

Teachers' Lived Experiences Implementing GASING in Mathematics Learning: A Phenomenological Study at SMPN 9 Jayapura

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ABSTRACT

This study aimed to explore the subjective experiences of a mathematics teacher at SMPN 9 Jayapura in implementing the GASING (Gampang, Asyik, dan Menyenangkan) learning method using a qualitative phenomenological approach. The main problem underlying the application of this method was the students' difficulty in understanding abstractly taught mathematical concepts and their low basic numeracy skills, such as multiplication and division. Data were collected through in-depth interviews with a teacher who had practiced the method. The results showed that the GASING method successfully changed the teacher's teaching paradigm to start learning from concrete to abstract stages. The approach using real objects proved to significantly increase students' interest, active participation, and quick calculation skills, including in students who previously had very low basic abilities. However, the teacher faced several challenges in its implementation, including the lack of comprehensive training time support from the school, passive student characteristics at home, and low student literacy levels that hindered the resolution of word problems. In conclusion, the GASING method was highly effective in creating deep and meaningful mathematics learning, but it required high commitment from teachers and systemic collaboration within the school environment.

ABSTRAK

Penelitian ini bertujuan untuk mengungkap pengalaman pribadi para guru matematika di SMPN 9 Jayapura saat menggunakan metode pembelajaran GASING yang berarti Gampang, Asyik, dan Menyenangkan dengan pendekatan fenomenologi kualitatif. Masalah utama yang melatarbelakangi penggunaan metode ini adalah kesulitan yang dialami siswa dalam memahami konsep matematika yang diajarkan dengan cara yang sulit dipahami serta rendahnya kemampuan dasar dalam menghitung, seperti dalam perkalian dan pembagian. Data diperoleh melalui wawancara mendalam dengan guru yang sudah menerapkan metode ini. Hasil penelitian menunjukkan bahwa metode GASING berhasil merubah cara mengajar guru dari yang awalnya abstrak menjadi lebih konkret. Metode ini menggunakan benda nyata dan terbukti mampu secara signifikan meningkatkan minat, partisipasi, dan kemampuan berhitung cepat siswa, termasuk bagi siswa yang sebelumnya memiliki kemampuan sangat rendah. Meskipun ada banyak hal positif, para guru juga menghadapi beberapa masalah dalam penerapannya, seperti kurangnya waktu pelatihan yang memadai dari sekolah, sifat siswa yang kurang aktif di rumah, dan rendahnya kemampuan membaca siswa yang menghalangi mereka dalam mengerjakan soal cerita. Jadi, dapat disimpulkan bahwa metode GASING sangat efektif dalam membuat pembelajaran matematika lebih dalam dan bermakna, tapi membutuhkan komitmen yang tinggi dari guru serta kerjasama yang baik di lingkungan sekolah.

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1. Introduction

Mathematics learning in schools should not focus solely on procedural accuracy, but also on students' ability to understand concepts, use representations, reason, and solve problems in meaningful contexts. In Indonesia, mathematics and reading achievement remain important areas of concern. The PISA 2022 report indicates that Indonesian students' performance in mathematics and reading still requires systematic strengthening (OECD, 2023). This condition suggests that strengthening foundational mathematical skills needs to go hand in hand with developing students' ability to understand information and apply knowledge contextually.

One mathematics learning approach that has developed in Indonesia is the GASING method (Gampang, Asyik, and Menyenangkan). The literature on GASING consistently emphasizes gradual learning, the use of concrete representations, structured practice, and the development of computational fluency. (Prahmana & Suwasti, 2014) showed that GASING learning for division places concrete experience at the starting point before progressing toward more abstract forms. (Prahmana, 2015) likewise highlighted the importance of a learning trajectory from informal to formal levels in addition. Empirical studies have also reported positive effects of GASING on mathematics learning outcomes and conceptual understanding (Kusuma et al., 2019; Munawaroh & Nurtamam, 2024).

More recent evidence shows that GASING has also been implemented in eastern Indonesia. (Paling & Suparyono, 2024) reported improved students' multiplication skills in Wamena through classroom action research, while (Yulianto, 2024) documented gains in basic multiplication skills following GASING-based instruction. (Maulida et al., 2024) likewise reported improved mathematical conceptual understanding when GASING was combined with cooperative learning, and (Hayati et al., 2024) found positive effects on students' mathematical problem-solving abilities. More recent work has also examined broader numeracy outcomes and GASING implementation across Indonesian contexts (Gultom et al., 2025; Yuana et al., 2026). At the teacher level, (Matondang et al., 2026) found that intensive GASING training in Jayapura was associated with improved teachers' mathematical competence and intrinsic motivation.

