EXPLORING FIFTH-GRADE STUDENTS' INTRINSIC MOTIVATION IN SCIENCE LEARNING: A QUALITATIVE CASE STUDY AT GMIT KUANINO 1 ELEMENTARY SCHOOL, KUPANG, INDONESIA

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ABSTRACT

Intrinsic motivation plays a critical role in sustaining students' engagement and persistence in science learning, particularly at the primary level. This study explores (1) how intrinsic learning motivation is manifested among fifth-grade students in science lessons and (2) what teacher and school efforts support the development of such motivation at GMIT Kuanino 1 Elementary School, Kupang City, Indonesia. A descriptive qualitative approach was employed. Data were collected through classroom observations, semi-structured interviews, and document analysis, enabling triangulation of information across sources. Findings indicate that students' intrinsic motivation is supported by multiple interacting factors: (a) teachers' use of varied and appropriate instructional methods, (b) utilization of learning media, (c) optimization of available facilities and learning resources, (d) continuous improvement of teacher quality through school programs, and (e) the creation of a pleasant and encouraging classroom climate. In addition, students' enthusiasm for learning and the availability of basic classroom resources (e.g., tables, chairs, whiteboards, textbooks) strengthened participation in science learning activities. These results suggest that intrinsic motivation in primary science learning can be fostered through coherent pedagogical practices and supportive school environments. Implications are discussed for classroom instruction and school-level support to enhance student engagement in science learning.

Keywords : Intrinsic Motivation; Science Learning; Primary Education; Teacher Strategies; Qualitative Study.

I. INTRODUCTION

Education plays a strategic role in developing human resources and supporting national progress. In Indonesia, curriculum development has continuously evolved over time, reflecting policy dynamics and educational reform agendas (Ananda & Hudaidah, 2021; Ritonga, 2018). Nevertheless, learning quality may be constrained by contextual challenges, including the learning environment and the availability and utilization of learning resources. Prior research

indicates that school climate and the use of learning resources can moderate the relationship between learning motivation and learning outcomes, suggesting that supportive environments and adequate resources matter for effective learning (Hamida, 2017).

Science learning in primary school is expected to cultivate curiosity, reasoning, and early scientific literacy. However, classroom practices that rely on limited instructional variation and insufficient learning resources may reduce students' interest and engagement. Evidence from science learning contexts shows that learning outcomes can be improved when teachers use appropriate approaches and learning media that support students' understanding (Ida & Fiteriani, 2017; Surahman et al., 2014).

Motivation is widely recognized as a key factor influencing students' engagement and seriousness in learning activities. When motivation is high, students are more likely to persist, participate actively, and achieve learning goals. Empirical evidence also shows a relationship between learning motivation and learning outcomes (Rahmi & Sumarmin, 2019). In addition, motivation functions to energize behavior, direct actions toward goals, and sustain persistence during learning (Harahap et al., 2018).

Intrinsic motivation, in particular, refers to an internal drive that energizes students to learn because of interest, enjoyment, or personal value rather than external rewards. Students with stronger intrinsic motivation tend to show persistence, a desire to improve, and willingness to overcome learning obstacles. Motivation can be observed through indicators such as the desire to succeed, learning needs, aspirations, appreciation, engaging learning activities, a conducive learning environment, and supportive classroom relationships (Wahyuni, 2017).

Despite its importance, intrinsic motivation does not automatically emerge in all students. It requires learning conditions that support meaningful engagement in tasks and classroom experiences. In school settings, teachers play an essential role in shaping motivational conditions through instructional strategies, the use of learning media, feedback, and the overall learning atmosphere (Arianti, 2019; Suprihatin, 2015; Solikah, 2018). At the school level, support such as facilities and programs for improving teacher competence may strengthen teachers' capacity to design motivating learning experiences (Hamida, 2017).

This study focuses on fifth-grade science learning at GMIT Kuanino 1 Elementary School in Kupang City. The research is driven by the need to understand how intrinsic motivation is manifested among primary students and what practical efforts teachers and schools implement to foster such motivation in daily science instruction. To sharpen the paper for an international journal, this study addresses the following research questions:

RQ1: How is intrinsic learning motivation manifested among fifth-grade students during science learning activities?

