

**LEVEL IMAJINASI MATEMATIS SISWA SMP**

**DISERTASI**

Diajukan untuk Memenuhi Sebagian Syarat Memperoleh Gelar Doktor  
Pendidikan pada Program Pendidikan Matematika



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**PERNYATAAN**

**LEVEL IMAJINASI MATEMATIS SISWA SMP**

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Sebuah Disertasi yang diajukan untuk memenuhi sebagian syarat dalam memperoleh gelar Doktor Pendidikan Matematika (Dr.) pada Fakultas Pendidikan Matematika dan Ilmu Pengetahuan Alam

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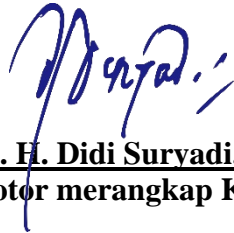
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## ABSTRAK

**Novi Andri Nurcahyono (2021).** Level Imajinasi Matematis Siswa SMP.

Penelitian ini bertujuan untuk memperoleh gambaran mengenai level imajinasi matematis siswa SMP dalam menyelesaikan masalah matematis. Metode penelitian yang digunakan yaitu metode penelitian kualitatif dengan desain *grounded theory*. Subjek penelitian terdiri dari 8 siswa yang dipilih dengan cara *purposive* berdasarkan hasil tes dan konsultasi dengan guru matematika. Teknik pengumpulan data menggunakan tes, observasi, dan wawancara. Hasil analisis diperoleh beberapa simpulan, yakni: 1) indikator imajinasi matematis siswa yang muncul terdiri dari sensibilitas, intuisi, kristalisasi, transformasi, eksplorasi, elaborasi, produktivitas, keefektifan, dan kebaruan; 2) level imajinasi matematis siswa SMP terdiri dari *initiating imagination*, *conceiving imagination*, *analysing imagination*, dan *developing imagination*; 3) karakteristik level *initiating imagination* terdiri dari penerimaan informasi diawali kesan dan perasaan, terjadi secara spontan, menghasilkan intuisi, menangkap dan menafsirkan informasi, munculnya keputusan secara cepat, serta berdasarkan pengalaman yang pernah dialami. Karakteristik level *conceiving imagination* terdiri dari menggunakan contoh nyata, membuat sketsa, membuat simpulan singkat, menyusun perencanaan, munculnya konsep baru, serta mengidentifikasi beragam data. Karakteristik level *analysing imagination* terdiri dari melakukan penjelajahan, membentuk pengertian umum, rinci, teliti, tekun dan cermat, menelaah pengalaman/situasi baru, menghimpun informasi, mendalami, mencermati, dan menganalisis, melakukan penalaran, menarik kesimpulan, mengembangkan/memperkaya ide, serta langkah-langkah terperinci. Karakteristik level *developing imagination* terdiri dari menghasilkan banyak ide, menggunakan sumber daya, keberhasilan tindakan, serta ide-ide yang tidak biasa; 4) Kendala yang muncul adalah gagal menangkap dan menafsirkan informasi yang ada di dalam soal serta gagal mencermati dan menganalisis berbagai kemungkinan dari informasi yang ada, gagal dalam membuat sketsa, gagal menemukan asosiasi antara informasi dengan sketsa yang dibuat dengan penyelesaian masalah, gagal memahami konsep, gagal dalam mencari dan melakukan penjelajahan untuk menemukan penyelesaian soal, gagal dalam menggunakan pengetahuan dalam melakukan penyelesaian masalah, tidak tekun dan cermat dalam dalam pengerjaan, miskonsepsi, gagal dalam menganalisis dan mendalami cara penyelesaian, serta gagal menelaah dan membentuk pengertian umum terhadap fenomena yang ditemukan, gagal dalam memperoleh simpulan serta gagal dalam mempelajari secara rinci dan memeriksa serta menyelidiki secara teliti hasil yang didapatkan; 5) Faktor penghambat dalam memunculkan imajinasi matematis terdiri dari, kognisi, motivasi, kepercayaan diri, dan inspirasi.

**Kata kunci:** level imajinasi matematis, penyelesaian masalah matematis, siswa SMP

## ABSTRACT

**Novi Andri Nurcahyono (2021).** Junior High School Students' Mathematical Imagination Level

This study aims to obtain a description of the level of mathematical imagination of junior high school students in solving mathematical problems. The research method was a qualitative research method with grounded theory design. The research subjects consisted of 8 students who were selected purposively based on test results and consultation with the mathematics teacher. Data collection techniques used tests, observation, and interviews. The results of the analysis obtained several conclusions, namely: 1) Indicators of junior high school students' mathematical imagination are sensibility, intuition, crystallization, transformation, exploration, elaboration, productivity, effectiveness, and novelty; 2) The level of junior high school students' mathematical imagination, namely, initiating imagination, conceiving imagination, analyzing imagination and developing imagination; 3) Characteristics of the level of initiating imagination, namely the reception of information begins with impressions and feelings, occurs spontaneously, generates intuition, captures and interprets information, emerges decisions quickly, and is based on experiences that have been experienced. The characteristics of the conceiving imagination level are using real examples, making sketches, making brief conclusions, compiling plans, emerging new concepts, and identifying various data. The characteristics of the level of analyzing imagination are exploring, forming a general, detailed, thorough, diligent and careful understanding, studying new experiences/situations, gathering information, exploring, observing, and analyzing, reasoning, drawing conclusions, developing/enriching ideas, and steps. detailed steps. Characteristics of the level of developing imagination are generating many ideas, using resources, successful actions, and unusual ideas; 4) The obstacles that arise are failure to capture and interpret the information in the problem and fail to paying close attention and analyzing the various possibilities of the existing information, fail to making a sketch, fail to find an association between the information and the sketch that is made by solving problems, fail to understanding the concept, failing in searching and exploring to find solutions to problems, inaccurate in using knowledge in solving problems, not being diligent and careful in processing, misconceptions, failing in analyzing and exploring how to solve them, and failing to analyze and form a general understanding of the phenomena found, failing in obtaining conclusions and failing in studying in detail and examining and investigating thoroughly the results obtained; 5) Inhibiting factors in bringing up mathematical imagination, namely, cognition, motivation, self-confidence, and inspiration.

**Keywords:** level of mathematical imagination, mathematical problem solving, junior high school students

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Novi Andri Nurcahyono

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