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Museum Pancasila: QR Codes, Digital Products, and Gallery Walk in Pancasila Education

Alfiah[1], Indra Danuarta[2], Indra Prayoga[1], Saiful Ma'arif[3], Wahyu Sulistyo[4]

[1,2,3,4]Civic Education, Program Profesi Guru (PPG) Calon Guru, Universitas Ivet, Semarang, Indonesia

[1]alfiali39@gmail.com

Abstract

Purpose	:	Pancasila Education needs learning experiences in which students explore, discuss, create, and reflect on how Pancasila values relate to daily life. This study describes the implementation of Museum Pancasila, a design that translates museum-learning principles into four content zones and integrates QR Codes, group digital products, and Gallery Walk, and describes score changes.
Method	:	A descriptive implementation study, reporting the planning and action stages of a first classroom action research cycle, involved 36 Grade X students in two meetings of two lesson periods each, the second devoted to individual evaluation. Data came from documentation, group products, a 15-item essay evaluation scored with a 0–4 rubric, and pretest–posttest scores on the same items, and were analyzed descriptively.
Results	:	Four groups, each working in one zone, produced a timeline, a concept map, a poster, and solution ideas on bullying. The individual evaluation had a mean of 93.06 (range 89–98). Mean scores rose from 81.39 (pretest) to 91.67 (posttest): 19 students improved, 14 were unchanged, and 3 declined. Among the 23 students with pretest scores below 100, the mean individual normalized gain was 0.68 (0.55 when computed from group means).
Conclusion	:	Museum Pancasila could be implemented as designed and generated varied artifacts. The score changes are descriptive, not evidence of effectiveness, because test items were identical, many students began at the maximum, and no comparison group or completed observation instruments existed. A complete cycle would need parallel tests, observation instruments, product rubrics, and documented reflection.

Keywords: civic education; experiential learning; cooperative learning; museum learning; normalized gain

1. Introduction

Pancasila Education is expected to do more than transmit knowledge about the foundation of the state, the position of Pancasila, and the application of its values. It also aims to help students connect these concepts with their daily lives. Learning therefore needs to give students room to process information, discuss, formulate ideas, present their work, and reflect on their understanding.

Several bodies of theory support such learning. Knowledge is built through social interaction and supportive guidance (Vygotsky, 1978; Wood et al., 1976), experience becomes educative when it is followed by reflection (Dewey, 1938; Kolb, 1984), and making products gives learners concrete artifacts through which to express and examine ideas (Krajcik & Blumenfeld, 2006). The content of Pancasila Education also calls for a particular treatment: Pancasila can be understood as the result of a dialogical process of formulation and, at the same time, as a set of values to be applied to present-day problems (Latif, 2011). Bullying is a suitable application context because it is a repeated

negative act carried out within an imbalance of power (Olweus, 1993), because schools are required to prevent and handle violence, including bullying (Kemendikbudristek, 2023), and because it is close to students' lives.

Three instructional elements are relevant here. Museum-learning perspectives treat visitors as active makers of meaning whose experience unfolds in physical, social, and personal contexts (Falk & Dierking, 2000; Hein, 1998). Gallery Walk, in which students move among stations to observe and respond to one another's work, has been used to promote classroom discussion (Francek, 2006) and to support engagement and the communication of concepts (Tan & Perrault, 2025). In Pancasila and civics classrooms, it has been combined with project-based learning in Grade X (Gunadi et al., 2026) and studied in relation to student activeness in Grade VII (Kholifah, 2026). QR Codes, for their part, connect physical materials with digital content (Law & So, 2010), although their usefulness depends on how concise and coherent that content is (Mayer, 2009).

The museum-learning literature offers more than a metaphor for this design. Falk and Dierking (2000) describe the museum experience through a contextual model in which learning emerges from the interaction of three overlapping contexts, namely the personal context (prior knowledge, interests, and motivation), the sociocultural context (conversation and collaboration with others), and the physical context (the setting, its objects, and how visitors orient themselves in it), all unfolding over time. Hein (1998) argues from a constructivist position that a museum should give visitors physical access to its exhibits and intellectual access to their ideas, offering several ways into the material so that visitors construct their own meanings and do not simply receive a prescribed one. Read together, these frameworks suggest three questions for classroom design: how learners are oriented to a bounded space and its objects, how they talk and work with others around those objects, and how they connect what they meet to what they already know. Museum Pancasila uses these questions as design principles, set out in Section 2.3, and does not treat them as findings about outcomes.

