

The Implementation Of Environment Based Contextual Teaching And Learning In Smartphone Photography Instruction For Class X TO 3 Students At SMKN 3 Semarang

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Abstract

This study aims to describe the implementation of environment based Contextual Teaching and Learning in smartphone photography instruction for Class X TO 3 students at SMK Negeri 3 Semarang. The study employed a qualitative descriptive approach conducted from April 10 to 29, 2026. Data were collected through observation, semi structured interviews, and documentation involving learning activities, students' experiences, photographic works, and teacher information. Data were analyzed through data condensation, data display, and conclusion drawing and verification. The findings indicate that the school environment functioned as an authentic context and visual learning resource. Learning activities included environmental observation, visual exploration, smartphone photography practice, discussion, presentation, and reflection. These

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activities enabled students to construct understanding through direct experience and interaction while developing visual decision making, problem solving, communication, collaboration, and reflective abilities. Environment based contextual learning therefore supported active, collaborative, and reflective photography learning

Keywords: Contextual Teaching and Learning; Smartphone Photography; School Environment; Contextual Learning; Arts Education.

INTRODUCTION

Social Twenty first century education is no longer focused solely on the acquisition of knowledge but also on developing creativity, critical thinking, communication, collaboration, and students' ability to connect knowledge with real life contexts. This orientation is consistent with the implementation of the Merdeka Curriculum, which provides teachers with greater flexibility to design learning activities based on students' characteristics, needs, and environmental contexts. Deep learning within the Merdeka Curriculum serves as a pedagogical approach that complements the curriculum by encouraging conceptual understanding beyond rote memorization (Maulana & Fazrin, 2025). Contextual learning provides students with opportunities to construct understanding through direct experience, observation, exploration, practice, and reflection. Sayadi (2021) explains that learning becomes meaningful when students are able to connect subject matter with real life situations, while Prihatini (2024) emphasizes that knowledge is constructed through students' experiences and interactions with their learning environment. These perspectives indicate that the environment serves not merely as a setting in which learning takes place but also as a valuable source of authentic experiences that can support the development of meaningful understanding.

These characteristics of learning are highly relevant to Arts and Culture education, particularly in smartphone photography instruction. Art education is not solely oriented toward the production of artworks but also provides students with opportunities to observe, explore, create, interpret, and construct meaning through their surrounding environment (Sihotang, Probosini, & Pratama, 2023). As a form of visual communication, photography enables students to convey information, experiences, emotions, and narratives through the selection of subjects, composition, perspective, lighting, and the timing of image capture (Abiyyu, Situmorang, & Wirasti, 2021). Photography instruction provides a practice based learning experience that



enables students to engage directly with real objects and situations (Azzahra, 2024). The use of smartphones is particularly relevant in this context, as these devices function not merely as documentation tools but also as learning technologies that enable photographic concepts to be explored and practiced within authentic environments.

The school environment has the potential to be developed as a learning resource for smartphone photography instruction (Salsabilla, 2025). Gardens, trees, school buildings, facilities, surrounding objects, and the activities of the school community can serve as sources of visual exploration. Through the use of these environmental resources, students can apply photographic concepts directly, ranging from selecting subjects and determining camera angles to composing images, utilizing lighting, and producing photographic works that convey particular messages. Learning can therefore extend beyond the delivery of concepts in the classroom to encompass learning experiences involving observation, experimentation, discussion, creative production, and reflection on the resulting works. Accordingly, the school environment can function as an authentic context that supports students in constructing understanding through real world experiences.

Theoretically learning that emphasizes direct experience and connections with the environment can be understood from the perspective of social constructivism. This perspective posits that knowledge is constructed through students' active engagement in learning experiences and their interactions with the social and cultural environment surrounding them (Zulfah, Melviana, Salsabila, & Amina, 2026). In photography instruction, this process can occur when students observe real world objects, explore visual possibilities, discuss their observations and photographic results, receive feedback, and reflect on their creative experiences. Interactions among students, teachers, peers, and objects within the learning environment provide opportunities for students to construct understanding actively rather than merely receive information transmitted by the teacher. Accordingly, the school environment can be positioned as a social and visual context that supports knowledge construction, while Contextual Teaching and Learning (CTL) serves as a pedagogical approach that connects this process of knowledge construction with authentic situations closely related to students experiences.

