



Impact of Inquiry-Based Learning with Multidisciplinary Groups (IBLMG) on Student Learning Outcome

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Abstract: The integration of Inquiry-Based Learning with Multidisciplinary Groups (IBLMG) has emerged as a prominent approach in contemporary educational settings, aimed at promoting enhanced teaching and learning outcomes. This journal delves into the core principles and methodologies underpinning the IBLMG framework, exploring its potential to foster a dynamic and engaging learning environment. By combining the strengths of Inquiry-Based Learning and Multidisciplinary Group collaboration, educators can empower students to cultivate critical thinking, problem-solving, and teamwork skills. The analysis examines the inquiry process in IBLMG and the impact on student learning outcomes. The findings provide valuable insights for educators and policymakers seeking to optimize teaching and learning strategies while fostering a holistic and multidimensional educational experience through IBLMG integration.

Index Terms: Policymakers, Multidimension, Teamwork, Critical thinking.

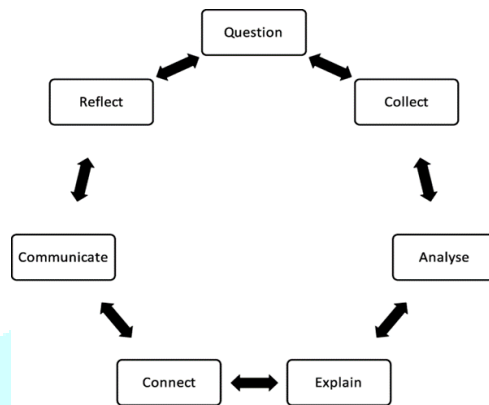
I INTRODUCTION

Inquiry-Based Learning (IBL) has gained recognition as an effective pedagogical approach that promotes active student engagement, critical thinking, and problem-solving skills. By emphasizing student-led investigations and exploration, IBL encourages learners to construct their knowledge, ask questions, and develop a deep understanding of concepts. However, to further enhance the effectiveness of IBL, an integration with Multidisciplinary Groups (IBLMG) has emerged as a promising approach in teaching and learning. By leveraging the collective knowledge, skills, and perspectives of different disciplines, IBLMG fosters a deeper understanding of complex real-world issues while promoting teamwork, communication, and critical thinking across disciplinary boundaries. This journal aims to provide a comprehensive analysis of IBLMG's impact on student learning outcomes, emphasizing its potential to foster critical thinking skills, promote collaboration, and nurture lifelong learners. By examining the principles, methodologies, and

findings of IBLMG implementations, this study seeks to shed light on the transformative nature of this approach in the educational landscape.

II The Inquiry Process in IBLMG

At the heart of IBLMG lies the inquiry process, which serves as the foundation for students' pursuit of knowledge and understanding across different disciplines. This section delves the various steps and stages of the inquiry process in IBLMG, highlighting its key components and significance in promoting student-centered learning.



Reference: <https://slejournal.springeropen.com/articles/10.1186/s40561-021-00152-z>

The inquiry process begins with students generating questions and expressing curiosity about a specific topic or real-world issue. Encouraging students to ask meaningful questions sets the stage for their investigation and drives their motivation to seek answers.

Once students have formulated their questions, they embark on planning and designing their investigations. This stage involves determining the scope and focus of their inquiry, identifying the resources needed, and outlining the research approach.

In the next stage, students actively collect data and conduct research to gather information relevant to their inquiry questions. They may employ various methods, such as conducting experiments, surveys, interviews, or literature reviews, to explore the topic from different angles.

After data collection, students engage in the critical analysis and interpretation of their findings. They analyze patterns, draw connections, and draw conclusions based on the evidence they have gathered. This stage fosters higher-order thinking as students synthesize information from multiple sources and perspectives.

In IBLMG, students use their analysis to draw conclusions and make informed inferences. They apply their understanding to answer their initial questions, leading to deeper insights and new discoveries. Through collaborative discussions within their groups, students refine their conclusions and gain a deeper appreciation for the multidisciplinary nature of knowledge.

Reflection is a crucial component of the inquiry process in IBLMG. Students engage in metacognitive thinking, reflecting on their learning journey, the strategies employed, and the challenges faced. Reflective practices foster self-awareness and self-regulation, helping students refine their inquiry skills and approaches in future investigations.

The inquiry process culminates with students sharing their findings and solutions with their peers and a broader audience. Presentations, discussions, exhibitions, or research papers are common formats for sharing their work.

