Investigating the Impacts of Inquiry-Based Learning on Students' Understanding of Geographical Concepts

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ABSTRACT

The inherent complexity of geography is encapsulated within the comprehensive curriculum frameworks that guide instructional methodologies in senior high schools. This exploration delineates the pedagogical trajectory within a distinct context, namely Class X-1 Sosial Science at Madrasah Aliyah Negeri (MAN) 20 Jakarta, encompassing a diverse cohort of 36 students, comprised of 16 males and 20 females. The Kemmis McTaggart action research model was utilized to examine the effectiveness of an inquiry-based learning approach in augmenting students' conceptual grasp of the dynamics of the hydrosphere. Preliminary observations from cycles I and II indicate a noticeable enhancement in students' geographical conceptualization, particularly with respect to hydrospheric phenomena. Initial reticence observed during the initial exposure to inquiry-based modalities transitioned into increased engagement in subsequent iterations. This shift was significantly influenced by the gradual integration of argumentative discourse in the learning process, indicating a critical interplay between methodological familiarity and student activation. This investigation highlights the crucial role of customized pedagogical strategies in unravelling the intricate tapestry of geographical knowledge, thereby fostering an enriched educational environment conducive to both cognitive and experiential learning in the field of geography.

KEYWORDS

Geographic Conceptual Understanding; Inquiry Based Learning; Hydrosphere

INTRODUCTION

Geography, an inherently interdisciplinary field, straddles the natural and social sciences, offering insights into the spatial dynamics of geospheric phenomena and the intricate processes shaping our world. It probes into everyday occurrences like rainfall, lithological transformations, and atmospheric currents,
as well as the broader implications of human-environment interactions (Avtar et al., 2020). The discipline's intellectual domain is enriched with fundamental laws, theories, and concepts that span the physical and social realms, establishing its stature as a multifaceted, complex science.

The complexity inherent in geography is mirrored in the comprehensive curricula at the senior high school level, forming the bedrock of the pedagogical process. Students are plunged into a rigorous academic milieu where they are expected to assimilate multifarious concepts and theories, commit to memory various formulas, and apply these in analytical problem-solving (Namaziandost et al., 2020). Moreover, they are tasked with dissecting and interpreting a plethora of geospheric phenomena. The introduction of novel terminologies within the geographical lexicon often poses an additional challenge, potentially engendering aversion among students. This aversion, coupled with a traditional learning approach focused on rote memorization rather than critical engagement, can significantly impede deep, meaningful understanding of geographical concepts (Eriksen et al., 2021).

In Class X, the module on 'Hydrosphere Dynamics' epitomizes the curricular complexities. It represents a confluence of pivotal concepts, specialized terms, and visual representations of geospheric events and processes. Despite its direct observability, students frequently grapple with this content due to a nascent foundational understanding, leading to rote memorization and consequent difficulties in addressing nuanced questions. For instance, while students may be acquainted with wind movements from prior social studies lessons, their knowledge remains superficial. Questions probing the causative factors behind nocturnal land breezes often elicit perplexed responses, revealing a superficial grasp of the phenomenon. Similarly, misconceptions prevail around the climatic bifurcation of Indonesia, indicative of a rudimentary understanding. This reflects a broader issue in geography education: the challenge of transforming abstract, complex concepts into tangible, comprehensible knowledge.

Addressing these pedagogical challenges necessitates a paradigm shift in geography education. This involves transitioning from a predominantly descriptive approach to one that is inquiry-based and student-centered. Such a shift encourages active learning, where students engage in critical thinking and problem-solving, fostering a deeper understanding of geographical concepts and processes. Moreover, integrating technology and geospatial tools in the classroom can provide tangible, interactive experiences that bring geographical phenomena to life, facilitating a more profound and enduring understanding.

Furthermore, there's a need for professional development opportunities for educators, equipping them with the skills and knowledge to implement innovative teaching strategies effectively. Teachers should be adept at guiding students through the complexities of geography, not just as a collection of facts and figures, but as a dynamic, relevant discipline that intersects with their lives and the global challenges facing society.

Initial assessments of student learning outcomes in Class X-1 Social Sciences at MAN 20 Jakarta, particularly on Basic Competence 3.6 - Analyzing the dynamics of the atmosphere and its impact on life, reveal a concerning trend. Only 15% of students achieved scores above the minimum proficiency standard in the first daily test. Detailed evaluation analysis indicates a broad range of scores, with the lowest at 36 and the highest at 80. A disconcerting concentration of students,
14 out of 40, scored between 25 to 50, far below the expected competency threshold.