These limitations create room for research that does not merely assess whether GASING improves learning outcomes, but instead examines how teachers experience, interpret, adapt, and sustain its implementation in authentic learning situations. This perspective is important because the success of a pedagogical innovation depends not only on the characteristics of the method, but also on teachers' interpretations, student conditions, time, resources, school support, and classroom adaptation processes. Accordingly, this study focuses on the lived experience of a

mathematics teacher at SMPN 9 Jayapura.

Building on this gap, the study aimed to explore a teacher's lived experience of implementing the GASING method in mathematics learning at SMPN 9 Jayapura. Specifically, it examined how the teacher interpreted changes in pedagogical practice, experiences of concept concretization, implementation challenges, perceived effects on student learning, and expectations for sustaining the innovation. IPA was selected because it focuses on how participants make sense of the experiences they undergo (Smith et al., 2021).

2. Method

This study employed a qualitative approach with an Interpretative Phenomenological Analysis (IPA) design. IPA was used to examine in depth how the participant made sense of significant experiences, with attention to phenomenological, hermeneutic, and idiographic dimensions (Smith et al., 2021). The quality of IPA research is supported by strong analytic narrative, close engagement with participants' words, and transparent connections between experience and researcher interpretation (Nizza et al., 2021).

The participant was one mathematics teacher at SMPN 9 Jayapura who had completed GASING training and implemented the method in classroom teaching. The single-participant selection was purposive because the study prioritized idiographic depth over statistical generalization. Information about the participant's training background and implementation experience was treated as contextual information about the individual experience, rather than as a characteristic representative of all teachers or schools.

Primary data were obtained through semi-structured in-depth interviews focusing on experiences before, during, and after GASING implementation. The interview transcript was read and analyzed repeatedly to maintain close engagement with the participant's original narrative. Non-participant classroom observation was used as contextual evidence, as planned in the study design. In reporting the findings, verbatim quotations were used to demonstrate the empirical basis of each major interpretation.

The analysis followed the IPA stages of reading and re-reading, initial noting, development of emergent themes, examination of relationships among themes, and construction of superordinate themes (Smith et al., 2021). Interpretation was conducted idiographically by maintaining the relationship between the participant's words and the meanings constructed by the researcher. Reflexivity was used to consider the researcher's position throughout the interpretive process. Because this was a single-participant idiographic study, the findings were not intended for statistical generalization to mathematics teachers as a whole or to all schools in Papua.

3. Results And Discussion

Based on the IPA analysis, five superordinate themes formed an interconnected structure of meaning in the participant's experience. Figure 1 summarizes these relationships and the interpretive constructs emerging across the themes.

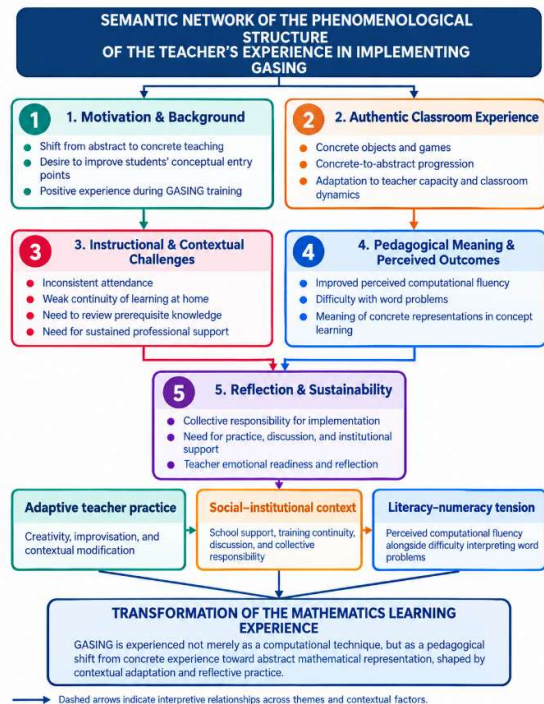


Figure 1. Semantic Network of the Phenomenological Structure of the Teacher's Experience in Implementing GASING

The network shows that the teacher's experience was not formed by isolated events. Motivation initiated a shift toward concrete teaching; authentic classroom practice required adaptation; contextual constraints shaped implementation; perceived pedagogical benefits coexisted with literacy-numeracy tension; and evaluative reflection connected these experiences to sustainability. Together, the relationships point to a transformation in how mathematics learning was constructed through GASING.

3.1 Motivation and Background of GASING Implementation

The participant's experience indicates that the decision to implement GASING began with the realization that previous teaching practices had placed too much emphasis on presenting mathematics abstractly. The teacher explicitly described this change as a shift in how she thought about teaching, particularly in connecting concrete objects with abstract concepts. This experience became evident when the teacher compared fraction instruction before and after participating in GASING training.

