Digital Perspectives Journal on Education
Volume 2, Issue 1, pp. 38-49.
e_ISSN: 3124-4815
https://journal.dyoqu.com/index.php/dpj
DOI. https://doi.org/10.64780/dpje.v2i1.234

PowerPoint-Assisted Active Learning in Islamic Religious Education: A Two-Cycle Classroom Action Research Study

Refika Dwi Lestari1* **Mahrus As'ad 2**

[1]State Islamic Institute of Metro, Indonesia
[2]State Islamic Institute of Metro, Indonesia

*** Corresponding author:**
Mahrus As'ad, State Islamic Institute of Metro, Indonesia. Mahrusasadsyarif@gmail.com

Article Info

Article history:

Received: April 20, 2026
Revised: Mei 21, 2026
Accepted: June 24, 2026

Keywords:

classroom action research; Islamic Religious Education; PowerPoint-assisted learning

Abstract

Background of study: Presentation software is readily available in many schools, but its classroom value depends on the pedagogy organized around it. In Grade 8A Islamic Religious Education, the Cycle I baseline mean was 57.17, and 16 of 23 students scored below the school mastery threshold of 65.
Aim and scope: This study examined within-class changes in behavioral engagement, a descriptive teacher instructional implementation index, and classroom test scores during an iteratively redesigned PowerPoint-assisted learning process. It did not test the independent causal effect of PowerPoint.
Methods: A two-cycle classroom action research design involved 23 students in four 80-minute sessions. Data were obtained from a nine-indicator behavioral observation checklist, a ten-domain teacher implementation checklist, two ten-item classroom tests, and lesson documentation. Because the available revision records did not permit transparent reconstruction of tie handling and zero differences, the results are reported descriptively rather than as inferential evidence.
Results: The recorded behavioral engagement index increased from 53% to 75%, and the teacher instructional implementation index increased from 76 to 87. Mean scores changed from 57.17 to 65.22 in Cycle I and from 65.22 to 80.87 in Cycle II; mastery increased from 30.43% to 60.87% and from 56.52% to 78.26%, respectively.
Conclusion: The findings indicate classroom-level improvement alongside revisions that added questioning, peer explanation, group work, summarization, and presentations. The nonstandardized tests, single observer, absence of a comparison class, and incomplete item-level records restrict interpretation to this classroom and do not establish the general effectiveness of PowerPoint.

To cite this article: Lestari, RD., & As'ad, M. (2026). PowerPoint-Assisted Active Learning in Islamic Religious Education: A Two-Cycle Classroom Action Research Study. *Digital Perspectives Journal on Education*, *2*(1), 38-49. https://doi.org/10.22460/dpje.v14i1.pxx-xx

INTRODUCTION

Digital media has become commonplace in adolescents' lives, but a technology-rich classroom is not necessarily a pedagogically stronger classroom. Screens and presentation software can modernize the appearance of instruction without changing how students reason, participate, or construct meaning. UNESCO (2023) therefore argues that educational technology should be evaluated according to the learning problems it addresses. In a meta-analysis of 48 studies, Baker et al. (2018) found no meaningful average cognitive advantage for PowerPoint over traditional instruction (Hedges' g = 0.067), indicating that the instructional design surrounding the medium is more consequential than the software itself. Comparative research similarly suggests that presentation outcomes depend on design quality, task structure, and instructional use rather than on platform labels alone (Chou et al., 2015).

This issue is particularly relevant to Islamic Religious Education (IRE), which is expected to connect knowledge, reflection, religious values, and everyday conduct. Digital transformation has expanded the media available to IRE teachers, yet implementation remains uneven because teacher competence, infrastructure, content development, and school conditions shape what can be sustained (Mintasih et al., 2024; Septiani Selly Susanti et al., 2024). In resource-constrained schools, familiar software and basic projectors may be the most feasible digital tools. Their educational value therefore depends on whether teachers integrate visual representations with questioning, feedback, discussion, and student explanation rather than merely transferring lecture notes onto slides.

The local problem was identified in Grade 8A at SMP Islam Purbolinggo, East Lampung. Before the first action meeting, routine instruction was documented as being dominated by teacher explanation, whiteboard use, and printed materials. The quantitative baseline was the Cycle I pretest administered on 1 April 2023: the class mean was 57.17, only 7 of 23 students (30.43%) reached the school mastery threshold of 65, and 16 students (69.57%) remained below it. These figures were taken from the class grade sheet used in the action-research records. The preliminary observation notes were descriptive rather than item-level counts; consequently, this study does not retrospectively claim quantified baseline engagement indicators that were not recorded.

