



Toward Bridging the Conceptual Gap in Pancasila Education: A Multi-Source Needs Analysis for Interactive Multimedia Design

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Abstract

This study addresses a persistent conceptual gap in fifth-grade Pancasila Education specifically in learning norms, rights, and obligations by conducting a systematic multi-source needs analysis for interactive multimedia design. Grounded in Mayer's Cognitive Theory of Multimedia Learning and Piaget's developmental framework, the study employed a qualitative descriptive approach in which descriptive statistics from student questionnaires were used to quantify identified needs and strengthen qualitative interpretations drawn from interviews and observations. Data were collected from 175 students and 7 classroom teachers across seven elementary schools in Ngaglik District, Sleman Regency, Yogyakarta, from January to March 2026, using purposive sampling. Three research questions guided the study, addressing learning process conditions, conceptual understanding, and multimedia needs. Findings revealed a significant pedagogical gap between students' high motivational readiness (93.1%) and instructional quality, as lecture-based methods dominated with minimal use of interactive media. Students' conceptual understanding averaged only 50.1% across six indicators, reflecting a systematic gap between declarative knowledge and applied understanding a dual limitation explicable through the convergent application of CTML and Piaget's concrete operational framework. All students (100%) expressed a need for accessible and engaging learning media, with over 94% requesting interactive features such as animations, quizzes, and collaborative tools, unanimously endorsed by all seven teachers and corroborated by the complete absence of purpose-built multimedia in all observed schools. Unlike prior studies relying on single data sources or broad Pancasila themes, this study contributes a triangulated, context-specific needs profile and theoretically grounded design specifications to advance interactive multimedia development for this underexplored topic and grade level.

Keywords: conceptual understanding; elementary school; interactive multimedia; needs analysis; norms, rights and obligations;

Menjembatani Kesenjangan Konseptual dalam Pendidikan Pancasila: Analisis Kebutuhan Multi-Sumber untuk Perancangan Multimedia Interaktif

Abstrak

Penelitian ini mengkaji kesenjangan konseptual yang persisten dalam pembelajaran Pendidikan Pancasila kelas V khususnya pada materi norma, hak, dan kewajiban melalui analisis kebutuhan multi-sumber yang sistematis untuk desain multimedia interaktif. Berlandaskan Cognitive Theory of Multimedia Learning Mayer dan teori perkembangan kognitif Piaget, penelitian ini menggunakan pendekatan kualitatif deskriptif dengan statistik deskriptif dari kuesioner siswa untuk mengkuantifikasi kebutuhan yang teridentifikasi dan memperkuat interpretasi kualitatif dari wawancara dan observasi. Data dikumpulkan dari 175 siswa dan 7 guru kelas V di tujuh sekolah dasar di Kecamatan Ngaglik, Kabupaten Sleman, Yogyakarta, pada periode Januari hingga Maret 2026 menggunakan teknik purposive sampling. Tiga pertanyaan penelitian memandu studi ini, mencakup kondisi proses pembelajaran, pemahaman konseptual, dan kebutuhan multimedia. Temuan mengungkapkan kesenjangan pedagogis signifikan antara kesiapan motivasional siswa yang tinggi (93,1%) dengan kualitas pembelajaran, karena metode ceramah mendominasi dengan penggunaan media interaktif yang sangat terbatas. Pemahaman konseptual siswa rata-rata hanya 50,1% dari enam indikator, mencerminkan kesenjangan sistematis antara pengetahuan deklaratif dan pemahaman terapan

keterbatasan ganda yang dapat dijelaskan melalui penerapan konvergen CTML dan kerangka operasional konkret Piaget. Seluruh siswa (100%) menyatakan kebutuhan terhadap media pembelajaran yang mudah dipahami dan menarik, dengan lebih dari 94% menginginkan fitur interaktif seperti animasi, kuis, dan pembelajaran kolaboratif, yang didukung penuh oleh seluruh guru dan dikuatkan oleh tidak tersedianya multimedia khusus di semua sekolah yang diobservasi. Berbeda dari studi sebelumnya yang mengandalkan sumber data tunggal atau tema Pancasila yang luas, penelitian ini berkontribusi melalui profil kebutuhan yang tervalidasi triangulasi dan spesifikasi desain berbasis teori untuk memajukan pengembangan multimedia interaktif pada topik dan jenjang kelas yang selama ini kurang dieksplorasi.

Kata kunci: analisis kebutuhan, hak dan kewajiban, multimedia interaktif, norma, pemahaman konsep, sekolah dasar

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INTRODUCTION

Indonesian society is known for its rich cultural heritage and diverse ideologies. Pancasila, as the foundation of the state, serves as the basis for everyday life, laws, and politics. It also represents the core values that shape the character of the nation. These values are taught through Pancasila education, which plays a crucial role in shaping the character and identity of the Indonesian people ([Ladjard et al., 2025](#)). According to Decision No. 046 of 2025 issued by the Head of BSKAP, Pancasila education is a subject that covers information about Pancasila and civic education. Its purpose is to help students become citizens who are intelligent, honest, virtuous, and responsible.