"GASING changed the way I think as a teacher, especially about how I should teach mathematics from concrete objects toward abstraction. There was a specific problem: my students did not understand what fractions looked like because I always taught them abstractly, so they did not know what two-thirds plus three-fifths actually represented." (Participant, in-depth interview)

This statement suggests that the teacher's motivation was not simply to find a new technique, but to reconstruct how the process of understanding mathematical concepts was perceived. This is consistent with the GASING design, which develops a learning trajectory from informal experience toward more formal forms of mathematical operations (Prahmana, 2015; Prahmana & Suwasti, 2014). A recent systematic review likewise indicates that GASING is commonly implemented through concrete, structured learning and an emphasis on strengthening foundational skills (Gesiradja et al., 2025; Wenno et al., 2026).

This finding is also consistent with recent scholarship showing that GASING is often developed through gradual learning practices oriented toward mastery of foundational skills (Gesiradja et al., 2025; Wenno et al., 2026). Thus, the teacher's experience reflects not only the adoption of a new technique, but also a change in how students are understood to enter mathematical concepts.

3.2 Authentic Experiences in Classroom Practice

During the initial implementation of GASING, the participant described the classroom atmosphere as simultaneously enjoyable, moving, and demanding adaptation. The use of drinking straws as concrete representations prompted some students to perceive the activity as resembling learning in elementary school. For the teacher, however, this response indicated that some students genuinely needed concrete experiences to re-enter foundational mathematical concepts. The teacher also adapted the "enjoyable and fun" element by replacing singing activities with interactive games because she felt uncomfortable using singing in class.

"It felt good, and it was also funny because the children laughed when I introduced concrete objects like these five straws and said, this is five... As a teacher, I felt happy and touched, but I still tried to keep the learning enjoyable." (Participant, in-depth interview)

"I could not really apply singing in the classroom, so I replaced it with an interesting game." (Participant, in-depth interview)

This adaptation shows that GASING implementation did not occur mechanically. The teacher retained the principle of an enjoyable learning atmosphere while modifying the form of activities to fit her own capacity and the classroom dynamics. This finding can be understood through the literature on concreteness fading, which positions concrete experience as a foundation before learners are gradually guided toward abstract representations (Fyfe et al., 2014, 2015; Kokkonen & Schalk, 2021).

3.3 Instructional Challenges and Contextual Barriers

The challenge most frequently experienced by the participant was not primarily a lack of facilities, but inconsistent student attendance and weak continuity of learning at home. These conditions required the teacher to allocate time to review previous material before introducing new content. Thus, GASING implementation did not take place in a fully stable classroom environment, but in a situation that required the teacher to continually restore students' prerequisite knowledge.

"There are challenges. Facilities are not really the main issue; the challenge is that in a public school class there are many students, and attendance tends to be on and off—sometimes they come and sometimes they do not." (Participant, in-depth interview)

"Most of them do not review the material. I can see it when I enter the classroom to teach the next topic: I have to review the previous material for several minutes. Only after reviewing it can I continue with the new material." (Participant, in-depth interview)

These quotations show that the implementation experience was strongly shaped by continuity in students' learning. In the context of professional development, systematic reviews indicate that limitations in training, curriculum support, and media readiness remain challenges for sustaining GASING (Gesiradja et al., 2025; Wenno et al., 2026). Evidence from Papua also suggests that teacher professional development can strengthen instructional capacity: Ismail and Imawan (Ismail & Imawan, 2021) reported an 84% improvement in teachers' TPACK after a training program involving teachers from Jayapura City and Regency.

A teacher-training study in Papua further found that intensive GASING training was associated with improvements in teachers' mathematical competence and intrinsic motivation (Matondang et al., 2026). However, the participant's experience indicates that the benefits of training still need to be translated into practice through teachers' own ongoing classroom adaptation.

3.4 Pedagogical Meaning and Perceived Learning Outcomes

For the participant, the experience of GASING changed how mathematics teaching was understood. Concrete objects were no longer viewed merely as supplementary teaching aids, but as bridges that helped students enter mathematical concepts. This experience aligns with the concrete-to-abstract learning trajectory in mathematics education (Prahmana, 2015) and with evidence from concreteness-fading research showing the benefits of beginning with concrete materials and gradually moving toward abstract symbols (Fyfe et al., 2014, 2015).

