

An Interdisciplinary Approach to Enhancing Student Engagement and Academic Achievement through Interactive Visual Media

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ABSTRACT

This study examined an interdisciplinary approach to enhancing student engagement and academic achievement through the integration of pedagogical strategies, interactive visual media, and educational psychology. The research was conducted in response to low student participation and learning outcomes in an Islamic junior secondary school, where conventional instructional methods had limited active learning. A Classroom Action Research (CAR) design based on Kurt Lewin's model was employed and implemented in two cycles consisting of planning, action, observation, and reflection. The participants were 24 eighth-grade students. Interactive visual media in the form of pop-up books were utilized to support student-centered instruction and to accommodate diverse learning styles. Data were collected through classroom observations and learning outcome assessments. The findings indicated a substantial improvement in both student engagement and academic achievement. Student engagement increased from 62.50% in the first cycle to 87.50% in the second cycle, while the average learning score improved from 74.67 to 81.33. These results suggested that the integration of interactive visual media within an interdisciplinary instructional design enhanced learner participation, motivation, and conceptual understanding. This study demonstrated that interdisciplinary instructional design promoted inclusive and resilient learning environments, and that interactive visual media supported active learning and offered flexible possibilities for classroom implementation across diverse educational contexts.

Keywords:

Interdisciplinary Learning, Student Engagement, Academic Achievement, Interactive Visual Media, Classroom Action Research.

1. INTRODUCTION

Student engagement and academic achievement have remained critical challenges in secondary education, especially in subjects that require conceptual understanding and active participation. (Maulidiyyah et al., 2025; Rina et al., 2024) Many classroom practices that rely on teacher-centered learning and oral explanation, which often result in passive learning environments and limited student involvement. These conditions can negatively affect students' motivation, participation, and learning outcomes. Then teacher's role is important to enhancing student engagement. (Priyanto & Kock, 2021) The success of the teaching and learning process is closely related to the teacher's ability to effectively explain the subject matter to students. Creativity is a crucial factor for teachers because it enriches the overall learning experience. (Mustika & Ain, 2020) Teacher creativity is an essential prerequisite for implementing valuable teaching and learning processes in schools.

Current educational discourse emphasizes the importance of interdisciplinary learning design as a response to these challenges. Interdisciplinary approaches integrate pedagogical strategies, instructional media, and educational psychology to create meaningful and inclusive learning experiences. (Corbacho et al., 2021) From a pedagogical perspective, student-centered learning encourages active participation and interaction. (Gunawan et al., 2025) From an instructional media perspective, interactive visual tools support learners in understanding abstract concepts through concrete representations. (Syofyan et al., 2025) Meanwhile, educational psychology highlights the role of motivation, attention, and engagement as key factors influencing academic achievement. (Wong et al., 2024)

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In the context of Islamic education, particularly in the subject of fiqh at the junior high school, students often face difficulties due to the abstract nature of the material and the limited use of engaging learning media. Interactive visual media, such as pop-up books, offer visual and kinesthetic learning experiences that can stimulate curiosity, (Sari, 2021) encourage participation, (Ilham & Aidin, 2021) and support diverse learning styles. (Cahyani et al., 2020; Dewi & Qisti, 2023; Michelle et al., 2023) When effectively integrated into instructional design, these media have the potential to enhance student engagement and learning outcomes.

Therefore, this study aims to examine how interdisciplinary learning designs using interactive visual media can improve student engagement and academic achievement in junior high schools. Using a Classroom Action Research approach, this study also seeks to contribute to discussions on inclusive, resilient, and sustainable learning practices that can be applied across various educational contexts.

2. METHOD

This study used a Classroom Action Research (CAR) design based on Kurt Lewin's model, (Mu'alimin, 2014) which consists of four stages: planning, action, observation, and reflection. CAR is a research activity that focuses on observing certain objects by applying certain rules to obtain the required information, (Nurgiansah et al., 2021) so it can help teachers identify the challenges in the learning process and find the solution to enhance the education's quality. (Udil, 2021) The study was conducted at a junior high school during the 2025/2026 academic year. The participants were 24 eighth-grade students.