Museum Pancasila combines these elements in one design. Content is divided into four zones (Formulation Trail, Position Room, Application Gallery, and Solution Laboratory), each with a content focus and an expected product. Students access content through QR Codes, record their journey in a Museum Passport/Visa and Collection Cards, produce group digital products, share them through Gallery Walk, and finish with a digital crossword puzzle and an individual evaluation. The studies reviewed above examine Gallery Walk, QR Codes, or product-based learning separately; the sources located for this study did not document a zone-based design that integrates them for Pancasila Education. At the same time, the classroom records available for this implementation do not include structured pre-action data or completed observation sheets. The study is therefore positioned as a descriptive account of an initial implementation rather than as a test of effectiveness.

This study aims to (1) describe how Museum Pancasila was implemented in Pancasila Education in Class X-2 of SMA Negeri 3 Semarang; (2) describe how QR Codes, group digital products, and Gallery Walk were integrated into the learning flow; (3) identify the process and product evidence available and its limits for further evaluation; (4) describe pretest–posttest score changes as an initial picture, without inferring causality; and (5) clarify how the design draws on museum-learning frameworks and how it differs from ordinary station-based and project-based learning.

2. Method

Research Design and Setting

This study is reported as a descriptive implementation account. The design was prepared for classroom action research (CAR), which treats action as a spiral of planning, action, observation,

and reflection (Kemmis & McTaggart, 1988), and the first cycle was started on that basis. Only the planning and action stages of that cycle are documented, however: two meetings were carried out, but no completed observation instruments and no documented reflection on the implementation were available for analysis, and no revised action was implemented. The study therefore does not present itself as a completed CAR cycle and does not claim to report what was learned from reflection. It records what was planned and enacted, describes the evidence that exists, and treats the gaps as requirements for the next cycle (Section 4.5). A mixed qualitative–quantitative approach was used: documentation and products were described qualitatively, and scores were described quantitatively.

The study took place in the Pancasila Education class X-2 at SMA Negeri 3 Semarang, Indonesia. The first meeting was held on Wednesday, 23 September 2026, in lesson periods 4 and 5 (2 lesson periods), and the second on Wednesday, 30 September 2026, in the same periods (2 lesson periods). The second meeting was devoted to individual evaluation.

Participants

Participants were 36 Grade X students, all recorded as present according to the class score list. Gender distribution and prior-ability profiles were not available and were not analyzed. Results are reported in aggregate, and no student is identified.

Design Principles Drawn from Museum-Learning Theory

The label "museum" in Museum Pancasila is a design claim, and it is tied to specific features and not to a theme. Table 1 maps each feature of the design to the museum-learning principle it was meant to realize, to the claim the design makes for it, and to the evidence this study holds. Falk and Dierking's (2000) contextual model organized the student journey. The zones, the QR-coded materials, and the Museum Passport/Visa orient students within the physical context: a bounded space with a content focus. Group work around each zone, and the exchange of products in Gallery Walk, serve the sociocultural context through shared talk, a shared record, and a shared product. The Collection Cards and the individual evaluation return attention to the personal context, that is, to what each student takes from a zone. Hein's (1998) distinction between physical and intellectual access shaped how content was offered. QR Codes and zone materials gave students physical access to content, whereas the group mission, the product, and the Collection Card required them to build an interpretation, so that content was not only available but had to be made sense of.

Three features distinguish the design from ordinary station-based learning and from project-based learning, although it borrows from both. First, in a typical station rotation every group passes through every station and the stations are interchangeable. Here each group is assigned to one zone and becomes responsible for it, and in the design the other zones are encountered through the other groups' products in Gallery Walk. Content therefore reaches students in two ways: directly through their own zone and indirectly through exhibits curated by peers. Second, project-based learning usually unfolds over an extended period around a driving question (Krajcik & Blumenfeld, 2006), whereas here each product is bounded by the content focus of its zone and was produced within a single meeting, while the journey is recorded in a passport and collection cards that carry the museum convention through the whole sequence. Third, the journey is organized around objects of interpretation, namely the QR-coded materials and the peer-made exhibits, and students alternate between the roles of visitor and curator, a role exchange that station rotations and projects do not normally build in. These are differences of design. The study does not test whether they matter for learning, and Section 4.2 considers how far the present evidence supports them. In practice the design is a hybrid of station work, short product-making, and Gallery Walk, framed by museum conventions.

