A FOUR-TIER DIAGNOSTIC TEST AS A TOOL TO DETECT LOWER SECONDARY STUDENTS' MISCONCEPTIONS ON THE CLASSIFICATION OF LIVING THINGS IN THE WEST REGION OF BANDUNG

RESEARCH PAPER

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Arranged by:

Arifah Nur Andini

2103844

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A Four-Tier Diagnostic Test as a Tool to Detect Lower Secondary Students' Misconceptions on the Classification of Living Things in the West Region of Bandung

Oleh
Arifah Nur Andini

Sebuah skripsi yang diajukan untuk memenuhi salah satu syarat memperoleh gelar Sarjana Pendidikan pada Fakultas Pendidikan Matematika dan Ilmu Pengetahuan Alam

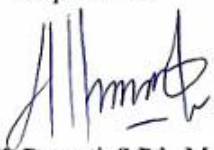
APPROVAL SHEET

ARIFAH NUR ANDINI

A FOUR-TIER DIAGNOSTIC TEST AS A TOOL TO DETECT LOWER SECONDARY STUDENTS' MISCONCEPTIONS ON THE CLASSIFICATION OF LIVING THINGS IN THE WEST REGION OF BANDUNG

Approved and confirmed by

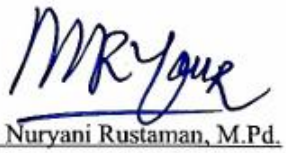
Supervisor I



Dr. Lilit Rusyati, S.Pd., M.Pd.

NIP. 198704202012122001

Supervisor II



Prof. Dr. Nuryani Rustaman, M.Pd.

NIPT. 920220119501231201

Received by,

Head of Science Education Study Program

Prof. Dr. Phil. Ari Widodo, M.Ed.

NIP. 196705271992031001

DECLARATION OF PLAGIARISM

I, the undersigned:

Name	:	Arifah Nur Andini
Students ID	:	2103844
Study Program	:	International Program on Science Education
Title	:	A Four-Tier Diagnostic Test as a Tool to Detect Lower Secondary Students' Misconceptions on The Classification of Living Things in The West Region of Bandung

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Bandung, April 8th 2025

Arifah Nur Andini

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A FOUR-TIER DIAGNOSTIC TEST AS A TOOL TO DETECT LOWER SECONDARY STUDENTS' MISCONCEPTIONS ON THE CLASSIFICATION OF LIVING THINGS IN THE WEST REGION OF BANDUNG

Arifah Nur Andini
arifahnurandini@upi.edu

ABSTRACT

Before carrying out learning activities, students already have prior knowledge about certain concepts, but some of them may experience misconceptions. This study focuses on the detection of misconceptions on the topic of Classification of Living Things for lower secondary students using the Four-Tier Diagnostic Test instrument. By convenience sampling, a total of 536 8th grade students of public secondary schools in the west region of Bandung participated in this study. A quantitative method with cross-sectional survey design was used to identify the types of conception of secondary students on this topic in the confidence level 95% with ±5% precision. The results found that as many as 22.07% of secondary students in the west region of Bandung experienced misconceptions. In addition, as many as 33.65% of them experienced Lack of Knowledge, and only about 23.34% of them achieved Scientific Knowledge. As for about 10.72% of students have False Negative, while the rest – about 10.23% have False Negative. Looking at each subtopic, in general, misconceptions occur in the concept of characteristics of living things, taxonomic levels, and five kingdoms classification. From this study, it can be concluded that most secondary students in the west region of Bandung still lack knowledge on the topic of classification of living things and some others are detected to have misconceptions. This problem is impactful to the students; therefore, various efforts such as the selection of the more appropriate learning model, book sources, or another related effort need to be concerned to overcome these problems.

Keywords: Classification of Living Things, Four-Tier Diagnostic Test, Misconception, West Region of Bandung

TES DIAGNOSTIK EMPAT TINGKAT SEBAGAI ALAT UNTUK MENDETEKSI MISKONSEPSI SISWA SMP MENGENAI KLASIFIKASI MAKHLUK HIDUP DI WILAYAH BARAT BANDUNG

Arifah Nur Andini
arifahnurandini@upi.edu

ABSTRAK

Sebelum melakukan kegiatan pembelajaran, siswa telah memiliki pengetahuan awal mengenai konsep tertentu, namun beberapa diantaranya mungkin mengalami miskonsepsi. Penelitian ini berfokus pada deteksi miskonsepsi pada topik Klasifikasi Makhluk Hidup untuk siswa sekolah menengah pertama dengan menggunakan instrumen *Four-Tier Diagnostic Test*. Dengan *convenience sampling*, sejumlah 536 siswa kelas 8 sekolah menengah pertama negeri di wilayah barat Bandung berpartisipasi dalam penelitian ini. Metode kuantitatif dengan desain survei *cross-sectional* digunakan untuk mengidentifikasi jenis-jenis konsepsi siswa sekolah menengah pada topik ini dengan *confidence level* 95% dengan ±5% presisi. Hasil penelitian menemukan bahwa sebanyak 22,07% siswa sekolah menengah pertama di wilayah barat Bandung mengalami miskonsepsi. Selain itu, sebanyak 33,65% dari mereka mengalami *Lack of Knowledge*, dan hanya sekitar 23,34% dari mereka yang mencapai *Scientific Knowledge*. Adapun sekitar 10,72% siswa mengalami *False Negative*, sedangkan sisanya – sekitar 10,23% mengalami *False Negative*. Jika dilihat dari masing-masing subtopik, secara umum miskonsepsi terjadi pada konsep ciri-ciri makhluk hidup, tingkat taksonomi, dan klasifikasi lima kingdom. Dari penelitian ini dapat disimpulkan bahwa sebagian besar siswa sekolah menengah di wilayah barat Bandung masih kurang memiliki pengetahuan tentang topik klasifikasi makhluk hidup dan sebagian lainnya terdeteksi mengalami miskonsepsi. Masalah ini berdampak pada siswa, oleh karena itu berbagai upaya seperti pemilihan model pembelajaran, buku sumber, dan upaya lain yang lebih sesuai perlu diperhatikan untuk mengatasi masalah tersebut.

Kata Kunci: Bandung bagian barat, *Four-Tier Diagnostic Test,* Klasifikasi Makhluk Hidup, Miskonsepsi

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