw data from the field was reduced and categorized into three main themes (adaptation strategies, constraints, and settlement efforts); (2) the presentation of data in the form of a descriptive narrative to arrange the flow of events logically; and (3) drawing conclusions and verifying findings to answer research objectives comprehensively (Miles et al., 2014).

RESULTS AND DISCUSSION

Results

Based on the results of participatory observation and in-depth interviews with grade IV teachers at SLB Nurul Iman, it was found that the use of video-based visual media has become the main instrument in learning. However, empirical reality in the field shows that raw video viewing without pedagogical intervention actually burdens the working memory capacity of students with mild intellectual disabilities, whose school assessment records place them in the IQ range of 50 to 70. Learners show highly variable responses depending on their Visual,

Auditory, and Kinesthetic (VAK) learning style profiles. Therefore, teachers are required to make a series of instructional adaptations so that the media is meaningful and accessible.

Mapping the VAK Profile as a Foundation for Learning Praxis

The adaptation process carried out by teachers does not occur incidentally, but is rooted in informal diagnostic assessments at the planning stage. The teacher does not generalize all students with intellectual disabilities, but maps the learning style of each individual through daily observation and joint discussions to compile a modified lesson plan as shown in figure 1.



Figure 1. Teachers discuss and plan lesson plan modifications based on learning profiles.

At SLB Nurul Iman, the VAK mapping is a "compass" for teachers to determine the type of video, the duration of the show, and the form of post-viewing follow-up.

Cognitive Load Reduction and Multimodal Approach in Execution

In the implementation stage, content differentiation adaptation is applied to manage the cognitive load of students. For students with visual and auditory tendencies, teachers facilitate video viewing by conditioning the lighting of the room and focusing attention on the laptop/smartboard screen as seen at figure 2. Instead of playing the full video, the teacher breaks the video into short segments (micro-learning), repeats key segments, and inserts verbal summaries. This strategy of segmentation and repetition was applied consistently across sessions so that information was never delivered faster than the students could follow.



Figure 2. Laptop-based video media viewing with classical mentoring and impression segmentation.

Furthermore, the most significant findings of this study can be seen in the handling of students with kinesthetic learning styles. Realizing that screen visualization alone is passive, the teacher integrates a multimodal approach in which video acts merely as a trigger (initial stimulus trigger). This viewing is then directly converted into a real physical practice (hands-on activity). For example, after watching an animated show about personal hygiene, the teacher directly directs the students to the sink to simulate the handwashing movement independently as shown in figure 3. In this conversion, the video did not end at the screen but continued into a concrete motor activity carried out by the students themselves.



Figure 3. Multimodal practice of handwashing as a conversion of video stimulation to kinesthetic activity.

Formative Evaluation Based on Behavioral Cues

In contrast to regular schools that often rely on summative tests, evaluations at SLB Nurul Iman are carried out in a formative and continuous manner. The teacher assesses students' understanding by reading behavioral cues. Positive affective responses, the ability to repeat movements, and simple questions from students signal successful adaptation. On the other hand, the appearance of repetitive movements (stereotypical) or loss of eye contact is a diagnostic indicator for teachers to immediately revise instructions or change videos.

Pedagogical Bricolage: Teacher Resilience in the Midst of Limitations

In orchestrating all of the strategies above, teachers cannot be separated from structural and technical obstacles. The main difficulty lies in the content curation process; The lack of SLB-specific repositories forces teachers to search for videos on public platforms (YouTube) that are often not disability-friendly. To get around this, teachers do pedagogical bricolage as a creative effort to assemble solutions from makeshift materials. The teacher combines animated videos (to attract basic attention) with real/documentary videos (to provide a concrete and childish representation of objects for children of grade IV).

In addition, limited facilities, such as the unavailability of ready-made projectors in every classroom and lack of formal video editing training, make teachers highly dependent on personal devices and peer-to-peer self-learning.

Discussion

The mapping of VAK profiles at the planning stage confirms and extends the argument of (Abol, 2023) that the identification of visual, auditory, and kinesthetic profiles is a prerequisite for serving students with special needs. What this case adds is the practical function of that mapping. At SLB Nurul Iman the profile is not merely diagnostic information filed in a document, but a working reference that determines the type of video selected, the length of the screening, and the form of follow-up activity after viewing. Profiling therefore operates as an instrument of media curation rather than as an administrative formality.