Table 1. *Museum-Learning Principles Underlying the Design Features*

Design feature	Museum-learning principle	Design claim	Evidence in this study
Four content zones, each with a content focus and a product	Physical context: a bounded, oriented space (Falk & Dierking, 2000)	Gives each group a distinct, manageable strand of content	Zones and products documented (Table 4; Figure 2); effect on focus not observed
QR Codes at the zones	Physical and intellectual access to content (Hein, 1998)	Bridges physical stations and digital content	Photographs of scanning (Figure 1); content quality not rated
Museum Passport/Visa and Collection Cards	Personal context: recording a journey and an interpretation (Falk & Dierking, 2000)	Prompts each group to record and interpret what it meets	Prepared and used (Figure 3); no rubric applied
Group mission and zone product	Sociocultural context: meaning built through shared work (Falk & Dierking, 2000; Hein, 1998)	Turns access to content into an interpretation expressed as a product	Four products documented (Figure 2); quality not rated
Gallery Walk	Sociocultural context: visitor and curator roles (Falk & Dierking, 2000)	Lets groups meet other zones through peers' exhibits	Placed in the Share stage; quality of discussion not recorded
Digital crossword and individual evaluation	Personal context over time: consolidation (Falk & Dierking, 2000)	Consolidates content after the visit and checks individual understanding	Crossword displayed (Figure 4); scores in Sections 3.3 and 3.4

Note. Principles follow Falk and Dierking (2000) and Hein (1998). The right-hand column records the status of the evidence, not an outcome.

The Museum Pancasila Learning Design

The learning objectives were that students are able to (1) sequence the important stages of the formulation and ratification of Pancasila; (2) analyze the ideas and compromises involved in formulating the foundation of the state; (3) interpret the values of unity, tolerance, deliberation, and national interest; and (4) communicate the results of their collection curation orally and collaboratively. Students worked in groups, each aligned with one of four zones, and moved through five stages: Explore, Analyze, Create, Share, and Reflect (Table 2). At the start of Meeting 1, the teacher introduced the concept and the rules of the museum journey. The Museum Passport/Visa and the Collection Cards were used to record students' learning journey and their interpretation of the material in a given zone.

Each stage had a defined purpose. In Explore, students entered their zone, read its materials, and scanned the QR Codes that opened the digital content for that zone, recording their journey in the Museum Passport/Visa. In Analyze, the group discussed what it had found and completed a group mission tied to the content focus of the zone. In Create, the group turned its analysis into one digital product matched to the zone (Table 4): a timeline for the Formulation Trail, a concept map

for the Position Room, a poster for the Application Gallery, and solution ideas on bullying for the Solution Laboratory. In Share, groups took the role of visitors to one another's exhibits through Gallery Walk. In Reflect, students worked on a digital crossword puzzle of 15 clues at Meeting 1 and answered the 15 individual essay items at Meeting 2. The four zones also form a content progression, from the process of formulating Pancasila, through its position, to its application in school life and the analysis of problems, so that the products move from recalling and organizing toward applying and proposing. The details of the Gallery Walk procedure, such as rotation order, time per exhibit, and whether responses to products were written or spoken, are not reported here.

Table 2. *Learning Flow of Museum Pancasila*

Stage	Meeting	Student activities
Explore	1	Exploring the zone, reading materials, scanning QR Codes, and collecting information.
Analyze	1	Discussing the information and completing the group mission.
Create	1	Producing the group product that corresponds to the zone.
Share	1	Gallery Walk to view and explore the products of other groups.
Reflect	1 and 2	Reinforcement through a digital crossword puzzle (Meeting 1); individual evaluation through 15 essay items (Meeting 2).

Data Sources and Instruments

Data were collected through documentation and assessment. Documentation sources were photographs of students scanning QR Codes and collaborating, the Museum Passport/Visa and Collection Cards, the four group products, and the display of the digital crossword puzzle, which contained 15 clues. Two assessment instruments were used. The first was an individual evaluation of 15 short essay items administered at Meeting 2. Each item was scored from 0 to 4 with the rubric in Table 3, so the maximum score was 60, and scores were converted to a 0–100 scale as (score obtained ÷ 60) × 100. Item 15 required students to identify a problem, name the related precept or value, propose a solution, and outline implementation steps. The second instrument was a pretest and posttest consisting of the same 15 essay items, whose scores were available for all 36 students. The individual evaluation and the pretest–posttest were treated as separate datasets because they originate from different assessments. Completed observation sheets for student activity and teacher performance were not available and were therefore not used.

Item development and scoring. The 15 essay items were written by Alfiah, who was also responsible for the scoring. Every response was checked by two or three of the authors, with Alfiah as the person in charge of the scoring. Before the items were given to students, they were aligned with the initial assessment (asesmen awal) of the lesson plan. The rubric (Table 3) is a general rubric: the same five level descriptors were applied to every item and were not written separately for each item, and item 15, which required a problem, the related precept or value, a solution, and implementation steps, was scored on the same 0–4 scale. Checking by more than one author is a safeguard, but it is not reported here as a formal reliability check: whether the assessors scored independently, how differences between them were resolved, and any agreement index were not recorded. Scoring consistency therefore could not be quantified, and because the person in charge of the scoring also wrote the items, the expectations of the scorer cannot be ruled out as an influence on the scores. Because the pretest and the posttest used the same items and the same rubric, any drift in scoring between the two occasions would also have gone undetected.

