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Implementation of Canva-Based Interactive Media in Fifth-Grade Natural and Social Sciences (IPAS): A Qualitative Classroom Study Amid Limited Devices

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Abstract

Background of study: Implementing interactive digital media in elementary classrooms requires alignment between instructional objectives, teacher support, and device access.
Aims and scope of paper: This qualitative study describes the implementation of Canva-based interactive media in fifth grade Natural and Social Sciences (IPAS) at MI Muhammadiyah Penaruban and identifies enabling conditions and constraints.
Methods: Data were obtained from three non-participant classroom observations on April 10, 17, and 24, 2025, teacher and student interviews, and learning documents. The study involved one class of 13 students, and student interview responses were summarized into three groups. Source and technique triangulation supported descriptive analysis.
Result: Within this single-class context, implementation involved preparation, five instructional stages, and follow-up. Device constraints changed individual exploration into group work, requiring teacher assistance with navigation. Students perceived the visual materials as engaging and the explanations as clearer. Preparation time, shared devices, and reported connectivity issues presented challenges.
Conclusion: Implementation depended on teacher mediation and adjustments to available resources and time. Student perceptions do not establish measurable gains in learning achievement.

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INTRODUCTION

Digital learning is often seen as a path to more independent participation, but the same technology can increase demands on teachers and create unequal opportunities for interaction. The availability of digital learning resources does not guarantee that every child can control them or learn effectively through them. A review of teachers' technology integration demonstrates the interconnectedness of professional knowledge, pedagogical choices, and organizational support (Wohlfart & Wagner, 2023). Research on elementary school teachers also places digital practices within the context of school culture, self-confidence, and available support (Spiteri & Chang Rundgren, 2020). These findings challenge the notion that installing an app is sufficient to transform learning. Visually engaging lessons can still require intensive explanation, technical troubleshooting,

and coordination. This tension is evident when several students share learning resources originally intended to support individual exploration. Therefore, observing the actual actions of teachers and students provides a stronger basis for understanding digital learning than simply using app use as evidence of innovation.

This issue is relevant to the teaching of Natural and Social Sciences (IPAS) in Indonesian elementary schools. In the classroom studied, the material introduced the components of the Earth, changes in surface conditions, and processes related to natural phenomena. Students needed to connect written explanations with illustrations and moving representations of processes that were not entirely directly observable during the lesson. Multimedia research provides a basis for combining complementary verbal and visual information, while emphasizing the influence of instructional design on information processing (Çeken & Taşkın, 2022). Findings on instructional videos also distinguish presentations that facilitate explanations from simply displaying moving images (Fiorella & Mayer, 2018). Canva provides a practical tool for teachers to organize text, images, videos, navigation buttons, and quizzes. However, students accessed the media through shared laptops and televisions used for classroom instruction. Therefore, the empirical question is how multimedia content becomes part of classroom activities under these access conditions.

Implementation studies must distinguish participation in an activity from demonstrated understanding. The ICAP framework differentiates behavioral activities from constructive and interactive knowledge-building processes (Chi & Wylie, 2014). In this classroom, navigating the media, watching videos, discussing ideas, and producing summaries represent different kinds of participation. Research on feedback likewise emphasizes the quality of information students receive, not simply the presence of a quiz (Wisniewski et al., 2020). Consequently, the analysis describes observable tasks and teacher support rather than treating positive reactions as evidence of improved achievement.

Multimedia research explains why the observed Canva features may support instruction under particular conditions. Signaling and cueing can direct attention to relevant material (Alpizar et al., 2020; Schneider et al., 2018), which is pertinent to navigation buttons and on-screen instructions, although interface cues are not identical to cues highlighting conceptual content. Spatial contiguity concerns the proximity of related words and illustrations (Schroeder & Cenkci, 2018), while segmentation concerns manageable units of visual and video content (Rey et al., 2019). The risk of irrelevant decorative details (Sundararajan & Adesope, 2020) is relevant to quizzes, videos, and other engaging components that should remain aligned with instructional objectives. These connections are interpretive: the study documented media components but did not test compliance with individual design principles or their effects. Reviews of multimedia learning, cognitive load, and accessible media production provide broader context (Noetel et al., 2022; Sweller et al., 2019; Cavanagh & Kiersch, 2023).

