Improving the Ability to Create Basic Skirt Patterns Using Video Tutorials for Fashion Skills Instruction for Deaf Students Di SLB-E Negeri Pembina Medan

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Abstract.
This article examines simulated changes in basic skirt pattern-making skills and independence within a video-assisted classroom action research scenario. The analysis uses nine coded records from a final-project manuscript describing deaf students in Grades VIII and IX at SLB-E Negeri Pembina Medan. Seven performance aspects were scored from 1 to 4 across baseline and two simulated cycles. Descriptive analysis applied an assumed mastery threshold of 75 and a class target of 80%. Mean scores were 58.33, 75.40, and 88.10; mastery rates were 22.22%, 66.67%, and 88.89%. Mean independence scores were 2.11, 2.78, and 3.22. The scenario illustrates how aspect-level assessment can inform targeted instructional planning. However, these calculations do not establish classroom effectiveness because original assessment records and verified implementation evidence are unavailable. Actual classroom data are required before drawing empirical conclusions.
Keywords: *video tutorials; skirt patterns; deaf students; classroom action research and simulation.*

I. INTRODUCTION

Fashion design skills instruction provides students with the opportunity to connect knowledge of size, shape, and work sequences with products that can be directly examined. For deaf students, these activities require adequate communication access to ensure students understand the objectives, examples, and outcome criteria. Difficulty completing tasks should not be immediately viewed as a limitation of individual ability. The teacher's presentation of work steps, opportunities for repetition of examples, and clarity of success measures also need to be examined as part of the learning environment.

Basic skirt patterns are a demanding task that requires consistent relationships between steps. Measurements determine the location of construction points; points serve as reference points for the waist and hip lines; and darts establish the pattern's adjustment to the measurements used. Initial errors can impact subsequent steps, even if the student follows the teacher's instructions closely. Therefore, pattern assessment should encompass accuracy of measurements and lines, as well as sequence of work, neatness, and the ability to complete steps with appropriate assistance.

Hafizah's final project document places the learning of fashion design skills in grades VIII and IX at SLB-E Negeri Pembina Medan as the problem context. The initial description mentions difficulties in determining the kupnat, waistline, hipline, hip height, and skirt length. The document also describes a tendency to wait for teacher guidance before continuing work. This information forms the basis for developing action, but the extent of the problem cannot be determined from the narrative description alone because the original initial assessment evidence is not yet available in the file.

Video tutorials were chosen for the design because they allow for repetitive demonstrations of hand movements, tool positions, measurement placement, and drawing sequences. The intended benefit is not simply the presence of a screen in the practice room, but rather the availability of examples that students can review as they encounter specific steps. Thus, learning questions are directed at the relationship between content, practice opportunities, and feedback. The media should help students understand what to do next and how to check the accuracy of their own work.

Multimedia foundations provide a rationale for connecting words and images in a planned way. Mayer (2021) discusses learning through verbal and visual representations based on research on instructional design. In the context of skirt patterns, this idea is used to pair movement examples with relevant measurement markers. Its application still requires consideration of the communication needs of deaf students; general multimedia principles do not necessarily dictate the most appropriate choice of language, text format, or sign support for each student.

Clark and Mayer (2023) place the selection of graphics, text, learning activities, and videos within evidence-based design decisions. For hands-on learning, this consideration encourages the presentation of examples that directly relate to the task. Excessively long introductions or decorations that don't facilitate reading can be minimized. The main body should show the action closely enough, provide pauses that students can use, and connect the footage to the actual work at the workbench.

Evidence regarding video also requires attention to how the medium is used. Fyfield et al. (2022) identified support for coherence, segmentation, learner control, and linking video to learning activities. Noetel et al. (2022) demonstrated that multimedia design influences learning outcomes across contexts. Both studies support design reviews but do not provide directly transferable impact magnitudes for the nine students in this document. The appropriateness of materials, communication access, and implementation evidence remain to be examined in the target context.

