Hitik: International Journal of Catechists and Religious Educators
Volume 2 Issue 2 (December 2025)
ISSN (Online): 3082-3501 | ISSN (Print): 3028-2691
doi: https://doi.org/10.63130/hijcre.v2i2.196 | Pages: 124-135
Received: July 9, 2025 | Revised: November 22, 2025
Accepted: December 8, 2025 | Published: December 31, 2025

Original Article

Video App Usability and Creative Empowerment of Selected Deaf and Hard-of-Hearing (DHH) Learners

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Abstract

This study investigates how video editing tool usability relates to the creative potential of Deaf and Hard-of-Hearing (DHH) learners creating digital stories in Religious Education (RE). The research utilized a rigorous qualitative-methods design, integrating the Gestural Think-Aloud Protocol (GTAP) with Nielsen's Usability Heuristics. This approach systematically evaluated the performance of DHH learners using CapCut and Canva, while concurrently measuring their creativity using established cognitive models. Findings demonstrated that CapCut had a significantly superior usability rating compared to Canva. Although DHH learners' creative expression was in the "Developing" stage (46.5%–54.8%), the results confirm that tool accessibility is the dominant factor influencing creative achievement. The study also observed the manifestation of virtues, notably collaboration and honesty, during the project. This research concludes there is an urgent need for accessibility improvements in mainstream video editing applications, primarily focusing on automated captioning and navigation features, to ensure equitable learning experiences. This outcome validates digital storytelling as a transformative practice that cultivates creative, problem-solving, and collaboration skills while supporting RE outcomes.

Keywords: *Benilde Deaf School, Creative Potential, Deaf and Hard-of Hearing (DHH), Religious Education, Video Applications (Apps) Usability*

Suggested citation:

Blanco, C.E. & Arabit, A.U. (2025). Video App Usability and Creative Empowerment of Selected Deaf and Hard-of-Hearing (DHH) Learners. *Hitik: International Journal of Catechists and Religious Educators, 2*(2), 124-135. https://doi.org/10.63130/hijcre.v2i2.196

Introduction

Although the Philippines has made progress in implementing Inclusive Education (IE), a significant research gap persists regarding the effective utilization of Information and Communications Technology (ICT) for Deaf and Hard-of-Hearing (DHH) learners. While certain institutions, specifically some Catholic schools, have successfully integrated digital tools, a key implementation challenge remains: the strategic selection of ICT resources precisely tailored to the unique pedagogical requirements of DHH learners (Samaniego, 2016; Del Rosario, 2022). Given that DHH learners, defined by a minimum hearing loss of 35 decibels in the better ear, are significantly dependent on technological supports, ICT is indispensable. The medium is globally recognized for fostering literacy, critical thinking, and communication, making it crucial for enhancing the educational engagement of DHH learners, facilitating effective communication, and enabling self-expression.

Digital creative skills are critical for the development of DHH learners (David et al., 2023). In Religious Education (RE), creative potential is consistent with each learner's religious identity as Imago Dei, reflecting God's image and creative essence (Horvat & Horvat, 2023). Visual and interactive technologies enable DHH learners to convey their spiritual insights meaningfully. While instructional videos for DHH learners have received substantial attention, few studies have focused on them as content makers, despite rising smartphone availability and teenage participation in digital platforms.

This study fills that gap by analyzing how video editing apps help selected DHH learners at Benilde Deaf School (BDS) generate RE content about Laudato Si' on environmental stewardship. Based on Disability Theology and Disability Studies, it sees DHH learners as active theological actors. The study evaluates app usability using the Gestures Think-Aloud Protocol (GTAP) and Nielsen's Usability Heuristics (1995), while learner creativity is assessed using frameworks such as the Modified Conjunctional Model of Creative Imaging Ability and the Conative and Cognitive Resources of Creative Potential (Clough & Duff, 2020; Nielsen, 2024; Dziedziewicz & Karwowski, 2015; Kirsch et al., 2021; Lin et al., 2024).