Other literature highlights the importance of teacher knowledge and context for technology integration. The technology, pedagogy, and content knowledge (TPACK) framework links digital tools to the pedagogical processing of subject matter (Mishra & Koehler, 2006). Its contextual extension explicitly recognizes that instructional decisions depend on the conditions surrounding the lesson (Mishra, 2019). A recent systematic review also examined how contextual knowledge is part of the expertise of teaching with technology (Brianza et al., 2024). Wohlfart and Wagner's (2023) umbrella review synthesized research on teacher digital literacy and integration practices as interconnected issues. A review of elementary school digital technology curricula identified professional learning needs and implementation challenges across diverse educational settings (Stringer et al., 2022). Research on digital classroom disruption also emphasized the ongoing need for classroom management and preventative support (Meinokat & Wagner, 2022). Technology acceptance studies explain adoption through the interplay of perceived usefulness and other factors, but the adoption of learning resources is analytically distinct from the settings in which they are used (Scherer et al., 2019). Taken together, these studies support observations of teacher-selected encounters, student activities, and resource limitations in real lessons.

Research specific to Canva provides promising insights but does not negate the need for implementation-focused evidence. Mintarsih and Putra (2023) developed a multimedia English language course for elementary schools and assessed its feasibility through expert and user assessments. Furthermore, Septianingrum and Ratri (2026) reviewed a Canva-based social studies

media for fourth-grade students and reported positive classroom responses. Both studies support the feasibility of developing interactive media for elementary schools but address different levels, materials, and evaluation procedures. These positive assessments do not address how other teachers manage shared access or address navigational issues. Research on videos in authentic classrooms suggests that teachers can add learning supports beyond the design features already available in the media (La Torre & Désiron, 2024). Studies of teacher misconceptions about multimedia also show that intuitive assessments of media do not always align with evidence-based principles (Prinz et al., 2022). A gap noted is the lack of contextualized descriptions of fifth-grade teachers' adjustments to interactive media when devices, time, and support needs limit individual pace. This gap relates to the implementation of learning, not the claim that Canva has never been researched.

Teacher created interactive media require more than an appealing interface: teachers must select material, organize activities, and manage access to devices. Research on educational technology in different settings highlights the influence of implementation conditions and support (Hennessy et al., 2022; Crompton et al., 2021). In the present classroom, shared laptops and time-limited lessons create a specific empirical problem: how the planned stages of interactive learning are enacted, modified, or deferred. Describing these adjustments can inform decisions about grouping, navigation assistance, and follow-up without assuming that Canva itself causes improved achievement.

This study aims to describe the implementation of Canva based interactive media in fifth grade Natural and Social Sciences (IPAS) learning at MI Muhammadiyah Penaruban. The study covers preparation, implementation, follow up, and supporting and inhibiting conditions. Implementation is examined through the stages of orientation, independent study, individualized support, enrichment, and content transition (the framework's material transfer stage) based on Rosnelli's (2009) interactive learning framework. Particular attention is paid to adapting planned self-study to group access in classroom practice. Teacher and student accounts are compared with observations and documents to identify congruences and differences between sources. Multimedia learning and contextual technology integration are used as additional perspectives to interpret the research findings. The research contribution is a description of the implementation that shows the relationship between media preparation, teacher guidance, access arrangements, and student participation in the face of device limitations. This study does not test achievement hypotheses, estimate treatment effects, or establish the superiority of Canva over other media.

METHOD

Research Design

The study used a qualitative field approach to describe the implementation of Canva-based interactive learning in a natural classroom environment. Researchers observed learning without providing intervention and collected teacher and student statements. This design aligns with the descriptive objective of understanding preparation, implementation, and follow-up, including difficulties during learning. The study unit was one VA class and its science and education learning practices, not a representative sample of elementary schools in general. Multimedia learning theory and technology integration were used to interpret the reported evidence, not as psychological measures (O'Brien et al., 2014). The researcher acted as a non-participant observer while the classroom teacher delivered the lessons. The researcher did not teach or provide the instructional intervention. Access and scheduling were coordinated with the school and teacher. Observation notes were compared with teacher interviews, student group summaries, and classroom documents to check interpretations.

Participant

Participants were the VA class teacher and the class's students who were participating in IPAS learning using Canva-based interactive media. The teacher served as the source of information on the implementation, while the students provided information about their experiences using the media.