More closely related to fashion design was conducted by Rahmi et al. (2025) through the development of a video tutorial on basiba clothing patterns for deaf students. This research emphasized adapting the media to user needs and vocational material. Asfira et al. (2025), through the development of an embroidery tutorial book, demonstrated that visual guides can also be presented through print media. These differences in media justify first assessing the needs of the assignment, then selecting or combining learning resources that are accessible to students.

Visual access is not simply understood as adding as many elements as possible to the screen. Almalhy (2022) compared video presentations with sign language interpreters, captions, and a combination of the two and found that the pattern of results depended on the type of knowledge being assessed. Pavani and Leonetti (2026) also emphasized the diversity of student needs and attention demands when captions and sign language are present together. Therefore, the design of the skirt pattern needs to address the placement of text, demonstration areas, and communication support through collaborative review with the user.

User experience provides different information than learning outcome scores. Gehret and Elliot (2025) examined deaf and hard-of-hearing students' perceptions of asynchronous multimedia tutorials and highlighted how they used the learning features. This consideration is relevant in distinguishing the presence of a replay button from the ability to use it. In designing patterned learning, students need to know which sections to select, when to pause, and how to connect the display to the current step.

Institutional support also influences access to materials. Lima et al. (2025) identified limitations in visual materials and communication support in the Brazilian higher education context. Lomellini et al. (2025) discussed accessibility and inclusive design in online learning, while Loaiza-Ramírez and González-Beltrán (2026) mapped a set of digital accessibility guidelines for deaf and hard-of-hearing users. These studies were used as design considerations, not as evidence of the target school's circumstances or as a basis for equating the needs of all student groups.

Based on these issues, the article focuses on aligning three elements: the sequence of learning actions, assessment of skills per aspect, and interpretation of results. Classroom action research provides a framework for planning, action, observation, and reflection that can be used to improve learning (Machali, 2022). However, the action plan must be distinguished from the actual actions implemented. Similarly, examples of score processing need to be distinguished from evidence that student abilities have changed after using videos.

The purpose of this article is to describe the patterns of change in grades, completeness, and independence in the simulation dataset used in the final project and to explain their implications for designing basic skirt pattern learning. The article contributes to this by presenting a traceable processing procedure and reading aspects useful for planning assistance. All results are treated as simulations. This article does not test the causal effect of the video, does not establish classroom effectiveness, and does not replace the collection and verification of actual research data.

II. METHOD

The article uses descriptive analysis of the final project document and the simulation dataset listed in the appendix. The quantitative analysis unit consists of nine rows of data coded S01–S09, each with seven aspect

scores for the pre-cycle, Cycle I, and Cycle II. The classroom action framework in the document is used to explain the planning context. This placement allows numerical analysis to be repeated from the available score table without claiming that the sheet represents verified field observations.

The context mentioned in the manuscript is the learning of deaf students in grades VIII and IX at SLB-E Negeri Pembina Medan. The document plans implementation in the odd semester of the 2026/2027 academic year. The actual implementation date and duration have not been established as fact in the article. Student identities are not listed; data codes are used to compare processing stages. Class differences, learning experiences, and communication needs are not analyzed separately because the dataset does not provide sufficient variables for such grouping.

Data were taken from three raw score tables and checked against the summary table in the final assignment. The checks included a score range of 1–4, the sum of the seven aspects in each row, the total group scores, value conversion, and completion classification. This stage was a check for calculation consistency. The checks did not include grade validation by the assessor, match scores with the original work, or proof of student attendance at each meeting because these supporting documents were not yet available as a traceable set of evidence.

The seven aspects assessed were accuracy of measurement, position and width of the cuff, waistline, hipline, work steps, neatness, and independence. Each aspect was given equal weight and a maximum score of four, resulting in a maximum total score of 28. Hip height and skirt length were discussed as part of accuracy of measurement, not as variables with separate subscores. Interpretation was not extended to changes in each of these measurements because such detailed figures were not available.