In context, this study aligns with the wider developments in Deaf education within the Philippines. The 2018 FSL Act mandated Filipino Sign Language as the main medium of instruction, significantly boosting Deaf identity and educational inclusion. Educational institutions such as De La Salle-College of Saint Benilde (DLS-CSB) and its high school counterpart, the Benilde Deaf School (BDS), advocate for a bilingual-bicultural approach, promote Deaf leadership, and implement multimodal teaching strategies (Pescasio, 2023). BDS, in particular, cultivates an inclusive and creative learning environment, enriched by global partnerships and cultural initiatives, such as the annual Deaf Festival.

As hybrid learning persists post-pandemic, accessible tools like CapCut, iMovie, and Adobe Premiere Pro are essential to inclusive pedagogy (Dietz, 2022; Beaumont, 2025). This study aims to demonstrate how DHH learners, often marginalized in both educational and religious contexts, can thrive when provided with digital platforms to express their faith, engage with social issues, and grow creatively and spiritually.

The study pursues three main objectives: to assess DHH learners' perceptions of the usability of video editing apps in creating RE content using GTAP and usability heuristics; to explore how DHH learners express their creativity and spirituality through video content, guided by creative potential frameworks; and to evaluate their outputs based on feedback from teachers, parents, and a senior IT specialist.

Theoretically, the study contributes to the discourse on IE by showing how institutions can use ICT to nurture inclusive, expressive, and faith-based learning cultures (Reiss, 2016; Ilechukwu & Uchem, 2017). It offers educators and tech developers insights into integrating user-friendly media tools that support spiritual identity and creativity among DHH learners. By positioning DHH learners as active content creators, the study highlights the power of digital storytelling in religious and educational contexts.

Practically, it encourages RE teachers to reflect on their current ICT strategies and challenges institutions like BDS to embed creative, tech-based learning into their curriculum. By aligning digital learning with Gospel-centered values, schools can cultivate Christian digital citizens, DHH learners who engage online with empathy, integrity, and faith.

Ultimately, the study affirms that integrating creative digital tools in RE fosters inclusive practices and develops spiritually grounded, expressive, and digitally fluent DHH learners. It contributes to the formation of educational environments where DHH learners can thrive as faith-filled individuals in a connected, inclusive world.

Methodology

This rigorous qualitative study explored the creative process and usability experiences of seven (n=7) Grade 10 DHH learners (aged 15–17) from Benilde Deaf School (BDS), who were purposively sampled based on FSL fluency and basic ICT proficiency. The data-gathering procedure commenced after securing formal administrative approval and obtaining informed parental consent (facilitated by the RE teacher), following the researcher's completion of prerequisite FSL training to ensure cultural competence. The BDS coordinator and RE teacher facilitated logistics, while specialized personnel, including a senior IT specialist and SL specialists, managed recording, interpretation, transcription, and usability testing. The process comprised three main stages: Video Content Preparation, where the RE teacher set the Laudato Si' theme; core data collection in GTAP-Guided Sessions, which included a video-editing task using CapCut/Canva and the adapted Gestural Think-Aloud Protocol (GTAP), immediately followed by an FGD for self-assessment; and Secondary Respondents' Creative Assessment via Google Forms, sent to external evaluators (RE teacher, parents, IT specialist) to validate the content's vividness, originality, and transformative qualities. To ensure participant protection, the videos recorded during the editing and FGD sessions are strictly confidential, accessible only through permission, and not publicly viewable; furthermore, the identities of all DHH learners were not named in any documentation. The methodology was guided by three core research areas: usability (assessed using Nielsen's Ten Usability Heuristics), creative potential (analyzed via the Cognitive and Conative Resources of Creative Potential and the Modified Conjunctional Model of Creative Imaging Ability), and the synthesis of these findings. The study utilized a sophisticated, multi-method Data Analysis approach, combining thematic, narrative, parallel, and integrated analyses, to triangulate findings, demonstrating how DHH learners' engagement reflects their abilities. The analysis employed Thematic Analysis (coding GTAP transcripts against Nielsen's heuristics; video content against creative imaging criteria) and Narrative Analysis (coding GTAP/FGD transcripts for cognitive/conative indicators). An Integrated Analysis then synthesized these findings, framing the use of user-friendly interfaces as a means for DHH learners to express their creativity effectively. Qualitative trends were quantified using percentages evaluated against a modified DLSU grading scale (e.g., 97–100% =

Excellent). The final evaluation criteria involved linking First-Order Constructs (raw data) to Second-Order Themes to illustrate how technical interactions and creative skills reflect the DHH learners' potential and app effectiveness. The primary researcher managed the facilitation and analysis, ensuring trustworthiness through triangulation, independent coding, and cross-checking, with all procedures strictly adhering to ethical standards.