Participants and selection

Participant selection was limited to the teachers and students of class VA who were involved in the observed lesson. The class consisted of 13 students, and student information was collected through three interview groups of four, five, and four students, respectively. In the first observation,

12 students were present and one student excused themselves, while in the two subsequent meetings, all 13 students were present. These numbers reflect class membership and attendance per meeting. Student names were not included, and interview summaries were coded as Groups A, B, and C.

Instrument

The researcher served as the primary instrument, using observation guidelines, structured interview guidelines, and documentation. The observation guidelines contained 29 aspects covering learning activities and the use of Canva based media. Implementation observations referred to the five stages in Rosnelli's (2009) framework: orientation, independent study, individualized support, enrichment, and content transition (the framework's material transfer stage). The framework originated from digital engineering competency learning in vocational high schools. In this study, its use is limited as a reference to describe the stages of IPAS learning, not as evidence of equivalence of outcomes at both levels. The teacher interview guide contained 14 questions about planning, student needs, media preparation, learning choices, obstacles, and formative and summative evaluations. The student guide contained eight questions about preparation, clarity of instructions, learning experiences, perceptions of understanding, grouping, difficulties, evaluation, and facilities. Documents included teaching modules, interactive media, attendance information, and photos of lessons and interviews. The media included a title page, instructions, menus, objectives, materials, videos, refresher activities, and quizzes. For observation, orientation was indicated by explanations of objectives and navigation, independent study by students exploring media and discussing or summarizing content (in practice, in groups), individualized support by assistance with button or browser difficulties, enrichment by summaries, presentations, or quizzes, and content transition by instructions to continue to a new topic or subsequent learning activity. Here, "content transition" describes lesson sequencing, not tested application of knowledge in new situations. Each stage was classified as observed, modified, or deferred according to the session notes, rather than assumed to be fully accomplished.

Data reliability was checked through source triangulation between teacher and student accounts and through technical triangulation through observation, interviews, and documentation. Comparisons were made to examine the appropriateness of descriptions of activities and difficulties with evidence from other sources. Observations of three meetings allowed researchers to compare repeated learning stages and the adjustments that occurred. Data verification focused on the consistency between sources and techniques; psychometric reliability coefficients and inter-rater agreement were not available. Media trials by teachers prior to the lesson were used to verify the media's functionality. The limits of this verification were considered in interpreting the findings, in accordance with the principles of trustworthiness in qualitative research (Nowell et al., 2017).

Procedures and time frame

Fieldwork was conducted at MI Muhammadiyah Penaruban, an elementary Islamic school in Kaligondang, Purbalingga, Central Java, Indonesia. Classes had digital television, laptop access, and school Wi-Fi connections. The location was chosen because teachers had used interactive media and the school supported classroom access for research. The study was conducted from April 10–24, 2025. Detailed notes included three observations on Thursday, April 10, 17, and 24, 2025, at 7:00–8:10 a.m. WIB (Western Indonesian Time). Media implementation was observed at all three meetings. The lesson covered Chapter 4 of the fifth-grade science material, namely Getting to Know Our Earth.

Preparation included coordinating the observation schedule with the teacher and developing observation and interview guidelines. The researcher then conducted three non-participant observations while the teacher was implementing the science lessons according to the teaching module. At each meeting, the researcher recorded the opening, objectives and navigation instructions, group exploration, teacher assistance, enrichment, and closing. Structured interviews were conducted using prepared questions, and responses were recorded in writing. Teacher interviews were conducted on April 24, 2025. Student accounts were recorded in three group summaries; the dates of each interview and individual transcripts were not available in the research notes. Teaching modules, media pages, attendance information, and class photos were collected as supplementary documentation. Figure 1 summarizes the documented research sequence and the data sources that were compared. During data analysis, the observer compared records across the

three meetings and across the different data sources to avoid relying exclusively on the teacher's or students' views.