This research was conducted in two cycles. In the planning phase, a lesson plan was developed that integrated interactive visual media. In the action phase, learning activities were conducted using pop-up books designed to support fiqh learning topics. The observation phase involved monitoring student engagement using observation sheets, while the reflection phase focused on evaluating learning outcomes and identifying areas for improvement in the next cycle

Data collection techniques included classroom observations to measure student engagement and written tests to assess academic achievement. Indicators of student engagement included participation in discussions, attention to learning media, interaction with peers, and engagement in learning activities. Data were analyzed using descriptive quantitative analysis by calculating percentages of engagement and learning mastery.

3. RESULT AND DISCUSSION

Result

This section details the study's findings gathered from two cycles of Classroom Action Research. The results concentrate on student engagement and achievement after the implementation of interactive visual media, particularly in the form of pop-up books.

Student Engagement Results

Table 1. Table of Student Engagement in Cycle 1

No.	Statement	Yes	No
1	Students actively pay attention observe the pop-up book with focus.	V	
2	Students actively ask questions related to fiqh material after viewing the pop-up book.	V	
3	Students participate in class discussions by giving opinions or answering questions posed by the teacher.		V
4	Students listen attentively to the teacher's explanation when fiqh material is presented through the pop-up book.		V
5	Students take notes on important information from the pop-up book related to fiqh material	V	
6	Students use the pop-up book actively (flipping pages, exploring spesific parts).	V	

7	Students demonstrate an understanding of fiqh concepts by answering questions.	V	
8	Students show satisfaction and pride in their learning outcomes after understanding the material through the pop-up book.		V

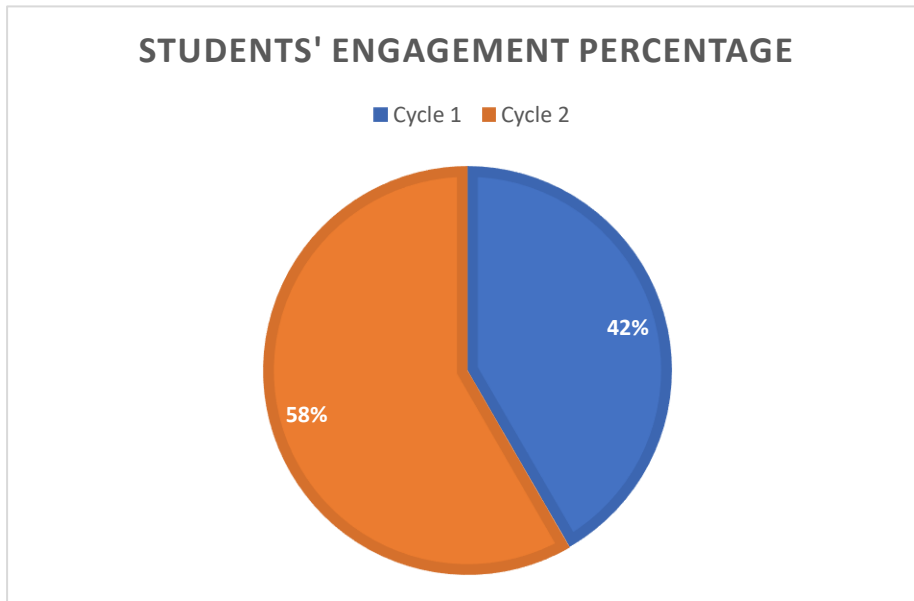
After the implementation of interactive visual media in Cycle 1, student engagement showed moderate levels across all observed indicators. As presented in Table 1, five of the eight engagement indicators were achieved, indicating that some students had begun to actively interact with the pop-up book media. However, several indicators related to active questioning, discussion participation, and confidence in learning outcomes were not fully achieved. This suggests that although students showed initial interest and attention, further refinement of the teaching strategy is needed to encourage more consistent engagement among all students.