Table 3. *Scoring Rubric for the Essay Items*

Score	Descriptor
4	Correct and complete
3	Correct but incomplete
2	Partly correct
1	Less accurate
0	Blank or irrelevant

Note. Maximum total score = 15 items × 4 = 60. Converted score = (score obtained ÷ 60) × 100.

Status of the evidence. The documentation sources (photographs, passports and collection cards, products, and the crossword display) are treated as implementation records. They can show that an activity took place and what it produced. They cannot establish the quality of group discussion, the distribution of participation among group members, or the level of understanding behind a product, because no observation record or product rubric was completed. Table 5 (Section 3.2) lists, for each source, what it can and cannot support, and the Results and Discussion are written within those limits.

Data Analysis

Documentation and products were analyzed descriptively by grouping evidence according to learning stage and type of artifact. Individual evaluation scores were described by number of students, mean, highest score, and lowest score. Pretest and posttest scores were described by mean, standard deviation, mean difference, and the number of students whose scores rose, stayed the same, or fell. Normalized gain was calculated as g = (posttest − pretest) ÷ (100 − pretest), the proportion of the possible improvement that was actually achieved. Two decisions about this index need justification because it comes from physics education research (Hake, 1998). First, the ratio itself is not specific to physics. It standardizes a raw difference by the room left above the pretest score, which matters here because pretest scores ranged from 30 to 100, and a student who starts at 60 has far more room to gain than one who starts at 95. Second, Hake's categories of high ($g \geq 0.70$), medium ($0.30 \leq g < 0.70$), and low ($g < 0.30$) gain were derived from class-average gains on concept inventories in introductory mechanics courses. They are conventions and not properties of Pancasila essay scores, and they were not designed for individual students or for rubric-scored essays. They were therefore used only as a shared descriptive vocabulary that lets readers compare the results with a widely used reference, and not as a standard of effectiveness. Following Bao (2006), who shows that the average of individual gains and the gain computed from class means are different quantities, both are reported: the mean of individual gains among students with a pretest below 100, and the gain computed from the pretest and posttest means of all 36 students. Gain was not calculated for students with a pretest score of 100 because the denominator is zero; because g is also poorly suited to score decreases (Marx & Cummings, 2007), the three decreases, all among these students, are reported as changes in score. No inferential tests were run and no causal claims were made, because there was no comparison group and no structured observation. The percentage of students meeting a mastery criterion was not computed because no criterion was specified.

3. Results

Implementation of Museum Pancasila

Both meetings were carried out as planned, and all 36 students attended. At Meeting 1, students worked in four groups, each assigned to one zone, and passed through the five stages shown in Table 2. Photographs show students using devices to scan QR Codes and explore content, discussing in groups, and producing group artifacts (Figure 1). Each group produced a different product that matched its zone (Table 4; Figure 2). Two of the four products addressed bullying: the

poster presented the application of Pancasila values in relation to bullying, and the solution ideas addressed bullying directly.



Figure 1. *Students Using QR Codes to Access Museum Pancasila Content*

Note. Left: students displaying the QR Codes used to access zone content. Right: students scanning QR Codes in groups. Faces have been obscured to protect student identity.

Table 4. *Zones, Content Focus, and Group Products*

Zone	Content focus	Group product
Formulation Trail	Process of formulating Pancasila	Timeline of the formulation of Pancasila
Position Room	Position of Pancasila	Concept map of the position of Pancasila
Application Gallery	Application of Pancasila values in school life	Poster on the application of Pancasila values, and Collection Card
Solution Laboratory	Analysis of problems that contradict Pancasila and formulation of solutions	Solution ideas on bullying



Figure 2. *Group Digital Products Created in the Four Zones*

Note. Top: timeline of the formulation of Pancasila (Formulation Trail) and concept map of the position of Pancasila (Position Room). Bottom: poster on the application of Pancasila values (Application Gallery) and solution ideas on bullying (Solution Laboratory). Student names have been obscured.

The variety of products shows that the content was processed through different representations: a chronological sequence, a conceptual structure, a visual message, and a proposal for action. The stored photographs and artifacts show that the Museum Passport/Visa and the Collection Cards were prepared and used (Figure 3), and Gallery Walk was placed in the Share stage so that groups could explore one another's work. Figure 4 shows students working on the digital crossword puzzle at the Reflect stage.

