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Video-based Learning for Hospitalized Students: Bridging educational gaps and emotional needs

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Abstract

Hospitalization disrupts students' academic progress and social engagement, often leading to educational setbacks and emotional distress. This paper explores how video-based learning can mitigate these challenges by offering accessible, personalized, and emotionally resonant educational experiences. Drawing on recent research in educational technology, health education, and inclusive pedagogy, we argue that video-based instruction supports cognitive engagement, social connection, and self-paced recovery for hospitalized learners.

Keywords: Hospitalized Learners, Video-based Instruction, Emotional Engagement.

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1.0 Introduction

Hospitalized students face unique barriers to learning, including physical limitations, emotional stress, and disconnection from peers and teachers. These challenges often result in disrupted academic progress and diminished motivation. Traditional classroom instruction is typically inaccessible, and asynchronous alternatives such as worksheets or static online modules, may lack the interactivity and empathy needed to sustain engagement.

Video-based learning, ranging from recorded lessons to interactive tutorials, offers a promising solution by combining visual engagement, narrative structure, and flexible access. Recent studies in health and clinical education have shown that video-based interventions can enhance knowledge retention, emotional involvement, and learner autonomy (Morgado et al., 2024; Wang et al., 2025).

This study explores how personalized, collaborative video-based content such as illustrated slides, peer-recorded messages, and multimodal materials, can foster emotional connection, motivation, and learning continuity among hospitalized students. Drawing on qualitative interviews with students and teachers, the study contributes to inclusive education by highlighting emotionally responsive pedagogical strategies that bridge hospital and classroom contexts.

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However, little is known about how video-based learning approaches can be tailored to support hospitalized students, particularly in ways that address both cognitive engagement (e.g., attention, comprehension, critical thinking) and affective engagement (e.g., motivation, emotional connection, sense of belonging). While video-based instruction has shown promise in general remote and health education contexts, its application in hospital-based learning environments is still emerging. For instance, Wang et al. (2025) demonstrated that interactive video-based case learning significantly enhanced motivation and critical thinking among medical students, but their study focused on clinical education rather than vulnerable school-aged learners. Similarly, Yue et al. (2025) found that instructor emotional expression and vocal charisma in asynchronous video lessons improved affective engagement, yet their work centered on adult learners in MOOCs. Dubovi (2022) explored cognitive and emotional engagement in VR-based learning using multimodal data, offering insights into immersive design, but did not address hospitalized populations. These studies underscore the potential of emotionally responsive video formats but also reveal a lack of targeted research on how such strategies can be adapted for children and adolescents in hospital settings.

2.0 Literature Review

Recent studies highlight the effectiveness of video-based learning in health education and remote instruction:

Morgado et al. (2024) conducted a meta-analysis showing that video-based interventions significantly improved learning outcomes in health education settings. Then, Navarrete et al. (2025) emphasized that video characteristics such as pacing, personalization, and emotional tone influence learner engagement and retention. In clinical education, Wang et al. (2025) found that interactive video-based case learning enhanced critical thinking and motivation among medical students. Additionally, a 2025 study by Ahmed et al. (2025) explored medical students' experiences with blended and remote learning post-pandemic. They reported that video-based instruction increased flexibility, reduced stress, and supported self-paced learning, especially when students faced health-related disruptions. These insights reinforce the potential of video-based learning to support hospitalized students not only academically but also emotionally, by allowing them to engage on their own terms and maintain a sense of agency.

Soelistya et al. (2023) examined immersive learning's impact on students' cognitive and affective development, concluding that emotionally rich, interactive environments promote deeper learning and resilience. While immersive technologies may not be feasible in all hospital settings, their pedagogical principles such as narrative immersion and emotional scaffolding, can inform simpler video formats tailored to hospitalized students. Tu, Wang, and Ya, (2025) conducted a systematic review on emotional engagement in synchronous online learning and emphasized that emotional presence, conveyed through tone, responsiveness, and visual cues, was a key predictor of learner persistence. Their findings reinforce the idea that video-based content for hospitalized students should not only deliver academic material but also convey warmth, empathy, and social continuity.

Despite these promising insights, few studies have directly examined how video-based learning can be adapted for hospitalized school-aged students. The existing literature tends to focus on adult learners in medical or higher education contexts, leaving a gap in understanding how emotionally responsive video content can support children and adolescents in hospital settings. This study addresses that gap by exploring how personalized, peer-generated, and multimodal video content fosters emotional connection, learning continuity, and a sense of agency among hospitalized students.