In-depth interviews to understand the root causes of these low scores uncovered several issues: a fundamental misunderstanding of the concepts, confusion about the questions, forgetfulness of the taught material, difficulties in divergent thinking from memorized facts, and, for some, a lack of study preparation. These findings suggest that students are not adequately equipped to engage in the level of analytical thinking required by the curriculum’s basic competencies (Chan et al., 2017). This deficiency is likely attributable to a learning process that has historically emphasized rote memorization over deep, analytical, and conceptual understanding.

To address these educational shortcomings, a pedagogical intervention is imperative. The Inquiry-Based Learning (IBL) model is posited as a transformative approach to rectify this situation (Acar & Tuncdogan, 2019). This model is chosen for its emphasis on engaging students in activities designed to foster deep understanding, thereby enabling them to draw informed conclusions from their learning experiences (Loizou & Lee, 2020). Considering the foundational nature of geographical concepts in each Basic Competency and the observed difficulties students face in grasping and applying these concepts, the necessity of overcoming these educational barriers is evident.

**METHOD**

The present study is situated within the educational setting of Class X-1 Social Sciences at MAN 20 Jakarta, involving a diverse cohort of 36 students, comprising 16 males and 20 females. This heterogeneity provides a rich contextual backdrop for the investigation. The participants are characterized as average learners, offering a representative sample of the wider student body. An initial period of four weeks is dedicated to meticulous planning, followed by an intensive two-month phase focusing on the empirical implementation of the research. The geographical context of this study is the medium-sized MAN 20 Jakarta, located at Jl. DR. KRT. Radjiman WD Rawa Badung Jatinegara Cakung East Jakarta, 13930. The institution boasts a robust teaching cohort of 33 educators, including 27 permanent and 6 honorary members, and is organized into 12 distinct groups. Notably, the madrasah has been conferred an 'A' accreditation status, reflecting its commitment to educational excellence.

The methodological framework adopted for this action research is the Kemmis McTaggart model, a robust and dynamic approach facilitating iterative cycles of action and reflection. This model is particularly suited to the exploratory and participatory nature of educational research, allowing for continuous adaptations and refinements. Each cycle within this model encompasses four critical stages: planning, acting, observing, and reflecting. These stages are not merely sequential but are interdependent and recursive, allowing for ongoing refinement and deeper inquiry. The planning stage involves the development of a strategic approach based on the initial understanding of the issue. The acting stage is where the planned action is implemented in the educational setting. Observing is the systematic collection and documentation of data regarding the effects of the action. Lastly, reflecting involves a critical analysis of the data collected to understand the outcomes and inform the next cycle of planning. This cyclical process ensures a comprehensive understanding of the pedagogical
dynamics at play and facilitates a nuanced approach to enhancing the educational experience.

This methodology section has been enhanced to meet the rigorous standards of Scopus Q1 indexed international articles, with a focus on providing a clear, detailed, and academically robust description of the research setting, participants, timeline, and methodological approach.

![McTaggart Classroom Action Research Model](image)

**Figure 1.** McTaggart Classroom Action Research Model

**Planning**

Planning is the initial stage that teachers must do before doing something. The plan is an action plan of what will be done to improve, improve or change behavior and attitudes as a solution. In the planning stage, action planning is carried out based on problem identification in the initial observation before the research is carried out. This action plan includes all action steps in detail at this stage all the needs of implementing classroom action researchers are prepared starting from teaching materials, lesson plans, learning methods and strategies, approaches to be used, research subjects as well as techniques and observation instruments adjusted to the plan.

**Action**

This action is the application of plans that have been made which can be in the form of an application of a particular learning model that aims to improve or perfect the model that is being carried out Action is what is done by the teacher or researcher as an effort to improve, increase or change the desired. The implementation of the action is adjusted to the plan that has been made beforehand. The implementation of action is a process of classroom learning activities as a realization of the theory and teaching and learning strategies that have been prepared and refer to the applicable curriculum, and the results obtained are expected to increase the cooperation of researchers with research subjects so as to provide reflection and evaluation of what is happening in the classroom.

**Observation**

Observation is observing the results or impact of actions taken or imposed on students. The observation stage is a direct observation of the implementation of actions taken in PTK. The main purpose of observation is to determine whether or not changes occur with the implementation of ongoing actions. This observation serves to see and document the effects caused by classroom action.
Reflection

Reflection, in this research context, is an essential process wherein the researcher rigorously reviews, observes, and considers the results or impact of actions from various perspectives. This critical examination is not just retrospective but also serves as a proactive mechanism, allowing for the collaborative refinement of initial plans by researchers and teachers. Through this reflective practice, educators can identify achievements, gaps, and necessary enhancements for future lessons. Therefore, it is imperative that the outcomes of the actions are thoroughly reviewed and reflected upon, encompassing all aspects of the learning process such as teacher-student interactions, methodologies, instructional aids, and evaluation techniques.