The segmentation practiced at the implementation stage is consistent with the finding of Pebisi et al. (2025) that students with intellectual disabilities require explicit and gradual instruction in order to build learning independence, and with Barman and Jena (2024), who showed that the benefit of video-based instruction is closely tied to the learner's level of cognitive development. Both studies reached that conclusion through purpose-built media. The present case shows that the same principle can be enacted without any production process at all, because the teacher achieves it simply by pausing, repeating, and narrating ordinary YouTube content.

The conversion of viewing into hands-on activity is the point at which this study speaks most directly to the existing literature. Ririn Lailatul Masykuro & Syuhud (2026) emphasize that abstract concepts become meaningful for students with special needs once they are translated into concrete practice, while Almumen (2024) demonstrates that video is most effective when it scaffolds action rather than simply delivers content. The handwashing sequence observed in this classroom follows exactly that logic. It also offers a practical response to the participation gap reported by Frisch et al. (2025), because the measure of involvement

shifts from the time a student spends facing a screen to the activity performed after the screen is turned off.

Read as a whole, the three phases documented here map onto the three principles of Universal Design for Learning. The mapping of VAK profiles, together with the teacher's attention to what holds the attention of each individual student, corresponds to multiple means of engagement. The combination of animated and documentary video, the segmentation of long clips, the repetition of key parts, and the inserted verbal summaries correspond to multiple means of representation, since the same content reaches the student through several channels and at several levels of density. The conversion of viewing into handwashing practice corresponds to multiple means of action and expression, because the student demonstrates understanding through movement rather than through speech or writing. What this case contributes is evidence that the three principles can be enacted without any UDL-compliant product, through adjustments the teacher makes to ordinary material already at hand.

The difficulties documented in this study, finally, point to a structural rather than an individual problem. The absence of a repository of disability-friendly content, the shortage of equipment, and the lack of formal training push the teacher into pedagogical bricolage, that is, assembling a workable solution out of materials never designed for the purpose. This mirrors the condition described by Wahyuni et al. (2025), that the implementation of Universal Design for Learning in Indonesia still rests heavily on individual initiative because technical and institutional support is lacking, and it reinforces the argument of Untari et al. (2026) that micro-level differentiation cannot be sustained by teacher resilience alone. Resilience explains how this classroom keeps functioning; it does not remove the need for institutional provision

CONCLUSION

This study concludes that the effectiveness of the use of video-based visual media for students with mild intellectual disabilities at SLB Nurul Iman is highly dependent on systematic and student-centered instructional adaptation strategies. The adaptation was successfully executed through three interdependent stages: planning, implementation, and evaluation. At the planning stage, teachers lay the foundation through informal assessments to map the profile of students' VAK learning styles. The implementation stage is realized through content differentiation with segmentation strategies to reduce children's cognitive burden, as well as the application of a multimodal approach that converts video impressions into concrete motor activities (hands-on activities) to train life skills. Finally, the evaluation stage is carried out in a formative-responsive manner by relying on the reading of students' behavioral cues as the main diagnostic indicator.

The dynamics of this praxis also reveal structural inequality. Teachers face major challenges related to the limited availability of disability-friendly video content, the complexity of managing multimodal classrooms, and the lack of formal learning technology training. Nevertheless, these obstacles were successfully bridged through pedagogical bricolage, a form of resilience in which the teacher independently curates and combines YouTube material, relies on personal devices, and carries out knowledge transfer through a peer community.

Read through the lens of Universal Design for Learning, the three stages show that the principles of engagement, representation, and action and expression can be realized without specially designed media, provided the teacher is given room to adapt. This study is nonetheless limited to one teacher in a single fourth-grade classroom at one special school, so its findings describe a particular practice rather than a pattern that can be generalized to other settings. Further research is needed to test whether the same adaptation cycle appears across different

schools and subject areas, and to examine how sustained assistive technology training would change the way teachers curate and modify video media.

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