Results

The empirical findings are presented below.

Usability Assessment: High Accessibility with Critical Friction Points

The aggregate usability score of 79.9% across CapCut and Canva indicates a successful initial integration of mobile video editing into the learning environment for DHH learners. This high score primarily reflects the apps' intuitive learnability and relative efficiency in fundamental tasks (trimming, merging, text overlays), which aligns well with the visual-motor skills inherent to the DHH community's communication modality (David et al., 2023).

CapCut Outperformed Canva: Heuristic Specificity

The difference in performance was statistically significant. CapCut demonstrated superior compliance with Nielsen's Usability Heuristics (Nielsen, 2024), particularly in "Aesthetic and Minimalist Design" (less cluttered workspace) and "Recognition rather than Recall" (context-sensitive, visible tools). This design minimized the "working memory tax" (Sweller, 1988), enabling DHH learners to focus on creative tasks rather than technical processes.

Critical Usability Deficits (Friction Points): The 20.1% Barrier

The remaining 20.1% usability deficit concentrated in areas critical to DHH learners' needs, manifesting as severe friction points:

1. Automatic Captioning Errors: This was the most frustrating point. The reliance on standard Automatic Speech Recognition (ASR) technology resulted in significant inaccuracies and synchronization failures with existing FSL interpreter or voiceover content. This necessitated an estimated 30% manual correction rate per minute of video, violating the heuristic of "Match between system and the real world" (Nielsen, 2024) and forcing attention diversion from creative refinement.
2. Complex Layered Interface Navigation: Utilizing advanced features (e.g., chroma keying) required deep navigation (three to five sub-menus), violating "Flexibility and efficiency of use" (Nielsen, 2024). This non-linear path introduced cognitive friction, particularly impeding the rapid testing of complex creative ideas.
3. Lack of Clear Error Recovery: Generic error messages (e.g., "Export Failed") when technical failures occurred violated the heuristic "Help users recognize, diagnose, and recover from errors" (Nielsen, 2024). This lack of actionable guidance led to significant frustration and documented instances of lost work.

Detailed Analysis of Heuristic Violations

A granular examination of the GTAP transcripts and video recordings revealed precisely where and why the 20.1% deficit occurred, emphasizing the specific needs of DHH learners.

1. Violation of Visibility of System Status (Heuristic #1): Both apps struggled to provide clear, continuous visual feedback during computationally intensive processes, such as rendering and exporting. The lack of a precise, step-by-step progress bar (often replaced by a generic spinning wheel or percentage stuck at a certain point) caused significant anxiety among the DHH learners. In the FGD, several participants gesturally expressed confusion and worry about whether the app was "working" or "frozen." This failure to provide continuous visual status violates a fundamental trust relationship between the user and the software, forcing DHH learners to rely on an auditory cue (system "humm" or fan noise) which they cannot access, or simply wait and hope.
2. Violation of Match Between System and the Real World (Heuristic #2): Beyond the captioning errors, this heuristic was violated by the confusing iconography for temporal elements. For DHH learners, who rely heavily on visual sequencing and clear beginning-middle-end markers, the non-standard icons for "speed up," "slow down," and "split scene" caused momentary but frequent halting of the editing flow. Furthermore, the use of terminology that is typically hearing-centric, even in the text menus, such as "audio ducking" or "sound leveling," forced the FSL interpreter to spend excessive time translating abstract audio concepts into visual metaphors, unnecessarily increasing the linguistic and cognitive load.
3. Violation of Error Prevention (Heuristic #5): A common point of failure was the inability to automatically prevent mistakes related to aspect ratios (e.g., mixing vertical and horizontal video clips) or exceeding memory/processing limits. Since DHH communication relies on the entire frame of view (and often FSL interpreters occupy a specific part of the screen), inconsistent aspect ratios are more than aesthetic failures; they are potential communication blockers. Neither app proactively warned the user before the final export failure, forcing the learner to re-edit substantial portions of the project after a system crash. This reactive failure wasted valuable time and was directly cited in the FGD as a major factor in reducing the complexity of their final creative concepts.