RQ2: What teacher strategies and school supports contribute to fostering students' intrinsic motivation in science learning?

This study contributes by providing context-specific evidence from an Indonesian primary school regarding (a) practical strategies teachers use to foster intrinsic motivation in science learning and (b) the role of school support (facilities, resources, and teacher development programs) in strengthening motivational conditions.

II. LITERATURE REVIEW

2.1. Learning Motivation in School Learning

Learning motivation is commonly understood as the internal drive that initiates, directs, and sustains students' learning behavior toward achieving learning goals. Motivation influences students' effort, persistence, and engagement in classroom activities (Abadi & Sugiyono, 2019; Harahap et al., 2018). Empirical studies also report that motivation is

associated with learning outcomes, indicating that students with higher motivation tend to demonstrate better academic achievement (Rahmi & Sumarmin, 2019).

Wahyuni (2017) highlights that motivation in learning can be observed through indicators such as the desire to succeed, learning needs, aspirations, appreciation, attractive learning activities, a supportive learning environment, and positive classroom relationships. These indicators provide an operational basis for identifying students' learning motivation within classroom contexts (Wahyuni, 2017).

2.2. Intrinsic and Extrinsic Motivation

Motivation is often categorized into intrinsic and extrinsic forms. Intrinsic motivation refers to students' internal willingness to learn because they find learning meaningful, enjoyable, or personally important. In contrast, extrinsic motivation is driven by external factors such as rewards, grades, or recognition (Abadi & Sugiyono, 2019; Harahap et al., 2018). In practice, intrinsic motivation is particularly important because it supports persistence and active participation even when students face learning difficulties (Rahmi & Sumarmin, 2019; Yassha & Setiawati, 2022).

2.3. The Role of Teachers in Fostering Students' Motivation

Teachers play a central role in shaping motivational conditions in the classroom. Teacher actions that encourage students include providing direction and support, using varied teaching approaches, giving feedback and appreciation, and creating a positive learning atmosphere (Arianti, 2019; Suprihatin, 2015). Solikah (2018) further emphasizes that teachers can strengthen motivation through instructional strategies that make learning activities more engaging and student-centered.

In addition to general strategies, pedagogical practices such as applying learning media and designing learning experiences that connect with students' context can increase students' attention and participation (Suprihatin, 2015; Solikah, 2018). Therefore, teacher competence in selecting methods and media is a key factor in sustaining motivation during instruction (Arianti, 2019).

2.4. Learning Environment, School Climate, and Learning Resources

Motivation is not determined solely by teacher behavior but also by the learning environment and school support. A supportive school climate and effective utilization of learning resources contribute to students' learning motivation and learning outcomes (Hamida, 2017). Limited facilities and inadequate learning resources may reduce students' learning comfort and engagement, potentially weakening their motivation (Hamida, 2017).

Classroom management and learning environment also matter. When the classroom is less conducive (e.g., frequent noise, lack of focus), students' concentration and participation may decrease, which can be reflected in lower motivation (Wahyuni, 2017; Rahmi & Sumarmin, 2019).

2.5. Intrinsic Motivation in Science Learning

In science learning, motivation is essential because science requires curiosity, inquiry, and persistence. The use of contextual learning media can support science learning outcomes and strengthen students' engagement with scientific concepts (Surahman et al., 2014). Similarly, differentiated learning approaches in science classrooms have been reported to contribute to improved learning outcomes, indicating the importance of adapting instruction to

students' needs and characteristics (Swartiningsih, 2021). Research on learning motivation in the context of differentiated learning also underscores that motivational factors are intertwined with how instruction is designed and implemented (Djamarah & Alfath, 2023).

2.6. Research Gap and Focus of This Study

Prior studies emphasize that motivation is related to learning outcomes (Rahmi & Sumarmin, 2019) and that teacher strategies and supportive environments are critical to strengthening learning motivation (Arianti, 2019; Hamida, 2017; Suprihatin, 2015; Solikah, 2018). However, evidence focusing specifically on students' intrinsic motivation in primary science learning—particularly in the local context of Kupang—remains limited. Therefore, this study investigates intrinsic learning motivation among Grade V students in science learning and identifies teacher and school efforts that support students' intrinsic motivation in the studied context.