At the elementary school level, the purpose of this subject isn't merely to help students memorize information, but also to instill moral and social values such as cooperation, tolerance, and responsibility. One of the key competencies in teaching Pancasila at the elementary level is a deep understanding of concept related to norms, rights, and obligations ([Sadiah et al., 2024](#)). Norms refer to rules or guidelines for behavior that apply in societal life, rights are things that every individual deserves to have, and obligations are everything that must be carried out with full responsibility ([Sartika et al., 2024](#); [Nugraha et al., 2025](#); [Surinjaya et al., 2025](#)). These three concepts are foundational to the development of disciplined, fair, and socially aware citizens, and their mastery requires not only cognitive understanding but also value internalization across everyday contexts of family, school, and community ([Afan et al., 2024](#); [Nugraha et al., 2025](#)).

Despite their importance, these concepts remain persistently difficult to teach and learn in elementary schools. Students frequently demonstrate an ability to recall definitions but struggle to apply conceptual understanding to real-life situations, recognizing norms in their environment, differentiating rights across contexts, or grasping the relational balance between rights and obligations ([Nugraha et al., 2025](#); [Susilawati et al., 2025](#)). This difficulty is compounded by prevailing instructional practices that rely heavily on lectures and textbook-based methods, which fail to provide the contextual grounding necessary for meaningful conceptual learning ([Rosalina & Suhardi, 2020](#); [Agustian et al., 2025](#); [Fathonah et al., 2025](#)). As a result, a persistent gap exists between what students are taught and what they are able to apply in authentic situations ([Surinjaya et al., 2025](#)).

Interactive multimedia has been widely identified as an effective pedagogical response to these instructional challenges. Defined as an integrated combination of text, images, audio, video, and animation that enables active student engagement, interactive multimedia can make abstract concepts more accessible and foster deeper participation in the learning process ([Surjono, 2017](#)). In the context of Pancasila Education, interactive multimedia can be integrated with contextual simulations, educational games, and reflective quizzes to support both cognitive understanding and character development ([Agustian et al., 2025](#); [Widyatama, 2025](#)). Empirical studies have consistently demonstrated its effectiveness in improving conceptual understanding, learning motivation, and student outcomes across various subjects ([Yuningsih & Haeruddin, 2024](#); [Distiliana & Efan, 2024](#); [Amelia & Juhana, 2025](#); [Liana et al., 2025](#); [Wahyudi & Kawuryan, 2025](#)).

The theoretical basis for this effectiveness is grounded in [Mayer's \(2014\)](#) Cognitive Theory of Multimedia Learning (CTML), which posits that meaningful learning occurs when verbal and visual information are processed simultaneously through dual cognitive channels auditory and visual, as well as integrated with prior knowledge in working memory. According to CTML, instruction that relies exclusively on verbal or textual delivery activates only one channel, constraining the depth of cognitive processing students can achieve. Conversely, multimedia that combines text, images, animation, and interactivity distributes cognitive load across both channels, thereby enhancing encoding, retention, and transfer of knowledge. For the specific content of norms, rights, and obligations concepts that are inherently relational, contextual, and socially situated the visual and interactive dimensions of multimedia are not merely motivational supplements but cognitively necessary conditions for meaningful understanding ([Adeyele, 2024](#); [Annamalai & Leng, 2025](#)). CTML therefore provides the theoretical rationale for why interactive multimedia is the appropriate instructional medium for this content, and informed the identification of multimedia features animations, quizzes, simulations, and collaborative tools as key dimensions of the needs analysis instrument in this study.

Complementing this cognitive framework is [Piaget's \(1972\)](#) theory of cognitive development, which identifies fifth-grade students as residing at the transition between the concrete operational and early formal operational stages. At this developmental juncture, learners require concrete, tangible, and experientially grounded examples as cognitive scaffolding before abstract reasoning can occur. Instruction that presents norms, rights, and obligations primarily through text-based definitions without contextual

simulation, visual narrative, or experiential anchoring is developmentally misaligned: it demands formal operational reasoning before the necessary concrete scaffolding has been established. This developmental framework informed the design of the needs analysis instrument, specifically the inclusion of indicators assessing students' ability to apply concepts to real-life scenarios rather than merely recall definitions and provides the theoretical basis for interpreting why the conceptual gap between definitional recall and applied understanding is systematically predictable under current instructional conditions.