3.0 Methodology

3.1 Qualitative Case Study

This design allows for an in-depth exploration of how collaborative content creation, for example, written messages, illustrated slides, audio recordings, fosters emotional connection and learning continuity among hospitalized students.

3.2 Participants and Sampling

In qualitative research, purposeful sampling is valued for identifying cases that provide deep insight into the phenomenon studied. This study used criterion-based purposive sampling, focusing on hospitalized students who received personalized, multimodal content and teachers who coordinated or contributed to its design. By selecting participants with direct involvement, the sampling ensured they could share meaningful perspectives on both the emotional and pedagogical aspects of the intervention. Their firsthand experiences offered rich information, making the sample especially relevant for understanding how the intervention shaped learning and teaching in this unique context.

Recent scholarship affirms the value of this approach. Ahmad and Wilkins, (2025) propose a comprehensive framework for purposive sampling in education, emphasizing the importance of aligning participant selection with the study's conceptual focus and emotional depth. Stratton (2024) highlights that purposeful sampling is particularly effective when investigating vulnerable populations, as it allows researchers to foreground lived experiences and contextual subtlety. Leah and Friday (2024) further illustrate how contemporary applications of Patton's sampling typologies can be adapted to educational settings, especially when exploring affective and multimodal learning strategies.

By selecting participants who were both emotionally and pedagogically engaged in the collaborative content process, this study was able to generate rich, context-sensitive findings that contribute meaningfully to the field of inclusive and hospital-based education.

Purposive Sampling

- Hospitalized students (aged 10–17) receiving remote instruction.

- Classroom teachers coordinating the content.

Sample Size:

1. Three hospitalized students.
2. Three teachers.

3.3 Procedure

Ethical Clearance and Consent

1. Ethical approval was obtained from the relevant institutional review boards.
2. Informed consent was secured from all participants (students, parents/guardians, teachers), with a clear explanation of the study's purpose, confidentiality measures, and voluntary participation.

Participant Selection

Purposive sampling was used to identify:

1. Three hospitalized students (aged 10–17) who were receiving remote instruction.
2. Three classroom teachers who coordinated collaborative content.

Semi-Structured Interviews

1. Individual interviews were conducted with the three hospitalized students.
2. The interviews focused on emotional responses, perceived connection to peers, and motivation to learn.
3. Open-ended questions were used to explore how different content formats (e.g., voice, visuals) influenced their experience.

Teacher Reflections

1. The three teachers were interviewed to understand their intentions, coordination strategies, and observations of student engagement.
2. Challenges and the perceived impact of collaborative content on hospitalized learners were explored during these interviews.

4.0 Findings

This section shares what was learned from interviews with three hospitalized students and three teachers. It focuses on how personalized materials like illustrated slides, voice recordings, and written messages, helped students feel emotionally supported, connected to their classmates, and motivated to learn. The findings are grouped into two parts: (1) students' emotional and learning experiences, and (2) teachers' strategies and reflections on how the content helped.

4.1 Emotional Responses of Hospitalized Students

- All three students described the collaborative materials as emotionally uplifting and comforting.
- Personalized messages and illustrated slides made them feel "remembered" and "still part of the class," reducing feelings of isolation.
- Voice recordings from peers were especially impactful, creating a sense of presence and warmth.

4.2 Perceived Connection to Peers

- Students felt a strong sense of social continuity through the content, particularly when classmates included jokes, shared memories, or drawings.
- One student noted, "Even though I'm not there, I feel like I'm still in the group."
- The materials helped maintain peer identity and classroom belonging.

4.3 Motivation to Learn

- Receiving collaborative content increased students' motivation to complete tasks and engage with lessons.
- Students expressed a desire to reciprocate, such as sending thank-you notes or contributing their own ideas.
- The emotional support embedded in the content translated into academic persistence.

4.4 Teachers' Intentions and Coordination Strategies

- Teachers aimed to foster emotional connection and learning continuity by curating content that was both pedagogically relevant and personally meaningful.
- They coordinated with classmates to ensure contributions were inclusive, age-appropriate, and emotionally sensitive.
- Teachers emphasized the importance of multimodal formats to accommodate students' energy levels and emotional states.

4.5 Challenges Faced by Teachers

- Time constraints and technical limitations occasionally hindered content creation and delivery.

- Teachers had to balance curriculum demands with emotional responsiveness.
- Ensuring equitable participation from classmates required ongoing encouragement and scaffolding.

4.5 Perceived Impact on Hospitalized Learners

- Teachers observed increased engagement and emotional resilience among the students who received collaborative content.
- They noted improvements in students' willingness to participate in remote tasks and maintain contact with peers.
- The approach was seen as a bridge between academic instruction and emotional care.