CapCut vs. Canva: A Functional Comparison

CapCut's superiority was largely attributed to its focused feature set. It demonstrated a clearer, timeline-based paradigm optimized for sequential visual editing. This structure better supported the DHH learners' strong visual-sequential processing skills. In contrast, Canva, a broader design platform, offered numerous design options and non-standard menu layouts, which, while providing flexibility, consistently violated the "Aesthetic and Minimalist Design" heuristic. DHH learners spent more time navigating through irrelevant templates and fonts in Canva, thereby increasing extraneous cognitive load and confirming that, for DHH content creation, functional specialization trumps broad feature inclusion.

Creative Output and Engagement: The "Developing" Stage

Creative expression was assessed using the Modified Conjunctional Model of Creative Imaging Ability (Dziedziewicz & Karwowski, 2017).

Creative Expression Stage

The DHH learners' average scores, ranging from 46.5% to 54.8%, placed their work in the "Developing" stage (0%–69.99%). While Fluency and Originality were

successfully demonstrated (generating visual ideas and unique metaphors), the scores in Elaboration (depth of detail) and, critically, Transformation (structural or conceptual novelty) remained moderate. Technical friction required DHH learners to prioritize legibility, hindering the complex intellectual processes needed for high-level creative transformation.

Component Breakdown of Creative Imaging

A detailed look at the four components of the Modified Conjunctional Model provided the granularity necessary to identify the exact point of creative truncation:

1. Fluency (Average 62.1%): This was the highest-scoring component. DHH learners were highly proficient at generating a volume of visual ideas to represent the complex themes of *Laudato Si'*. For instance, a learner quickly sequenced images of polluted rivers, factories, and clear skies to represent environmental deterioration and restoration. This demonstrates a strong underlying conceptual understanding and visual dexterity.
2. Originality (Average 58.9%): Scores were high due to the unique perspective offered by the DHH visual culture. DHH learners frequently employed metaphorical FSL signs and innovative use of color and speed transitions to convey theological concepts (e.g., using a sudden flash of white light combined with a slow motion sign for 'hope' to represent the concept of grace). This affirmed the Deaf Gain principle in the creative output.
3. Elaboration (Average 50.2%): This score began to drop. Elaboration requires adding deep, intricate details and layers of visual information (e.g., precise color correction, complex sound/music cues, and layered text effects). The constant technical interruptions (the 20.1% friction) discouraged this painstaking process. DHH learners often opted for a functional text overlay rather than a carefully animated one, sacrificing detail for completion.
4. Transformation (Average 46.5%): This was the lowest-scoring component and the critical measure of high-level creativity. Transformation requires restructuring the medium or the conceptual meaning of the work, enabling the audience to view the topic in a fundamentally new way. Because DHH learners were perpetually preoccupied with the technical baseline (captioning and export issues), they had insufficient energy reserves to attempt this risky, high-effort conceptual leap. The constraint was clearly extrinsic, imposed by the tool, not intrinsic, due to a lack of creative ability.

Creative Potential Engagement: Cognitive and Conative Resources

The Creative Potential Engagement measure (49.6%) confirmed significant resource investment. DHH learners demonstrated strong Cognitive Resources through effective visual metaphor planning and narrative sequencing. Crucially, their Conative Resources showed remarkable sustained motivation and self-regulation (repeating manual corrections, re-exporting failed renders). This investment confirms the intrinsic appeal of the visual medium for the DHH community's sensory pathways (Mitchell & Karchmer, 2004). The high persistence in the face of failure highlights a powerful internal drive, a "creative desire" that, if fully unleashed by accessible tools, promises to elevate creative output from the "Developing" to the "Expert" stage.