Despite the growing evidence base for interactive multimedia and the theoretical frameworks that justify its use, critical gaps remain in the existing literature. Most prior studies on interactive multimedia in Pancasila Education have targeted broad character education or general Pancasila values without specifically addressing the conceptual triad of norms, rights, and obligations at the fifth-grade level (Nugraha et al., 2024; Dewi et al., 2025; Fadilah et al., 2025). Furthermore, existing needs analysis studies in this domain have typically relied on a single data source either student questionnaires or teacher interviews alone limiting the depth, triangulability, and validity of their findings (Fathonah et al., 2025; Jayanti et al., 2025). Studies that integrate multiple data sources within this specific topic and grade level remain scarce, leaving a gap that this research seeks to address.

To address these gaps, this study is guided by three research questions focusing on the learning process, students' conceptual understanding, and the need for interactive multimedia in Pancasila Education. Specifically, the study examines the learning process conditions experienced by fifth-grade students in learning the topics of norms, rights, and obligations. It also investigates the level of students' conceptual understanding of these topics to identify their strengths and learning difficulties. Furthermore, the study explores the interactive multimedia features that both fifth-grade students and teachers perceive as necessary to support and enhance students' conceptual understanding of norms, rights, and obligations.

The study conducts a systematic needs analysis integrating three complementary data sources to generate empirically grounded and triangulated design specifications. The contribution of this research advances existing knowledge in two ways. Methodologically, it moves beyond the single-source needs analyses that dominate prior literature by integrating student questionnaires, teacher interviews, and classroom observations, a triangulation approach that produces a more comprehensive and internally validated needs profile than any single source could yield. Substantively, by focusing specifically on the conceptual triad of norms, rights, and obligations at the fifth-grade level and grounding the analysis in both Mayer's (2014) CTML and Piaget's (1972) developmental framework, this study generates design specifications that are simultaneously theoretically informed, contextually grounded, and empirically validated a combination absent from prior needs analysis research in this domain.

METHODS

This study employed a qualitative descriptive approach to systematically analyze the needs of fifth-grade elementary school students for interactive multimedia in Pancasila Education. Within this approach, descriptive statistics derived from student questionnaires were used to quantify the prevalence of identified needs, thereby supporting and strengthening the qualitative interpretations drawn from interviews and observations. This combined use of numerical description and qualitative interpretation is consistent with qualitative descriptive research that incorporates descriptive statistical data to enhance the depth and clarity of findings (Sandelowski, 2000). The theoretical frameworks of Mayer (2014) and Piaget (1972), introduced in the preceding section, informed both the design of the research instruments and the analytical categories used to interpret the findings.

Research Setting and Participants

This study was conducted across seven public elementary schools in Ngaglik District, Sleman Regency, Yogyakarta, from January to March 2026. The district was selected as the research site because it represents a typical suburban educational context in the Yogyakarta region, with schools that vary in size, resource availability, and geographic location, thereby providing a diverse yet contextually coherent sample for needs analysis purposes.

Participants consisted of 175 fifth-grade students and 7 classroom teachers. Students were drawn from all seven schools, with the number of participants per school determined by the total enrollment in the fifth grade at each institution. All available fifth-grade students at each school were invited to participate, resulting in a naturally varied sample in terms of gender and learning background. The seven classroom teachers one from each school were selected because they were the primary instructors responsible for

delivering Pancasila Education at the fifth-grade level during the research period. Participants were selected through purposive sampling, with the defining criterion being direct involvement in fifth-grade Pancasila Education during the data collection period.

Data Collection

Data were collected through three complementary instruments. First, a structured questionnaire of 18 items across three dimensions learning process, conceptual understanding, and multimedia needs was administered to all 175 students using a dichotomous response format (Yes/No). Items were developed based on Mayer's (2014) CTML and Piaget's (1972) developmental framework to assess both motivational and cognitive dimensions of students' learning experiences. Second, semi-structured interviews were conducted with all seven teachers to explore instructional practices, perceived student difficulties, and multimedia needs. Third, classroom observations were carried out in each school, focusing on dominant instructional methods, observable indicators of conceptual engagement, and the presence or absence of interactive media. The instrument underwent content validity assessment through expert judgment by one specialist in elementary Pancasila Education and was declared fit for use following one round of revision.

Data Analysis

Qualitative data from interviews and observations were analyzed using the interactive model of Miles & Huberman (2014), comprising three concurrent stages: data condensation, data display, and conclusion drawing and verification. Data condensation involved manually coding transcripts and observation notes by identifying recurring patterns relevant to each research theme, with codes assigned at the statement level, grouped into sub-themes, and consolidated into three overarching themes. Data display involved organizing condensed findings into structured summary tables for cross-source comparison. Conclusion drawing synthesized patterns across all three sources to produce integrated thematic conclusions for each research question. Quantitative data from the questionnaire were analyzed by calculating response frequencies and percentages, interpreted within the qualitative framework to identify patterns and substantiate findings.

