

**ANALYSIS OF STUDENTS MISCONCEPTIONS ABOUT
REPRODUCTION IN PLANTS USING A FOUR-TIER DIAGNOSTIC
TEST**

RESEARCH PAPER

Submitted as Requirement to Obtain Degree of *Sarjana Pendidikan* in
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Sebuah skripsi yang diajukan untuk memenuhi salah satu syarat memperoleh gelar
Sarjana Pendidikan pada Fakultas Pendidikan Bahasa dan Seni

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APPROVAL SHEET

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DECLARATION

I do hereby declare that every aspect was written in this research paper entitled “**Analysis of Student Misconceptions about Reproduction in Plants Using A Four-Tier Diagnostic Test**” to Analyze Student Misconceptions about Reproduction in plants” is the original result of my idea, effort, and works without copying or plagiarizing from other papers. The theories, opinions, and other that are contained in this paper have been quoted or referenced based on scientific code from UPI and under scientific ethics that applies in scholarly society. This declaration is created truthfully and mindfully. Unless it is eventually considered to be a violation of scientific ethics, or whether there is a statement by others regarding the authenticity of this research paper, I can accept the authorization of scholars or copyright that are found. Hence, I am willing to take responsibility and accept academic sanctions corresponds to the rules.

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ABSTRACT

Diagnosing students' conceptions is valuable for assessing their level of understanding and preventing misconceptions. The four-tier test is a diagnostic instrument to identify students' misconceptions based on confidence levels in their answers. Misconceptions refer to concepts that students comprehend but do not align with scientific understanding. Reproduction in plants is one of the subjects that can reveal misconceptions. Reproduction in plants is one of the subjects that can reveal misconceptions. a set of four-tier multiple-choice questions was distributed to 101 9th-grade students who had previously studied the topic. Students' conceptions were classified into categories: scientific knowledge, false positives, false negatives, misconceptions, and lack of knowledge. Data analysis was conducted using MS Excel to calculate percentages and frequencies. The results demonstrate that higher percentage of scientific knowledge, notably 48.25%, in contrast to misconceptions, accounting for 14.9%. However, one particular subtopic, fertilization in plants and seed dispersal, exhibited the highest occurrence of misconceptions. To address identified misconceptions, teachers should establish connections between the material and real-life situations, engage students in projects and discussions, and openly discuss misconceptions. Additionally, introducing Latin terminology related to the subject matter can help familiarize students with the language used in the material. By implementing these strategies, teachers can effectively address misconceptions, promote a deeper understanding of plant reproduction.

Keywords : Four- Tier Test, Misconceptions, Reproduction in Plants, Students' Conception

ANALISIS MISKONSEPSI SISWA TENTANG REPRODUKSI TANAMAN DENGAN MENGGUNAKAN UJI DIAGNOSTIK EMPAT TINGKAT

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ABSTRAK

Mendiagnosis konsepsi siswa sangat berguna untuk menilai tingkat pemahaman mereka dan mencegah kesalahpahaman. Tes empat tingkat merupakan instrumen diagnostik untuk mengidentifikasi miskonsepsi siswa berdasarkan tingkat kepercayaan terhadap jawabannya. Miskonsepsi mengacu pada konsep yang dipahami siswa namun tidak selaras dengan pemahaman ilmiah, Reproduksi pada tumbuhan merupakan salah satu mata pelajaran yang dapat mengungkap miskonsepsi. Reproduksi pada tumbuhan merupakan salah satu mata pelajaran yang dapat mengungkap kesalahpahaman. seperangkat soal pilihan ganda empat tingkat dibagikan kepada 101 siswa kelas 9 yang sebelumnya telah mempelajari topik tersebut. Konsepsi siswa diklasifikasikan ke dalam kategori: pengetahuan ilmiah, positif palsu, negatif palsu, kesalahpahaman, dan kurangnya pengetahuan. Analisis data dilakukan dengan menggunakan MS Excel untuk menghitung persentase dan frekuensi. Hasilnya menunjukkan bahwa persentase pengetahuan ilmiah lebih tinggi, yaitu 48,25%, dibandingkan dengan miskonsepsi, yakni sebesar 14,9%. Namun, salah satu subtopik tertentu, yaitu pemupukan tanaman dan penyebaran benih, menunjukkan tingkat kesalahpahaman tertinggi. Untuk mengatasi miskonsepsi yang teridentifikasi, guru harus membangun hubungan antara materi dan situasi kehidupan nyata, melibatkan siswa dalam proyek dan diskusi, dan mendiskusikan miskonsepsi secara terbuka. Selain itu, memperkenalkan terminologi Latin yang berkaitan dengan materi pelajaran dapat membantu membiasakan siswa dengan bahasa yang digunakan dalam materi. Dengan menerapkan strategi ini, guru dapat secara efektif mengatasi kesalahpahaman, meningkatkan pemahaman yang lebih mendalam tentang reproduksi tanaman.

Kata kunci : Diagnosis Tes Empat Tingkat, konsepsi siswa, Miskonsepsi, Reproduksi pada Tumbuhan,

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