These challenges highlight the need for a learning strategy that can connect photography concepts with experiences that are closely related to students' everyday lives. Contextual Teaching and Learning (CTL) represents a relevant pedagogical alternative because it positions real world experiences and the learning environment as integral components of the knowledge



construction process. Contextual learning provides students with opportunities to identify meaningful connections between the subject matter being studied and the situations they encounter in their daily lives. Aslamiyah (2024) explains that contextual learning emphasizes students' active involvement in discovering concepts through real world experiences, while Arqam (2026) demonstrates that connecting subject matter with students' experiences and learning environments can foster their attention and participation. The implementation of CTL in smartphone photography instruction can be facilitated through activities such as environmental observation, visual exploration, discussion, photographic practice, presentation, and reflection on the resulting works. These experiences demonstrate that photography instruction is not merely a process of acquiring technical skills but also a process through which students interact with their environment, peers, teachers, and the photographic works they produce (Wiguna & Oka, 2023).

Several previous studies have demonstrated the effectiveness of Contextual Teaching and Learning (CTL) in improving students' learning outcomes, motivation, and engagement. However, most of these studies have primarily examined the general application of CTL without specifically exploring the use of the school environment as an authentic context for smartphone photography instruction. In addition, previous research has tended to emphasize learning outcomes rather than examining the learning process through which students construct understanding through observation, exploration, practical activities, social interaction, and reflection. A comparison of previous studies and the position of the present study is presented in Table 1.

Table 1. Comparison of Previous Studies and the Research Position of the Present Study

Study	Focus	Main Findings	Research Gap Addressed by the Present Study
Agustiani (2023)	The effectiveness of CTL on learning outcomes	CTL improves students' learning outcomes.	Does not specifically examine environment-based smartphone photography instruction.



Study	Focus	Main Findings	Research Gap Addressed by the Present Study
Hadis (2022)	Comparison between CTL and conventional instruction	CTL produces better learning outcomes.	Does not focus on students' learning processes and experiences.
Ainah (2023)	CTL, motivation, and learning outcomes	CTL fosters active and meaningful learning.	Does not integrate environmental exploration with photography practice.
Nurochmah (2022)	Student engagement and authentic experiences	Authentic experiences support the success of contextual learning.	Has not been specifically applied to photography instruction at the vocational high school level.

Previous studies on CTL have predominantly focused on its effects on learning outcomes, motivation, or student engagement. However, studies that specifically explore the use of the school environment as an authentic context for smartphone photography instruction within Arts and Culture education at the vocational high school level remain limited. Few studies have documented the learning process in detail, particularly how students progress from observing their environment and exploring visual possibilities to making photographic decisions, engaging in collaborative interactions, and reflecting on their photographic works. This gap provides an important space for the present study, which seeks to examine the implementation of environment based Contextual Teaching and Learning in smartphone photography instruction by focusing on students' learning experiences and the processes through which understanding is constructed through direct interaction with the school environment.

The novelty of this study lies in the implementation of an environment based Contextual Teaching and Learning approach in smartphone photography instruction, positioning the school



environment as a source of visual experience rather than merely as a practice setting. The school environment is utilized as an authentic context that enables students to observe objects, make visual decisions, explore photographic techniques, produce photographic works, discuss the results, and engage in reflection based on direct experiences. This study integrates CTL with photographic creative activities through instruction in basic smartphone photography techniques. The focus of the study is directed not only toward learning outcomes but also toward facilitating and supporting students throughout the photography learning process.