Table 2. Table of Student Engagement in Cycle 2

No.	Statement	Yes	No
1	Students actively pay attention observe the pop-up book with focus.	V	
2	Students actively ask questions related to fiqh material after viewing the pop-up book.	V	
3	Students participate in class discussions by giving opinions or answering questions posed by the teacher.	V	
4	Students listen attentively to the teacher’s explanation when fiqh material is presented through the pop-up book.		V
5	Students take notes on important information from the pop-up book related to fiqh material	V	
6	Students use the pop-up book actively (flipping pages, exploring spesific parts).	V	
7	Students demonstrate an understanding of fiqh concepts by answering questions.	V	
8	Students show satisfaction and pride in their learning outcomes after understanding the material through the pop-up book.	V	

In Cycle 2, student engagement showed a clear improvement compared to Cycle 1. As shown in Table 2, seven of the eight engagement indicators were successfully achieved. Students demonstrated increased participation in discussions, greater confidence in answering questions, and more active interaction with the pop-up book media. These improvements indicate that adjustments made during the reflection phase of Cycle 1 contributed to more effective learning activities in Cycle 2. Overall, the results show a positive trend in student engagement when interactive visual media is consistently implemented in student-centered learning activities.

Chart 1. Chart of Students' Engagement Percentage



To determine the percentage of student engagement, the following formula was applied:

$$P = F/N \times 100$$

Based on calculations, student participation in Cycle 1 reached 62.5%, while in Cycle 2 it increased to 87.5%. This represents a 25% increase between the two cycles. This increase demonstrates a clear positive trend in student engagement following the continued use of interactive visual media.

Overall, engagement data suggests that repeated exposure to pop-up book media supports a gradual shift from passive learning behaviors to more active participation in classroom activities.

Student Achievement Results

Tabel 3. Table of Student Achievement in Cycle 1

No.	Name	Score	KKM	Passed	Failed
1	A.A.Y	80	75	V	
2	A.I.P	80	75	V	
3	A.F.S.F	50	75		V
4	A.H.M	80	75	V	
5	B.R	80	75	V	
6	E.F.R	80	75	V	
7	G.E.A	60	75		V
8	I.S	80	75	V	
9	M.A.R	90	75	V	
10	R.D.F	80	75	V	
11	U.N.N	80	75	V	
12	V.L	70	75		V
13	Y.P.A.M	70	75		V
14	K.A.S	80	75	V	
15	A.Y.C.R	60	75		v
Total		1120	1125	10	5
Average		74,67	75	66,67%	33,33%

Student academic achievement results for Cycle 1 are presented in Table 3. The average student score reached 74.67, indicating an improvement compared to pre-intervention conditions. However,

only 10 of the 15 students met the Minimum Mastery Criteria (KKM), while five students remained below the expected standard. These results indicate that although learning outcomes improved, further instructional adjustments are needed to support all students in achieving mastery.

Table 4. Table of Student Achievement in Cycle 2

No.	Name	Score	KKM	Passed	Failed
1	A.A.Y	90	75	v	
2	A.I.P	90	75	v	
3	A.F.S.F	80	75		v
4	A.H.M	90	75	V	
5	B.R	60	75	V	
6	E.F.R	90	75	V	
7	G.E.A	60	75		V
8	IS	90	75	V	
9	M.A.R	70	75	V	
10	R.D.F	60	75	V	
11	U.N.N	90	75	V	
12	V.L	90	75		V
13	Y.P.A.M	100	75		V
14	K.A.S	80	75	V	
15	A.Y.C.R	80	75		v
Total		1220	1125	11	4
Average		81,33	75	73,33%	26,67%

As shown in Table 4, student academic achievement further improved in Cycle 2. The mean score increased to 81.33, and the number of students achieving the Minimum Mastery Criteria increased to 11. This improvement indicates that the continued use of interactive visual media, along with instructional adjustments based on reflections from Cycle 1, contributed to improved learning performance. The upward trend in both the mean score and mastery level demonstrates the effectiveness of the instructional intervention in supporting student achievement.