The study focuses on behavioral engagement because its observation instrument recorded visible classroom actions: enthusiasm, concentration, cooperation, asking questions, answering accurately, responding to others, explaining, summarizing, and drawing conclusions. This narrow focus follows the established distinction between behavioral, emotional, and cognitive engagement (Fredricks et al., 2004). The instrument did not directly measure affective engagement, cognitive engagement, motivation, or internalized religious values. The Cognitive Theory of Multimedia Learning (CTML) provides a tentative interpretive framework: coherent verbal and visual representations may support selection, organization, and integration of information when unnecessary processing is controlled (Mayer, 2017, 2024). Active-learning research likewise indicates that overt participation can range from active to constructive and interactive processing, while recall, discussion, explanation, and application are generally more productive than uninterrupted listening (Chi & Wylie, 2014; Freeman et al., 2014; Prince, 2004).

Previous IRE studies report positive outcomes from interactive multimedia and PowerPoint-based activities, but their designs and media differ substantially. Handayani et al. (2022) used a true experimental posttest-only control-group design with questionnaires and tests, whereas Hamka et al. (2023) used a quasi-experimental pretest-posttest control-group design and game-based PowerPoint. Video-based studies have likewise emphasized concrete and repeatable representations (Anggraeni & Maryanti, 2021; Permatasari et al., 2021). These studies support the potential of digital media, but they do not show that ordinary slide presentations automatically produce active learning, nor do they explain how a teacher revises classroom interaction from one lesson to the next.

Three gaps guide this study. First, the pedagogical practices surrounding presentation media are often underreported. Second, achievement or perception measures are commonly presented without parallel documentation of observable student behavior and teacher implementation. Third, process-sensitive evidence from non-metropolitan Islamic secondary classrooms remains limited (Nkomo et al., 2021). Classroom action research cannot resolve causal attribution, but it can document how instructional problems are identified, revised, and re-examined across cycles.

This study therefore examined how a two-cycle PowerPoint-assisted intervention was associated with changes in recorded behavioral engagement, a descriptive teacher instructional implementation index, and classroom learning-outcome scores on fasting material. Its theoretical contribution is a media-pedagogy integration framing in which slides function as shared representations while questions, peer explanations, group tasks, summaries, and feedback structure active processing. Methodologically, the study combines process and outcome records across four sessions. Practically, it describes a feasible improvement process for schools that have basic projection technology but limited access to complex digital systems.

The scope of the claims is deliberately local. The study did not include random assignment, a comparison class, standardized tests, independent observers, delayed assessment, or direct measures of cognitive load and affective engagement. Accordingly, the findings are interpreted as within-class changes that occurred alongside an iteratively revised learning package, not as proof that PowerPoint independently caused the observed outcomes.

METHOD

Research Design

This study employed classroom action research in two iterative cycles, each comprising planning, action, observation, and reflection (Kemmis et al., 2014; Mertler, 2020). Each cycle included two meetings. The researcher prepared the initial lesson plan, PowerPoint materials, and observation instruments in consultation with the class teacher. The teacher, Agus Riyanto, S.Ag., implemented the lessons, while the researcher served as the sole observer. After Cycle I, the teacher and researcher jointly reviewed field notes, checklist records, and student scores to plan Cycle II. To reduce, but not eliminate, researcher-involvement and observational bias, the same observation forms and procedures were used across all four sessions, records were completed during the lessons, and reflections were cross-checked against lesson plans, grade sheets, attendance documents, and classroom photographs. Figure 1 summarizes the iterative research design.