Triangulation Process

Validity was established through systematic triangulation involving two complementary strategies. For method triangulation, findings from each instrument were cross-referenced thematically: percentage distributions from the student questionnaire were compared against teacher interview statements and observational evidence for each theme, with convergence confirming findings and divergence prompting re-examination of the data. Source triangulation compared perspectives from students and teachers, corroborated against direct observational evidence. Member checking was additionally employed to confirm key interview findings with participants. This triangulation process produced the integrated thematic findings reported in the Results and Discussion section.

Ethical Considerations

Prior to data collection, official research permission was obtained from Yogyakarta State University, and institutional approval was secured from the principals of all seven participating schools. All classroom teachers provided informed consent before participating in interviews and observations. Student participation was voluntary, and all data were treated with strict confidentiality, with no identifying information linked to individual responses in the reporting of findings.

RESULTS AND DISCUSSION

Result

This needs-analysis study was conducted from January to March 2026, involving 175 students and 7 fifth-grade teachers from seven elementary schools in Ngaglik District, Sleman Regency. Data was collected through questionnaires, observations, and interviews. The demographic details of the respondents are presented in Tables 1 and 2.

Table 1. Frequency of Student Gender

Gender	Number	Percentage
Female	84	48%
Male	91	52%
Total	175	100%

Table 2. Frequency of Teacher Gender

Gender	Number	Percentage
Female	4	57%
Male	3	43%
Total	7	100%

The distribution of respondents is relatively balanced between males and females across both groups, strengthening the representativeness of the data collected regarding actual conditions of Pancasila Education in fifth-grade elementary schools.

Data Condensation

The data condensation process involved manually coding and selecting the most relevant information from questionnaire responses, interview transcripts, and observation notes, organized around three research themes corresponding to the three research questions. Recurring patterns were identified across sources and consolidated into the summary tables below.

Table 3. Condensed Findings of Student Needs Analysis Questionnaire

Theme	Key Finding	Percentage
Learning Process	Students are enthusiastic about Pancasila Education lessons.	93.1%
	Only about half of students find the teacher's explanations easy to understand or illustrated with real-life examples.	46.3-49.1%
	Students feel significantly more motivated and comprehend material better when instructional media is used.	96-98.3%
Concept Understanding	Students have a basic understanding of the general definition of norms; deeper conceptual grasp is limited.	63.4%
	Fewer than half of students can cite examples of norms from their immediate environment	37.7%
	Understanding of rights is partial; students struggle to differentiate rights across contexts (school vs home).	48.6-56%
	Understanding of the balance between rights and obligations is the weakest conceptual area.	41.1%
Interactive Multimedia Needs	All students want instructional media that is easy to understand and non-confusing.	100%
	Students strongly desire interactive features: quizzes or games, animations, expression of personal experience, and collaborative (paired learning).	94.3-98.9%
	Students believe interactive multimedia will help them better understanding norms, rights and obligations.	97.1%

Based on the student needs analysis questionnaire, the findings show that although most fifth-grade students are enthusiastic about Pancasila Education (93.1%), only about half find the teacher's explanations easy to understand (46.3–49.1%). Most students also reported that instructional media improve their motivation and understanding (96.0–98.3%). Their conceptual understanding remains limited, particularly in applying norms, distinguishing rights across contexts, and understanding the balance between rights and obligations (37.7–63.4%). Furthermore, students expressed a strong need for interactive multimedia, with all students (100%) preferring clear and easy-to-understand media, 94.3–98.9% requesting interactive features, and 97.1% believing that such multimedia would enhance their understanding of norms, rights, and obligations.

Table 4. Condensed Findings of Teacher Interview Data

Theme	Main Finding	Representative Quote
Learning Process	All teachers view Merdeka Curriculum positively for its flexibility but emphasise it demands greater creativity and use of varied, contextual media. Limited availability of interactive media is identified as the primary learning barrier.	"Students get bored easily with text-based learning methods. Therefore, more interactive teaching methods and strategies are necessary." (T1)
Concept Understanding	Students can recall basic definitions but struggle to connect norms, rights, and obligations to real-	"The main difficulty is understanding the meaning and differences between norms,

Theme	Main Finding	Representative Quote
	life contexts. The abstract nature and wide scope of the material are the core difficulties.	rights, and obligations. These concepts seem abstract to elementary school students." (T1)); "Students don't yet understand how rights and obligations relate to their everyday lives." (T2)
Interactive Multimedia Needs	All seven teachers strongly support the development of interactive website-based multimedia, emphasizing the need for contextual simulations, quizzes, visual content, and features that deepen conceptual understanding.	"Multimedia allows for the presentation of information in a visual and interactive manner, making it easier for students to understand." (T1) "Website-based multimedia can present information about norms, rights, and obligations in a more engaging format." (T7)