III. METHODOLOGY

3.1 Research Design

This study employed a descriptive qualitative design to provide a comprehensive and in-depth understanding of students' intrinsic learning motivation in science learning and the efforts implemented by teachers and the school to foster such motivation. This approach is appropriate for describing phenomena factually and systematically and for capturing participants' experiences and observed behaviors in natural classroom settings (Sugiyono, 2019).

3.2 Research Setting and Time

The study was conducted at GMIT Kuanino 1 Elementary School, Kupang City, Indonesia, focusing on Grade V science learning. Data collection was carried out for three weeks (October 2024) during regular science lessons.

3.3 Participants and Sampling

Participants consisted of:

a. 28 Grade V students (observed as a whole class), and
b. two key informants: one Grade V science/class teacher and the school principal.

Participants were selected using purposive sampling, involving individuals directly engaged in Grade V science learning and school support activities relevant to student motivation.

3.4 Data Collection Techniques

Data were collected through classroom observation, interviews, and documentation, consistent with the qualitative descriptive approach used in this study.

3.4.1 Classroom Observations

Non-participant observations were conducted in six (6) science learning sessions, each lasting approximately 70–80 minutes. Observations focused on:

a. manifestations of intrinsic motivation (e.g., enthusiasm, persistence, initiative, participation), and
b. teacher actions and classroom conditions (e.g., teaching methods, use of learning media, feedback, classroom climate).

An observation guide was used to help identify motivation-related indicators such as students' desire to succeed, learning needs, engaging learning activities, supportive environment, and classroom relationships (Wahyuni, 2017).

3.4.2 Semi-Structured Interviews

Semi-structured interviews were conducted to gain deeper insights into:

a. students' perceptions of science learning and what makes them feel motivated from within, and
b. teacher and school perspectives on strategies and supports for fostering intrinsic motivation.

A total of 12 interviews were conducted:

a. 10 students (selected to represent varied learning engagement levels observed in class),
b. 1 science/class teacher, and
c. 1 school principal.

Each interview lasted approximately 15–25 minutes for students and 30–45 minutes for teacher/principal. Interviews were recorded using audio notes and complemented with written summaries.

3.4.3 Documentation

Document analysis was used to support and triangulate data from observation and interviews. A total of 8 documents were reviewed, including:

a. lesson plans/teaching modules for science,
b. learning materials and worksheets,
c. student textbook/resource lists,
d. classroom facilities inventory notes, and
e. school programs related to teacher competence development.

3.5 Research Instruments

The primary research instrument was the researcher, supported by:

a. an observation guide (intrinsic motivation indicators; teacher strategies; classroom climate),
b. interview protocols (students; teacher; principal), and
c. a document review checklist.

3.6 Data Analysis

Data analysis followed an inductive thematic procedure:

a. data organization (transcribing interviews; observation notes; compiling documents),
b. initial coding to identify meaning units related to intrinsic motivation and support efforts,
c. categorization (e.g., teacher strategies; learning media; facilities/resources; classroom climate; school support),
d. theme development aligned with the research questions, and
e. interpretation by connecting themes across data sources.

IV. RESULTS

Based on classroom observations, semi-structured interviews, and document analysis, the results are organized into three main themes: (1) teacher and school efforts to foster students' intrinsic motivation in science learning, (2) manifestations of students' intrinsic motivation during science learning activities, and (3) supporting factors that strengthen students' intrinsic motivation.

4.1 Teacher and School Efforts to Foster Students' Intrinsic Motivation (RQ2)

The data indicate that fostering intrinsic learning motivation in Grade V science learning involved five interrelated efforts implemented by teachers and supported by the school: (1) selecting varied and appropriate learning methods, (2) utilizing learning media, (3) maximizing learning facilities and infrastructure, (4) improving teacher quality, and (5) creating a pleasant learning atmosphere.