5.0 Discussion

The findings of this study affirm the emotional and pedagogical value of personalized, multimodal content in supporting hospitalized students. Students described collaborative materials such as illustrated slides, voice recordings, and written messages as emotionally uplifting and comforting. These responses echo Morgado et al. (2024), who found that video-based interventions in health education significantly improved learning outcomes when designed with emotional relevance and visual clarity. The sense of being "remembered" and "still part of the class" reported by students in this study illustrates how emotionally attuned content can reduce isolation and foster belonging, a critical affective dimension often overlooked in remote instruction.

These findings highlight the role of emotionally responsive, peer-created content in supporting hospitalized students. Such materials not only sustain academic engagement but also nurture emotional well-being and belonging. Students described feeling "remembered" and "still part of the class," showing that learning in vulnerable contexts is relational and affective. To understand how personalized, multimodal content achieves this dual impact, the findings are examined through established theories. Frameworks such as the Cognitive Theory of Multimedia Learning (CTML), Social Cognitive Theory, and New Pedagogies for Deep Learning (NPDL) help explain the cognitive and emotional mechanisms and situate the study within inclusive pedagogy.

Mayer's Cognitive Theory of Multimedia Learning (CTML, 2021) explains that learners process information more effectively when content is delivered through both visual and auditory channels, if cognitive load is managed. In this study, illustrated slides, voice recordings, and written messages reflected CTML's principles of dual-channel processing and personalization. Students reported emotional uplift, especially from voice messages and personalized visuals, showing that these materials not only conveyed information but also activated affective pathways that improved attention and memory. This supports Mayer's view that emotionally relevant multimedia enhances motivation and reduces extraneous load, fostering deeper learning.

Bandura's Social Cognitive Theory highlights social modeling, self-efficacy, and reciprocal interaction. Students' feelings of being "remembered" and "still part of the class" illustrate the importance of social presence and peer modeling in sustaining engagement. Voice recordings and peer-generated messages provided vicarious experiences that strengthened self-efficacy, reinforcing confidence and persistence even during hospitalization.

The use of multimodal content reflects Universal Design for Learning (UDL) principles, which promote multiple means of representation, engagement, and expression (CAST, 2018). By providing materials in visual, auditory, and written formats, teachers addressed the diverse needs and emotional states of hospitalized students. This flexibility allowed learners to engage at their own pace and energy levels, supporting inclusive and emotionally responsive learning environments.

Students' sense of connection to peers through jokes, shared memories, and drawings aligns with Navarrete et al. (2025), who highlight how personalization and emotional tone in video content enhance engagement and retention. Peer-recorded voice messages in this study also reflect Suen and Hung's (2024) findings that vocal warmth and instructor presence strengthen affective engagement in asynchronous formats. Such elements were especially meaningful for hospitalized learners, who benefited from familiar voices and supportive narratives.

These findings emphasize the importance of emotional design and social presence in video-based learning. Social Presence Theory explains that feeling "with others" in mediated environments boosts emotional engagement and motivation. Peer-generated voice recordings and personalized visuals created warmth and belonging, serving as emotional anchors that reduced isolation and reinforced classroom identity for hospitalized students.

Krashen's Affective Filter Hypothesis, though developed for language learning, helps explain how emotions shape learning. When students feel safe, motivated, and connected, their affective filter is lowered, allowing better processing and retention of input. In this study, supportive narratives and familiar voices likely reduced stress and isolation, enabling hospitalized students to engage more fully with academic content. Their motivation to reciprocate through thank-you notes or sharing ideas - shows how emotional support can foster persistence. This echoes Wang et al. (2025), who found interactive video-based case learning enhanced autonomy and critical thinking, and Ahmed et al. (2025), who reported that flexible video formats reduced stress and supported self-paced learning.

These findings highlight the value of emotional support and flexible design in sustaining motivation. Self-Determination Theory (SDT) explains this connection, emphasizing autonomy, competence, and relatedness as drivers of intrinsic motivation. Personalized, peer-generated content supported autonomy by letting students engage on their own terms, while voice recordings and messages reinforced relatedness. The desire to reciprocate reflected competence and social connection. Together, these elements nurtured intrinsic motivation, aligning with Ahmed et al. (2025), who showed that emotionally responsive formats foster autonomy and resilience in challenging contexts.