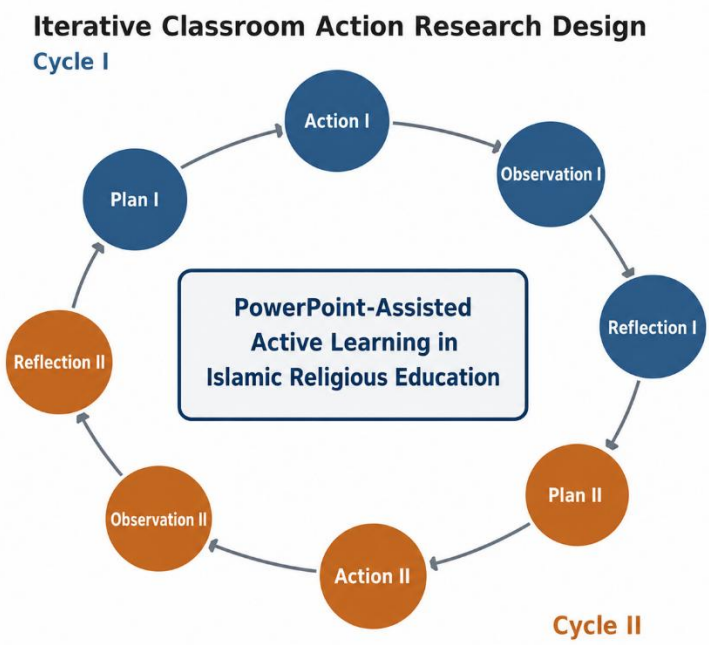

Figure 1. Iterative Classroom Action Research Design

Participant

The participant group comprised all 23 students in the intact Grade 8A class at SMP Islam Purbolinggo, East Lampung, including 12 boys and 11 girls. The class was purposively selected because the diagnosed learning problem and planned action concerned this existing classroom; all registered students were included rather than sampled individually. No students from other classes were involved, and no random assignment was used. Accordingly, the participants represented one

natural classroom rather than a statistically representative sample, which limits generalization beyond the study setting.

Instrumentation

The classroom instruments were aligned with the lesson plan, curriculum competencies, learning objectives, and improvement targets. The ten-item short-answer test blueprint covered the definition and scriptural basis of fasting, requirements and pillars, obligatory and recommended fasting, invalidating acts, exemptions, prohibited times, and moral implications. Representative content prompts required students to explain concepts, distinguish categories, identify conditions, and apply fasting rules to examples. Student scores were retained on a 0-100 scale, and the school mastery threshold was 65. However, the archived documents did not preserve item-level weights or a detailed scoring rubric. The instruments were developed for classroom decision-making rather than standardized measurement. No construct-validity analysis, item-difficulty analysis, internal-consistency estimate, interrater reliability, test-retest reliability, or Rasch analysis was available. Therefore, the resulting scores are interpreted as approximate classroom indicators rather than precise estimates of latent engagement or achievement constructs.

Instrument

Data were collected using four sources. First, the student behavioral-observation checklist contained nine observable indicators: enthusiasm, concentration, cooperation, asking questions, answering accurately, responding to teacher or peer questions, providing explanations, summarizing, and drawing conclusions. Second, the teacher instructional implementation checklist contained ten domains: lesson opening, classroom management, reinforcement, questioning, methods and strategies, media use, content mastery, instructional variation, evaluation, and lesson closure. The original forms converted observations into aggregate indices on a 0-100 scale, although the archived records did not retain item-level counts, rubric anchors, or weighting rules. Third, two ten-item classroom learning-outcome tests were used; Cycle I and Cycle II employed different test forms aligned with the same fasting curriculum. Fourth, documentation comprised lesson plans, slide materials, attendance lists, classroom photographs, grade sheets, and observation notes.

Procedures and Time Frame

The study was conducted at SMP Islam Purbolinggo, a private Islamic junior high school in Taman Fajar Village, Purbolinggo District, East Lampung, Indonesia, during the second semester of the 2022/2023 academic year. Four 80-minute meetings were held on 1 April, 8 April, 15 April, and 6 May 2023, from 08:00 to 09:20 local time. The topic, translated as "Fasting Cultivates Piety," included the definition and scriptural basis of fasting, requirements and pillars, obligatory and recommended fasting, invalidating acts, exemptions, prohibited times, and moral significance. A laptop and LCD projector were used alongside student textbooks and the Quran.

Before Cycle I, the researcher reviewed the class grade records, observed routine instruction, prepared the lesson plan and PowerPoint slides, and organized the instruments. In Cycle I, Meeting 1 combined the baseline pretest, teacher explanation, note-taking, and directed questions. Meeting 2 continued the explanatory slides and question-and-answer activities before the Cycle I posttest and reflection. Reflection identified hesitation in asking and answering questions, uneven participation, dependence on teacher summaries, and limited persistence during testing.

Cycle II revised the participation structure while retaining PowerPoint as a shared representation. The teacher used slides as prompts for direct and random oral questions, student-generated questions, reading and explaining scriptural evidence, peer discussion, and student summaries. In Meeting 4, students worked in three groups on obligatory and recommended fasting and presented concise explanations before the Cycle II posttest and reflection. The same observer used the same checklists from lesson opening to closure in all four meetings. A pretest was administered at the beginning of each cycle and a posttest at the end of the second meeting of that cycle. The archived records did not preserve the exact number of slides, a minute-by-minute activity allocation, session-specific absence counts, slide-exposure duration, or a formal audit of visual-design principles; these details are therefore not reconstructed retrospectively.