Based on the teacher interviews, all teachers viewed the Merdeka Curriculum positively because it provides flexibility in teaching, although it requires greater creativity and the use of varied instructional media. Teachers identified the limited availability of interactive learning media as a major challenge in teaching Pancasila Education. They also reported that students generally understand basic definitions but experience difficulties in relating the concepts of norms, rights, and obligations to real-life situations due to their abstract nature. Consequently, all teachers strongly supported the development of interactive website-based multimedia incorporating contextual simulations, quizzes, and visual content to improve students' conceptual understanding and learning engagement.

Table 5. Condensed Findings of Classroom Observation

Theme	Main Finding	Implication
Classroom Learning Atmosphere	Lessons are predominantly delivered using the lecture method supported by textbooks and LKS. Digital media (LCD, video) is used occasionally and not systematically.	Students receive limited variety of media, restricting opportunities for active and contextual engagement.
Concept Comprehension in practice	When asked to apply concepts to real-life scenarios (e.g., identifying norms in their school), responses are superficial, imprecise, or inconsistent. Students reproduce definitions when prompted but struggle with applications.	Confirms a clear gap between declarative knowledge (definition recall) and applied conceptual understanding.
Available Instructional Media	Schools are equipped with LCD projectors and limited digital devices; however, interactive multimedia specifically designed for Pancasila Education material is absent in all observed schools.	Confirms the urgency of developing purpose-built interactive multimedia for this subject and grade level.

Based on the classroom observations, Pancasila Education lessons were predominantly conducted using the lecture method supported by textbooks and student worksheets (LKS), while digital media such as LCD projectors and videos were used only occasionally. As a result, students had limited opportunities to engage actively with the learning material. Observations also showed that although students could recall basic definitions, they struggled to apply the concepts of norms, rights, and obligations to real-life situations, indicating a gap between factual knowledge and conceptual understanding. Furthermore, while schools had basic digital facilities, no interactive multimedia specifically designed for Pancasila Education was available, highlighting the need to develop purpose-built interactive multimedia for fifth-grade learning.

Discussion

Data Display

The following section integrates findings from the three data sources thematically, presenting each research theme through a narrative that combines questionnaire data, interview statements, and observational evidence, followed by critical interpretation grounded in the theoretical frameworks established in the Introduction.

Learning Process of Pancasila Education

Questionnaire results indicate that 93.1% of students are enthusiastic about Pancasila Education. However, a significant gap exists between this enthusiasm and the quality of instructional delivery: only 46.3% of students found teachers' explanations easy to understand, and only 49.1% reported that teachers used real-life examples. In contrast, 98.3% felt more motivated when engaging media was used, and 96.0% found it easier to understand material when teachers used instructional aids. Teacher interviews consistently reinforced these findings. All seven teachers identified the limited availability of interactive media as the primary obstacle to effective Pancasila instruction. Teacher 1 noted that students *"get bored easily with text-based learning methods,"* while Teacher 2 emphasized that Generation Alpha students are fundamentally oriented toward digital and visual stimuli. Teacher 6 added that students disengage when exposed to excessive text-based content and need varied, contextual media that encourages active participation. Classroom observations confirmed that in all seven schools, lectures, textbooks, and worksheets remained the dominant instructional methods, with digital media used sporadically and without systematic integration.

These findings reveal not merely a preference gap but a deeper pedagogical misalignment that is theoretically explicable through Mayer's (2014) CTML. Instruction that relies exclusively on verbal delivery activates only the auditory channel, leaving the visual channel underutilized and constraining the depth of cognitive processing students can achieve. This finding is consistent with Adeyele (2024), who demonstrated that interactive multimedia significantly outperformed lecture-based instruction in supporting conceptual achievement across varying ability levels, and with Annamalai & Leng (2025), who found that multimedia tools with pedagogical agent support produced significantly higher user engagement and learning acceptance than text-only alternatives. However, an alternative explanation warrants consideration: the motivational gap observed in this study may also reflect broader generational shifts in attention and media consumption patterns among Generation Alpha students, rather than solely a function of instructional design. This does not diminish the need for multimedia, but suggests that motivational responsiveness to media alone is insufficient; the multimedia developed must also be pedagogically structured to convert motivational engagement into conceptual learning (Wahyudi & Kawuryan, 2025).