Table 1. Qualitative Findings on Imago Dei Virtues

Metric	Score/Rating	Interpretive Conclusion (Empirical)
Aggregate Usability	79.9%	High Feasibility (Medium is suitable for DHH learners)
Critical Friction	20.1%	Structural Limitation (The technical barrier prevents seamless workflow)
Creative Output (Transformation)	46.5%–54.8% ("Developing")	Under-realized Creative Potential (Energy diverted from high-level refinement)
Conative Engagement	49.6% (High Persistence)	Intrinsic Motivation Confirmed (Desire to create overcame technical difficulty)

The findings on Collaboration (71.4%) and Honesty (57.1%), observed during the Gestural Think-Aloud Protocol (GTAP), are recognized as qualitative data points regarding peer interaction and self-assessment, which will be interpreted within the theological framework. The GTAP provided rich evidence of these virtues in action: DHH learners consistently used FSL to troubleshoot issues with peers before consulting the interpreter or facilitator. A moment of striking honesty occurred when a learner, after a successful collaboration on a color correction issue, gestured to the camera that the idea was their partner's, not their own. This active, embodied self-attribution speaks to a profound respect for intellectual property and community ownership over the creative process, essential virtues in the context of Christian ethics.

Discussion

The discussion employs Usability Theory within the IE framework, drawing on Disability Studies and Deaf Studies to interpret the data.

1. The Constraint of Usability on Creative Flow

The paradox of high usability (79.9%) juxtaposed with moderate creative output (46.5%–54.8%) is interpreted via Usability Theory and Cognitive Load Theory (Sweller, 1988). The 20.1% friction points (caption errors, deep navigation) impose a significant extraneous cognitive load, which competes directly with the germane cognitive load required for creative transformation. The resultant cognitive switching cost prevents the establishment of Flow State (Csikszentmihalyi, 1990). The micro-interruptions continuously pulled DHH learners out of deep concentration, requiring their persistence to be redirected toward technical troubleshooting rather than conceptual novelty. This constant redirection of attention created a severe deficit in mental resources available for Elaboration and Transformation. The energy that should have been dedicated to visualizing intricate details, testing multiple conceptual sequences, or refining the metaphorical complexity of their *Laudato Si'* messages was instead consumed by the repetitive, low-value task of manual caption alignment.

The DHH learners' experience, therefore, serves as a measurable, real-world confirmation that extrinsic cognitive load directly limits the achievement of intrinsic creative potential. A system that forces a user to stop, fix an error, and mentally reorient themselves to the creative problem is a system that actively undermines high-level creative production. The 20.1% usability gap quantifies the measurable

constraint imposed on transformative creativity, representing the scale of lost creative output. The theoretical implication is clear: in inclusive digital pedagogy, maximizing usability is not just about reducing frustration; it is about protecting the cognitive space required for creativity and complex learning to occur.

2. Digital Storytelling as an Inclusive and Empowering Medium

Disability Studies: The Critique of Digital Ableism

From a Disability Studies perspective, the 20.1% usability deficit is not viewed as a technical glitch but as a manifestation of digital ableism, a systemic structural limitation embedded in inaccessible design (Garland-Thomson, 2002). The technology, designed for a hearing-centric user base, effectively imposes a design-induced disability (the necessity of labor-intensive manual captioning) upon DHH learners. This perspective mandates that the focus of IE shift from reactive accommodation to a Universal Design for Learning (UDL) framework, which proactively removes these barriers (CAST, 2018). The inability of ASR technology to accurately recognize FSL-mediated or accented English voiceovers exemplifies how technological neutrality is a myth; the technology inherently privileges one demographic (hearing, Standard English speakers) while functionally disabling another.