Mayer's theory underscores the importance of dual-channel processing, personalization, and emotional design in multimedia instruction. The multimodal materials used in this study, combining visuals, voice, and text likely supported cognitive engagement while also reducing emotional barriers to learning. The emotional tone embedded in peer messages and voice recordings may have

lowered cognitive load and increased motivation, enabling students to persist with academic tasks despite physical and emotional challenges.

Teachers' strategies in this study, curating content that was both pedagogically relevant and emotionally sensitive, reflect principles of Universal Design for Learning (CAST, 2018) and socio-emotional pedagogy. Their emphasis on multimodal formats to accommodate students' energy levels and emotional states resonates with Soelistya et al. (2023), who found that emotionally rich, interactive environments promote deeper learning and resilience. Although immersive technologies may not be feasible in all hospital settings, the pedagogical principles of narrative immersion and emotional scaffolding can inform simpler, accessible video formats.

Challenges faced by teachers, including time constraints and balancing curriculum demands with emotional responsiveness, highlight the need for institutional support and collaborative planning. Despite these barriers, teachers observed increased engagement and emotional resilience among students who received collaborative content, suggesting that such approaches serve as a bridge between academic instruction and emotional care.

These findings show that when students feel emotionally supported, their motivation and willingness to engage in learning increases. To understand how this emotional support leads to academic persistence, it helps to explore theories that explain the link between well-being, autonomy, and sustained learning.

Bronfenbrenner's theory emphasizes that learners and educators are embedded within multiple, interacting systems—ranging from the immediate classroom (microsystem) to institutional policies and societal expectations (exosystem and macrosystem). The time and resource constraints reported by teachers in this study reflect pressures from the exosystem, for example, administrative workload and curriculum pacing guides, which can limit their capacity to respond emotionally to students. However, the observed benefits of collaborative, personalized content suggest that when microsystem-level relationships, for example, teacher-student-peer interactions are intentionally nurtured, they can buffer the effects of broader systemic limitations and promote student well-being.

The NPD framework (Fullan et al., 2018) advocates for learning environments that prioritize well-being, collaboration, and character development alongside academic rigor. Teachers in this study enacted NPD principles by curating content that was not only pedagogically aligned but also emotionally meaningful. Their efforts to scaffold peer contributions, ensure inclusivity, and adapt formats to students' emotional and physical capacities reflect a commitment to learning partnerships and whole-child development. Despite institutional constraints, these teachers demonstrated that deep learning is possible when emotional care is integrated into instructional design.

Teacher resilience refers to the capacity of educators to sustain commitment and effectiveness in the face of challenges. The teachers in this study exhibited what Gu and Day (2013) describe as "resilience-in-action" - balancing emotional labor with pedagogical intent. Their ability to respond to students' emotional needs while navigating logistical and technical barriers illustrates the relational and moral dimensions of teaching. This resilience was relational and systemic, supported by collaboration with peers and students. Addressing a gap in literature focused mainly on adult learners, this study offers insights into how emotionally responsive, peer-generated video content supports hospitalized school-aged students. It underscores the importance of designing learning that honors both cognitive and affective needs, and calls for further research into scalable, inclusive hospital-based education.

6.0 Limitations

This study's findings are limited by its small, context-specific sample of hospitalized students and teachers, which restricts generalizability. Reliance on self-reported experiences may introduce bias, while emotional responses could be influenced by individual circumstances beyond the intervention. Additionally, the focus on multimodal, peer-generated content means other instructional approaches were not examined. Future research should expand participant diversity and explore broader contexts to strengthen validity and applicability.

7.0 Conclusion & Recommendations

This study shows the emotional and pedagogical value of personalized, collaborative content for hospitalized students. Semi-structured interviews revealed that illustrated slides, voice recordings, and handwritten messages uplifted students, strengthened peer connections, and motivated learning. These resources-maintained classroom belonging and reduced isolation, highlighting the importance of emotionally resonant practices during medical absence. Teachers played a key role in curating inclusive, meaningful content. Despite time and technical challenges, their efforts ensured learning continuity and emotional care. Findings affirm that multimodal, collaborative content bridges hospital and school, supporting both cognitive engagement and emotional resilience.

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Paper Contributed to Related Field of Study

This study advances inclusive and health-related education by showing how personalized, multimodal content especially video-based and peer-generated materials supports hospitalized students' emotional well-being and learning continuity. Unlike prior research focused mainly on academic outcomes, it highlights the affective dimension, where emotional tone, peer connection, and multimodal design foster motivation and belonging. Centering student and teacher voices, the findings extend Universal Design for Learning and socio-emotional pedagogy, suggesting new directions for hospital-based instruction.

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