IBLMG encourages students to take action based on their findings and insights. Students may apply their learning to address real-world challenges or propose solutions to existing problems. This application of knowledge empowers students to see the practical relevance and impact of their inquiry endeavours.

III METHODOLOGY

The present study employed a mixed-methods research design to investigate the impact of IBLMG on student learning outcomes. Quantitative data were collected through pre- and post-assessment scores on critical thinking measures administered to a sample of students from diverse educational settings. Qualitative data were gathered through interviews with teachers and students to gain insights into their experiences with IBLMG. The research sample included students from various grade levels and disciplines, ensuring a comprehensive understanding of IBLMG's effectiveness.

IV FINDINGS

The quantitative analysis revealed a statistically significant improvement in students' critical thinking skills after participating in IBLMG. The pre-assessment scores indicated a baseline level of critical thinking, while the post-assessment scores demonstrated a significant increase. The qualitative data provided rich insights into the students' engagement, motivation, and sense of ownership in the inquiry process. Teachers reported observing enhanced collaboration among students within multidisciplinary groups, leading to deeper exploration and understanding of complex topics.

V DISCUSSION

The findings of this study underscore the positive impact of IBLMG on student learning outcomes. The significant improvement in critical thinking skills reflects the effectiveness of IBLMG in nurturing students' ability to analyze information, draw connections, and apply knowledge to real-world scenarios. The qualitative data highlight the importance of collaborative learning experiences, as students actively engage with peers from different disciplines, expanding their perspectives and problem-solving approaches.

VI Impact of IBLMG on Student Learning Outcomes:

Inquiry-Based Learning with Multidisciplinary Groups (IBLMG) has gained prominence in education for its potential to transform student learning experiences and outcomes. This section explores the impact of IBLMG on student learning outcomes, highlighting its effects on critical thinking, motivation, engagement, interdisciplinary knowledge, and lifelong learning skills.

IBLMG encourages students to ask meaningful questions, design investigations, and analyze complex information. Engaging in open-ended inquiry tasks challenges students to think critically and problem-solve, leading to a deeper understanding of concepts. This autonomy in learning ignites intrinsic motivation and a sense of curiosity, leading to increased engagement in the learning process. By working collaboratively in multidisciplinary groups, students feel a sense of ownership and responsibility for their learning, which further enhances their commitment to the inquiry process. As students work collaboratively with peers from different disciplines, they gain exposure to diverse perspectives and insights. This interdisciplinary approach fosters a

more comprehensive and holistic understanding of complex issues, preparing students to apply knowledge and problem-solving skills in real-world contexts.

In multidisciplinary groups, students must effectively communicate their ideas, listen to others' viewpoints, and collaborate to achieve shared goals. IBLMG nurtures students' communication and teamwork skills, as they engage in discussions, present findings, and work collectively to address challenges. These essential interpersonal skills are transferable to various aspects of their academic and professional lives.

IBLMG cultivates a growth mindset, where students view learning as a continuous and lifelong process. The skills acquired through IBLMG, such as critical thinking, problem-solving, collaboration, and communication, are highly transferable to real-world situations. Students are better prepared to tackle complex issues, make informed decisions, and contribute to their communities and professions effectively.

VII IMPLICATIONS

The implications of this study suggest that IBLMG holds great potential as a transformative educational approach. By integrating IBLMG in classrooms, educators can foster a culture of inquiry, critical thinking, and collaboration, preparing students to become adaptive, creative, and lifelong learners. The findings support the need for professional development opportunities for teachers to effectively implement IBLMG and leverage its benefits across diverse educational contexts.

VIII CONCLUSION

Inquiry-Based Learning with Multidisciplinary Groups (IBLMG) has emerged as a promising approach to foster critical thinking and collaboration in education. This journal highlights the positive impact of IBLMG on student learning outcomes, as evidenced by the significant improvement in critical thinking skills and increased engagement within multidisciplinary groups.

The implications underscore the importance of embracing IBLMG to cultivate a generation of students equipped with the skills and mindset necessary to thrive in an ever-changing world. As educators continue to embrace IBLMG, they contribute to a transformative educational landscape that prepares students to become innovative problem-solvers and responsible global citizens.

IX REFERENCES

1. A multi-disciplinary and inquiry-based learning activity: The seven continents - Gregory Michael Adam. <https://files.eric.ed.gov/fulltext/EJ1310112.pdf>.
2. Science and inquiry-based teaching and learning: a systematic review – Faculty of Education Sciences, National University of San Augustine de Arequipa, Peru. <https://www.frontiersin.org/articles/10.3389/feduc.2023.1170487/full>.