Based on these issues, this study aims to describe and examine the implementation of an environment based Contextual Teaching and Learning (CTL) approach in smartphone photography instruction for Class X TO 3 students at SMK Negeri 3 Semarang, particularly in fostering learning experiences through activities involving observation, exploration, practice, discussion, creative production, and reflection on photographic works. The study also seeks to examine how environment based contextual learning can provide students with opportunities to actively engage throughout the photography learning process.

RESEARCH METHODS

This study employed a qualitative descriptive research approach. A qualitative approach was used to understand the learning phenomenon within its natural context and based on the experiences of the research participants (Moleong, 2022). The analytical framework focused on the process of students' knowledge construction through direct experience, social interaction, the utilization of the learning environment, photographic practice, and reflection throughout the implementation of Contextual Teaching and Learning (CTL). This approach was selected to describe and examine the implementation of an environment based Contextual Teaching and Learning (CTL) approach in smartphone photography instruction naturally, based on students' experiences and activities throughout the learning process.

The study was conducted from April 10 to 29, 2026, at SMK Negeri 3 Semarang, Central Java, Indonesia. The research was situated within Arts and Culture instruction focusing on smartphone photography for Class X TO 3 students. The research activities were carried out during learning sessions both inside and outside the classroom, with the school environment utilized as a source and context for students' visual experiences. The research participants consisted of several Class X TO 3 students at SMK Negeri 3 Semarang who participated in Arts and Culture instruction on smartphone photography. The participants were selected purposively



based on their involvement in the series of environment based photography learning activities. The Arts and Culture teacher served as a supporting informant to provide information regarding the planning, implementation, and evaluation of the learning activities. This participant selection was intended to obtain in depth data that could capture students' experiences and engagement throughout the implementation of the CTL approach.

The study was conducted through several stages, including preliminary observation, learning implementation, data collection, and data analysis. The preliminary observation was carried out to identify the learning conditions, students' characteristics, and instructional needs related to smartphone photography. The implementation stage involved the application of an environment based CTL approach through activities such as observing the school environment, exploring visual objects, engaging in discussions, practicing photography, presenting or appreciating photographic works, and conducting reflection. Photography activities were conducted progressively through instruction in basic smartphone photography techniques.

Throughout the learning process, the researcher observed students' activities and engagement, documented the learning process and photographic works, and conducted interviews to obtain information regarding students' learning experiences. The collected data were subsequently organized, condensed, analyzed, and interpreted to develop an in depth understanding of the implementation of environment based CTL in smartphone photography instruction. The focus of the study included the learning process, student engagement, learning focus, interactions with the environment, and students' experiences in observing, exploring, practicing, producing, and reflecting on photographic works.

The research data consisted of qualitative data derived from learning activities, students' experiences, photographic works, and information provided by the teacher. Data were collected through observation, interviews, and documentation. Direct observations were conducted throughout the learning process using an observation sheet to record students' engagement, attention or learning focus, interactions, environmental exploration activities, photographic practice, discussions, and reflection. Semi structured interviews were conducted with two students and one teacher to explore their experiences, understanding, responses, difficulties, and perceptions of environment based photography instruction. Documentation was used to complement the data by collecting photographs of the learning process, students' photographic works, and relevant instructional documents. The primary research instrument was the researcher, supported by observation guidelines, an interview protocol, and a documentation



checklist. The instruments were developed based on the research focus and indicators of student engagement, contextual learning experiences, environmental exploration activities, the creative process, and reflection. Instrument quality was ensured by examining the alignment between the indicators and the research focus, as well as by employing multiple data collection techniques to obtain complementary information.