The operational rubric in the appendix differentiates between levels of accuracy and need for assistance. A score of four represents work that meets the criteria or is completed without direct assistance, while a score of one represents incomplete results or the need for assistance for most of the task. Levels two and three bridge the gap between these two levels. A summary of the assessment focus is presented in Table 1. This summary helps readers understand the content of the scores; validity and interobserver consistency have not yet been established.

Table 1. Focus of seven aspects of assessment

Aspect	Focus of inspection
Size	Size conformity with task reference.
Kupnat	Accurate location, width and shape of the coupling.
Waist	The accuracy and connection of the waist line.
Pelvis	Position and shape of the pelvic line.
Step	Sequence and completeness of work procedures.
Neatness	Clarity of lines, markings, and cleanliness of patterns.
Independent	There are many stages that require direct assistance.

Source: Summary of the rubric in the final assignment. Each aspect is scaled from 1–4; maximum score is 28.

Measurement in actual applications requires agreed-upon reference measures, units, pattern construction systems, and error tolerances before assignments are given. The document includes examples of pattern formulas, but the article does not establish all the constants in those examples as universal rules. Teachers should ensure that the steps in the video align with the system taught in class. Changes in the system or task

demands between cycles can alter the assessment difficulty and should be noted and taken into account when comparing results.

Individual scores are calculated by dividing the total score by the maximum score, then multiplying by 100. The group average is calculated by dividing the sum of the individual scores by the number of rows. Completion is calculated as the percentage of rows that reach the threshold value. The calculation uses the following three equations. The symbol S_i represents the sum of the seven scores for the i-th row, X_i represents the individual score, n is the number of rows, and n_t is the number of completed rows.

$$X_i = \frac{S_i}{28} \times 100$$

$$\bar{X} = \frac{\Sigma X_i}{n}$$

$$P = \frac{n_t}{n} \times 100\%$$

The analysis used n = 9, an individual completion threshold of 75, and a classical completion target of 80%, following the assumptions in the final project. Since 75% of 28 is 21, rows with a total score of at least 21 are classified as completed. For nine rows of data, the classical target of 80% requires at least eight rows to be completed. Both thresholds are used as analytical rules, not as statements that the school has approved the KKM or the same indicators for the actual study.

The action framework contains two cycles, each with two meetings, with planning, action, observation, and reflection. This framework is consistent with Machali's (2022) description of classroom action research steps. Table 2 summarizes the focus of the meetings in the document. The content indicates the activity plan and evidence requirements, not a report that each activity has been implemented. Decisions to improve specific stages in Cycle II should stem from documented reflections after Cycle I.

Table 2. Action meeting scenario

Stage	Focus of planned activities
I, meeting 1	Size and baseline; observe impressions, practice, check results.
I, meeting 2	Kupnat and whole pattern; practice test and reflection.
II, meeting 1	Practice the parts that need improvement based on reflection.
II, meeting 2	Practice with limited assistance, testing, and follow-up.

Source: Two-cycle design in the final project; not yet an implementation report.

The planned video content includes an introduction to the tool and its purpose, measurements, baseline construction, couplating, and final inspection. The document suggests a duration of approximately 5–8 minutes, but video files and user review results have not been included. Therefore, this duration is treated as a design specification. The final duration should be determined based on the number of steps, display readability, practice opportunities, and user response, rather than solely on the desire to meet a specific timeframe.

Accessibility needs include hand and tool visibility, legibility of size numbers, text position, ease of pausing, and appropriateness of gesture support or explanations. The diversity of user needs warrants customization, rather than a single configuration for all students. The design review draws on the discussion of learner segmentation and control by Fyfield et al. (2022) and the grouping of digital accessibility guidelines by Loaiza-Ramírez and González-Beltrán (2026). This review does not yet constitute a media feasibility test.

In the activity design, students observe one section of the presentation, try the relevant steps, check their results, and then move on to the next section. The teacher can point out any difficult points, adjust communication, and provide feedback on the work. This support needs to be distinguished from the

communication access the students actually need. Reducing direct support is intended to expand opportunities for experimentation, not eliminate explanations or support that make the task accessible.