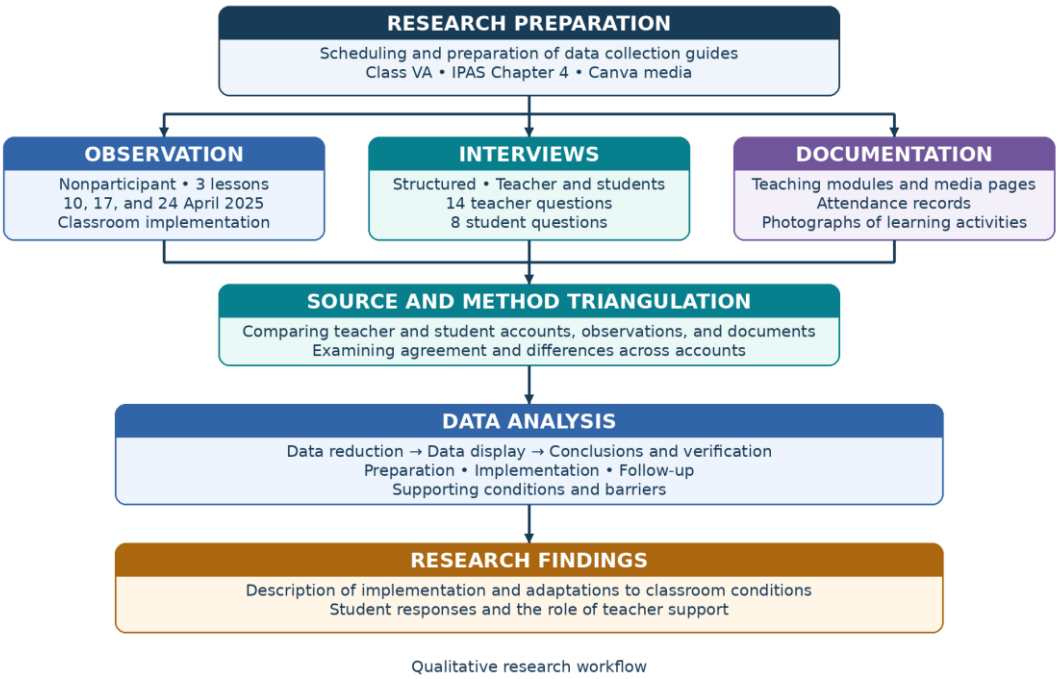


Figure 1. Research procedure and comparison of three data sources

Analysis plan

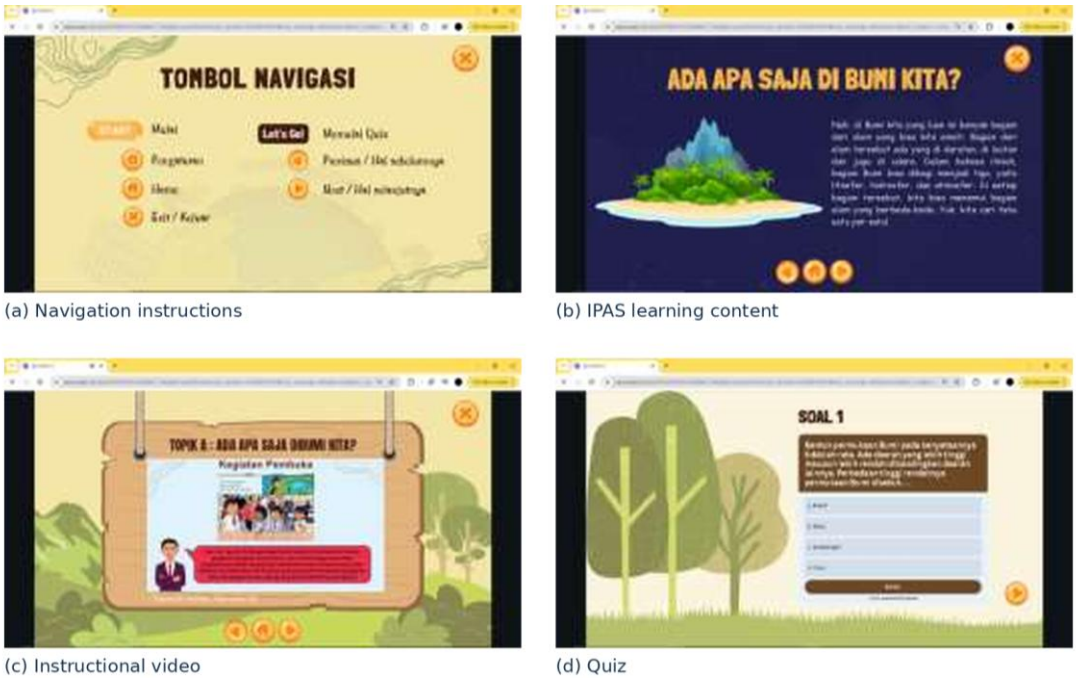
Data were analyzed through data reduction, data presentation, conclusion drawing, and verification. Data reduction was carried out by selecting information relevant to the preparation, implementation, follow-up, supporting conditions, and barriers to learning. Observation notes, teacher and student statements, and documentation were compiled into a descriptive narrative regarding the three meetings and stages of media implementation. Comparisons between sources were presented in a matrix to clarify congruences and discrepancies in the evidence. Conclusions were verified by reviewing teacher statements, student group summaries, class notes, and documentation. The analysis used written notes and group summaries and therefore did not include coding of individual transcripts or counting code frequencies. The organization of information focused on categories relevant to the research objectives and transparency of data interpretation (Linneberg & Korsgaard, 2019).