Data trustworthiness was established through source and methodological triangulation. In the context of credibility assessment, triangulation refers to the verification of data obtained from various sources, using different methods, and across different periods (Gunawan, 2024). Source triangulation was conducted by comparing information obtained from students and the teacher, while methodological triangulation involved comparing findings from observations, interviews, and documentation. Data trustworthiness was further strengthened by examining the consistency among learning process records, informants' statements, and students' photographic works. This process was undertaken to ensure that the interpretations developed in the study remained consistently grounded in the empirical data obtained from the field. Data analysis was conducted interactively throughout the research process, from data collection to the completion of the study. The analysis consisted of data condensation, data display, and conclusion drawing and verification (Rianto, 2021). Data obtained from observations, interviews, and documentation were first organized according to the research focus and subsequently categorized into themes related to contextual learning experiences, environmental utilization, student engagement and learning focus, exploration processes, photographic practice, interaction, and reflection. The categorized data were then presented in narrative form to identify patterns and relationships among the findings. Conclusions were drawn based on consistent patterns within the data and were verified through comparisons across data sources and collection techniques. The analytical process was conducted iteratively to ensure that the resulting interpretations remained aligned with the observed learning conditions.

RESULTS AND DISCUSSION

Results

The findings indicate that the implementation of an environment based Contextual Teaching and Learning (CTL) approach in smartphone photography instruction fostered learning experiences that were more closely connected to students' real life contexts. The findings were derived from observations of the learning process, interviews, and documentation of both the



learning activities and students' photographic works. The data analysis revealed four main findings: (1) the utilization of the school environment as an authentic learning context, (2) direct exploration and practice of photography, (3) student engagement and learning focus throughout the instructional process, and (4) reflection on students' learning experiences and photographic works.

The School Environment as an Authentic Context

The school environment was utilized as an integral part of the photography learning process rather than merely as a setting for practical activities. Students were encouraged to observe their surroundings and identify objects that could serve as sources of photographic ideas. The selected subjects included gardens, trees, school buildings, school facilities, surrounding objects, and activities involving members of the school community. The observations indicated that students were given opportunities to independently select subjects that they considered interesting and relevant to the photographic concepts being studied.



Figure 1. The teacher guides students in observing the school environment

The observations indicate that utilizing the school environment as an authentic context provided students with opportunities to experience photography learning directly. As shown in Figure 1, the teacher did not merely convey photographic concepts verbally but guided students in identifying and exploring objects available within the school environment. This activity demonstrates that the surrounding environment can serve as a source of visual experience, enabling students to apply photographic concepts in real world situations. Students were given opportunities to select photographic subjects based on their observations, allowing the learning

process to engage their abilities to observe, select, consider perspectives, and make visual decisions.

These findings indicate that an authentic context can bridge conceptual understanding and practical experience, as photographic concepts such as composition, perspective, camera angle, and lighting were explored through students' direct interactions with objects in their immediate environment. The utilization of the school environment made photographic concepts that had previously been introduced through verbal explanations more concrete and meaningful. This process demonstrates that the school environment can function as a source of visual experience through which students construct understanding through direct interaction with their surroundings. Visual experiences encountered in everyday activities can therefore provide opportunities for students to learn directly from real world contexts.

Exploration and Photographic Practice as Contextual Learning Experiences

The implementation of CTL was evident in activities involving observation, exploration, experimentation, and the production of photographic works. Students were not merely presented with examples of photographic techniques by the teacher but were given opportunities to experiment with various camera angles, compositions, perspectives, and uses of light based on the subjects they identified within the school environment. The learning process was conducted progressively through the instruction and application of basic smartphone photography techniques.



Figure 2. Students practicing photography in the school environment

The observations indicate that direct photographic practice provided students with opportunities to experiment and identify approaches that aligned with their intended visual

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outcomes. Figure 2 illustrates the stage at which photographic concepts were applied through hands on practice in the school environment. Students used smartphones to photograph subjects identified during the preceding exploration activities. This activity demonstrates that students had opportunities to directly apply and test concepts related to camera angles, composition, perspective, and lighting within an authentic environmental context. Variations in the characteristics of photographic subjects and visual conditions encouraged students to adjust the photographic techniques they employed.