4.1.1 Selecting varied and appropriate learning methods

Teachers attempted to reduce student boredom and improve engagement by using instructional methods that were considered more varied and aligned with lesson objectives. This effort was described as essential to sustain students' interest and active involvement during science learning.

4.1.2 Utilizing learning media

The findings show that teachers used learning media to support students' understanding and to make learning activities more engaging. The use of media was positioned as part of the teacher's effort to stimulate participation and maintain attention during science lessons.

4.1.3 Maximizing learning facilities and infrastructure

Teachers and the school sought to optimize available facilities and infrastructure to support learning activities. This included ensuring the availability and use of classroom resources as part of a supportive learning environment.

4.1.4 Improving teacher quality

The results indicate that school-level programs and initiatives were directed toward improving teacher competence, which in turn supported better learning design and classroom implementation. This effort reflects the school's active role in strengthening instructional quality to foster student motivation.

4.1.5 Creating a pleasant learning atmosphere

Creating a fun and enjoyable classroom atmosphere emerged as a consistent strategy in motivating students. Teachers emphasized classroom conditions that encourage comfort, reduce tension, and support student willingness to participate actively in learning tasks.

4.2 Manifestations of Students' Intrinsic Motivation During Science Learning (RQ1)

The study found that students' intrinsic motivation in Grade V science learning was reflected in an internal drive to engage with tasks and master competencies, rather than relying solely on external stimulation.

Across data sources, intrinsic motivation was manifested through the following observable tendencies:

1. Task engagement and persistence: students showed seriousness in completing assigned learning tasks and attempting to overcome learning difficulties.
2. Desire to improve: differences in learning ability and motivation were noted, indicating that some students demonstrated stronger self-driven effort and learning enthusiasm than others.
3. Responsiveness to teacher support: teacher-provided motivation and encouragement functioned as reinforcement that helped students sustain enthusiasm and participation in the learning process.

4.3 Supporting Factors Strengthening Students' Intrinsic Motivation

The findings show that students' intrinsic motivation was strengthened by both internal and external supporting factors.

4.3.1 Students' enthusiasm for learning (internal factor)

The most fundamental supporting factor identified was students' own learning enthusiasm, which served as a baseline for sustained engagement in science learning activities.

4.3.2 Adequate classroom facilities and learning resources (external factor)

A key external factor was the availability of supporting facilities and infrastructure for teaching and learning, including classrooms with adequate tables and chairs, whiteboards, markers, and textbooks. These resources supported smoother lesson implementation and facilitated student participation.

4.3.3 More engaging learning materials (literacy and numeracy enrichment)

Learning materials were described as increasingly interesting because they were complemented by literacy and numeracy components, which encouraged students to be more active in learning participation.

4.3.4 Active school role through teacher competence programs

Finally, the active role of the school—through both teachers and the principal—was reflected in programs intended to improve teacher competence, thereby supporting better learning experiences and motivational conditions at school.

Table 1. Summary of Results by Research Questions

Research Question	Main Findings (Themes)	Key Evidence Sources
RQ1	Intrinsic motivation manifested as internal drive to engage, persist, and strive for improvement during science learning	Observation, interviews
RQ2	Teacher/school efforts: varied methods, learning media, facilities optimization, teacher quality improvement, pleasant learning atmosphere	Observation, interviews, documents

V. DISCUSSION

This study examined intrinsic learning motivation in Grade V science learning and identified teacher and school efforts that foster such motivation. The discussion interprets the findings in relation to prior studies on learning motivation, teacher roles, and contextual supports.

5.1 Teacher and school efforts as drivers of motivational conditions (RQ2)

The results show five interrelated efforts: using appropriate and varied methods, utilizing learning media, maximizing facilities, improving teacher quality, and creating a pleasant learning atmosphere. These efforts align with prior literature emphasizing that teachers play a central role in strengthening students' learning motivation through instructional decisions and classroom management. This is consistent with work highlighting teachers' roles and strategies in improving student motivation (Arianti, 2019; Suprihatin, 2015; Solikah, 2018).