Calculations are performed on the numbers before rounding. Grades, percentages, and aspect averages are displayed with two decimal places for ease of reading. The difference between stages is calculated from the original value, so it can differ by 0.01 from the subtraction of two rounded numbers. This is important for data with rounded total scores and fixed denominators. Completion status is determined from the original value or a minimum score of 21, so it does not depend on the decimal display in the table.

The average of each aspect is obtained by summing the scores for the same aspect across the nine rows and dividing by nine. This reading is used to identify relatively lower scores in the simulation. The difference in total scores represents the change in grade points, while the difference in completion is expressed in percentage points. The two units are not interchangeable. The average aspect remains within the rubric score range of 1–4 and is not treated as a percentage of completion.

Independence is specifically displayed through the average score and the number of rows that received a score of at least three. The threshold of three follows the limited assistance descriptor in the rubric and is used as a supplementary summary. Independence is also a component of the total score; therefore, the two measures are mathematically related. The article does not use the similarity of increases as evidence of a causal relationship or as separate outcomes.

Documents included problem descriptions, observation forms, photo documentation, and brief learning notes. These elements were reviewed to understand the action plan and the limitations of the evidence. Notes lacking date sequences, encounter codes, or clear links to scores were not used to develop qualitative findings across cycles. The article also did not calculate completion time, frequency of assistance, user response, or action implementation because these measures were not consistently recorded in the analyzed data.

The analysis was limited to descriptive statistics. No significance tests, causal effect calculations, or generalizations to the deaf student population were performed. The p-value from the simulated data does not resolve issues of data origin or prove the implementation of the intervention. The results are interpreted as an example of how rubric scores can be summarized for learning reflection. Comparison with the literature is used to assess the appropriateness of the design and the limits of interpretation, not to replace unavailable field evidence.

Traceability of the analysis was maintained by retaining the codes, sequence of steps, seven aspects, and raw scores as listed in the appendix. Each results table represents a recalculation of the same data, not an additional source of evidence. Application to actual research requires replacing the dataset with the original assessments with work and meeting codes, along with a review of the assignment references and rater agreement. This procedure allows readers to distinguish the numerical consistency from the quality of the evidence underlying the conclusions.

III. RESULTS AND DISCUSSION

Examination of the dataset revealed a total group score of 147 in the pre-cycle, 190 in Cycle I, and 222 in Cycle II. The combined maximum score for each stage was 252, which is nine rows multiplied by 28. The average converted scores were 58.33, 75.40, and 88.10, respectively. All scores fell within the rubric's allowable range. The summary in Table 3 presents the average, range, number of completions, and a summary of independence to prevent changes from being interpreted solely through a single group measure.

In the pre-cycle, the lowest score was 42.86 and the highest score was 75.00. Two of the nine rows reached the individual threshold, resulting in a completion rate of 22.22%. An example calculation can be seen in S01, which has a total score of 14. The score is 14 divided by 28 multiplied by 100, which is 50.00. This example demonstrates the direct relationship between rubric scores and grades. These pre-cycle scores are not used to determine the actual starting ability levels of all students in the school.

Table 3. Recapitulation of simulation results

Indicator	Pre	I	II
Total score	147	190	222
Average value	58.33	75.40	88.10
Lowest value	42.86	64.29	71.43
The highest score	75.00	85.71	96.43
Total amount	2	6	8
Not finished yet	7	3	1
Completion (%)	22.22	66.67	88.89
Independent ≥ 3	2	7	8

Source: Recalculation of simulation data. Pre = pre-cycle; I = Cycle I; II = Cycle II. Number of rows per stage = 9.

In Cycle I, the average rose to 75.40, with a range of scores ranging from 64.29 to 85.71. Six rows achieved the minimum score of 21, while S01, S03, and S07 did not. Thus, the group average exceeded the individual threshold, but the classical completion rate was only 66.67%. This situation demonstrates why class success cannot be inferred solely from the average. A few high scores can raise the average when there are still rows of incomplete data.