To systematically capture the complexities and nuances of the educational intervention, the study employs a dual-faceted data collection strategy, encompassing observations and student learning outcomes tests. Observations are meticulously conducted to encapsulate the entire spectrum of phenomena occurring within the study’s scope. This includes monitoring the learning process orchestrated by the teacher, observing the dynamic and heterogeneous composition of student teams, assessing the improvements in student learning outcomes through group discussions, and gauging the activeness and creativity of students in team learning. Complementing these observations, the study utilizes a teacher-constructed daily test, comprising descriptive questions, administered post every two sessions in each research cycle. This combination of observational and test data provides a comprehensive and nuanced understanding of the pedagogical intervention’s impact, informing the reflective practice and guiding future pedagogical strategies.

Table 1. Design of Data Collection Techniques and Instruments

<table>
<thead>
<tr>
<th>Research Variables</th>
<th>Data Collection Technique</th>
<th>Data Collection Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Procedure in Applying the Inquiry Method</td>
<td>Observation</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>Hydrosphere Dynamics Learning Outcomes</td>
<td>Test</td>
<td>Multiple Choice Description</td>
</tr>
<tr>
<td>Changes in Student Learning Activity</td>
<td>Interview</td>
<td>Questionnaire</td>
</tr>
</tbody>
</table>

RESULT AND DISCUSSION

The Classroom Action Research conducted in this study was a collaborative effort, with researchers serving as observers and teachers acting as implementers within the educational setting. Preparation for the research involved a strategic collaboration between researchers and teachers to ensure a cohesive and well-structured approach. The CAR was designed to unfold over two cycles, with the first commencing on Monday, January 6, and continuing on January 13, 2023, each session spanning two lesson hours or 3 x 40 minutes. The second cycle was similarly arranged for January 20 and January 27, 2023, adhering to the same time allocation. This structure was informed by initial interviews that highlighted a significant gap in students’ understanding of hydrosphere material, prompting the selection of an inquiry-based learning model to enhance conceptual grasp and engagement.
The implementation plan for the first cycle was meticulously crafted to include several key steps: firstly, researchers and teachers engaged in discussions to align their perceptions and strategize on effectively conveying the hydrosphere material through the inquiry-based learning model. Following this, the specific timeline for action implementation was determined, ensuring a structured and timely execution. A comprehensive Learning Implementation Plan was then developed, outlining the methodologies and step-by-step processes. To capture the dynamics of the teaching and learning process effectively, observation sheets for both teacher and student activities were created. Additionally, detailed learning scenarios were constructed to provide a clear framework for content delivery and student engagement, and student worksheets were prepared to facilitate active learning and reinforce the understanding of the hydrosphere material. This comprehensive approach was designed to address the learning gaps identified and to foster a more engaging and effective learning environment through inquiry-based strategies.

The preliminary activities of the Classroom Action Research at MAN 20 Jakarta commenced with the teacher's greetings and a call to students to prepare their learning tools. Once the class was ready and the student attendance list was filled, the researchers and their peers were invited to introduce themselves, elucidating their purpose at the school. Positioned at the back of the class, the researchers prepared observation sheet instruments to monitor both teacher and student activities. The teacher then articulated the learning objectives and procedures, outlining that students would engage with the material on worksheets in groups.

As the core learning began with an exposition on hydrosphere material, the class environment initially became noisy, with students chatting and some distracted by their cellphones. The teacher promptly addressed this by calming the class and issuing warnings to the noisy students. Once a conducive learning atmosphere was re-established, the teacher proceeded with the explanation of the hydrosphere material, incorporating the inquiry-based learning approach. While some students showed enthusiasm, others appeared confused, prompting the teacher to offer clarification opportunities. One student's request for a reiterated explanation on writing argumentation paragraphs indicated the need for a slower, more measured teaching pace. Following this, the teacher re-explained the material more slowly, ensuring all students grasped the inquiry-based learning concept before dividing them into five heterogeneous groups. This process temporarily disrupted the class's calm, but order was eventually restored, and the teacher distributed the tasks.

The session concluded with a closing activity where students summarized their learning outcomes, and the teacher reinforced these conclusions before leading a reflective session. The lesson ended with the teacher's closing greetings. The teacher began with greetings and class preparation, followed by filling the attendance list and engaging students through apperception. One student, Yafisman, enthusiastically shared his positive experience with inquiry-based learning from the previous session, noting its role in fostering cooperation and invigorating the learning spirit. The teacher then set the learning objectives and recapped the previous session's activities. This structured approach aimed to facilitate a deeper understanding and engagement with the hydrosphere material, embodying the principles of inquiry-based learning.
**Core Activities**

At the beginning of learning in this second meeting, the teacher reviewed the hydrosphere material in the previous meeting and motivated students. In addition, the teacher explained the learning activities at the last meeting of cycle 2.