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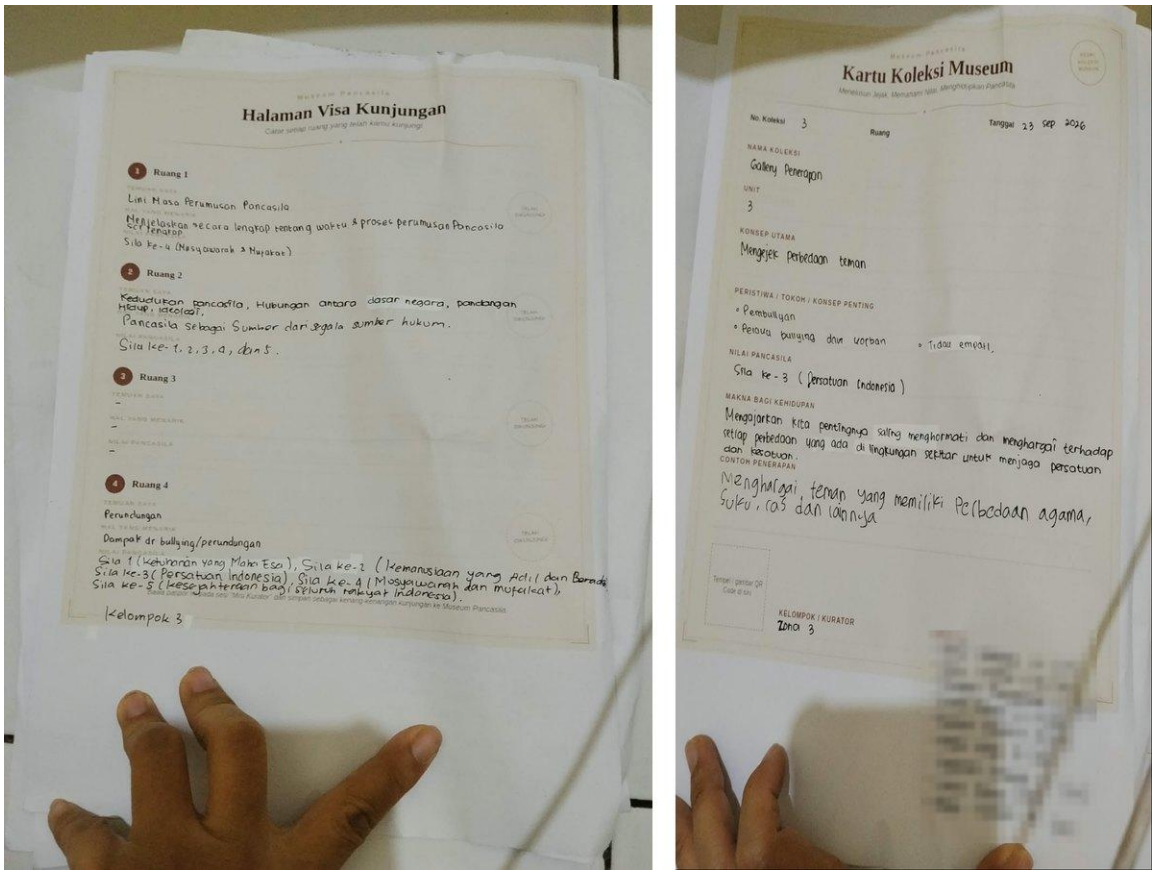

Figure 3. *Completed Museum Passport/Visa and Collection Card*

Note. Left: Museum Passport/Visa page completed by one group. Right: Collection Card for the Application Gallery zone. Student names have been obscured.

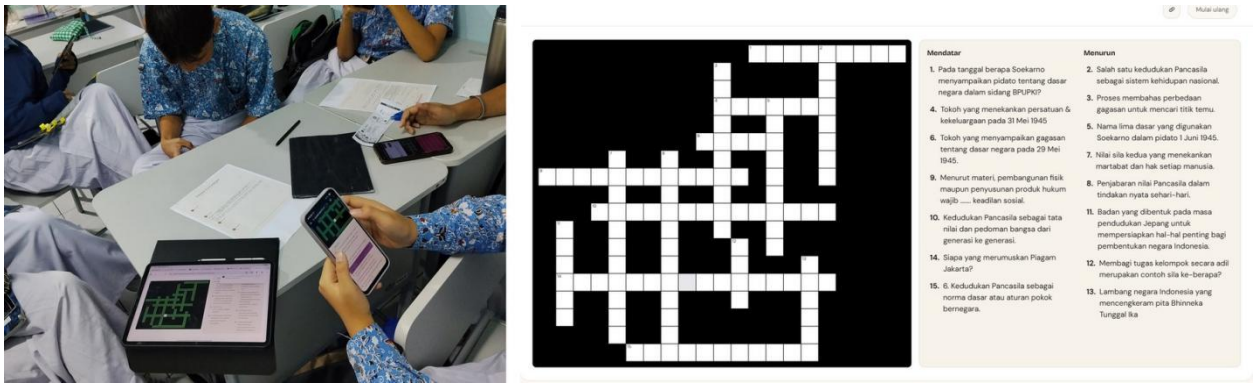

Figure 4. *Reinforcement Through the Digital Crossword Puzzle*

Note. Left: students working on the crossword puzzle on a tablet and a smartphone. Right: display of the puzzle with its 15 clues.