In Cycle II, scores ranged between 71.43 and 96.43. Eight completed rows yielded a completion rate of 88.89%, thus exceeding the classical assumption target. S03 had a total score of 20 and remained below the minimum score of 21. Therefore, achieving the class target in the scenario does not mean that all rows have met the individual threshold. This reading provides an example of why maintaining specific follow-up measures even though the group indicator has been achieved.

The average change from pre-cycle to Cycle I was 17.06 points, then increased by 12.70 points in Cycle II. The overall increase of 29.76 points is calculated from the scores before rounding. Completion increased by 44.44 percentage points in the first stage and by 22.22 percentage points in the subsequent stage. This difference represents a change in two different measures. The 29.76-point increase is not expressed as a 29.76% increase in completion, because the denominators and meanings of the measures are different.

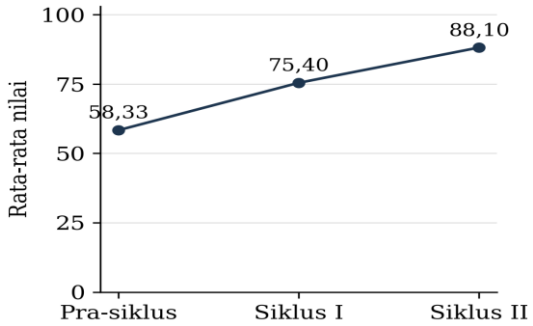


Fig. 1. Average simulation value

Source: Simulation data calculation in Table 3.

Figure 1 shows a pattern of increasing averages across all three simulation stages. Using an axis starting at zero helps maintain the proportionality of change. The line summarizes the sum of the group scores and not any other independent measure. Therefore, the consistency between the graph and Table 3 indicates a faithful presentation of the same data, not triangulation, which could strengthen evidence of the intervention's effectiveness.

The individual comparisons in Table 4 are necessary because averages can mask variation. Each code is compared with itself at three stages, using the same number of aspects and the same denominator. The table does not include student names and does not link codes to identities in the photographs. The use of codes maintains the analytical requirements while limiting the interpretation of the simulation lines. The order of the codes does not indicate the order of ability, grade, or communication need categories.

Table 4. Individual values in the simulation

Code	Pre	I	II
S01	50.00	67.86	85.71
S02	60.71	75.00	89.29
S03	42.86	64.29	71.43
S04	64.29	78.57	92.86
S05	75.00	85.71	96.43
S06	57.14	75.00	85.71
S07	53.57	71.43	89.29
S08	75.00	82.14	96.43
S09	46.43	78.57	85.71

Source: Simulation scores in the final assignment appendix. In Cycle II, S03 was incomplete; the other eight codes were completed.

S03 had the lowest initial and final scores in the dataset, 42.86 and 71.43, respectively. Although the difference was 28.57 points, the final score was still below the threshold of 75. This example distinguishes progress from criterion attainment: positive change does not necessarily result in completion. In actual practice, teachers need to examine areas of the work that are not yet appropriate and the type of support needed, then determine exercises that address those difficulties.

S05 and S08 were already at 75.00 in the pre-cycle, and both reached 96.43 in Cycle II. Their increase of 21.43 points was smaller than some codes that started from lower scores. A smaller difference does not necessarily indicate the design is less beneficial for groups with higher starting scores. The starting position and maximum score limits the scope for improvement. Therefore, comparing the differences needs to be accompanied by a reading of the level of achievement at each stage.

S09 changed from 46.43 to 78.57 and 85.71, respectively, for an overall increase of 39.29 points. S01 and S07 both increased by 35.71 points from pre-cycle to Cycle II. This variation suggests that a single group average is insufficient to describe the entire spectrum. However, the dataset does not provide information explaining why the rates of change differ. Explanations regarding motivation, training intensity, or language suitability are not considered factual without supporting implementation records.