The comparison of Cycle 1 and Cycle 2 revealed a clear upward trend in both student engagement and academic performance. The findings indicate that improvements in instructional practices throughout the cycles played a crucial role in maintaining student participation and enhancing learning outcomes. This underscores the importance of continuously refining teaching methods in Classroom Action Research, as it can lead to significant improvements in classroom learning experiences.

The percentage of students achieving mastery is calculated using the following formula:

$$P = F/N \times 100$$

Based on the calculations, 66.67% of students achieved mastery of the material in Cycle 1, while 73.33% achieved mastery of the material in Cycle 2. This shows an increase of 6.66% between cycles.

Chart 2. Chart of Students' Achievement Average

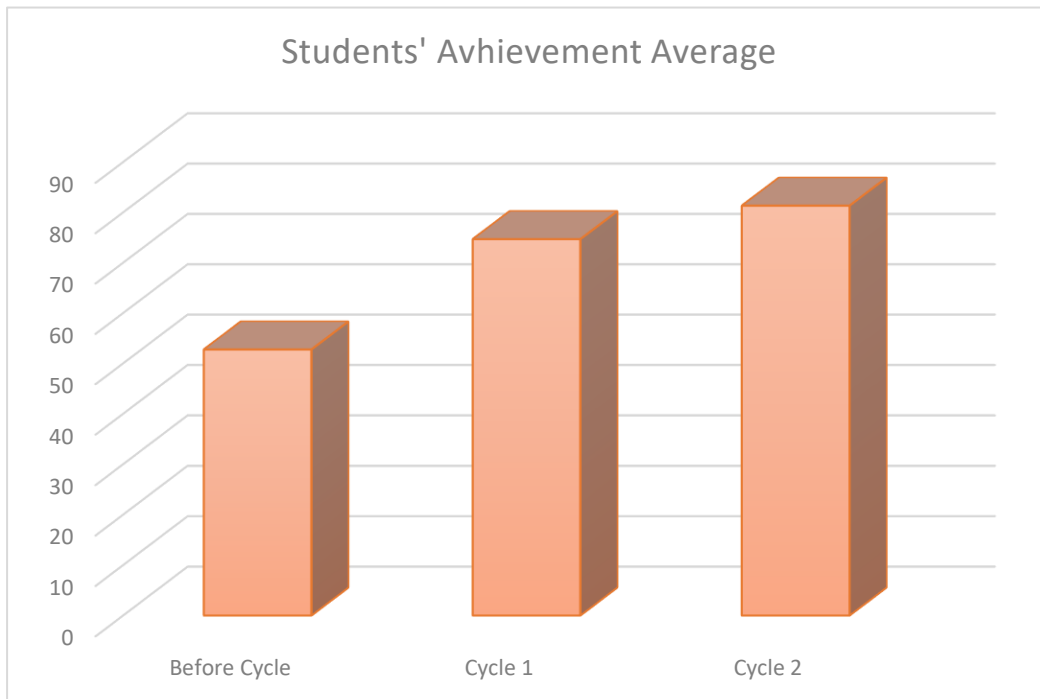
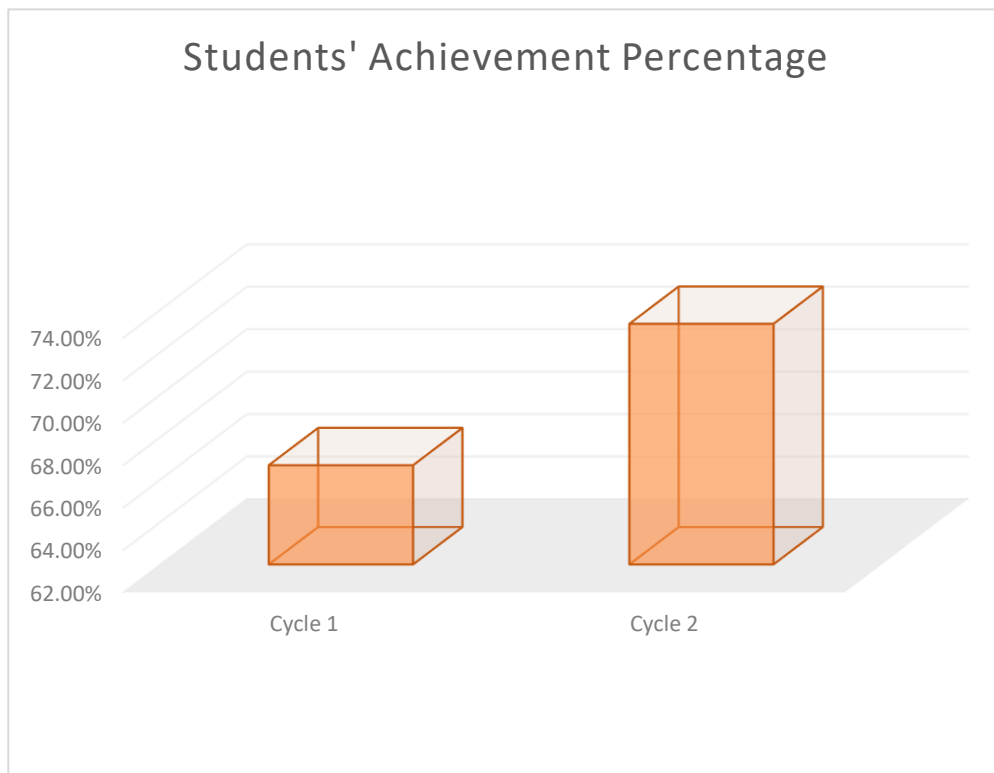


