

**CARA BERPIKIR SISWA DALAM MEMECAHKAN MASALAH GEOMETRI PADA
RANCANG BANGUN RUMAH ADAT MELAYU SAMBAS**

Disertasi

Diajukan sebagai salah satu syarat penyusunan Disertasi untuk memperoleh gelar Doktor
Pendidikan Program Studi Pendidikan Matematika



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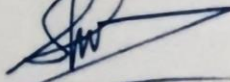
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PADA RANCANG BANGUN RUMAH ADAT MELAYU SAMBAS**

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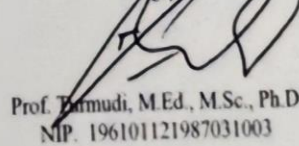
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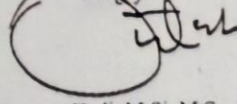
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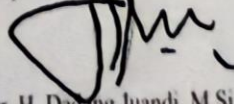
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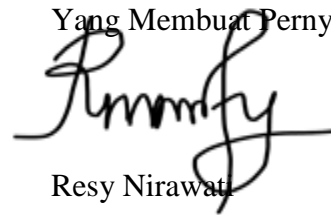
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PERNYATAAN

Dengan ini saya menyatakan bahwa disertasi dengan judul “**Cara Berpikir Siswa Dalam Memecahkan Masalah Geometri Pada Rancang Bangun Rumah Adat Melayu Sambas**” beserta seluruh isinya adalah benar-benar karya saya sendiri. Saya tidak melakukan penjiplakan atau pengutipan dengan cara-cara yang tidak sesuai dengan etika ilmu yang berlaku di masyarakat keilmuan. Atas pernyataan ini, saya siap menanggung risiko/sanksi apabila di kemudian hari ditemukan adanya pelanggaran etika keilmuan atau ada klaim dari pihak lain terhadap keaslian karya saya ini.

Bandung, 5 Mei 2023

Yang Membuat Pernyataan



Resy Nirawati

ABSTRAK

Resy Nirawati (2023). Cara Berpikir Siswa Dalam Memecahkan Masalah Geometri Pada Rancang Bangun Rumah Adat Melayu Sambas.

Penelitian ini bertujuan untuk mengkaji dan mendeskripsikan secara komprehensif mengenai cara berpikir siswa dalam memecahkan masalah geometri pada rancang bangun rumah adat melayu Sambas serta membuat konjektur (teori substantive) yang berkaitan dengan cara berpikir siswa dalam memecahkan masalah geometri untuk menggali *mental act*, *ways of thinking* dan *ways of understanding* berdasarkan kemampuan kognitif rendah, sedang dan tinggi. Metode di dalam penelitian ini adalah penelitian kualitatif berjenis case study dengan desain *grounded theory* dengan bantuan *software* Atlas.ti 9. Subjek yang diteliti adalah siswa Sekolah Dasar Negeri 2 Sambas yang sudah belajar geometri. Lokasi penelitian dilakukan di Kabupaten Sambas provinsi Kalimantan Barat, Indonesia. Siswa yang terlibat berjumlah 28 orang siswa, dengan instrumen penelitian berupa tes tertulis materi geometri serta pedoman wawancara semi terstruktur.

Hasil penelitian 1) Cara berpikir siswa dalam memecahkan geometri pada rancang bangun rumah adat melayu Sambas merupakan kategori inti/fenomena sentral yang dibangun atau dikonstruksikan oleh tiga tema yang meliputi *mental act* yang ditemukan meliputi *interpreting*, *explaining*, *mathematizing*, *working mathematically*, *inferring*, *validating*. *Ways of thinking* yang ditemukan meliputi *ways of interpreting*, *ways of explaining*, *ways of mathematizing*, *strategy working mathematically*, *ways of inferring*, *ways of validating*. *Ways of understanding* yang ditemukan meliputi *interpretation*, *explanation*, *mathematization*, *solution*, *inference* dan *validation*; 2) *Mental act*, *ways of thinking* dan *ways of understanding* siswa berdasarkan kemampuan kognitif rendah, sedang dan tinggi dalam memecahkan masalah geometri pada rancang bangun rumah adat melayu Sambas 3); Analisis *grounded theory* menghasilkan suatu rumusan teoritik antara kemampuan kognitif siswa dan cara berpikir siswa dalam memecahkan masalah geometri yaitu makin tinggi level kemampuan kognitif siswa, maka makin beragam cara berpikir siswa dalam memecahkan masalah geometri pada rancang bangun rumah adat melayu Sambas; 4) Karakteristik dari *ways of thinking* dan *ways of understanding* siswa dalam memecahkan masalah geometri pada rancang bangun rumah adat melayu Sambas yang meliputi cara berpikir benar dengan cara memahami yang benar, cara berpikir benar dengan cara memahami yang salah, cara berpikir salah dengan cara memahami yang benar, dan cara berpikir salah dengan cara memahami yang salah; 5) Tipe kesalahan siswa meliputi *misread error*, *concept error*, *careless error*, *transformation error*, *test procedure error* dan *application error*.

Kata Kunci: Atlas ti 9, Geometri, *Grounded Theory*, *Mental Acts*, Rumah adat, Tipe kesalahan siswa, *Ways of thinking*, *Ways of understanding*

ABSTRACT

Resy Nirawati (2023). The way students think in solving geometry problems in the design of traditional Malay Sambas houses.

This study aims to study and describe comprehensively the way of thinking of students in solving geometry problems in the design of Sambas Malay traditional houses and making conjectures (substantive theory) related to the way students think in solving geometry problems to explore mental acts, ways of thinking and ways of understanding based on low, medium and high cognitive abilities. The method in this study is qualitative research type case study with grounded theory design with the help of Atlas.ti 9 software. The subjects studied were students of State Elementary School 2 Sambas who had studied geometry. The location of the study was conducted in Sambas District, West Kalimantan province, Indonesia. The number of students involved was 28 students, with research instruments in the form of written tests of geometry material and semi-structured interview guidelines.

Research results 1) The way students think in solving geometry in the design of traditional Malay houses Sambas is a core category / central phenomenon built or constructed by three themes which include mental acts found including interpreting, explaining, mathematizing, working mathematically, inferring, validating. Ways of thinking found include ways of interpreting, ways of explaining, ways of mathematizing, strategy working mathematically, ways of inferring, ways of validating. Ways of understanding found include interpretation, explanation, mathematization, solution, inference and validation; 2) Mental act, ways of thinking and ways of understanding students based on low, medium and high cognitive abilities in solving geometry problems in the design of Sambas Malay traditional houses 3); Grounded theory analysis produces a theoretical formulation between students' cognitive abilities and students' ways of thinking in solving geometry problems, namely the higher the level of students' cognitive abilities, the more diverse the way students think in solving geometry problems in the design of Sambas Malay traditional houses; 4) Characteristics of students' ways of thinking and ways of understanding in solving geometry problems in the design of Sambas Malay traditional houses which include how to think right by understanding the right, how to think right by understanding the wrong, how to think wrong by understanding the right, and how to think wrong by understanding the wrong; 5) Types of student errors include misread error, concept error, careless error, transformation error, test procedure error and application error.

Keywords: Atlas ti 9, Geometry, Grounded Theory, Mental Acts, Traditional houses, Types of student errors, Ways of thinking, Ways of understanding

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