In a group of nine, one completed row is equivalent to approximately 11.11 percentage points. Therefore, changes in some codes result in a relatively large shift in completion. Six completed rows in Cycle I fell short of the 80% target, while eight rows in Cycle II exceeded it. This hierarchical nature is important to consider when small-group results are presented as percentages; the number of rows is still included so readers understand the underlying magnitude of the numbers.

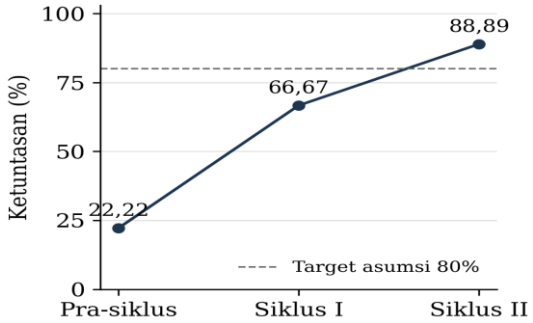


Fig. 2. Simulation completion

Source: Simulation data calculation in Table 3.

Figure 2 shows the completion rate along with the assumed target reference line of 80%. The graph confirms that the target was achieved in the Cycle II scenario. In actual research, target setting should precede the reading of results, and therefore should not be chosen after the figures are known. Because the

document uses assumed targets, the article retains the term and does not translate it into a school administrative decision.

Analysis of the seven aspects in Table 5 shows that all means increased across the dataset. The aspect with the lowest initial value was the location and width of the quiver, which was 1.89. The mean quiver became 2.67 in Cycle I and 3.11 in Cycle II. The waistline had the largest difference from pre-cycle to Cycle II, which was 1.44. The information per aspect helps formulate the focus of the work examination, but does not yet identify the types of technical errors that actually occur in class.

The cupping pattern can be a focus of assistance because the final average is lower than the accuracy of measurements, waistline, hipline, and work steps. In the action plan, the teacher can separate the point determination, width division, and line direction into checkable steps. This decision is a planning implication of the scoring pattern, not a report that a specific error has been observed. Actual pattern results are still needed to determine whether assistance should be directed at location, width, shape, or measurement reading.

Table 5. Average simulation aspects

Aspect	Pre	I	II
Size	2.44	3.22	3.67
Kupnat	1.89	2.67	3.11
Waistline	2.44	3.11	3.89
Pelvic line	2.56	3.11	3.78
Work steps	2.67	3.33	3.67
Neatness	2.22	2.89	3.33
Independence	2.11	2.78	3.22

Source: Recalculation of seven aspects. Values are the average of scores on a scale of 1–4.

The average waistline changed from 2.44 to 3.11 and 3.89, respectively, while the hipline changed from 2.56 to 3.11 and 3.78, respectively. Both lines relate to the application of measurements and the connection of dots in the pattern. In video design, point markers and shots showing the entire line trajectory can assist in step checking. However, conformity of the line shape to the reference measurement cannot be demonstrated solely through increased scores without consistent work and scoring rules.

Measurement accuracy changed from 2.44 to 3.22 and 3.67, respectively. This category encompasses several measurements in the task, including hip height and skirt length. The available data do not separate the values for each measurement, so the article does not suggest that one measurement is significantly higher than another. In further research, detailed error breakdowns could be recorded per measurement point if that information is needed for reflection, while maintaining a final assessment comparable to the rubric.

Work steps had averages of 2.67, 3.33, and 3.67, respectively, while neatness had averages of 2.22, 2.89, and 3.33. This difference illustrates that following a sequence does not automatically produce a neat pattern. Instruction should differentiate checking the sequence from checking the legibility of lines, markings, and pattern cleanliness. Feedback can identify areas of the product that need improvement so students understand the reasons for corrections, rather than simply receiving a grade.

The average independence score increased from 2.11 to 2.78 and 3.22, respectively. The number of rows with a minimum independence score of three changed from two to seven and eight, respectively. In Cycle I, there were seven rows with a minimum independence score of three, but only six rows achieved a total score. Thus, relatively limited assistance does not always result in achievement of all pattern components. Assessment of process and outcome quality need to be read together to ensure that one label does not represent the entire learning situation.