Chart 2. Chart of Students' Achievement Percentage



Discussion

The findings of this study demonstrated that the use of pop-up book as a tool for learning in the subject of fiqh within an interdisciplinary instructional design contributed to enhanced student engagement and academic achievement in this subject. (Faizatud Daroini, 2023; Nurhanifah et al., 2020; Ruliyah, 2020) This improvement shown that learning activities that combine pedagogical strategies, learning media, and principles of educational psychology are more effective than conventional teacher-

centered approaches. (Rini, 2021) Similar findings have been reported in previous studies showing that interactive visual media have a positive effect on student engagement and academic achievement in the context of religious education. (Michelle et al., 2023)

From an interdisciplinary perspective, pedagogically, student-centered learning activities facilitated through pop-up books can shift classroom dynamics from passive learning to more active, student-participated learning. In terms of learning media, the visual and kinesthetic elements of pop-up books help transform the abstract concept of zakat into a concrete representation, making it more accessible to diverse learners. This supports previous research that emphasizes that multimodal and interactive media enhance students' conceptual understanding and learning motivation. (Khamidah & Ita Sholichah, 2022; Nurhanifah et al., 2020; Rini, 2021; Sahara & Silalahi, 2022)

Psychologically, increased student engagement indicates increased motivation, attention, and interest, all three of which are key factors in meaningful learning and student engagement. Previous studies have shown that a learning environment actively supported by visual media leads to higher student engagement. (Nurgiansah et al., 2021)

This research was conducted in two cycles: the first and second cycles. Each cycle was expected to demonstrate improvement, and if the second cycle failed to demonstrate progress, a third cycle would be conducted, and so on. A successful Classroom Action Research (CAR) was one that resulted in change and improved learning quality. The researchers used 10 multiple-choice questions in each cycle to measure improvements in student learning outcomes. To assess student engagement, the researchers used an instrument containing eight statements.

4. CONCLUSION

Based on the findings of this study, the integration of pop-up book media into interdisciplinary learning designs has been shown to increase student engagement and academic achievement in fiqh learning on the topic of zakat. This increase in student engagement indicates that interactive visual media, when implemented through student-centered learning activities, effectively encourages participation, motivation, and engagement in the learning process.

Furthermore, improvements in student academic achievement reflect the positive impact of integrating pedagogical strategies, instructional media, and principles of educational psychology. These findings suggest that interdisciplinary instructional design can support inclusive learning environments by accommodating diverse learning styles and ability levels. Furthermore, the adaptive nature of pop-up books allows teachers to modify instructional practices according to classroom conditions and available resources, thus contributing to robust and sustainable learning practices.

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