Concept Understanding of Norms, Rights, and Obligations

Questionnaire results reveal that students' conceptual understanding remains low to moderate across all six measured indicators, averaging only 50.1%. The highest understanding was recorded for the general definition of norms (63.4%), while the weakest areas were citing contextual examples of norms (37.7%) and understanding the balance between rights and obligations (41.1%). Understanding of rights as citizens (56.0%), differentiation of rights across contexts (48.6%), and understanding obligations in daily life (53.7%) all fell below the 60% threshold. Teacher interviews provided direct corroboration: Teacher 1 noted that students *"are able to define norms in general terms, but their understanding of citizens' rights and responsibilities needs improvement,"* while Teacher 2 stated that understanding *"is still limited to general concepts and good behavior."* Teachers 4, 5, and 7 independently identified the same core problem: students cannot connect these concepts to real-life situations, and the broad scope of the material makes structured understanding difficult. Classroom observations confirmed this pattern when asked to identify examples of norms in their school environment, students' responses were consistently vague, repetitive, or irrelevant.

This pattern is theoretically explicable through the convergence of two frameworks. Anderson & Krathwohl (2001) distinguish between declarative knowledge, knowing *what*, and applied knowledge, knowing *how* and *when* to use it. Students in this study have acquired the former but have not been supported in developing the latter. Piaget's (1972) developmental theory explains why: fifth-grade students at the concrete-to-formal operational transition require contextually grounded, concrete examples as scaffolding before abstraction can occur. Current instruction, which presents norms, rights, and obligations through text-based definitions without contextual simulation, is developmentally misaligned. This finding aligns with Jayanti et al. (2025), who identified similar conceptual gaps in Pancasila Education and attributed them to the absence of contextually rich teaching materials, and with Fathonah et al. (2025), who found that needs for multimedia in elementary civic education were driven primarily by students' difficulty connecting abstract concepts to lived experience. An alternative explanation worth considering is that the conceptual gap may also reflect curriculum design factors specifically, whether the sequencing of concepts in the Merdeka Curriculum sufficiently scaffolds from concrete to abstract rather than solely instructional delivery. This suggests that the multimedia to be developed should not only present concepts visually but also follow

a carefully sequenced pedagogical progression from concrete examples to abstract principles (Agustian et al., 2025).

Theoretical Synthesis

Taken together, the findings from the first two themes reveal a convergent explanatory pattern that neither Mayer's (2014) Cognitive Theory of Multimedia Learning nor Piaget's (1972) developmental framework can fully account for independently. CTML explains *why* current instructional conditions limit students' cognitive engagement exclusive reliance on verbal delivery leaves the visual channel underutilized, constraining the depth of encoding and knowledge transfer that students can achieve. Piaget explains *why* this limitation carries developmental consequences fifth-grade students at the concrete-to-formal operational transition require concrete, experientially grounded scaffolding before abstract reasoning can be consolidated, a condition that text-based definitional instruction alone is insufficient to provide. The convergence of these two explanatory mechanisms in a single instructional context produces a compounding effect: instructional delivery is cognitively suboptimal (CTML) and developmentally premature (Piaget) at the same time. This dual limitation is what produces the systematic gap between declarative knowledge and applied understanding observed consistently across all three data sources. Interactive multimedia, within this theoretical framework, is not merely a motivational supplement or a technological addition it is the pedagogically appropriate response to a dual instructional limitation that operates simultaneously at the cognitive processing level and the developmental scaffolding level. This theoretical synthesis provides a completer and more actionable explanatory model for the conceptual gap than either framework could offer independently and directly informs the multimedia design specifications identified in the following theme.

