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Project-Based Learning through Rumah Belajar to Improve Caption Learning Outcomes

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ABSTRACT

This classroom action research investigated the use of Project-Based Learning (PjBL) supported by the Indonesian Rumah Belajar portal to improve Grade XII students' learning outcomes in English caption material. The study was conducted with 34 students of Class XII IPS-3 at SMA Negeri 3 Tegal in two cycles, each consisting of two meetings and the stages of planning, action, observation, and reflection. Data were collected through achievement tests, classroom observation, discussion, and student caption products. Cognitive achievement increased from a pre-cycle mean of 73 to 79 in Cycle I and 85 in Cycle II. Classical mastery increased from 34% before the intervention to 75% in Cycle I and 100% in Cycle II. Observed attitude and participation indicators, including attention, questioning and answering, and group cooperation, increased from an average of 79% in Cycle I to 89% in Cycle II. Students also produced caption projects representing identification, cutline, summary, expanded, and quote forms. The findings indicate that integrating PjBL with Rumah Belajar can support active, collaborative, product-oriented English learning. Because the study used a single-class action-research design without a comparison group, the findings demonstrate classroom improvement rather than causal effectiveness.

Keywords: caption; Project-Based Learning; Rumah Belajar; English learning; classroom action research

INTRODUCTION

English learning integrates listening, speaking, reading, and writing, and classroom tasks are more meaningful when students use these skills for authentic communicative purposes. In the source classroom, Grade XII IPS-3 students experienced low motivation and relatively weak achievement in caption material, a topic that requires learners to interpret visual information and produce concise, contextually appropriate English. Contemporary language education emphasizes active participation, multimodality, collaboration, and purposeful production rather than teacher-dominated transmission (Richards, 2015; Kress, 2010; Hafner, 2015; Godwin-Jones, 2018; Lim & Tan, 2022).

Project-Based Learning (PjBL) is relevant to this problem because it organizes learning around sustained inquiry, collaboration, decision making, and the production of a concrete artifact. Research has associated well-designed PjBL with gains in achievement, motivation, collaboration, self-regulation, and higher-order thinking, although outcomes depend on scaffolding, assessment, task design, and teacher facilitation (Kokotsaki et al., 2016; Chen & Yang, 2019; Guo et al., 2020; Condliffe et al., 2017; Almulla,

2020; Markula & Aksela, 2022). Digital learning environments can extend these affordances by providing resources, communication channels, and spaces for creating and sharing products (Bond et al., 2020; Martin et al., 2020; Rapanta et al., 2020; Carrillo & Flores, 2020).

This study therefore implemented PjBL by utilizing Rumah Belajar, an Indonesian educational portal, in caption learning. The intervention aimed to improve both cognitive learning outcomes and observed learning attitudes while enabling students to create caption products. The study focused on the progression from the pre-cycle condition through Cycle I and Cycle II and on the practical role of a national digital learning portal in supporting project-oriented English instruction.

LITERATURE REVIEW

Project-Based Learning and Active Learning

PjBL positions learners as active participants who investigate a meaningful problem and construct a publicly shareable product. Its core features include a challenging question, sustained inquiry, authenticity, student voice and choice, reflection, critique, revision, and product presentation (Krajcik & Blumenfeld, 2006; Bell, 2010; Kokotsaki et al., 2016; Condliffe et al., 2017; Guo et al., 2020). Meta-analytic evidence indicates positive effects on academic achievement, especially when projects are carefully structured and aligned with curricular objectives (Chen & Yang, 2019). PjBL can also promote creativity, collaboration, problem solving, and learner autonomy (Almulla, 2020; Markula & Aksela, 2022; Virtue & Hinnant-Crawford, 2019; Miller & Krajcik, 2019). These outcomes are consistent with broader evidence on active learning, formative feedback, and student-centered instruction (Freeman et al., 2014; Hattie & Timperley, 2007; Black & Wiliam, 2009; Panadero et al., 2018).

Digital Platforms and Online Learning Support

Digital platforms can complement project work by making resources available beyond classroom time and by supporting communication, feedback, and multimodal production. Studies of technology-supported learning stress that access alone is insufficient; pedagogical design, teacher presence, interaction, and learner self-regulation determine whether digital tools become educationally productive (Rasheed et al., 2020; Bond et al., 2020; Martin et al., 2020; Rapanta et al., 2020; Trust & Whalen, 2020; Ferri et al., 2020). During the COVID-19 period, research also highlighted the importance of flexible access and clear instructional organization (Hodges et al., 2020; Bozkurt & Sharma, 2020; Adedoyin & Soykan, 2023; König et al., 2020; Engzell et al., 2021). In Indonesia, Rumah Belajar was developed as a national digital learning ecosystem offering learning resources, electronic books, question banks, virtual laboratories, cultural resources, and virtual-class functions. Its educational value lies in how teachers integrate these features with explicit learning goals and classroom activity (Rizka & Afandi, 2019; Kurniawan et al., 2020; Warsita, 2019).

Caption Learning, Multimodality, and EFL Production

Caption writing is inherently multimodal because learners must coordinate image meaning with concise verbal information. Multimodal literacy research shows that meaning is distributed across linguistic, visual, spatial, and other representational modes (Kress, 2010; Jewitt, 2013; Serafini, 2014; Hafner, 2015). In EFL contexts, digital multimodal composing can increase opportunities for authentic language use, audience awareness, creativity, and learner agency (Jiang, 2017; Hafner & Ho, 2020; Zhang et al., 2021; Lim & Tan, 2022). Writing development is also strengthened when learners plan, draft, receive feedback, revise, and produce texts for meaningful purposes (Hyland, 2019; Graham, 2018; Lee, 2017; Teng & Zhang, 2020). Accordingly, a caption project can connect vocabulary, grammar, visual interpretation, collaboration, and written production in one task.