Deaf Studies: Validation of Visual-Gestural Modality

In contrast, Deaf Studies validates mobile video production as an inherently powerful, visual-centric pedagogical platform (Beaumont, 2025). The success of the DHH learners' visual rhetoric confirms the concept of Deaf Gain (Bauman & Murray, 2010), interpreting the visual-gestural modality not as a deficit but as a unique cultural strength. The medium aligns perfectly with their sophisticated visual processing skills, providing a platform where complex narrative and theological ideas can be articulated with impact. Furthermore, the use of CapCut's robust visual effect tools (e.g., dynamic text, graphic overlays) allowed the DHH learners to engage in a highly visual form of digital literacy that complements FSL's own visual-spatial grammar (Clough & Duff, 2020). Therefore, the goal of IE, informed by Deaf Gain, is to ensure the intentional design of the toolset becomes a crucial pedagogical prerequisite for translating high visual potential into high creative performance.

3. The Necessity of Universal Design for Learning (UDL)

The theoretical convergence of Usability, Cognitive Load, and the Disability/Deaf Studies critique points inexorably to the necessity of adopting the Universal Design for Learning (UDL) framework as the primary corrective pedagogical approach. UDL, in this context, is not merely an optional best practice but a structural imperative derived from empirical data. Specifically, UDL principles demand that the multiple means of action and expression must be supported by tools that minimize the labor required for communication. The 30% manual correction rate for captions directly contravenes the UDL principle of "Providing Options for Sustaining Effort and Persistence" (Checkpoint 8.2), as it diverts motivational energy into extraneous tasks instead of challenging creative work.

UDL as a Structural Mandate: Moving Beyond Accommodation

The study advocates for a shift from the reactive model of accommodation (providing an interpreter or funding manual captioning after the fact) to the proactive model of UDL-informed design (demanding technology with 99% captioning accuracy). This aligns with the principle of Proactive Design, where accessibility

features are not bolted on, but are foundational. The specific UDL checkpoints violated by the current software structure include:

- Checkpoint 1.3: Offer alternatives for visual information: While video editing is visual, the interface itself failed to offer customizable visual aids for complex navigation, relying instead on small, fixed icons that are easily lost in the crowded mobile screen.
- Checkpoint 4.1: Vary the methods for response and navigation: The apps largely forced sequential, linear manipulation of the timeline. A UDL-compliant app might offer gesture-based, FSL-optimized shortcuts or a simplified "visual storyboard" navigation mode, honoring the DHH visual processing strength.

The design of future educational technology must move beyond compliance with minimal accessibility checklists and fully embrace UDL by designing for the most marginalized users first. This structural reorientation is required to transform the high conative investment demonstrated by the DHH learners into high-level, sustained creative flow, ultimately ensuring equitable access to complex forms of digital literacy. The study posits that until this 20.1% technical barrier is eliminated via UDL-informed design, the DHH learner's creative efforts will remain unnecessarily constrained.

Validation from External Evaluators

The external evaluators validated the necessity of a UDL focus.

- IT Specialist: The senior IT specialist confirmed that the 20.1% deficit is rooted in technical debt and design priority, not impossibility. They specifically noted that the chroma keying navigation structure (three to five sub-menus) could easily be flattened into a single-tap 'Accessibility Mode', a UDL-informed design choice. The specialist argued that the cost of developing a custom, highly accurate ASR model for FSL-mediated voice is high; however, the cost of manual correction labor currently absorbed by teachers and DHH learners is higher in the long run, thereby confirming the economic efficiency of UDL.
- RE Teacher and Parents: Both the RE teacher and parents observed high engagement, as well as profound frustration, during the captioning phase. Parents noted that the time dedicated to manual correction at home diverted time away from deeper reflection on the *themes of Laudato Si'*. This highlights the practical, pedagogical, and spiritual cost of inaccessible design, validating the study's core hypothesis that tool usability impacts theological reflection.

Theological and Ethical Imperative

The theological interpretation operates as a separate, final interpretive layer, rooted in Disability Theology and focused on translating the empirical and structural findings into an ethical mandate for the Church and educational institutions.

1. The Imago Dei: Giftedness and Relationality

The theological framework affirms the unique expressions of DHH learners as a complete and rich manifestation of the Imago Dei (Image of God) (Yong, 2010, 2011). Their visual-spatial pathways are not deficits but charisms (spiritual gifts) that

contribute uniquely to the Body of Christ. Their creative works are interpreted as spiritual utterances that demonstrate intrinsic dignity (Yong, 2010).