Interactive Multimedia Needs

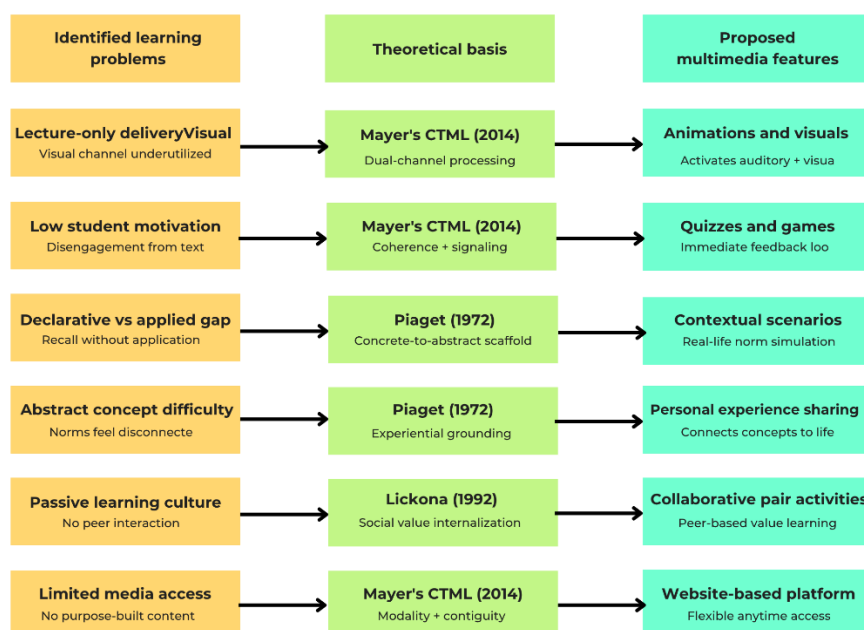
Questionnaire results demonstrate exceptionally high and consistent demand for interactive multimedia across all indicators. All 175 students (100%) unanimously preferred learning media that is easy to understand the only item achieving complete consensus. Other indicators received near-unanimous endorsement: quizzes or games (98.9%), expression of personal feelings and experiences (98.9%), belief that multimedia will improve understanding (97.1%), attractive images and animations (96.6%), and collaborative paired learning (94.3%). Teacher interviews reinforced these findings with full institutional endorsement. Teacher 1 emphasized that multimedia *"allows for the presentation of information in a visual and interactive manner, making it easier for students to understand"* directly reflecting the dual-channel processing principle of CTML. Teacher 7 added that *"website-based multimedia can present information about norms, rights, and obligations in a more engaging format."* Teacher 6 emphasized self-study features, Teacher 2 highlighted videos and simulations grounded in real-life experiences, and Teacher 3 noted the importance of flexible web-based access. Classroom observations confirmed that no interactive multimedia specifically designed for teaching norms, rights, and obligations was available or in use in any of the seven schools.

These findings go beyond confirming general multimedia effectiveness established in prior literature. They reveal a specific, structured, and multi-dimensionally validated needs profile for this context. The near-unanimous preference for quizzes and games (98.9%) reflects the pedagogical potential of gamification specifically, the use of game mechanics such as immediate feedback, progress indicators, and reward systems to sustain intrinsic motivation and increase time-on-task (Deterding et al., 2011; Quan et al., 2025). This is consistent with Wahyudi & Kawuryan (2025), who found that interactive multimedia incorporating game-based elements significantly improved learning engagement in elementary Pancasila Education, and with Agustian et al. (2025), who demonstrated that culturally contextual multimedia produced higher conceptual gains than generic digital content. The equally strong desire to express personal experiences (98.9%) and learn collaboratively in pairs (94.3%) indicates that the required multimedia must function as an interactive environment supporting self-expression and peer learning dimensions particularly significant for Pancasila Education's character development objectives, where value internalization requires experiential and social learning opportunities beyond cognitive absorption alone (Lickona, 1992). An alternative explanation for the unanimous multimedia demand warrants consideration: students' responses may partially reflect social desirability bias a tendency to endorse novel or technology-related options favorably regardless of genuine pedagogical need. However, the convergence of this demand across student questionnaires, teacher interviews, and observational evidence of absent media in all seven schools

substantially mitigates this concern, suggesting that the need is genuine and structurally grounded rather than merely attitudinal.

Collectively, these findings yield a concrete, theoretically grounded, and empirically validated set of design specifications. To make this specification explicit and actionable, Figure 1 presents a conceptual model that maps each identified learning problem to its theoretical basis and corresponding multimedia feature. As illustrated in Figure 1, every proposed feature is not a generic design preference but a direct response to a specific, theoretically explicable learning problem from animations addressing dual-channel deprivation (Mayer, 2014) to collaborative activities addressing the social dimension of value internalization (Lickona, 1992). This model is intended to serve as a transparent design rationale that can guide both the development and the evaluation of the interactive multimedia to be produced in subsequent research phases.

Figure 1. Conceptual model: from identified learning problems to multimedia design specifications



Practical Implications

The findings of this study carry concrete implications for teachers, instructional designers, and school administrators. For teachers, the identification of a persistent gap between declarative and applied understanding suggests that classroom instruction should prioritize contextual examples and real-life scenario discussions even within current resource constraints for instance, using role-play activities or case-based discussions about norms in family and school settings as interim strategies while multimedia resources are being developed. For instructional designers, the needs profile identified in this study provides actionable specifications: the multimedia should open with animated scenario-based vignettes that present real-life dilemmas involving norms, rights, and obligations, followed by interactive quizzes with immediate corrective feedback, collaborative pair activities where students discuss and reflect on personal experiences, and self-paced review modules accessible outside school hours via a website-based platform. Each feature directly maps onto a specific identified need rather than representing a generic design preference. For school administrators, the unanimous teacher endorsement of website-based delivery and the confirmed availability of LCD projectors and digital devices in all seven schools signals that infrastructural readiness exists the primary barrier is not hardware but the absence of purpose-built content. Investment in developing and institutionalizing such multimedia is therefore practically feasible and evidentially justified.