Classroom Action Research and Formative Improvement

Classroom action research is designed for iterative improvement through cycles of planning, action, observation, and reflection. It is particularly suitable when teachers seek evidence-based solutions to a localized instructional problem while continuously adapting practice (Burns, 2010; Mertler, 2020; Stringer, 2014; Kemmis et al., 2014). Repeated assessment across cycles can function formatively when evidence is used to revise instruction, provide feedback, and increase student participation (Black & Wiliam, 2009; Bennett, 2011; Andrade, 2019; Wisniewski et al., 2020). This logic underpins the present two-cycle intervention.

METHODS

Research Design and Participants

The study used classroom action research at SMA Negeri 3 Tegal with 34 students in Class XII IPS-3, comprising 11 male and 23 female students. The intervention consisted of two cycles, each conducted in two meetings. Each cycle followed four stages: planning, action, observation, and reflection. English-teacher colleagues from the school MGMP assisted as observers.

Learning Procedures and Data Collection

In Cycle I, students registered for Rumah Belajar and were organized into eight groups. Learning focused on identification bar, group identification, and cutline captions. In Cycle II, students were organized into six groups and worked with summary, expanded, and quote captions. At the end of the intervention, students created caption products based on their own ability and creativity. Data were collected through achievement tests, observation, and discussion. Non-test observation focused on student attention, ability to ask and answer questions, and cooperation in groups.

Data Analysis

Achievement was summarized using class means, score distributions, and the number and percentage of students reaching the school minimum mastery criterion (KKM). Observational data were summarized as percentages. The source study categorized activity as inactive (≤26%), less active (>26%–50%), sufficiently active (>50%–75%), and active (>75%). Results were compared descriptively across the pre-cycle condition, Cycle I, and Cycle II.

RESULTS AND DISCUSSION

Improvement in Cognitive Learning Outcomes

Before the intervention, only 11 of 34 students reached the KKM, corresponding to 34% classical mastery, while 23 students (66%) had not reached mastery. The mean pre-cycle score was 73. After the first PjBL cycle, the mean increased to 79 and 24 students reached the KKM, equivalent to approximately 75% classical mastery. In Cycle II, the mean increased further to 85 and all 34 students reached the KKM, yielding 100% classical mastery.

Table 1. Summary of cognitive learning outcomes across the action-research stages

Stage	Mean score	Students reaching KKM	Classical mastery
Pre-cycle	73	11 of 34	34%
Cycle I	79	24 of 34	75%
Cycle II	85	34 of 34	100%

The progressive increase is consistent with the pedagogical logic of PjBL: students repeatedly engaged with authentic visual-text tasks, discussed solutions in groups, presented results, and produced a final artifact. Such processes can strengthen engagement and deepen learning when inquiry and production are supported by scaffolding and feedback (Kokotsaki et al., 2016; Chen & Yang, 2019; Guo et al., 2020; Almulla, 2020). The use of Rumah Belajar added digital resources and access to the project sequence, consistent with research emphasizing purposeful integration of technology rather than technology use in isolation (Bond et al., 2020; Rapanta et al., 2020; Rasheed et al., 2020).

Improvement in Learning Attitudes and Participation

The mean observed attitude score was 79% in Cycle I and 89% in Cycle II. The observed dimensions were student attention, ability to ask and answer questions, and cooperation within groups. This 10-percentage-point increase suggests stronger classroom participation as students became familiar with the project structure and collaborative expectations. The pattern is compatible with evidence that project

work can support ownership, peer interaction, and active participation when roles and outputs are explicit (Bell, 2010; Virtue & Hinnant-Crawford, 2019; Markula & Aksela, 2022).

Table 2. Change in observed attitude and participation

Observed outcome	Cycle I	Cycle II	Change
Mean attitude/participation	79%	89%	+10 percentage points

Caption Products and Multimodal Learning

The project culminated in student-produced captions, including quote captions. This product-oriented component is important because caption learning requires students to connect visual interpretation with concise English expression. From a multimodal perspective, students were not merely recalling definitions; they were coordinating image content, audience, language choice, and communicative purpose (Kress, 2010; Serafini, 2014; Hafner & Ho, 2020). The production stage therefore provided an authentic endpoint for the project and a concrete artifact through which language learning could be demonstrated.

Limitations

The findings should be interpreted within the limits of classroom action research. The study involved one class, did not use a control or comparison group, and relied primarily on descriptive comparisons across cycles. Observer-based attitude percentages may also be influenced by judgment and by changes in task difficulty or group composition. Consequently, the results support improvement in this classroom context but do not establish that PjBL or Rumah Belajar alone caused the gains. Future studies should use validated instruments, report reliability procedures, and compare alternative instructional conditions.

CONCLUSION AND RECOMMENDATIONS

The two-cycle classroom action research showed consistent improvement after Project-Based Learning was integrated with Rumah Belajar for English caption instruction. The mean achievement score increased from 73 in the pre-cycle stage to 79 in Cycle I and 85 in Cycle II; classical mastery increased from 34% to 75% and then to 100%. Observed attitude and participation increased from 79% in Cycle I to 89% in Cycle II. Students also completed caption products, demonstrating the product-oriented character of the intervention. Teachers may therefore consider combining PjBL with digital learning resources for caption and other multimodal English tasks, while maintaining explicit scaffolding, feedback, and assessment criteria. Further research should test the approach with larger samples and stronger comparative designs.

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