

**PROFIL ASESMEN EPISTEMIK SAINS UNTUK KOMPETENSI MENJELASKAN
FENOMENA SECARA ILMIAH PADA PEMBELAJARAN BIOLOGI**



SKRIPSI

*Diajukan untuk memenuhi syarat memperoleh gelar Sarjana Pendidikan Program Studi
Pendidikan Biologi*

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**PROGRAM STUDI PENDIDIKAN BIOLOGI FAKULTAS PENDIDIKAN
MATEMATIKA DAN ILMU PENGETAHUAN ALAM UNIVERSITAS
PENDIDIKAN INDONESIA**

2025

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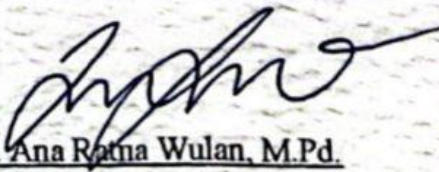
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ABSTRAK

PROFIL ASESMEN EPISTEMIK UNTUK KOMPETENSI MENJELASKAN FENOMENA SECARA ILMIAH PADA PEMBELAJARAN BIOLOGI

Rendahnya literasi sains siswa, khususnya dalam kompetensi menjelaskan fenomena secara ilmiah, menunjukkan perlunya asesmen yang tidak hanya menekankan pada penguasaan konsep, tetapi juga pada keterampilan epistemik. Kompetensi menjelaskan fenomena ilmiah penting untuk melatih siswa berpikir kritis, logis, serta mampu menghubungkan konsep sains dengan fenomena nyata. Kompetensi ini merujuk pada indikator dalam PISA 2025 Science Framework. Desain penelitian menggunakan metode deskriptif kuantitatif dengan sample purposive sampling sebanyak 225 siswa kelas X-XI di lima SMA berakreditasi A,B, dan C. instrumen utama terdiri dari kuesioner skala likert (1-4) yang telah diuji validitas dan reabilitasnya. Penelitian ini membandingkan pengalaman belajar, pengalaman asesmen, kesesuaian antara keduanya, serta kendala dan harapan siswa disekolah dengan akreditasi A,B, dan C. metode deskriptif kuantitatif digunakan dengan melibatkan 225 siswa kelas X dan XI dari lima sekolah di Bandung dan Cimahi. Hasil menunjukkan bahwa pengalaman belajar sering, namun lemah dalam merevisi hipotesis dan menggunakan representasi visual. Asesmen sering menggunakan bentuk representasi berupa presentasi. Kesesuaian antara pengalaman belajar dan asesmen umumnya sering sesuai. Kendala utama siswa adalah kurangnya pemahaman konsep dan kesulitan menyampaikan penjelasan terstruktur. Harapan siswa meliputi pembelajaran interaktif, bimbingan jelas, dan kesempatan revisi. Perbandingan antara akreditasi menunjukkan sekolah dengan akreditasi A lebih banyak dan konsisten melakukan pembelajaran asesmen epistemik sains. Akreditasi sekolah B menunjukkan hasil yang hampir sama, namun masih memerlukan dukungan dalam pengelolaan waktu. Sementara akreditasi sekolah C belum sepenuhnya konsisten menerapkan pembelajaran dan asesmen yang lebih baik.

Kata kunci: asesmen epistemik, menjelaskan fenomena ilmiah, kompetensi sains, pembelajaran biologi, PISA 2025.

ABSTRACT

EPISTEMIC ASSESSMENT PROFILE FOR THE COMPETENCE OF EXPLAINING PHENOMENA SCIENTIFICALLY IN BIOLOGY LEARNING

The low level of students' scientific literacy, particularly in the competence of explaining phenomena scientifically, indicates the need for assessments that emphasize not only conceptual mastery but also epistemic skills. The competence of explaining scientific phenomena is important to train students to think critically, logically, and be able to connect scientific concepts with real phenomena. This competence refers to the indicators in the PISA 2025 Science Framework. The research design used a quantitative descriptive method with a purposive sampling sample of 225 students in grades X-XI in five high schools accredited A, B, and C. The main instrument consisted of a Likert scale questionnaire (1-4) that had been tested for validity and reliability. This study compared learning experiences, assessment experiences, the suitability between the two, as well as obstacles and expectations of students in schools with A, B, and C accreditation. The quantitative descriptive method was used involving 225 students in grades X and XI from five schools in Bandung and Cimahi. The results showed that learning experiences were frequent, but weak in revising hypotheses and using visual representations. Assessments often used presentations as a form of representation. The suitability between learning experiences and assessments was generally often appropriate. The main obstacles students face are a lack of conceptual understanding and difficulty delivering structured explanations. Student expectations include interactive learning, clear guidance, and opportunities for revision. A comparison of accreditation levels shows that schools with A accreditation consistently implement epistemic science assessments more frequently and consistently. Schools with B accreditation show similar results, but still require support in time management. Meanwhile, schools with C accreditation have not yet consistently implemented better learning and assessments.

Keywords: *epistemic assessment, explaining scientific phenomena, science competencies, biology learning, PISA 2025.*

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