Analysis Plan

Behavioral engagement and teacher instructional implementation were summarized using the aggregate indices recorded for each meeting. Learning-outcome data were summarized using the mean, standard deviation (SD), minimum-maximum range, and the number and percentage of students who met the mastery threshold. The revision records available for this manuscript did not contain the complete paired student-level dataset required to reproduce the previously reported Wilcoxon procedure transparently, including the distribution of difference scores, treatment of ties and zero differences, and the exact or asymptotic p-value method. To avoid unverifiable inferential precision, the revised manuscript therefore reports descriptive within-class changes only. No statistical association was tested between the process indices and test scores.

Scope and Limitations of the Methodology

The methodological scope was limited to iterative improvement in one classroom. The study did not use a comparison class, random assignment, standardized or equivalent cross-cycle tests, delayed testing, independent observation, direct measurement of affective or cognitive engagement, or external replication. The evidence therefore supports a contextual account of classroom changes that occurred alongside the redesigned learning package, not a causal estimate of PowerPoint's independent effectiveness.

RESULTS AND DISCUSSION

Results

Baseline and Cycle Development

The Cycle I pretest provided the verifiable quantitative baseline: the class mean was 57.17 (SD = 10.53), 7 students (30.43%) met the mastery threshold, and 16 students (69.57%) scored below it. Pre-action field notes described instruction as dominated by teacher explanation, whiteboard use, and printed materials, but those notes did not contain indicator-level behavioral counts. Cycle I introduced PowerPoint to organize the fasting material, yet the lesson still relied heavily on explanation and directed responses. The Cycle I reflection therefore led to a Cycle II redesign that added student-generated questions, randomized oral responses, group discussion, reading and explaining textual evidence, student summaries, and group presentations.

Recorded Behavioral Engagement and Instructional Implementation

The recorded aggregate behavioral engagement index increased from 53 in Meeting 1 to 59 in Meeting 2, 63 in Meeting 3, and 75 in Meeting 4. The teacher instructional implementation index was 76, 77, 79, and 87 across the same meetings. These values were generated by the original classroom checklists and show a directional pattern within those instruments. Because item-level student counts, incident frequencies, weighting rules, rubric anchors, and session-specific attendance denominators were not preserved in the archived records, the indices cannot be interpreted as validated measures of engagement quality or teacher competence, and no indicator-level comparison is claimed.

Table 1. Aggregate Behavioral Engagement and Instructional Implementation Indices by Meeting

Indicator	Meeting 1	Meeting 2	Meeting 3	Meeting 4
Student activity (%)	53	59	63	75
Teacher implementation score	76	77	79	87

Learning Outcomes Across the Two Cycles

In Cycle I, the mean score increased from 57.17 (SD = 10.53) on the pretest to 65.22 (SD = 8.19) on the posttest, a descriptive gain of 8.05 points. The number of students meeting the mastery threshold increased from 7 (30.43%) to 14 (60.87%). In Cycle II, the mean increased from 65.22 (SD = 10.28) to 80.87 (SD = 14.74), a descriptive gain of 15.65 points, while mastery increased from 13 students (56.52%) to 18 students (78.26%). These changes describe the scores recorded in the

classroom but do not separate the contribution of slides from repeated exposure, revised teacher practice, peer interaction, or differences between test forms.

Table 2. Descriptive Learning Outcomes from the Classroom Grade Records

Cycle	Assessment	Mean	SD	Min-Max	Mastery, n (%)
I	Pretest	57.17	10.53	40-75	7 (30.43)
I	Posttest	65.22	8.19	50-80	14 (60.87)
II	Pretest	65.22	10.28	50-80	13 (56.52)
II	Posttest	80.87	14.74	60-100	18 (78.26)

Notes. SD = standard deviation; mastery threshold = score ≥ 65. Pretest and posttest refer to the classroom-developed test forms used within each cycle.