These findings were further supported by an interview with a student, who stated:

“I approached the photography process as an opportunity to experiment, observe the results, identify weaknesses, and make improvements. Learning photography provided me with direct learning experiences and opportunities to solve problems spontaneously. In my view, practicing photography in the school environment is not merely an activity for producing photographic works but also a process of developing knowledge through contextual experiences within the school environment.” (Interview with Hirro, April 10, 2026)

Student Engagement and Learning Focus

Student engagement was evident through active participation in observing the environment, identifying photographic subjects, taking photographs, engaging in discussions, and responding to the resulting photographic works. Learning activities conducted outside the classroom provided a learning atmosphere that differed from conventional classroom based instruction. The observations indicated that students became increasingly active in independently selecting photographic subjects.

This finding was further supported by a student’s statement during an interview:

“I found it easier to understand the material when learning through examples outside the classroom and exploring various objects that I encountered. I also had the freedom to choose the subjects I wanted to photograph while considering the basic photography techniques being studied.” (Interview with Ganesha, April 15, 2026)





Figure 3. Students and the teacher actively engage in discussion during outdoor exploration

Students learning focus was evident in their ability to adjust photographic techniques according to the characteristics of the selected subjects. Observation records indicated that students did not immediately settle on a single photograph but experimented with several camera angles before selecting the image they considered most appropriate. This finding was further supported by a student's statement explaining that changes in shooting position were made because the initial results did not adequately capture the form of the subject. Process documentation also revealed several photographic attempts before students selected the works to be presented. Figure 3 illustrates students engagement and learning focus throughout the environment based photography learning process. Students were actively involved in observing subjects, taking photographs, engaging in discussions, and receiving feedback from the teacher during outdoor exploration. These interactions indicate that the teacher functioned as a facilitator who provided guidance without restricting students' opportunities for exploration. Students were given opportunities to select subjects, consider camera angles, arrange compositions, and adjust lighting according to the characteristics of the environment they encountered.

These activities demonstrate the presence of both cognitive and practical engagement in the learning process, as students did not merely follow instructions but also made visual decisions based on their observations and experiences. Interactions among students and between students and the teacher also created a collaborative learning space that facilitated the exchange of ideas and feedback. Thus, utilizing the environment as an authentic context not only supported the development of students' technical photography skills but also provided opportunities for autonomy, collaboration, and reflective thinking throughout the creative process.

Reflection on Photographic Works

Reflection was conducted through discussions and appreciation of the photographic works produced by the students. Students were given opportunities to present their selected subjects using PowerPoint presentations, explain the reasons for their choice of camera angles, describe the techniques employed, and share their experiences throughout the photographic process. The documentation indicated an exchange of experiences between students and the teacher, as well as among students, during discussions of the photographic works.



Figure 4. PowerPoint presentation of students' photographic work

Figure 4 illustrates the stage of reflection and meaning making concerning the photographic works produced by the students. The works were presented in the form of PowerPoint presentations containing photographic documentation, along with explanations of the subjects, techniques, composition, and rationale for selecting particular camera angles. One student's work demonstrated the application of a low angle perspective, the rule of thirds, diagonal lines, color contrast, negative space, and detail to construct the visual character of a school building.

The presentation activity also provided students with opportunities to communicate their experiences and receive responses from both the teacher and their peers. The photographic works were not positioned merely as final products but also functioned as part of an authentic assessment process, enabling the teacher to observe students' technical skills, visual decision making, ability to articulate their works, and reflective processes. The reflection stage served as a process through which students reconstructed their practical experiences into a more structured understanding of photographic concepts and the visual decisions underlying their creative works.

Table 2. Key Findings from the Implementation of Environment Based CTL in Photography Instruction

CTL Component	Learning Activity	Data Evidence	Finding
Constructivism	Observing objects and connecting them with photographic concepts	Observation, interviews	Students construct understanding through real world objects.
Inquiry	Exploring camera angles, composition, perspective, and lighting	Observation, photographic works	Students engage in experimentation and visual adjustments.
Learning Community	Discussion and feedback	Observation, interviews	The exchange of ideas and perspectives occurs among students and between students and the teacher.
Modeling	The teacher provides examples of photographic techniques	Observation	Students use the examples as references for practice.