RESULTS AND DISCUSSION

Results

Preparation connects media to the fifth-grade IPAS teaching module and its learning objectives. Teachers select content from government-mandated IPAS teaching materials and plan cooperative learning, activities, and evaluation within the Independent Curriculum. In interviews, teachers explain the steps, starting with objectives and source materials, selecting templates, adding text, images, and videos, inserting quizzes or games, and conducting pre-tests. The prepared media functions as a series of learning components, not a collection of unrelated slides. The media displays objectives and instructions, provides access to materials, and includes evaluation and refresher activities.

The media documentation displays the page layout, including the initial display, navigation instructions, main menu, learning objectives, materials, videos, refresher activities, and quizzes. The navigation instructions explain the functions of buttons for accessing and navigating between media components. Material is presented through text and illustrations, while videos are used to demonstrate processes related to the IPAS material. Quizzes are part of the learning practice and evaluation activities. An example of the media component display is shown in Figure 2.



(a) Navigation instructions (b) IPAS learning content

(c) Instructional video (d) Quiz

Figure 2. Screenshots of Canva-based interactive media for IPAS learning

Teachers also checked the availability of laptops, internet access, and audio support. Whole-class instruction used laptops connected to digital television, with students then accessing media in groups. Teachers' statements explicitly linked grouping to cooperative learning and device limitations. One interview excerpt read, "Besides the limited devices, the implementation of this student-centered model supports group discussions and collaboration" (classroom teacher interview, April 24, 2025). This statement explains the teacher's rationale for the arrangement, but does not yet demonstrate improved achievement through collaboration. Evidence of preparation suggests that pedagogical decisions and decisions regarding resources are made simultaneously.

The implementation was analyzed using five consistently defined stages: orientation, independent study, individualized support, enrichment, and content transition (the material transfer stage in Rosnelli's framework). Orientation comprised explanations of objectives, the task sequence, and start, home, next, previous, and quiz buttons. During independent study, pupils explored the media for approximately 30 minutes; because laptops were shared, this stage was modified into group exploration with peer discussion and teacher assistance rather than individual self-pacing. Individualized support comprised assistance with navigation or browser difficulties where needed. Enrichment was evidenced by summaries, discussion or presentation, and a quiz in the final meeting. Content transition meant moving or assigning subsequent material, not demonstrating cognitive transfer to unfamiliar situations. The stages varied across the three lessons; the recorded evidence and deferred activities are distinguished in Table 1.

Table 1. Observed lessons and implementation activities

Meetings and attendance	Focus on the material	Exploration and follow-up	Mentoring and transition
April 10, 2025 12 students present; one permission	Earth components: lithosphere, hydrosphere, atmosphere	Three groups of four students; approximately 30 minutes of exploration; written summary	Teacher assisted with navigation and browser difficulties. Content transition was deferred due to limited instructional time.
April 17, 2025 13 students attended	Changes in the Earth's surface and the water cycle	Three groups of four to five students; approximately 30 minutes of exploration; discussion and presentation	Teacher assisted with navigation and browser difficulties. Students were assigned to read subsequent material at home.

Meetings and attendance	Focus on the material	Exploration and follow-up	Mentoring and transition
April 24, 2025, 13 students attended	Natural phenomena, plate movements, and surface changes	Groups of four, four, and five students; exploration takes approximately 30 minutes; a ten-question quiz is taken individually in turns	No navigation difficulties requiring teacher assistance were documented. The transition to Chapter 5 was postponed.

Across the three observed meetings, the five implementation stages were identified with different levels of completion. Orientation was conducted through explanations of learning objectives, activities, and media navigation. Independent study was modified into group exploration because of limited devices, while individualized support was provided when students encountered navigation or browser difficulties during the first two meetings. Enrichment activities varied across sessions, including written summaries, group discussions, presentations, and an individual-turn quiz. Content transition was deferred during the first and third meetings because of instructional time constraints, whereas the second meeting included an assignment to study subsequent material at home. These findings indicate that the implementation stages were adapted to classroom conditions rather than uniformly completed in every meeting.