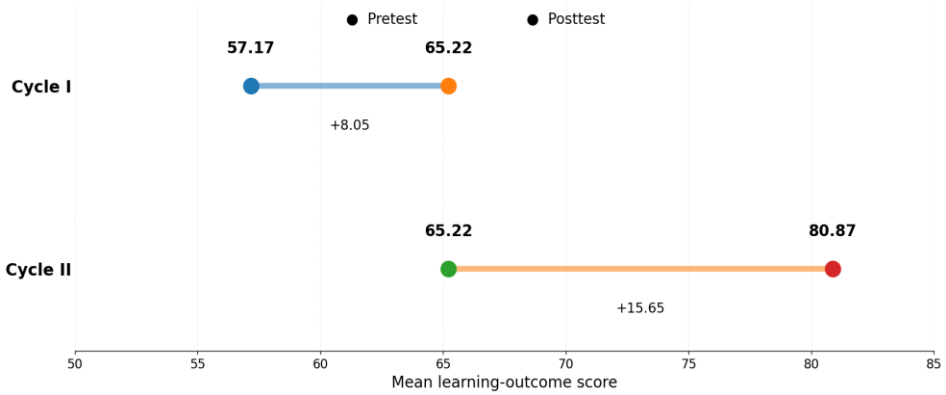

Figure 2. Paired Mean Scores Across the Two Action Cycles

Intercycle Pattern

The Cycle II posttest mean was 15.65 points higher than the Cycle I posttest mean, and the corresponding mastery proportion was 17.39 percentage points higher. Over the same sequence of meetings, the aggregate process indices also increased. This temporal co-occurrence is reported descriptively only; it does not demonstrate a statistical relationship or establish a mechanism linking the observation indices to test performance. Five students remained below the mastery threshold at the end of Cycle II, indicating that the classroom problem was reduced but not fully resolved.

Table 3. Cycle I Reflections and Cycle II Pedagogical Revisions

Cycle I observation	Cycle II revision	Proposed pedagogical rationale (not directly tested)
Students hesitated to ask and answer questions.	Direct questions, random oral responses, and student-generated questions.	May increase retrieval opportunities and distribute responsibility for responding.
Participation was uneven.	Small-group discussion and rotating spokespersons.	May widen opportunities to process and explain the material.
Students depended on the teacher's summary.	Students prepared and presented summaries at lesson closure.	May support organization and retrieval of the main ideas.
Slides were mainly explanatory.	Slides were linked to questions, tasks, examples, and discussion prompts.	May connect shared visual representations with active processing.

Discussion

The first finding concerns the mismatch between available technology and enacted pedagogy. The school already had a laptop and projector, but access to hardware had not by itself produced active digital learning. This is consistent with evidence that educational technology becomes useful only when institutions and teachers can coordinate content, tasks, classroom routines, and interaction (Mhlongo et al., 2023; Nguyen et al., 2022). Technology-mediated learning is also shaped by students' experience of the tool and by the way learner choice is structured; these factors may influence motivation and performance but do not independently establish conceptual learning

(Rohles et al., 2022; Schneider et al., 2018). In this study, the substantive revision was not the acquisition of a new platform; it was the reorganization of student roles and teacher prompts around an existing presentation tool.

The findings also align with Baker et al. (2018) meta-analysis of 48 studies, which reported a negligible average difference between PowerPoint-assisted and traditional instruction (Hedges' g = 0.067, 95% CI [-0.103, 0.236]). That result cautions against attributing classroom change to the presence of slides. Cycle I in the present study illustrates the same point: visual organization was introduced, but participation remained uneven while teacher explanation continued to dominate. The stronger Cycle II pattern occurred only after questioning, peer explanation, group work, summarization, and presentations were added. The defensible interpretation is therefore media-pedagogy integration rather than technological superiority.

CTML offers a plausible, but untested, explanation for why organizing definitions, categories, textual evidence, and examples on a shared display might support comprehension (Mayer, 2017, 2024). Coherent words and visuals may reduce the burden of following continuous verbal explanation and help students organize related concepts. However, this study did not measure cognitive load, multimedia processing, attention allocation, or mental-model construction, and it did not compare alternative slide designs. CTML is therefore used to interpret the pattern, not to demonstrate a mediator or confirm a cognitive mechanism.

The behavioral engagement index rose from 53 to 75 across four meetings, but the construct must be interpreted narrowly. The checklist captured visible actions, not students' emotional investment, motivation, strategic thinking, or cognitive engagement. Bond et al. (2020) and Nkomo et al. (2021) emphasize that engagement is multidimensional and highly sensitive to measurement choices. In the present study, aggregate checklist values suggest that more observable participation was recorded during the revised lessons, but the absence of item-level counts and an independent observer prevents stronger claims about which behaviors changed most or how consistently they were displayed.