"Clearly, my perspective changed. Through GASING, I learned how to teach mathematics using real objects and concrete things, and that was the most transformative part, because I had never realized this before." (Participant, in-depth interview)

"The most visible improvement was in fast computation... but when I changed the questions into word problems, they would not read them because students today have very limited literacy." (Participant, in-depth interview)

Regarding perceived effects, the participant most prominently emphasized improved computational fluency and the ability to solve direct procedural problems. This aligns with recent GASING studies reporting gains in basic arithmetic and conceptual understanding (Maulida et al., 2024; Yuliyanto et al., 2024). However, she also observed difficulties when the format of the questions changed into word problems, a concern that is relevant to research showing that GASING can also be used to support mathematical problem solving when instructional experiences are designed around concrete and logical activity (Hayati et al., 2024). This finding should nevertheless be understood as the participant's experience and perception, rather than as evidence that GASING causally produces a gap between computation and problem solving. Empirical studies instead suggest that GASING can support computational skills, learning outcomes, and conceptual understanding across different contexts (Afifasani et al., 2025; Kusuma et al., 2019; Munawaroh & Nurtamam, 2024; Paling & Suparyono, 2024; Yuana et al., 2026). Therefore, "literacy-numeracy tension" is more appropriately treated in this study as an interpretive theme signaling the need to integrate computational practice with reading and meaning-making in problem statements.

3.5 Evaluative Reflection and Sustainability Hopes

At the reflection stage, the participant felt that GASING required teachers to continue adapting. She mentioned differences in the language used in the teaching guide, the need to prepare instructional media appropriate to the topic, and difficulties in disseminating the method when training was compressed. These experiences indicate that sustaining an innovation requires more than introducing a method; it also requires time for practice, opportunities for discussion, and institutional support.

"GASING training was supposed to be 15 full days, from 7:00 a.m. to 4:00 p.m.... the school wanted to compress it into four days, and that was extremely difficult for me." (Participant, in-depth interview)

"If we want to train teachers in GASING at school, I cannot do it alone; all the mathematics teachers at my school need to be involved." (Participant, in-depth interview)

This statement shows that the participant understood the sustainability of GASING as a collective process rather than an individual responsibility. Information about training duration, other teachers' responses, and school support is still treated as part of the participant's subjective experience. Systematic reviews of GASING emphasize the importance of sustained training, contextual support, and implementation adaptation (Gesiradja et al., 2025; Wenno et al., 2026). At the same time, the participant continued to see room for personal innovation, including modifying objects available around students to teach algebra.

"The most meaningful thing is to teach with heart... when you can control your emotions as you enter the classroom, it will affect the students in the class." (Participant, in-depth interview)

The reflection on "teaching with heart" reveals a phenomenological dimension that is not captured by learning-outcome measurements alone. For the participant, successful implementation was not only a matter of technique, but also of the teacher's emotional readiness to create a classroom atmosphere that was enjoyable yet purposeful. This meaning broadens the understanding of GASING as a pedagogical experience that is both technical and affective.

4. Integrative Discussion

Overall, the teacher's experience in this study comprised five layers of meaning: (1) a shift in pedagogical orientation from abstract presentation toward concrete experience; (2) adaptive practices using concrete objects and games adjusted to classroom conditions; (3) challenges related to learning continuity, student attendance, and professional development support; (4) perceived benefits in computational fluency, accompanied by tension when students encountered word problems; and (5) professional reflection on the need for collective support and teacher emotional regulation. These five layers indicate that GASING was experienced not as a stand-alone computational technique, but as a transformation in how mathematical learning experiences are constructed.

The most potentially significant conceptual contribution of this study is the notion of literacy-numeracy tension, referring to the teacher's experience that computational fluency does not always develop alongside the ability to understand textual information in word problems. In this study, the term is positioned as an interpretive theme emerging from the participant's experience, rather than as a causal relationship that has been established. This positioning keeps the strength of the claim aligned with the design of a single-participant IPA study.

At the same time, the study demonstrates the particular relevance of the Papuan context for GASING research. Studies in Wamena, Sorong, and Jayapura show that GASING is not only used in schools in other parts of Indonesia, but has also developed within the Papuan educational context. However, most existing studies still focus on learning outcomes, numeracy skills, or training, while teachers' lived experiences of implementation remain relatively underexplored. This is where the present phenomenological study offers a distinct contribution.

5. Conclusion

This study shows that the teacher's experience of implementing the GASING method at SMPN 9 Jayapura involved a process of pedagogical change, contextual adaptation, and professional reflection. The teacher understood GASING as an approach that helps build a bridge from concrete experience to more abstract mathematical representations. From the participant's perspective, this strategy supported computational fluency and made learning feel more closely

aligned with students' needs.

However, the participant's experience also indicates that procedural fluency does not automatically resolve difficulties with word problems and text-based problem solving. Therefore, implementing GASING at the junior secondary level should be positioned within a broader learning ecosystem that also attends to reading literacy, reasoning, and problem solving. Sustaining the innovation likewise requires training, institutional support, and space for teachers to adapt the approach.

The main limitation of this study is its use of one participant in a single school context. Accordingly, the findings are not intended for statistical generalization. Future research could employ multi-case IPA, involve more than one teacher, or compare different school contexts in Papua and other parts of eastern Indonesia to examine the transferability of the themes identified.

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