A score of four on the rubric for independence indicates completion of a stage without direct assistance, while a score of three still allows assistance at one stage. Therefore, a score of at least three does not constitute full independence. Information about the areas of assistance, how assistance was provided, and the

student's opportunity to try again are necessary for the score to be meaningful. In inclusive practice, access to communication is maintained even if assistance with assignments is gradually reduced.

The interpretation of independence is also limited by the total score structure, which includes this aspect as one of seven components. An increase in independence also increases the total score, calculated from the calculation. The article does not use increases in either to suggest that independence leads to increased skills or vice versa. If the relationship between process and product is to be studied further, the measurement design needs to clearly distinguish variables and collect process information that goes beyond simply repeating the components of the total score.

These scoring patterns provide a basis for examining video design, but they do not prove learning mechanisms. Segmenting the presentation can be used to allow one section to support a practice phase, followed by an opportunity to review the work. Playback controls provide the possibility of revisiting difficult steps. Both align with the video design considerations of Fyfield et al. (2022). The use of the term "likely" remains necessary because this dataset does not record the video sections replayed, the duration of playback, or the order of each user's interactions.

The similarity to Rahmi et al.'s (2025) research lies in the material of the clothing patterns and the target audience of deaf students. However, the research on the development of the basiba pattern video is not identical to the analysis of the basic skirt pattern. The materials, subjects, instruments, and testing stages are different. Findings on the validity or practicality of the media in that study were not translated into the video's feasibility score in this article. The comparison is used to demonstrate the relevance of visual adjustments and the need for testing in the context of the intended users.

Asfira et al. (2025) used a tutorial book in embroidery lessons. This resource cautions that visual aids don't have to rely entirely on moving images. When making patterns, step cards or still images can accompany videos when students want to check measurements without waiting for a specific scene. These options represent design alternatives that need to be tested, not a conclusion that a combination of media is always better. The function of each resource needs to be explained to avoid overloading the information that needs to be monitored simultaneously.

Inderanata et al.'s (2026) study examined BISINDO-based videos in vocational welding learning with a single participant and an A–B design. The authors noted limitations in the duration of the phase and the lack of experimental replication. Relevant lessons include the importance of linking communication access choices to the context of practice and maintaining the boundaries of conclusions. The differences in welding and pattern-making tasks precluded the use of the results as a measure of expected improvement in this dataset.

Almalhy (2022) suggests that the choice between gestures, subtitles, and their combinations should consider the type of knowledge being learned. For a skirt pattern, students may need to watch hand gestures while following the measurement markers. If text or a gesture window is placed without considering the work area, attention can be divided. Therefore, display studies should observe when students switch between viewing the screen and the work. Such data are not yet available, so the article does not specify one display arrangement as best for testing results.

Pavani and Leonetti (2026) emphasize that limited evidence is insufficient to eliminate or mandate the combination of captioning and sign language in all situations. Its relevance to this design lies in maintaining access options while addressing user attentional demands. The guidelines mapped out by Loaiza-Ramírez and González-Beltrán (2026) can help develop a checklist. Implementing such a checklist still requires involving teachers and users to ensure that decisions about language, font size, positioning, and video controls are appropriate to the task and communication habits.

Gehret and Elliot (2025) identified the user experience of asynchronous tutorials as a source of design input. In the context of this article, assessing feasibility should not stop at whether the video plays. Users should be able to find relevant steps and relate them to the task at hand. Short questions after the tutorial can address difficult sections and helpful features. The article does not report these responses because user questionnaires or transcripts for this design are not yet available.

Niksiar et al. (2025) examined authentic electronic learning environments for deaf learners in sign language learning. The comparisons were limited to the importance of connecting activities to meaningful contexts. In fashion design, pattern assignments provided workpieces for review and revision. However, the online environment, language learning goals, and nature of the activities in that study differed from the practice of pattern drawing in schools. Therefore, this literature does not provide direct evidence of the efficacy of the designs discussed.