The teacher instructional implementation index also increased, but it should not be equated with a validated improvement in teaching quality. The available form covered ten relevant domains, including questioning, media use, classroom management, evaluation, and closure, yet its weighting and rating anchors were not retained and only one observer completed it. The pattern is compatible with the view that digital competence combines technological, pedagogical, and content knowledge (Falloon, 2020; Mishra & Koehler, 2006), but it remains a descriptive record of one teacher's implementation across a short action cycle.

Comparison with prior IRE research clarifies both the promise and the limits of the present findings. Handayani et al. (2022) used a true experimental posttest-only control-group design with 66 students (33 per group), an activity questionnaire, and an achievement test; their interactive multimedia combined multiple media and was evaluated through between-group t tests. Hamka et al. (2023) used a quasi-experimental pretest-posttest control-group design with 18 third-grade students (9 per group) and game-based PowerPoint featuring board-game, spinning, and quiz formats. Their experimental mean rose from 62.89 to 81.11 (+18.22), compared with 48.22 to 50.67 (+2.45) in the control group. By contrast, the present study involved 23 eighth-grade students, four 80-minute sessions, ordinary slide representations, and iterative changes to classroom interaction; its descriptive gains were +8.05 in Cycle I and +15.65 in Cycle II. Differences may reflect age, topic, media interactivity, test construction, exposure conditions, and research design. Unlike the comparison-group studies, the present action research cannot isolate an intervention effect, but it provides more explicit documentation of how the pedagogy changed between cycles.

The contextual contribution lies in showing how a non-metropolitan Islamic secondary school used existing, low-cost technology as part of a reflective improvement process. The findings suggest that local resource constraints do not rule out pedagogical innovation, although they shape its form. For IRE, the active structures also allowed students to explain doctrinal content, discuss conditions and categories of fasting, and connect textual knowledge with daily practice. Such use is consistent with arguments that digital reform in Islamic education should preserve curricular and ethical depth rather than treat technology as an end in itself (Rijal et al., 2022; Setiawan, 2019; Siskandar, 2020).

Alternative explanations remain substantial. Students may have responded to the novelty of projected slides, repeated testing, increased teacher attention, familiarity with classroom routines, or differences between the Cycle I and Cycle II test forms. Teacher fluency and confidence may also have developed over the four sessions. Because the study used one class, one teacher, one observer, nonstandardized instruments, and no delayed assessment, the findings cannot establish retention, transfer, causality, or generalizability. The study's contribution is therefore a transparent account of an iterative classroom improvement process, not proof of PowerPoint's independent effectiveness.

Implications

For teachers, presentation software can be treated as a shared representational space rather than as a substitute for a lecture. Slides should organize essential concepts and textual evidence while lessons create repeated opportunities to question, explain, compare, summarize, and present. Schools with limited technology budgets may gain more from collaborative lesson design, observation, and reflection than from purchasing more complex platforms without pedagogical support. For IRE curriculum managers, digital activities should preserve conceptual accuracy, textual grounding, and connections between religious principles and everyday conduct.

Research Contribution

This study contributes a media-pedagogy integration framing for interpreting the use of basic presentation technology in IRE. It shows that the same software can be embedded in substantially different participation structures across action-research cycles. Methodologically, the study brings together classroom process indices, reflection records, and student score summaries while explicitly distinguishing descriptive improvement from causal effectiveness. Contextually, it adds evidence from an Indonesian Islamic secondary classroom that is underrepresented in the international educational-technology literature.

Limitations

The study involved one intact class of 23 students, one teacher, one school, one topic, and four meetings. It lacked a comparison group, random assignment, standardized or equivalent cross-cycle tests, delayed testing, and independent replication. A single observer completed classroom checklists, and the archived data did not retain item-level observation counts, attendance denominators, rubric anchors, slide counts, detailed time allocations, or the complete paired score file required to reproduce inferential tests. The study did not measure affective or cognitive engagement, cognitive load, retention, transfer, digital literacy, or internalization of religious values. These limitations confine the findings to preliminary, within-class evidence.

Suggestions

Future research should compare PowerPoint-assisted active pedagogy with an equally active condition that does not use slides, preferably across multiple schools and with baseline adjustment. Observation protocols should include trained independent raters, explicit scoring anchors, item-level counts, attendance-adjusted denominators, and interrater reliability. Learning tests should undergo expert review, item analysis, reliability assessment, and equivalence checking across occasions. Researchers should retain the complete intervention package, including slide counts, visual-design specifications, exposure duration, task examples, and minute-by-minute lesson allocation. Longer implementation and delayed testing are needed to examine persistence, retention, transfer, and possible novelty effects.