In the first lesson, students explored the lithosphere, hydrosphere, and atmosphere and compiled a summary of the material. Notes indicate difficulty using navigation buttons in one group and laptops returning to the initial browser screen in another. Similar difficulties occurred in the second lesson, which covered changes in the Earth's surface, including a video of the water cycle, followed by group discussions and presentations. In the third lesson, students explored natural phenomena and changes in the Earth's surface before taking a ten-question multiple-choice quiz individually and in turns. No access difficulties were noted during the mentoring phase of the meeting. These notes suggest increased familiarity with operations in the last lesson, but do not yet explain the equitable distribution of these skills across students.

In this analysis, content transition refers only to continuation to the next topic after enrichment, in line with the function of the transfer stage in Rosnelli's (2009) framework. In the first lesson, the available time did not allow for this transition to be completed. After the second lesson, students were asked to read the next material at home and access media via smartphones. In the third lesson, a transition to Chapter 5 was planned for the next meeting using different media or learning models. The implementation of content transition thus adjusted to the lesson time and the scope of available media. The notes did not include tasks to measure the application of knowledge to new problem situations, so this stage cannot be treated as measurable evidence of cognitive transfer.

Teachers described students as enthusiastic and not easily bored when using media. An interview excerpt stated, "Students who don't get bored tend to be enthusiastic and actively engaged in the learning process" (classroom teacher interview, April 24, 2025). The three student interview summaries also linked enjoyable experiences to videos, images, and other light-hearted activities. They mentioned that examples and illustrations made explanations clearer or more concrete. These were perceived benefits, not independently assessed changes in understanding. Nevertheless, the data sources indicated a congruence between positive experiences and the learning setting.

Student summaries also identified limitations to the experience. Groups A and C mentioned sometimes forgetting the function of navigation buttons and seeking teacher assistance. Group B mentioned laptops that reverted to browser view. These descriptions align with the navigation and device issues in the first two observations. All three groups described the school's Wi-Fi as stable throughout their experience, while teachers cited intermittent internet access as a potential obstacle. Table 2 preserves these differing perspectives to prevent the evidence from being reduced to a purely positive or negative picture.

Table 2. Comparison of observations and interview statements

Aspect	Observation notes	Teacher's statement	Student group summary
Involvement	Documented explorations, summaries, discussions, presentations, and quizzes	Students seem enthusiastic and don't get bored easily	All groups said the lesson was fun with pictures, videos and mood enhancers.
Conceptual clarity	No concept test data or comparative achievement scores were reported.	Visual media is considered to help complex material	All groups rated the examples and illustrations as clearer.
Navigation	Button and browser issues were noted in the first two lessons	The teacher explains the operation and provides assistance.	Groups A and C forgot the function of the buttons; Group B mentioned browser problems.
Connectivity	The frequency or duration of the disturbances was not systematically documented.	Occasional internet disruptions are cited as a problem	All three groups said the school Wi-Fi was stable.
Device access	Media explored through group laptop access	Grouping related to device limitations and cooperation	The group refers to studying together with friends appointed by the teacher.

Note: Groups A, B, and C consist of four, five, and four students, respectively. The summaries are not verbatim transcripts of individual sessions.

Follow-up included a summary, discussion, presentation, and quiz from the last observed meeting. The teacher explained that formative evaluation used quizzes, group assignments or presentations, and participant observation. Separately, the teacher mentioned a written test at the end of the assessment period as the basis for summative considerations. The data analyzed did not include quiz scores per student, presentation rubrics, baseline measurements, or final test results for the observed unit. The ten-question quiz was reported as a class assignment, not a validated achievement outcome. The available evidence supports a description of the evaluation arrangement, not a conclusion regarding its measurable effectiveness.

Supporting conditions included digital television, available laptops, school Wi-Fi, and platform features to integrate learning components. The main constraints were preparation time, limited devices, and connection issues reported by teachers. Device scarcity affected group settings, while lesson time limited material transitions. Media was implemented through planned stage adjustments. Teacher assistance was still needed during the exploration, although students were expected to work more independently. The findings identified preparation, access arrangements, and responsive support as interdependent conditions in this implementation.