CTL Component	Learning Activity	Data Evidence	Finding
Questioning	The teacher provides guiding questions and prompts	Observation	Students consider the rationale behind their visual decisions.
Reflection	Presentation and appreciation of photographic works	Documentation	Students explain the process and visual considerations underlying their works.
Authentic Assessment	Assessment of the learning process and photographic works	Photographic works, presentations	Photographic works serve as evidence of students' application of photographic concepts.

DISCUSSION

The implementation of an environment-based Contextual Teaching and Learning (CTL) approach in smartphone photography instruction demonstrates that the school environment can function as an authentic learning context. Through observation, exploration, practical activities, discussion, creative production, presentation, and reflection, students constructed photographic understanding through direct experiences and interactions with objects, teachers, and peers. This process reflects social constructivism, in which knowledge is constructed through experience and social interaction rather than merely transmitted by teachers. These findings can be understood through the perspective of social constructivism associated with Lev Vygotsky, as discussed by Zulfah, Melviana, Salsabila, and Amina (2026) knowledge is not regarded as something simply transmitted from teachers to students but is constructed through experience and social interaction within particular contexts, which serves as the primary theoretical foundation of this study.

The findings show that environmental exploration enabled students to connect photographic concepts, such as composition, perspective, camera angles, and lighting, with real-world objects and situations. The school environment functioned as a visual laboratory that encouraged students to identify subjects, solve visual problems, and make independent



decisions. These findings reinforce Sayadi's (2021) view that learning becomes more meaningful when subject matter is connected to real life situations, as well as Prihatini's (2024) emphasis on the importance of experience and interaction with the learning environment in the construction of knowledge.

The school environment, within the context of photography instruction, can be understood as a visual laboratory that facilitates the inquiry process. Students are encouraged to observe their surroundings, identify visually engaging subjects, consider their visual characteristics, and determine the most appropriate ways to represent these subjects through photography. This process transforms learning from an activity centered on receiving instructions into one that involves discovering and solving visual problems. Students are required to consider practical questions, such as which camera angle would best represent a subject, how the composition should be arranged, how available light can be utilized, and how the subject can convey a particular visual message. Thus, environmental exploration not only increases students' physical activity but also engages analytical thinking in the process of making visual decisions (Yusmaningsih, Delianti, Mursyida, & Marta, 2024). This finding is consistent with Yang (2025) who emphasizes that real world experiences constitute an important component of contextual learning.

Smartphones functioned not only as documentation tools but also as learning media that enabled students to experiment with camera angles, composition, perspective, and lighting. Students were able to evaluate photographic results, identify weaknesses, and make improvements through repeated practice. This pattern is consistent with Andrean (2024), who emphasizes photography as an experiential learning process. In line with art education, the process of observation, exploration, creation, and meaning-making enabled students to transform environmental experiences into creative works Reinaldi (2023).

Student engagement was further strengthened through discussion, feedback, and collaboration. These activities reflected the learning community component of CTL, through which students exchanged perspectives and refined their visual decisions. This finding is consistent with Cyly (2023) who argues that collaboration in photography learning broadens students' perspectives on their photographic works. The teacher consequently functioned as a facilitator by providing examples, guidance, questions, and feedback while allowing students autonomy in selecting subjects and visual approaches. This role demonstrates the interrelationship among modeling, questioning, and learning community within CTL Mardeni



(Mardeni, 2021). Furthermore, students' explanations of their visual decisions developed their ability to articulate meaning through photographic works, reinforcing the importance of visual communication in art education. This process is in line with Ong (2021), who emphasizes the importance of learning through visual artworks, as art education is fundamentally concerned not only with the skills required to produce images but also with the ability to construct and communicate meaning. This perspective further reinforces Laksana's (2022) view that photography can function as a medium of visual communication through which information, experiences, emotions, and narratives are conveyed through various visual decisions.