In the context of science learning, the use of learning media and more active methods is particularly relevant because science concepts are often better understood when students are supported by concrete representations and engaging activities. The findings resonate with studies reporting improved learning outcomes in science when contextual media are applied (Surahman et al., 2014) and when cooperative/structured learning approaches are used to support cognitive outcomes (Ida & Fiteriani, 2017).

School-level support also emerged as important, especially through efforts to improve teacher competence and to ensure facilities are available and utilized. This is consistent with evidence that school climate and utilization of learning resources relate to the influence of motivation on learning outcomes (Hamida, 2017). In other words, teacher practices may be more effective when the school environment enables teachers to implement motivating instruction.

5.2 How intrinsic motivation manifested in students' learning (RQ1)

Intrinsic learning motivation in this study was reflected as an internal drive that supports students' engagement, persistence, and seriousness in completing tasks—patterns also described in the manuscript's conceptual framing of intrinsic motivation. These manifestations are consistent with the view that motivation functions to energize action, direct behavior toward goals, and sustain persistence (Harahap et al., 2018).

Moreover, the indicators used to interpret motivational behaviors (e.g., desire to succeed, learning needs, engaging activities, conducive environment, and classroom relationships) are consistent with the indicators of learning motivation discussed in prior research (Wahyuni, 2017). This alignment supports the interpretation that the observed engagement and persistence are valid expressions of motivational conditions in the classroom setting.

5.3 Supporting factors: interaction between internal enthusiasm and external conditions

The study found that students' enthusiasm for learning was the most basic supporting factor, while facilities (tables/chairs, boards, textbooks), increasingly engaging materials enriched with literacy–numeracy components, and the school's active role reinforced student participation. These results reinforce the idea that intrinsic motivation is not solely "inside the student," but is strengthened or weakened by learning environments and the availability/utilization of learning resources (Hamida, 2017).

The findings can also be read in light of learning reforms emphasizing instructional adjustment to learners (e.g., differentiated learning). While this study did not test differentiated learning as an intervention, its emphasis on varied methods, supportive classroom atmosphere, and more engaging materials is consistent with discussions of motivational issues in differentiated learning implementation (Djamarah & Alfath, 2023) and studies linking differentiated implementation to science learning outcomes (Swartiningsih, 2021).

5.4 Implications for practice

Practically, the findings suggest three actionable implications for primary science learning:

1. Instructional design: prioritize varied methods and learning media to sustain attention and improve conceptual understanding (Surahman et al., 2014; Ida & Fiteriani, 2017).
2. Classroom climate: intentionally build a pleasant, supportive learning atmosphere that encourages participation and reduces disruptive behaviors, because motivational indicators are closely related to learning environment and relationships (Wahyuni, 2017).
3. School support: strengthen teacher development programs and optimize learning resources so teachers can implement motivating instruction consistently (Hamida, 2017; Arianti, 2019).

5.5 Limitations and future research

This study is context-specific (one school and one grade level), and its qualitative design prioritizes depth of understanding over statistical generalization. Future studies could: (a) include multiple schools for broader comparison, (b) incorporate longitudinal observation to examine stability of intrinsic motivation across topics and semesters, and (c) complement qualitative findings with motivation scales or structured rubrics based on established indicators (Wahyuni, 2017) to strengthen measurement triangulation.

VI. CONCLUSION

This study investigated intrinsic learning motivation among Grade V students in science learning at GMIT Kuanino 1 Elementary School, Kupang City, and examined teacher strategies and school supports that foster such motivation. The findings indicate that students' intrinsic motivation was manifested through active engagement in learning tasks, persistence in completing activities, and a desire to improve learning performance during science lessons.

In response to the second research question, the study identified five interrelated efforts used to foster students' intrinsic motivation: (1) employing varied and appropriate teaching methods, (2) utilizing learning media, (3) optimizing available learning facilities and resources, (4) strengthening teacher quality through school support and improvement programs, and (5) creating a pleasant and supportive classroom atmosphere.

Overall, the results suggest that intrinsic motivation in primary science learning can be strengthened when teacher practices and school-level supports are aligned. Practically, teachers are encouraged to design engaging science learning experiences using varied methods and learning media, while schools should ensure the availability and effective utilization of classroom resources and continue supporting teacher competence development.

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