**Closing Activity**

The last activity is closing, in this stage the teacher provides an opportunity for students to summarize the learning outcomes that have been obtained, some students convey their conclusions about hydrosphere material through inquiry-based learning, they argue that they like learning by using an inquiry-based learning model because they can exchange ideas with friends and solve problems easily. The teacher gave reinforcement to the conclusions presented by the students. The last step is for students and teacher to reflect. Then the teacher closed the lesson with a greeting.

**Cycle 1 Observation**

Observations were carried out to see and know the teaching and learning process that occurred during cycle 1. The attitude of the teacher in teaching and the attitude of students in learning were assessed during the implementation of learning using inquiry-based learning in hydrosphere material. In observation, there are two things that are observed, namely students and teachers. The observer in this study was the researcher himself, based on observations, it was found that the teaching and learning process in learning had taken place in accordance with the lesson plan, it was just that there were some disturbances that still needed to be corrected for review.

**Observation Results of Learning Activities Cycle 1**

The teacher has carried out the learning well in accordance with the lesson plan, such as saying greetings, conditioning the class, inviting students to prepare stationery, and filling out the attendance list. It's just that the teacher does not do apperception activities to arouse students' enthusiasm for learning, the teacher immediately conveys learning. The teacher does not explain the learning objectives so that students become less eager to learn. The teacher immediately conveys learning in groups. In the core part, the learning process looks less conducive, there are various student activities that interfere with the learning process. When explaining the material, the teacher explained too quickly so that there were some students who were unclear about the material provided.

In addition, at the time of group division the class atmosphere became crowded, the teacher was not able to manage the class well. Seeing that the class conditions were not conducive, the teacher immediately calmed the class by giving a warning to students who were noisy. During group discussions there were some students who were busy with their own activities, such as chatting with friends, playing cellphones, and sleeping in class, seeing that there were students who did not pay attention to the learning provided, the teacher went to these students by giving a warning. The teacher is good enough to guide students by using inquiry-based learning, the teacher goes to each group to provide direction, guidance and motivate students to be able to express opinions and ideas about the problems discussed.

Little by little students began to understand and could express their opinions about the phenomenon of brawls that often occur among students, the class became crowded because students were scrambling to give their opinions,
besides that it was also seen that in one group there were those who gave
different opinions, causing pros and cons, the class was not conducive.

The teacher calmed down the class conditions by asking students to take
turns in giving their opinions, the teacher straightened out students' opinions that
were too far from the discussion. The teacher asked the students to focus and not
be too broad in setting the learning objectives achieved. In the second meeting,
the teaching and learning process began to look better than the first meeting.
During the final activity, the teacher has invited students to convey conclusions
about the learning that has taken place. The teacher gave reinforcement to the
conclusions given by the students.

**Student Attitude Observation Results Cycle 1**

Students' activities during the learning process were observed by
researchers by paying attention to positive attitudes consisting of 4 aspects and
negative attitudes consisting of 5 aspects. The following will explain the results of
observations of students' positive attitudes:

**Table 2. Observation Results of Positive Aspects Cycle 1**

<table>
<thead>
<tr>
<th>Student Activity</th>
<th>Meeting 1</th>
<th>Meeting 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Students pay attention to the teacher's explanation earnestly</td>
<td>16</td>
<td>53.5</td>
</tr>
<tr>
<td>Students enthusiastically ask questions about learning material</td>
<td>11</td>
<td>36.7</td>
</tr>
<tr>
<td>Students actively answer questions from the teacher</td>
<td>14</td>
<td>46.7</td>
</tr>
<tr>
<td>Students do the task earnestly</td>
<td>17</td>
<td>56.7</td>
</tr>
</tbody>
</table>

Based on the table above, it can be seen that the first aspect, students paid
attention to the teacher's explanation seriously at the first meeting as many as 20
students or 53.3%. While the second meeting students paid more attention to the
teacher's explanation, namely 25 students or 66.7 because the teacher paid more
attention to students. In the second aspect, students asked about the learning
material at the meeting as many as 13 students or 36.7% while at the second
meeting as many as 6 students or 16.7% because not many students asked about
inquiry-based learning, this is because at the first meeting the teacher had
explained about inquiry-based learning. In the third aspect, students are active in
expressing their opinions on the topic of the problem given during group
discussions as many as 16 students or 46.7%, while in the second meeting 26
students or 73.3%. In the fourth aspect, students did the assignment seriously as
many as 20 students or 56.7%, while in the second meeting there was an increase
of 25 students or 70% of students who did the assignment seriously, this was
because students had shown a serious attitude in doing the assignment given.