Process Evidence and Observation

Because completed observation sheets for students and the teacher were not available, student activity is described qualitatively from photographs and artifacts only. These sources document the use of QR Codes, group collaboration, and the resulting products, but they provide no standardized observation scores and are not used to claim a change in student activeness or to rate teacher performance. The quality of the QR Code content, the quality of the discussions during Gallery Walk, and the time spent at each stage were not recorded.

Table 5 summarizes what each evidence source can and cannot support. The pattern is consistent: the sources show that activities were enacted and that artifacts were produced, and none of them can show how well students discussed, participated, or understood.

Table 5. *What Each Evidence Source Can and Cannot Establish*

Evidence source	What it can document	What it cannot establish
Photographs of QR Code use and group work	That devices and QR Codes were used and that groups worked together	The quality of discussion, who contributed, or what was learned
Museum Passport/Visa and Collection Cards	That the instruments were prepared and used by groups	The depth or accuracy of the interpretation recorded (no rubric applied)
Four group products	That the products were varied and matched their zones	The quality of the products or individual contributions
Digital crossword puzzle (15 clues)	That the reinforcement activity was run	Performance on the puzzle (no puzzle scores analyzed)
Individual evaluation (15 essay items)	The descriptive distribution of scores at Meeting 2	Change over time or mastery (no baseline for this dataset and no criterion)
Pretest and posttest (same 15 items)	The direction and size of score changes	Cause of change (identical items, ceiling, no comparison group)

Note. Sources are those described in Section 2.5.

Individual Evaluation

The individual evaluation at Meeting 2 covered all 36 students. Converted scores ranged from 89 to 98, with a mean of 93.06. No mastery criterion was specified for the subject, so the percentage of students meeting a criterion was not computed.

Pretest–Posttest Score Changes

Mean scores rose from 81.39 (*SD* = 20.02) on the pretest to 91.67 (*SD* = 12.76) on the posttest, a difference of 10.28 points (Table 6). Thirteen students (36.1%) already scored 100 on the pretest, and 21 students (58.3%) did so on the posttest. At the individual level, 19 students' scores rose, 14 stayed the same, and 3 fell (Table 7). Ten of the 14 unchanged scores were at the maximum of 100, and the three decreases all involved students who scored 100 on the pretest and 60–80 on the posttest. Among the 23 students whose pretest score was below 100, the mean of individual normalized gains was 0.68. Using Hake's thresholds only as descriptive bins, 14 of these students fell in the high bin, 3 in the medium bin, and 6 in the low bin (four of whom had unchanged scores). Computed instead from the group means of all 36 students, the gain was (91.67 − 81.39) ÷ (100 − 81.39) = 0.55. The two figures differ because they are different quantities (Bao, 2006), and neither should be read as an effect size for the design.

Table 6. *Descriptive Statistics of Pretest and Posttest Scores (N = 36)*

Test	*M*	*SD*	Min	Max	Students scoring 100, *n* (%)
Pretest	81.39	20.02	30	100	13 (36.1)
Posttest	91.67	12.76	60	100	21 (58.3)

Note. M = mean; *SD* = sample standard deviation. The mean difference was 10.28 points.

Table 7. *Direction of Score Change and Descriptive Normalized Gain Bins*

Category	*n*	%
Direction of change (N = *36)*		
Increased	19	52.8
Unchanged (10 at a score of 100)	14	38.9
Decreased	3	8.3
Normalized gain, students with pretest < 100 (n = *23)*		
High ($g \geq 0.70$)	14	60.9
Medium ($0.30 \leq g < 0.70$)	3	13.0
Low ($g < 0.30$)	6	26.1

Note. Normalized gain was not computed for the 13 students with a pretest score of 100. Mean individual normalized gain for the 23 students was 0.68; the gain computed from the group means of all 36 students was 0.55. Hake's (1998) thresholds are used only as descriptive bins.