The need for accessible materials also depends on the support they provide. Lima et al. (2025) and Lomellini et al. (2025) demonstrated the relevance of instructional materials, educator support, and inclusive design in higher education contexts. In this school design, implications that could be considered include screen settings, availability of video copies, and opportunities for teachers to review materials with users. The availability of these resources was not measured in the dataset; explanations were not used to describe the state of the institution as if it had been evaluated.

The multimedia literature also does not justify replacing all teacher interaction with video. Clark and Mayer (2023) discuss the relationship between media and learning activities, while Noetel et al. (2022) point to the importance of design quality across contexts. In pattern design, teacher feedback is still needed to check for errors not identified through examples. Repeated viewing may provide access to procedures, but it does not ensure that students have applied the measures or understood the rationale for corrections.

The main limitation of these results is the origin of the numbers as a simulation. Consistency in summation and conversion only proves that processing can be traced from the available scores. Activity photos do not in themselves prove that scores were awarded at a specific meeting, and blank observation forms are not the result of observations. To establish actual research evidence, each score needs to be linked to the work, assessment time, assessor, and appropriate support notes. Without such a link, the magnitude of improvement remains a property of the dataset.

Furthermore, the two-cycle design without a comparison group did not separate the contribution of the video from the repetition of practice, feedback, or teacher attention. Even if actual data eventually improves, conclusions need to consider the combination of actions and implementation conditions. This article does not make claims of effectiveness because verified implementation is not available. The action framework was used to formulate reflection questions: what areas remained difficult, what support was provided, and what changes need to be tested in the next meeting.

The 75% threshold and 80% target are also assumptions that influence classification. Two groups with the same average can have different completion rates if the distribution of scores is different. Similarly, changes to the completion rule can change the number of lines classified as complete without changing the work or scores. Therefore, the source of the criteria should be stated in the actual report. The article retains the final assignment criteria to maintain continuity of analysis, while presenting individual scores so readers can assess their distribution.

The immediate utility of analysis lies in linking the summary to planning decisions. The total score is used to check achievement, the aspect score to select the focus of support, and the process notes to explain how students completed the task. All three require interconnected evidence. For example, a low Kupnat score directs the examination of the work, and the support notes help determine whether the exercise needs to focus on measuring, dotting, or connecting lines. These examples represent a follow-up flow that needs to be demonstrated in class.

Prior to empirical reporting, the video tools, rubrics, and assignments should be reviewed with the teacher; benchmarks and tolerances should be established; and scoring should be agreed upon. Results sheets should include student codes, stages, dates, aspects, and assessors. Process documentation can document opportunities for repeat viewings and types of support without adding unobserved claims. Once actual data are available, the abstract, tables, graphs, discussion, and conclusions should be updated as a whole to avoid mixing simulation and field results.

IV. CONCLUSION AND SUGGESTIONS

The analysis yielded a summary of changes in the simulation dataset and a traceable relationship between the seven aspect scores, individual grades, and group completion. The pattern of change in the scenario supports the use of aspect-by-aspect analysis to plan more targeted support, especially when group achievement leaves room for individual needs. The contribution lies in the clarity of the processing and design of the basic learning reflection pattern, not in proving that video use has improved the skills of deaf students in the target school.

Video tutorials can be considered part of a design that connects examples, practice, checking results, and repeating steps. The design of the display and communication support should be tailored to the needs of the user and the task. Teachers are advised to maintain feedback on the work, record direct assistance, and differentiate communication access from assistance with patterns. Checking for size, squareness, lines, and neatness should be done using the same criteria to provide a clear basis for comparison between stages.

Future researchers should gather original score sheets, coded work, meeting notes, and evidence of implementation before drawing empirical conclusions. Completeness thresholds and classical targets should be agreed upon before assessment, along with a review of rubrics and assessor consistency. Design tests can address variations in communication needs and experiences with video controls. Until such evidence is available, the article's results serve as an example for analysis and planning, while maintaining the status of all figures as simulated data.

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