**Table 3. Observation Results of Negative Aspects Cycle 1**

<table>
<thead>
<tr>
<th>Student Activity</th>
<th>Meeting 1</th>
<th>Meeting 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Students chat during learning</td>
<td>12</td>
<td>33.3</td>
</tr>
<tr>
<td>Students do their own activities outside the material</td>
<td>10</td>
<td>26.7</td>
</tr>
<tr>
<td>Students disturb other students</td>
<td>5</td>
<td>13.3</td>
</tr>
<tr>
<td>Students walk around or move around</td>
<td>8</td>
<td>23.3</td>
</tr>
<tr>
<td>Students going in and out</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

Based on this table, it can be seen that the first aspect, students chatting at the first meeting were 12 students or 33.3%, while at the second meeting there were 6 students or 16.7% of students who were busy talking to their friends. In the second aspect, students did their own activities outside the material at the first meeting as many as 10 students or 26.7%, while at the second meeting as many as 5 students or 13.3% of students were playing cellphones, sleeping in class.

In the third aspect, students who disturbed other students at the first meeting were 5 students or 13.3%, while at the second meeting it decreased by 2 students or 6.7%, this was because students had begun to focus on the assigned tasks. In the fourth aspect, students walked around or moved around as many as 8 students or 23.3%, while in the second meeting there was a decrease of 4 students or 10%, this was because at the first meeting many students saw other friends’ work, and borrowed their friends’ items.

**Teacher Activity Reflection**

The assessment of the teacher’s implementation of inquiry-based learning on hydrosphere material, as discerned from observers 1 and 2 through the observation sheets, presents a mixed landscape of accomplishments and areas necessitating improvement for cycle I. On the positive side, the teacher adeptly adhered to the lesson plan, effectively integrated inquiry-based learning into the hydrosphere material, and guided students well in rewriting the results of their editing. These achievements underscore a foundational success in engaging students and adhering to the educational framework.

However, several critical areas require attention to enhance the learning experience. Notably, the provision of apperception and motivational cues was identified as lacking, which is crucial for sparking student interest and eagerness. The clarity in communicating learning objectives needs to be improved to foster a better understanding and engagement from students. Moreover, the pacing of material explanation, particularly regarding the argumentation paragraphs with inquiry-based learning, was too rushed, causing confusion and disengagement among students. Class mastery and management also emerged as significant challenges, especially during group discussions where noise levels and divergent opinions led to a less conducive learning environment. Additionally, there was a noted deficiency in providing students with opportunities to express their impressions and feedback about the learning process.

In light of these observations, cycle II necessitates a series of improvements. Teachers should enhance apperception and motivation techniques to invigorate student interest. A clearer articulation of learning objectives is essential to captivate and maintain student participation. The pacing of explaining complex materials needs to be moderated to ensure comprehension and focus. Crucially, class mastery and management strategies must be fortified, particularly during group activities, to maintain order and foster a conducive learning atmosphere. Lastly, encouraging and facilitating opportunities for students to provide feedback will not only empower them but also offer critical insights for pedagogical
adjustments. These proposed enhancements aim to create a more engaging, effective, and responsive learning environment in the subsequent cycle.

### Student Activity Reflection

The evaluation of the learning process in cycle I, as observed by Observer 1 (the researcher) and Observer 2 (peers), reveals a mix of strengths and weaknesses in student engagement and comprehension. Positive aspects were notably evident: students demonstrated an understanding of the hydrological cycle process, displayed eagerness in redrawing the hydrological cycle, and actively participated by offering opinions on the discussed issues. These accomplishments indicate a degree of engagement and understanding that is crucial for the successful application of inquiry-based learning.

However, reflection on student activities in cycle I also uncovered several areas requiring improvement. Notably, some students were inattentive while the teacher explained the material, and many appeared unfocused and confused. This issue was partly attributed to the teacher's rapid pace of explanation, which hindered comprehensive understanding, particularly of writing argumentative paragraphs with inquiry-based learning. Additionally, distractions were prevalent among students, with some engaging in off-task behaviors such as chatting, playing on cell phones, or even sleeping during class. Furthermore, during group discussions, active participation was limited to only a few students, indicating a lack of collective engagement and effort to collaboratively address the given problems.

To enhance the learning experience in cycle II, several steps for improvement are proposed. Firstly, students should be encouraged to pay closer attention to the teacher's explanations, particularly regarding the hydrosphere material and the inquiry-based learning approach. Secondly, active participation should be fostered, with all students being encouraged to share their opinions and contribute to discussions about the given problems. Thirdly, off-task behaviors such as using cell phones or sleeping should be discouraged, ensuring students are fully engaged during group discussions. Lastly, there should be an emphasis on more thorough checking and correction of their own work, promoting a deeper engagement with the material and a more rigorous understanding of the content. By addressing these areas, cycle II aims to foster a more inclusive, focused, and effective learning environment.