DHH Visual Charisms and the Triune God

The DHH learners' superior performance in Fluency and Originality confirms their visual intelligence as a theological gift. The diversity of bodies, minds, and communication modalities reflects the diverse creativity of God (Yong, 2011). The high creative output, even in the Developing stage, is a testament to the DHH community's unique ability to articulate abstract faith concepts through concrete visual metaphor. This visual testimony enriches the collective imagination of the Church, particularly within the Deaf Gain framework.

The empirical findings of the GTAP, the high scores in Collaboration (71.4%) and Honesty (57.1%), are key theological data. These relational virtues reflect the nature of the Triune God as a community of perfect relationship (*communio*). The DHH learners, through their cooperative struggle against technical limitations, inadvertently mirrored the relational *Imago Dei*. By engaging in mutual emotional support and peer-led troubleshooting, they demonstrated the interdependence and relationality that underpins the Christian doctrine of communion (Del Rosario, 2022). The DHH community's resilience thus serves as a spiritual witness, offering a model of profound relationality that is vital for the collective spiritual maturity of the Church. The technological struggle, although externally imposed, became the crucible for the formation of virtue.

2. Structural Injustice and the Imperative for Wholeness (Shalom)

The commitment to resolving the 20.1% usability deficits is clarified as a profound theological imperative (Volpe, 2024). The remaining technical barriers are interpreted as forms of structural injustice that obstruct the DHH learners' full flourishing (shalom). *Shalom* is defined here as holistic well-being and justice that allows every creature to reach its God-given potential. The unusable technology, by diverting creative energy, actively hinders this flourishing and constitutes a form of exclusion. Disability Theology clarifies that the Church's obligation extends beyond spiritual teaching to confronting all forms of structural exclusion, including those embedded in pedagogical technology.

Policy Implications of Shalom

Achieving *shalom* for DHH learners in digital spaces requires not only individual compassion but also systemic change. This calls for educational institutions, particularly faith-based ones like De La Salle, to adopt ethical ICT procurement policies. These policies must mandate that the selection and budgeting for educational software prioritize UDL compliance and measurable usability for DHH learners over market popularity or low cost.

By demanding and ensuring truly accessible tools, the Church affirms DHH learners as essential, fully functioning members whose unique visual, cognitive, and communicative contributions are vital to the collective body's spiritual and intellectual growth. The elimination of the 20.1% friction point is therefore an act of restorative justice that models radical, inclusive hospitality, ensuring that the technology itself becomes an extension of the teacher's faith-based commitment to equity.

Conclusion

This qualitative research, guided by the Gestural Think-Aloud Protocol (GTAP) and frameworks from Usability, Creativity, and Disability/Deaf Studies, confirmed that the creative empowerment of DHH learners in RE digital storytelling is fundamentally constrained by tool accessibility. "The study confirmed a functional paradox: high usability (79.9%) coexists with moderate creative output (46.5%–54.8%), demonstrating that the 20.1% gap, driven by captioning errors and complex navigation, creates cognitive switching costs that inhibit creative flow and the full deployment of creative resources." Framed by Disability Studies, this technical barrier represents a design-imposed disability, underscoring that intentional, inclusive design is a pedagogical necessity validated by Deaf Studies for its alignment with the DHH visual-gestural modality.

Consequently, the study recommends prioritizing usability fixes for captioning and navigation to eliminate cognitive load and integrating reflective dialogue to nurture the theological virtues (e.g., Collaboration, Honesty) already manifested by DHH learners. Ultimately, the empirical need for accessible design is viewed as a theological imperative, an act of justice, affirming DHH visual output as a valid expression of intrinsic dignity (Imago Dei), thereby establishing the implementation of Universal Design for Learning (UDL) as a fundamental priority for IE. However, limitations regarding the study's reliance on only two apps and contextual variance in observed virtues necessitate future Longitudinal Studies on creative development, Comparative Studies on ICT tools, and Policy Development research to institutionalize UDL budgeting.

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