CONCLUSION

The purpose stated in the Introduction was to examine how an iteratively redesigned PowerPoint-assisted classroom action intervention was associated with changes in recorded behavioral engagement, teacher instructional implementation, and classroom learning outcomes. The findings address that purpose: across two cycles, the recorded behavioral engagement index, the descriptive instructional implementation index, mean test scores, and mastery proportions increased, with the strongest pattern occurring in Cycle II after questioning, peer explanation, group discussion, summarizing, and presentation activities were strengthened. These results support the practical interpretation that PowerPoint can function as a shared representational resource when it

is embedded in active and reflective pedagogy. Nevertheless, the study does not establish PowerPoint as the independent cause of the changes because it involved one intact class, one observer, nonstandardized cross-cycle tests, no comparison group, and no delayed assessment. The findings should therefore be generalized only as evidence of improvement within this classroom. The model may be further developed as a low-cost professional-reflection framework for schools with basic projection technology, while future multi-site studies should use comparable instruments, independent observers, an equally active comparison condition, and measures of retention and transfer.

ACKNOWLEDGMENT

The authors thank the principal, the Islamic Religious Education teacher, and the Grade 8A students of SMP Islam Purbolinggo for their support during the classroom action research. Appreciation is also extended to the supervising lecturer and the Islamic Religious Education Study Program at the State Islamic Institute of Metro.

AUTHOR CONTRIBUTION STATEMENT

RDL contributed to the study conceptualization, intervention design, data collection, data analysis, visualization, and preparation of the initial manuscript. MS contributed to supervision, interpretation of the findings, review, and editing. Both authors approved the final manuscript.

REFERENCES

Anggraeni, R., & Maryanti, R. (2021). Implementation of video learning media in Islamic Religious Education subjects. *Indonesian Journal of Multidiciplinary Research*, *1*(2), 257–266. https://doi.org/10.17509/ijomr.v1i2.37609

Baker, J. P., Goodboy, A. K., Bowman, N. D., & Wright, A. A. (2018). Does teaching with PowerPoint increase students' learning? A meta-analysis. *Computers & Education*, *126*, 376–387. https://doi.org/10.1016/j.compedu.2018.08.003

Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2020). Mapping research in student engagement and educational technology in higher education: A systematic evidence map. *International Journal of Educational Technology in Higher Education*, *17*(1), 2. https://doi.org/10.1186/s41239-019-0176-8

Chi, M. T. H., & Wylie, R. (2014). The ICAP Framework: Linking Cognitive Engagement to Active Learning Outcomes. *Educational Psychologist*, *49*(4), 219–243. https://doi.org/10.1080/00461520.2014.965823

Chou, P.-N., Chang, C.-C., & Lu, P.-F. (2015). Prezi versus PowerPoint: The effects of varied digital presentation tools on students' learning performance. *Computers & Education*, *91*, 73–82. https://doi.org/10.1016/j.compedu.2015.10.020

Falloon, G. (2020). From digital literacy to digital competence: The teacher digital competency (TDC) framework. *Educational Technology Research and Development*, *68*(5), 2449–2472. https://doi.org/10.1007/s11423-020-09767-4

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, *111*(23), 8410–8415. https://doi.org/10.1073/pnas.1319030111

Hamka, Muh. S., Usman, U., Halik, A., Hamdanah, H., & Muhammadun, M. (2023). Efektivitas Games PowerPoint dalam Meningkatkan Hasil Belajar Pendidikan Agama Islam. *Jurnal Intelektual: Jurnal Pendidikan Dan Studi Keislaman*, *13*(2), 146–163. https://doi.org/10.33367/ji.v13i2.3832

Handayani, F., Mansur, A., & Rusdi, A. (2022). Efektivitas Penggunaan Multimedia Interaktif Terhadap Keaktifan dan Hasil Belajar Siswa pada Mata Pelajaran Pendidikan Agama Islam. *Muaddib: Islamic Education Journal*, *5*(1), 33–40. https://doi.org/10.19109/muaddib.v5i1.15090

Kemmis, S., McTaggart, R., & Nixon, R. (2014). *The Action Research Planner: Doing Critical Participatory Action Research*. Springer Singapore. https://doi.org/10.1007/978-981-4560-67-2

Mayer, R. E. (2017). Using multimedia for e-learning. *Journal of Computer Assisted Learning*, *33*(5), 403–423. https://doi.org/10.1111/jcal.12197

Mayer, R. E. (2024). The Past, Present, and Future of the Cognitive Theory of Multimedia Learning. *Educational Psychology Review*, *36*(1), 8. https://doi.org/10.1007/s10648-023-09842-1

Mertler, C. A. (2020). Action research: Improving schools and empowering educators (6th ed.). SAGE.