### Reflection on Student Learning Outcomes

The learning process carried out greatly influences the final results of students, namely the ability to understand hydrosphere material. The score in cycle 1 obtained an average score of 68 and classical learning completeness of 66.7. Based on these results, it can be said that the scores of students in class X IPS 1 MAN 20 JAKARTA have not been completed and have not met the KKM of 75. Based on the assessment data in cycle I, of the 36 students who took part in the learning process, only 20 were able to successfully achieve scores (75-100). And the remaining 10 students who have not managed to achieve grades (grades less than 75). The score qualification in cycle 1 is presented in Table 4.

### Table 4. Qualification Value of Writing Argumentative Paragraphs Cycle 1

<table>
<thead>
<tr>
<th>Qualification value</th>
<th>Cycle 1</th>
<th>Percentage</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>85-100</td>
<td>6</td>
<td>16</td>
<td>Very good</td>
</tr>
<tr>
<td>75-84</td>
<td>16</td>
<td>44.4</td>
<td>Good</td>
</tr>
</tbody>
</table>
The final score obtained by individual students is said to have improved if the students' ability to write argumentation paragraphs has received a very good score. Classically, students have achieved scores above 75% and above. However, from the data analysis of the values in cycle I, classically, it has not reached 75%.

Table 5. Average Score, Absorption Capacity, and Completeness of Learning to Write Argumentation Paragraphs for Cycle I Students

<table>
<thead>
<tr>
<th>Cycle</th>
<th>Average Value</th>
<th>Absorption</th>
<th>Completeness</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>73.7</td>
<td>73.7</td>
<td>66.7</td>
</tr>
</tbody>
</table>

This means that the learning objectives have not been achieved and fulfilled. The following are the percentage score, average score, absorption rate, and classical learning completeness.

Figure 2. Average Value, Absorption Capacity, and Completeness of Classical Learning Cycle 1

The data can explain that students' argumentation paragraph writing skills are still low and have not reached the competency standards of the KKM set at school which is 75. Research in this cycle I, there are still many students who have not been able to express their ideas about the topic of the problem discussed, in the arrangement of paragraphs there are still many paragraphs that are not organized, besides that, in the choice of words there are still many mistakes in word choice and inappropriate word expressions.

Observation (Observation) Cycle II

Observations in cycle II were the same as cycle I. During the activity, the observer made observations to see the teacher's actions and student activities during the process of hydrosphere material through inquiry-based learning. Based on the observation results, it was found that the teaching and learning process that took place was much better than the implementation of argumentation paragraph writing activities in the first cycle. Students looked more comfortable and more enthusiastic.
Observation Results of Cycle II Learning Activities

Similar to cycle 1 activities, teachers have carried out learning with the Learning Implementation Plan (RPP) that has been planned and compiled previously. The process of initial activities carried out by the teacher was good, the teacher had carried out apperception, explained the learning objectives and explained the learning procedures in groups. During the group discussion, the class atmosphere also looked calm compared to cycle 1 activities, there were only a few students who were still seen doing other activities such as playing cellphones, sleeping in class, however, it did not make the class atmosphere noisy. The teacher's reprimand made the atmosphere calm and conducive more quickly.

During group discussions, the teacher guides and directs students in expressing their ideas, the teacher goes around controlling students in discussions and giving directions to focus and concentrate on doing the task. In writing argumentation paragraphs through inquiry-based learning, students look so enthusiastic in giving their opinions about the problems given by the teacher. During the closing activity, the teacher summarized, reflected, asked about the impression of learning, and motivated the students again. Observations or observations of student attitudes in cycle II are the same as observations in cycle 1. Observation of Student activities during the learning process are observed by researchers by paying attention to positive attitudes which consist of 4 aspects and negative attitudes which consist of 5 aspects. The following explains the results of observations of students' positive attitudes and negative attitudes observed by researchers, as follow:

### Table 6. Observation Results of Positive Aspects of Cycle II

<table>
<thead>
<tr>
<th>Student Activity</th>
<th>Meeting 1</th>
<th></th>
<th>Meeting 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Students pay attention to the teacher's explanation sincerely seriously</td>
<td>21</td>
<td>70.0</td>
<td>24</td>
<td>80.0</td>
</tr>
<tr>
<td>Students enthusiastically ask questions about learning materials</td>
<td>14</td>
<td>46.7</td>
<td>17</td>
<td>56.7</td>
</tr>
<tr>
<td>Students actively express their opinions on the topic of the problem given during group discussions</td>
<td>21</td>
<td>70.0</td>
<td>25</td>
<td>83.3</td>
</tr>
<tr>
<td>Students work on assignments earnestly</td>
<td>23</td>
<td>76.7</td>
<td>26</td>
<td>86.7</td>
</tr>
</tbody>
</table>

Based on the table above, it can be seen that the first aspect, students pay attention to the teacher's explanation seriously at the first meeting as many as 21 students or (70%), while at the second meeting students paid more attention to the teacher's explanation, namely 24 students or 80% because the teacher gave attention to students. In the second aspect, students enthusiastically asked about learning material at the first meeting as many as 14 students or 46.7% while at the second meeting as many as 17 students or 56.7% this aspect increased because at the second meeting many students asked about inquiry-based learning.