Discussion

Preparation connects materials and cooperative activities with the technical requirements of the media. This combination suggests that teachers' learning considerations help transform the platform into a usable learning resource. TPACK provides a relevant interpretation because it links technology choices with the pedagogical processing of materials (Mishra & Koehler, 2006). The emphasis on context in subsequent developments makes device availability part of this consideration, rather than merely an external detail (Mishra, 2019; Brianza et al., 2024). This interpretation aligns with the literature on teacher technology integration, which views professional knowledge and contextual support as interrelated conditions (Wohlfart & Wagner, 2023; Spiteri & Chang Rundgren, 2020). This classroom case illustrates TPACK as a lens for interpreting how pedagogical planning and resource limitations meet in practice; teacher knowledge itself was not measured.

The independent study stage was implemented through group exploration due to device limitations. This adjustment expanded media access but made navigation and learning pace a group-

level activity. Rosnelli (2009) emphasized the opportunity to progress at individual pace; the results of this study demonstrate the limits of this principle when devices are shared. Research on computer-assisted collaborative learning also emphasizes the importance of the learning environment and supporting strategies, suggesting that the mere existence of groups does not necessarily demonstrate equal contribution by each student (Chen et al., 2018). Compared with segmentation at individual pace in multimedia research, group pacing can require negotiation among students with different needs (Rey et al., 2019). The findings therefore clarify the contextual adjustment of implementation, without suggesting that group access is synonymous with individual autonomy or that the original model has been retested.

The use of navigation buttons relies on orientation and repetitive assistance. Teacher explanations may reduce the operational demands students must manage while attending to the material. Cognitive load theory helps interpret these demands, although research does not directly measure mental effort or cognitive load (Sweller et al., 2019). Studies of multimedia cues and design support the clarity of relevant structures, but content cues and interface operational cues serve distinct functions (Alpizar et al., 2020; Noetel et al., 2022). Research on authentic classroom videos also suggests that teachers can provide support during presentations beyond the features embedded in the media (La Torre & Désiron, 2024). These findings place teacher mediation at the intersection of interface use and engagement with the material, while the presumed cognitive mechanisms remain untested.

Students associated media with enjoyable lessons and clearer explanations. Their accounts align with the benefits of relevant verbal and visual representations, but enjoyment does not necessarily translate into the formation of accurate or enduring mental models (Çeken & Taşkın, 2022; Schroeder & Cenkci, 2018). Research on instructional videos and commonly available media creation tools also emphasizes the design of multimedia learning, not its mere presence (Cavanagh & Kiersch, 2023; Fiorella & Mayer, 2018). Research on the development of Canva and a recent study of fourth-grade science students reported generally positive assessments that resemble the perceptions in this study (Mintarsih & Putra, 2023; Septianingrum & Ratri, 2026). Given differences in design and setting, the strongest point of comparison is students' reception of visual media rather than its effect on achievement. The field findings therefore illuminate perceived clarity and enjoyment, not learning gains.

Student accounts corroborate the navigation and teacher support issues documented in observations. This correspondence reinforces the description of operational difficulties, while the lack of problems recorded at the last meeting suggests the possibility of habituation. A review of digital classroom disruptions identified technical and management demands as relevant aspects for prevention and management (Meinokat & Wagner, 2022). A review of elementary school digital curricula also linked implementation to confidence, support, and professional learning (Stringer et al., 2022). However, the reduction in reported difficulties could also reflect changes in assignments, group support, or the focus of observer recording, rather than improvements in individual abilities. The practical implication is that teachers need to plan for accessible instructions and support pathways without assuming that repeated exposure will provide equal fluency for all students.

Summaries, presentations, and quizzes provide different opportunities for students to express understanding. Developing explanations or negotiating group presentations can potentially involve more constructive activity than page navigation, as distinguished by the ICAP (Chi & Wylie, 2014). Feedback research indicates that these tasks are most informative when teacher responses help students recognize and address misconceptions (Wisniewski et al., 2020). Video instructional guides also emphasize activities that accompany presentations (Mayer et al., 2020). The contribution here is to identify how these assessment opportunities were incorporated into the lesson sequence, while keeping the evidence of task completion separate from any unmeasured change in achievement.