Mhlongo, S., Mbatha, K., Ramatsetse, B., & Dlamini, R. (2023). Challenges, opportunities, and prospects of adopting and using smart digital technologies in learning environments: An iterative review. *Heliyon*, *9*(6), e16348. https://doi.org/10.1016/j.heliyon.2023.e16348

Mintasih, D., Sukiman, S., & Purnama, S. (2024). Integration of Digital Technology in Islamic Religious Education Learning: A Qualitative Study on Teachers' Competence and Implementation Models in Secondary Schools. *Jurnal Pendidikan Islam*, *13*(1), 85–96. https://doi.org/10.14421/jpi.2024.131.85-96

Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record: The Voice of Scholarship in Education*, *108*(6), 1017–1054. https://doi.org/10.1111/j.1467-9620.2006.00684.x

Nguyen, L. T., Kanjug, I., Lowatcharin, G., Manakul, T., Poonpon, K., Sarakorn, W., Somabut, A., Srisawasdi, N., Traiyarach, S., & Tuamsuk, K. (2022). How teachers manage their classroom in the digital learning environment – experiences from the University Smart Learning Project. *Heliyon*, *8*(10), e10817. https://doi.org/10.1016/j.heliyon.2022.e10817

Nkomo, L. M., Daniel, B. K., & Butson, R. J. (2021). Synthesis of student engagement with digital technologies: A systematic review of the literature. *International Journal of Educational Technology in Higher Education*, *18*(1), 34. https://doi.org/10.1186/s41239-021-00270-1

Permatasari, D., Amirudin, A., & Sittika, A. J. (2021). Pemanfaatan Aplikasi Youtube dalam Pembelajaran Daring Pendidikan Agama Islam pada Siswa Sekolah Dasar. *Jurnal Pendidikan Glasser*, *6*(1), 10. https://doi.org/10.32529/glasser.v6i1.1164

Prince, M. (2004). Does Active Learning Work? A Review of the Research. *Journal of Engineering Education*, *93*(3), 223–231. https://doi.org/10.1002/j.2168-9830.2004.tb00809.x

Rijal, F., Nudin, B., & Samad, I. A. (2022). Islamic Religious Education Learning Innovation at the MTsN Model Banda Aceh and the MTsN Model Gandapura Bireuen. *AL-ISHLAH: Jurnal Pendidikan*, *14*(2), 2239–2250. https://doi.org/10.35445/alishlah.v14i2.1930

Rohles, B., Backes, S., Fischbach, A., Amadieu, F., & Koenig, V. (2022). Creating positive learning experiences with technology: A field study on the effects of user experience for digital concept mapping. *Heliyon*, *8*(4), e09246. https://doi.org/10.1016/j.heliyon.2022.e09246

Schneider, S., Nebel, S., Beege, M., & Rey, G. D. (2018). The autonomy-enhancing effects of choice on cognitive load, motivation and learning with digital media. *Learning and Instruction*, *58*, 161–172. https://doi.org/10.1016/j.learninstruc.2018.06.006

Septiani Selly Susanti, Laila Nursafitri, Iri Hamzah, Rita Zunarti, Darmanto, Fitriyah, Bima Fandi Asy'arie, & Muhammad Syihab As'ad. (2024). Innovative Digital Media in Islamic Religious

Education Learning. *Jurnal Pendidikan Agama Islam*, *21*(1), 40–59. https://doi.org/10.14421/jpai.v21i1.7553

Setiawan, A. (2019). Conceptual of Blended Learning as Islamic Education Study Program Learning Reform Action in Digital Era 4.0. *SYAMIL: Jurnal Pendidikan Agama Islam (Journal of Islamic Education)*, *7*(2), 119–129. https://doi.org/10.21093/sy.v7i2.1827

Siskandar, S. (2020). The Role of Religious Education and Utilization Digital Technology for Improving The Quality in Sustainability Madrasa. *JURNAL TARBIYAH*, *27*(1). https://doi.org/10.30829/tar.v27i1.675

UNESCO. (2023). Global education monitoring report 2023: Technology in education - A tool on whose terms? UNESCO.