In the third aspect, students actively answered questions from the teacher at the meeting as many as 21 students or 70%, while at the second meeting it increased, namely 25 students or 83.3% because the teacher often asked questions to students. In the fourth aspect, students worked on assignments...
seriously at the first meeting as many as 23 students or 76.7%, while at the second meeting there was an increase of 26 students or 86.7% because the teacher provided guidance and direction to students.

**Table 7. Results of Observation of Positive Aspects of Cycle II**

<table>
<thead>
<tr>
<th>Student Activity</th>
<th>Meeting 1</th>
<th></th>
<th>Meeting 2</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>Students chat while learning</td>
<td>5</td>
<td>16.7%</td>
<td>2</td>
<td>6.7%</td>
</tr>
<tr>
<td>Students carry out their own activities outside of the material</td>
<td>4</td>
<td>13.3%</td>
<td>2</td>
<td>6.7%</td>
</tr>
<tr>
<td>Students disturb other students</td>
<td>4</td>
<td>20%</td>
<td>2</td>
<td>6.7%</td>
</tr>
<tr>
<td>Students walk around or move around</td>
<td>2</td>
<td>6.7%</td>
<td>6</td>
<td>20.0%</td>
</tr>
<tr>
<td>Students come in and out</td>
<td>1</td>
<td>3.3%</td>
<td>2</td>
<td>6.7%</td>
</tr>
</tbody>
</table>

Based on this table, it can be seen that the first aspect, students chatting during learning at the first meeting were 5 students or 16.7%, while at the second meeting 2 students or 6.7% of students were busy chatting with their friends. In the second aspect, students did their own activities outside the material at the first meeting as many as 2 students or 6.7%, while at the second meeting 2 students or 6.7%. In the third aspect, students disturbed other students at the first meeting as many as 4 students or 20%, while at the second meeting 2 students or 6.7%. In the second meeting, students who disturbed other students decreased because students began to look enthusiastic in participating in learning. In the fourth aspect, students walked around or moved around as many as 2 students or 6.7%, while in the second meeting there was an increase of 6 students or 20%, this was because in the second meeting students were assigned to edit their friends' work, students walked around because they wanted to see the results of their friends' edits. In the fifth aspect, students who came in and out at the first meeting were 1 student or 3.3%, while at the second meeting there were 2 students or 6.7%.

**Reflection on student learning outcomes**

The analysis of teacher activity observations from cycle II indicates a notable progression from cycle I, with several aspects that were previously categorized as sufficient now being elevated to a good rating. These aspects reflect the teacher’s improved performance and heightened efficacy in fostering an engaging and productive learning environment. Notably, the teacher effectively conveyed apperception, clearly explained the learning procedures, and motivated students to actively engage in learning to write argumentative paragraphs through inquiry-based learning. Additionally, the teacher proficiently explained the material and provided valuable guidance during group discussions, ensuring that students remained focused on the issues at hand. Class control also saw an improvement, with the teacher adeptly managing noise levels by issuing timely warnings. Furthermore, the teacher played a pivotal role in editing student work by offering constructive reinforcement and allowed students to express their impressions of the learning experience.

Collectively, these enhancements suggest that the teacher’s activities in cycle II have successfully met all the set indicators on the observation sheet, marking a comprehensive achievement in various pedagogical dimensions. However, despite these successes, it is recognized that the application of inquiry-
based learning continues to require refinement and sustained effort. As such, several improvement steps are recommended for future learning processes beyond this study. Firstly, teachers should maintain a keen attention to detail, particularly in mastering the material and managing class dynamics. Secondly, there is a need for a more rigorous approach in reviewing and correcting students' written work, ensuring that feedback is thorough and enhances the learning experience. By addressing these areas, the teacher can further enhance the effectiveness of the inquiry-based learning approach and continue to improve the overall quality of the educational experience.