4. Discussion

Interpreting the Implementation

The results show that Museum Pancasila could be enacted in two meetings of two lesson periods each and that its components yielded concrete, varied artifacts. Dividing the content into zones gave each group responsibility for a distinct strand of content, and the Share stage turned each group's product into an object that other students could explore. This arrangement resembles cooperative-learning structures that pair group responsibility with individual accountability (Johnson & Johnson, 1999; Slavin, 1995): groups were accountable for their zone's product, whereas the individual evaluation at Meeting 2 asked every student to show their own understanding. Without completed observation sheets, however, the contribution of each group member cannot be judged, and the arrangement can only be said to provide the structure in which such contributions could occur.

The sequence of Explore, Analyze, Create, Share, and Reflect can be read in parallel with experiential learning, in which concrete experience is followed by reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984), and in which experience gains educational value through continuity and reflection (Dewey, 1938). The parallel is conceptual. The sequence is not identical to Kolb's cycle, and it has not been tested empirically in this classroom. The four products also place different cognitive demands on students (Anderson & Krathwohl, 2001): the timeline mainly involves remembering and understanding, the concept map involves organizing understanding, and the poster and the solution ideas on bullying involve applying, analyzing, and creating. Because no product rubric was completed, this mapping describes what the tasks required, not the level students reached.

QR Codes served as the bridge between the physical stations and digital content (Law & So, 2010). Their value depends on whether the content is concise and coherent (Mayer, 2009), but neither the quality of the QR Code content nor the quality of the discussions during Gallery Walk was recorded. The fit between the design and these ideas therefore remains conceptual rather than demonstrated.

Two of the products, the poster and the solution ideas, connected Pancasila values with bullying, a problem that exists in the school environment (Kemendikbudristek, 2023; Olweus, 1993). This choice is consistent with the view that character and value education involves knowing, feeling, and doing the good (Lickona, 1991), because it asks students to move from knowing what a value means toward proposing what could be done. The present data, however, show only that students produced such products. Whether students internalized the values or changed their behavior was not measured, and nothing in the records supports a claim about either.

Does the Museum Framing Earn Its Place?

A design that borrows its name from museums should show what the borrowing contributes. Section 2.3 and Table 1 set out the intended contributions, and this subsection asks how far the present evidence supports them. For the physical context, the zones and QR Codes structured access to content, and photographs show students using them (Figure 1), but whether the zone boundaries helped students concentrate or merely fragmented the content cannot be judged without observation. For the sociocultural context, the Share stage created the conditions for an exchange between visitors and curators, but the quality of that exchange was not recorded. Gallery Walk can be a display more than a conversation unless students are asked to respond to what they see, and the present records cannot show which it was. For the personal context, the Passport/Visa and the Collection Cards were prepared and used, yet no rubric was applied to them, so they document that reflection was invited and not that it occurred in depth. In each case the museum framing produced specific, checkable features, which is its main contribution so far. A fair test of whether the framing adds anything to ordinary station-based or project-based learning would compare these features with a version of the lesson that keeps the content and the products but drops them, for example with no passport, no assigned zone responsibility, or no visitor role in the Share stage. Without such a comparison, the museum framing is best treated as a design rationale that makes choices explicit, and not as a mechanism shown to improve learning.

Reading the Score Changes

The rise of 10.28 points in the mean and a mean individual normalized gain of 0.68 should be read with caution for four reasons. First, the baseline was already high: the pretest mean was 81.39 and 13 of the 36 students (36.1%) scored the maximum, which leaves little room for improvement and makes gain incalculable for them. Second, the pretest and posttest used the same 15 items, so familiarity with the questions may have contributed to higher scores. Third, three students who scored 100 on the pretest scored between 60 and 80 on the posttest; the reasons were not recorded and should be explored through reflection or interviews rather than inferred from the numbers. Fourth, there was no comparison group, so changes cannot be separated from other influences between the two tests.

The spread of scores also narrowed (*SD* from 20.02 to 12.76), but with 21 students at the maximum on the posttest, part of this narrowing is likely to reflect a ceiling effect rather than more even understanding. The individual evaluation (M = 93.06, range 89–98) is a separate dataset and cannot be compared directly with the posttest. Taken together, the score changes are best used as formative information for improving the lesson (Black & Wiliam, 1998), not as evidence that Museum Pancasila is effective.

The use of Hake's (1998) categories deserves a further caution. They were built for class-average gains on physics concept inventories, and this study applies them to a rubric-scored Pancasila essay test, to individual students, and in a sample in which more than a third began at the ceiling. The mean individual gain of 0.68 lies just below the 0.70 boundary of the high bin, while the gain computed from group means is 0.55, so the choice of calculation alone moves the result by 0.13. A single figure and a single label therefore hide how unstable the index becomes when pretest scores are high and the test is short. For this reason the gain is presented as one more description of the score changes, alongside the raw means and the counts of students who rose, stayed the same, and fell, and not as a rating of the design. If a later cycle uses parallel items and a more demanding test, normalized change (Marx & Cummings, 2007), which handles decreases, would be a better-suited index.