Beyond the specific context of Ngaglik District, the findings of this study hold broader implications for primary school civic education in Indonesia, as well as potential relevance for similar educational contexts elsewhere. The pedagogical misalignment identified in this study between students' motivational readiness, their cognitive developmental stages, and currently implemented teaching methods is not unique to Ngaglik or the *Pancasila* Education subject alone. Similar patterns have been observed across various regions and subject areas, where curricula based on abstract values are frequently delivered through text-heavy, didactic

methods that fail to align with the learning needs of upper-primary students in the concrete operational stage (Adeyele, 2024; Annamalai & Leng, 2025; Husnah et al., 2026; Ropita et al., 2026). The triangulation-based needs analysis framework employed here integrating student questionnaires, teacher interviews, and classroom observations offers a replicable methodological model; researchers and curriculum developers in other regions and disciplines can adapt it to identify context-specific multimedia needs with greater precision and validity than approaches relying on a single data source. Furthermore, the theoretical synthesis of CTML and Piaget's developmental framework as a dual diagnostic lens rather than using either theory in isolation provides a generalizable analytical approach for identifying and explaining instructional gaps where abstract conceptual material is taught to learners at the concrete developmental stage. These broader implications suggest that the conceptual gap documented in this study is not merely a local curriculum issue but a manifestation of a larger pedagogical challenge one that can be effectively addressed through the use of interactive multimedia specifically designed based on both cognitive and developmental theories.

CONCLUSION

This study analyzed the interactive multimedia needs of fifth-grade elementary school students in learning norms, rights, and obligations within Pancasila Education, drawing on data from 175 students and 7 teachers across seven elementary schools in Ngaglik District, Sleman Regency. Three converging findings emerged across all data sources, each corresponding to one of the three research questions guiding this study. Regarding learning process conditions, a significant pedagogical gap exists between students' high motivational readiness (93.1%) and the quality of instructional delivery, characterized by the dominance of lecture-based methods and the near-total absence of interactive media in all seven observed schools. This gap is not merely a resource problem but a structural instructional misalignment current delivery fails to activate the dual cognitive channels that Mayer's CTML identifies as necessary for meaningful learning of relational and contextual concepts such as norms, rights, and obligations.

Regarding conceptual understanding, students' grasp of norms, rights, and obligations remains low, averaging only 50.1% across six indicators, with the most critical weaknesses in applied understanding citing contextual examples of norms (37.7%) and grasping the balance between rights and obligations (41.1%). This pattern is developmentally predictable: Piaget's framework establishes that fifth-grade students require concrete, contextually grounded scaffolding before abstract reasoning can be achieved, yet current instruction presents these concepts primarily through text-based definitions without experiential anchoring. The result is a systematic gap between what students can define and what they can apply.

Regarding multimedia needs, there is a high, consistent, and multi-dimensionally validated demand for interactive multimedia, unanimously expressed by all students (100%) and endorsed by all seven teachers, spanning aesthetic, interactive, collaborative, and self-expressive dimensions. The convergence of this demand across three independent data sources and its corroboration by the complete absence of purpose-built multimedia in all observed schools confirms that this need is structurally grounded rather than merely attitudinal.

The primary contribution of this research is both empirical and practical, enriching the existing body of knowledge in a way that distinguishes it from prior studies in the field. Unlike earlier studies that relied on single data sources and addressed Pancasila themes in general terms—without targeting the specific conceptual triad of norms, rights, and obligations at the fifth-grade level—this research employs multi-source triangulation. It focuses on a fundamental yet under-researched conceptual triad (norms, rights, and obligations) and grounds its analysis in the convergent application of Mayer's CTML theory and Piaget's developmental theory. From a practical standpoint, the resulting specifications—comprising visually engaging animations, game-based quizzes, contextual scenario simulations, personal experience-sharing features, collaborative pair activities, and web-based accessibility—are each directly mapped to identified specific needs and theoretically supported by the conceptual model presented in Figure 1.

Limitations

This study has several limitations that future research should address. The research was conducted within a single district, constraining the generalizability of the findings to other geographic, demographic, or curricular contexts. The reliance on self-reported data from student questionnaires introduces the possibility of social desirability bias, which future studies should mitigate through additional performance-based assessment of conceptual understanding. Instrument validation relied on expert judgment by a single specialist, representing a methodological boundary that future studies should address through multi-expert

validation and reliability testing. Future research should therefore proceed sequentially: developing interactive multimedia prototypes based on these specifications, validating them through expert review, and testing their effectiveness through experimental or quasi-experimental designs under real classroom conditions — completing the bridge toward meaningful conceptual understanding that this needs analysis has begun to build.

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