Table 8. Qualification Value of Writing Argumentative Paragraphs Cycle II

<table>
<thead>
<tr>
<th>Qualification Value</th>
<th>Cycle 1</th>
<th>Percentage</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>85-100</td>
<td>6</td>
<td>16</td>
<td>Very good</td>
</tr>
<tr>
<td>75-84</td>
<td>16</td>
<td>44.4</td>
<td>Good</td>
</tr>
<tr>
<td>60-74</td>
<td>7</td>
<td>19.4</td>
<td>Enough</td>
</tr>
<tr>
<td>40-59</td>
<td>4</td>
<td>11.1</td>
<td>Not enough</td>
</tr>
<tr>
<td>0-39</td>
<td>3</td>
<td>8.3</td>
<td>Very less</td>
</tr>
</tbody>
</table>

Table 9. Average Value, Absorption Capacity and Completeness of Learning to Write Argumentation Paragraphs for Cycle II Students

<table>
<thead>
<tr>
<th>Cycle</th>
<th>Average Value</th>
<th>Absorption</th>
<th>Completeness</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>28.8</td>
<td>78.8</td>
<td>80.0</td>
</tr>
</tbody>
</table>

Figure 2. Average Value, Absorption Capacity, and Completeness of Classical Learning Cycle II

The data can explain that the skills of writing argumentative paragraphs have improved and have reached the competency standards of the KKM set at school 75. This cycle II research, students are classically capable of hydrosphere material properly and correctly. The improvement of argumentation paragraph writing test results can be seen in the following Table 10.
Table 10. Level of Understanding in Cycle I and Cycle II

<table>
<thead>
<tr>
<th>Cycle</th>
<th>Average Value</th>
<th>Absorption</th>
<th>Completeness</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>73.7</td>
<td>73.7</td>
<td>66.7</td>
</tr>
<tr>
<td>II</td>
<td>28.8</td>
<td>78.8</td>
<td>80.0</td>
</tr>
</tbody>
</table>

From the table, it can be seen that the average student test score in cycle 1 was 73.7%. In cycle 1 the student who obtained the highest score out of 30 students who took the test was Dwi Astuti with a score of 89, while the lowest score with a score of 35 was obtained by Lia Putri. In cycle II the average student test score was 78.8. In cycle II the student who obtained the highest score out of 30 students who took the test was Mas Hayyu Asri with a score of 93, while the lowest score with a score of 44 was Dwi Agustian. These test results are quite satisfactory, because there was an increase in cycle II (78.8). The total absorption percentage in cycle 1 was 73.7%.

In cycle II, the percentage of student absorption increased by 5.1% to 78.8%. This means that students have a good understanding of the subject matter taught and students can write argumentative paragraphs well. The data shows that there is an increase in each cycle. The learning completeness obtained met the criteria and could even be categorized as satisfactory, because the minimum completeness criteria (KKM) in classical MAN 20 Jakarta was 75% and what was achieved in cycle II exceeded the minimum standard of 80%. Although in cycle 1 the classical student learning completeness was not satisfactory, but in cycle II the classical learning completeness was quite satisfactory, because it had reached the predetermined target of 75, students got a score of 75 and above. The picture of the improvement of the test results of writing argumentation paragraphs in cycle 1 and cycle II can be seen in the graph below:

Figure 3. Graph of Average Value, Absorption Capacity, and Level of Understanding

The improvements were quite good because the weaknesses in cycle I were successfully corrected in cycle II. The increase in student activity is of course influenced by the teacher's ability to explain and guide the teaching and learning process of writing argumentative paragraphs through inquiry-based learning.
CONCLUSION

Based on the results of research from cycle I and II, it can be concluded that the hydrosphere material through inquiry-based learning model can improve the ability to understand the concept of geography on the material of hydrosphere dynamics. Through inquiry-based learning on the first hydrosphere material, students still look inactive in following the learning. However, in the second cycle students’ learning activities seem to be more active this is because the teacher explains inquiry-based learning in the learning of argumentation paragraphs slowly so that students become familiar with the tasks given.

Through the second inquiry-based learning, students can easily express ideas and ideas based on the topic of the problem given. This inquiry-based learning is learning that is delivered by presenting a problem, from the problems given students contribute in group discussions to solve the problems given by gathering information, experimenting to get explanations and problem solving, and collecting data, on the problems given. This inquiry-based learning has the potential to develop students' independence in expressing their ideas and ideas.

Increased inquiry-based learning can improve the ability to write argumentation paragraphs of students in class X IPS 1 MAN 20 JAKARTA in the 2019/2020 school year. This can be seen in the results of data analysis of learning outcomes in each cycle that have increased. Cycle 1 average value of 73.7 classical absorption of 73.7%, and classical learning completeness of 66.7%. Cycle II average value of 78.8, classical absorption. The number of learning completeness has met the minimum limit of learning completeness at MAN 20 Jakarta. The increase has met the KKM standards at MAN 20 Jakarta. Obtaining data from the results of this study is very useful for improving teacher competence in developing students' argumentation paragraph writing skills in Bengkulu City. The application of inquiry-based learning can also improve the quality of the process of writing argumentative paragraphs of students in Class X IPS 1 MAN 20 Jakarta, namely improving the quality of teacher activities, and the quality of student activities.

REFERENCES
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