Reflection connected practical experiences with conceptual understanding. Through presentations, appreciation, and discussion, students revisited their creative processes, explained their visual decisions, and recognized the relationship between photographic techniques and intended visual effects. This finding supports Sari' (2021) explains that reflection helps students connect their experiences with their understanding of concepts. This function was evident when students were able to identify the use of low angle perspectives, the rule of thirds, diagonal lines, color contrast, negative space, and detail as components of a strategy for constructing the visual character of their works. Students' ability to explain the rationale behind the use of these photographic elements indicates a development from merely engaging in practical activities toward greater awareness of the creative process. Students not only understood that a particular technique could be applied but also began to recognize why the technique was selected to produce a specific visual effect. This development is important because photography instruction at the school level should not be limited to students' ability to produce technically proficient images. Rather, as Nawawi (2024) argues, learning should develop students' ability to understand the relationship among visual decisions, the context of the photographic subject, and the messages they intend to convey. In this regard, photography learning serves as a medium for developing technical skills while simultaneously fostering critical, creative, communicative, and reflective thinking skills (Rahayu, Muhibbin, & Sumardi, 2025).

These findings also have implications for Arts and Culture instruction in vocational high schools. Photography learning can be structured through observation, exploration, practice, feedback, presentation, and reflection, supported by appropriate management of time, learning spaces, and instructional guidance. In line with Swastini (2024), this perspective on learning management highlights the importance of integrating environmental planning, time management, instructional guidance, and learning activities. Overall environment based CTL



demonstrates that the strength of smartphone photography instruction lies in the integration of authentic contexts, direct experiences, social interactions, creative practice, and reflection. This integration positions photography as a learning experience that develops not only technical skills but also visual decision making, problem solving, communication, collaboration, creativity, and reflective thinking (Ani, Suklani, & Kambali, 2026).

CONCLUSION

The implementation of an environment based Contextual Teaching and Learning (CTL) approach in smartphone photography instruction demonstrates that the school environment can function as an authentic context that supports the development of meaningful learning experiences for students. The learning process was carried out through a sequence of activities involving environmental observation, exploration of visual subjects, application of photographic techniques, discussion, production and presentation of photographic works, and reflection. This sequence indicates that students' understanding of photography was not acquired solely through teacher delivered instruction but was constructed through direct experiences and interactions with photographic subjects, the teacher, and peers.

Practical experiences also provided students with opportunities to experiment, observe the results, identify limitations, make improvements, and develop an understanding of the relationship between photographic techniques and intended visual outcomes. Accordingly, the implementation of CTL not only supported the acquisition of basic photography skills but also fostered students' abilities to make visual decisions, solve problems, communicate, collaborate, and reflect on their creative processes. These findings reinforce that the strength of environment based photography learning lies in the interconnectedness among authentic contexts, direct experiences, social interactions, creative practice, and reflection.

The findings imply that Arts and Culture teachers can utilize the school environment as a learning resource for photography by designing structured activities encompassing observation, exploration, practice, feedback, presentation, and reflection, supported by appropriate management of time and learning spaces as well as adequate instructional guidance.

FUTURE DIRECTIONS

Future research could expand the study of environment based Contextual Teaching and Learning (CTL) in smartphone photography instruction by involving different classes, schools,



educational levels, and sociocultural contexts. Such studies could examine whether the learning patterns identified in this research, including environmental observation, visual exploration, practical activities, social interaction, and reflection, also emerge in different learning environments. Future studies could also explore various photographic genres, such as product photography, documentary photography, storytelling photography, and cultural photography, to examine how different subjects and visual contexts influence students' creative strategies and visual decision making. Longitudinal or mixed methods approaches may provide a more comprehensive understanding of the development of students' photography skills, visual literacy, creativity, and reflective abilities. In addition, further research could investigate the influence of teacher scaffolding, collaborative learning structures, peer feedback, and digital portfolios on students' learning experiences. These directions may contribute to the development of Arts and Culture learning models that integrate technical photography skills with creativity, critical thinking, communication, collaboration, and reflection.

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