Relation to Previous Studies

Earlier work supports individual elements of the design at the level of strategy. Gallery Walk has been linked to discussion (Francek, 2006), engagement and the communication of concepts (Tan

& Perrault, 2025), and, in Pancasila and civics classes, to student activeness (Gunadi et al., 2026; Kholifah, 2026). Product-based collaborative learning has been associated with collaboration skills and cognitive outcomes (Aifah & Astriani, 2024). These studies differ from the present one in subject, level, or context, so they serve as points of comparison and not as evidence that the design works in Class X-2. Likewise, the present study did not measure activeness, the outcome emphasized by Gunadi et al. (2026) and Kholifah (2026), and so it neither confirms nor contradicts their findings.

What this study adds is a documented, zone-based design specific to Pancasila Education. In this design each zone is tied to a content focus and a product, bullying serves as the context for applying values, and QR Code access, the Museum Passport/Visa, Collection Cards, Gallery Walk, and a digital crossword puzzle are combined in one learning flow. It also shows, in a transparent way, which evidence such an implementation can and cannot provide when observation instruments and a mastery criterion are missing: documentation can establish that the design was enacted and what artifacts it generated, but it cannot establish how actively students participated or how well the products reflected their understanding.

Implications and Limitations

Theoretically, the study offers a design description from which testable hypotheses can be drawn, for example whether zone-based product sharing is associated with greater student activeness or deeper conceptual understanding. Such hypotheses require indicators and thresholds that are set before the action is repeated. Practically, teachers can adapt the zone structure to other Pancasila Education topics. To turn an implementation like this into usable evidence, they should prepare observation sheets, a product rubric, and parallel pretest and posttest items, and record the time spent at each stage.

The study has several limitations. It covers two meetings in one class at one school; no complete action-research cycle was carried out, so observation, documented reflection, and revised action are still missing; Alfiah wrote the items and was in charge of the scoring, and every response was checked by two or three authors, but no independence of the checks, resolution procedure, or agreement index was documented, so scoring consistency was not quantified; completed observation sheets and a mastery criterion were not available; identical test items and a ceiling effect limit the interpretation of the score changes; there was no comparison group; and the quality of products and QR Code content was not rated with a rubric. The findings should therefore not be generalized beyond this class.

Because the first cycle stopped after action, the reflection stage and the revised action remain to be done. The gaps documented above translate into requirements for a second cycle: (a) a structured observation sheet for student activity and teacher performance, with indicators set beforehand; (b) a product rubric and a check of QR Code content, applied independently by at least two raters, with the division of scoring, the resolution of differences, and an agreement index recorded so that scoring consistency can be reported; (c) parallel but not identical pretest and posttest items, more demanding than the present ones so that a third of the class does not begin at the ceiling; (d) a record of the time spent at each stage and of the Gallery Walk procedure, ideally with a response sheet so that students' comments on one another's work leave evidence; and (e) follow-up of the three students whose scores fell, through short interviews. These are requirements derived from the limits of the present records, not findings. With them in place, the present account would become the first half of an action-research cycle and would no longer stand in for one.

5. Conclusion

Museum Pancasila was implemented in Class X-2 of SMA Negeri 3 Semarang in two meetings of two lesson periods each, with 36 students moving through five stages across four zones.

QR Codes provided access to content, group digital products served as learning artifacts, and Gallery Walk allowed groups to explore one another's work. The design translated museum-learning principles into specific, checkable features (assigned zones, QR-coded access, a passport and collection cards, and a visitor and curator exchange in Gallery Walk), although whether these features add to ordinary station-based or project-based learning was not tested. The available evidence consists of photographs, four group products, the Museum Passport/Visa and Collection Cards, a digital crossword puzzle, and assessment scores. The individual evaluation produced a mean of 93.06 (range 89–98). Mean scores rose from 81.39 to 91.67, with 19 students improving, 14 unchanged, and 3 declining, and the mean individual normalized gain was 0.68 among the 23 students for whom it could be computed (0.55 when computed from the group means). Because of identical test items, the ceiling effect, the absence of a comparison group, and the lack of completed observation instruments, these findings describe the implementation and the score changes but do not show that the design improved learning.

Follow-up work should be specific. A next cycle should use parallel but not identical pretest and posttest items of greater difficulty, since 13 students began at the maximum; complete observation sheets for student activity and teacher performance; apply a rubric to product quality and QR Code content; record the time spent at each stage; and follow up the three students whose scores declined through reflection or interviews. Indicators and thresholds of success should be defined before the action is repeated, and a comparison group would make it possible to examine the effect of the design.

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