Time constraints limited the implementation of the content transition stage, and smartphone access at home was proposed after one lesson. Within Rosnelli's (2009) framework, the content transition stage allows for continuation of material after the completion of the previous activity; in this class, this continuation is aligned with the time and media coverage of Chapter 4. Contextual technology integration studies support this interpretation within the context of school facilities and organization (Mishra, 2019; Brianza et al., 2024). Research on emergent learning and technology-assisted professional development also indicates that the provision of learning resources needs to be

considered alongside the implementation conditions (Hennessy et al., 2022; Crompton et al., 2021). The availability of home devices, completion of follow-up activities, and learning outcomes were not documented, so this instruction does not yet demonstrate successful learning outside of school. Consequently, teachers need to plan accessible continuations for students and distinguish observed content transition from specifically assessed transfer of knowledge.

Compelling platform features come with preparation demands and differing accounts of connectivity. This combination challenges the simple explanation that ease of automated setup translates into ease of classroom implementation. A review of digital integration and technology acceptance helps distinguish device adoption from continued use in learning (Wohlfart & Wagner, 2023; Scherer et al., 2019; Bui, 2022). Studies of multimedia misconceptions and irrelevant decorative information also suggest evaluating appealing features based on the purpose of the material's explanation (Sundararajan & Adesope, 2020; Prinz et al., 2022). Teacher reports of internet disruptions and student reports of stable Wi-Fi may both be valid because they refer to different experiences and potentially different usage times. Overall, the findings support a context-sensitive account that media design, teacher mediation, and shared access shape participation, without establishing a new causal model or universal recommendation for Canva.

Implications

Teachers using interactive media with shared devices need to plan who controls the interface, how peers contribute, and how help is requested. Rotating roles for operation and discussion are practical recommendations based on access arrangements, not procedures evaluated in research. Navigational instructions should be concise, demonstrated prior to exploration, and readily available for reference. Visual components should clarify science concepts, while quizzes and follow-up discussions should require students to explain the relationships shown. School leaders can support implementation by providing time for setup and maintenance of devices and connectivity. Continuation at home should be provided after checking for equitable student access to necessary resources and media.

Research contribution

This research provides a contextual description of the implementation of Canva-based interactive media through the preparation, implementation, and follow-up of science learning. Its main contribution lies in explaining the adjustment of the five implementation stages when independent learning occurs with shared tools and teacher guidance. The study clarifies the differences between interface interactivity, group participation, perceived understanding, and measurable learning outcomes. The multimedia and technology integration perspectives enrich the interpretation of the interactive learning stages framework, without replacing it or claiming to test new theories. Practically, the article identifies points for adjustment of classroom activities, navigational aids, and follow-up planning that are relevant for comparable situations.

Limitations

The evidence covers one teacher, one class, one science unit, and three lessons, thus limiting transferability. Student interview responses are provided as group summaries, not complete individual transcripts. This format hinders analysis of within-group differences, individual speaker experiences, and minority perspectives. Validated achievement data, comparison groups, measurable engagement scales, independently audited coding, or long-term follow-up are not available.

Suggestions

Future research should observe multiple teachers and schools with varying device-per-student settings. Full interview transcripts and systematic observation of usage rotations would allow for analysis of participation facilitated or constrained by device sharing. Learning evaluation research should utilize appropriate conceptual measures, documented assessment quality, and credible comparison strategies. Longer-term observations would help distinguish initial familiarization with the interface from sustained learning participation.

CONCLUSION

The implementation of Canva-based interactive media in fifth-grade IPAS learning at MI Muhammadiyah Penaruban took place through curriculum-aligned preparation, teacher led implementation, and follow-up in the form of in-depth activities and evaluation. Five stages of implementation—orientation, independent study, individualized support, enrichment, and content transition—were observed or adapted according to available devices and instructional time. Independent study was conducted in groups, while teacher assistance maintained student access to materials and activities. The visual and interactive features received a positive response from students, but the perceived benefits could not be equated with measurable improvements in achievement. The study answered its descriptive objective by showing that media implementation depended on material readiness, access arrangements, mentoring, and follow up, not just application availability. Management of preparation time, devices, and connectivity were key concerns for implementation in classes with comparable conditions.

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AUTHOR CONTRIBUTION STATEMENT

TNA was responsible for the implementation of the research, data collection and analysis, and drafting the article, including the presentation of the results and discussion. MF contributed through research supervision and provided methodological guidance and input on the manuscript's preparation to ensure it met the research objectives.

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