

**ANALISIS PROFIL PERTANYAAN KETERAMPILAN BERPIKIR
KRITIS DALAM BUKU IPA PADA KONSEP-KONSEP BIOLOGI KELAS
IX PADA KURIKULUM MERDEKA**

SKRIPSI

diajukan untuk memenuhi sebagian syarat dalam memperoleh gelar Sarjana
Pendidikan



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**ANALISIS PROFIL PERTANYAAN KETERAMPILAN BERPIKIR KRITIS
DALAM BUKU IPA PADA KONSEP-KONSEP BIOLOGI KELAS IX PADA
KURIKULUM MERDEKA**

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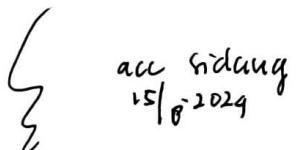
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ABSTRAK

Penelitian ini menganalisis profil pertanyaan keterampilan berpikir kritis dalam buku IPA kelas IX pada konsep-konsep Biologi berdasarkan kurikulum Merdeka. Tujuan penelitian adalah untuk menentukan persentase kemunculan berbagai jenis pertanyaan berpikir kritis menurut teori Facione dan memberikan contoh konkret dari pertanyaan-pertanyaan tersebut dalam buku pelajaran. Penelitian dilatarbelakangi oleh pentingnya keterampilan berpikir kritis dalam dunia pendidikan dan kehidupan pribadi seseorang, di mana keterampilan ini esensial untuk membantu siswa memahami, menilai, dan menyelidiki konsep-konsep biologi secara lebih mendalam. Buku sebagai sumber pelajaran utama, berpeluang besar dalam mengembangkan keterampilan berpikir kritis melalui latihan pertanyaan. Pendekatan yang digunakan adalah kuantitatif dengan metode deskriptif, menggunakan teknik analisis isi untuk mengeksplorasi profil pertanyaan. Dalam penelitian ini, *codebook* digunakan sebagai instrumen utama, digunakan untuk menganalisis dan melabeli pertanyaan yang terdapat dalam buku. Hasil penelitian menunjukkan bahwa aspek pertanyaan inferensi paling dominan dengan persentase 32%, disusul oleh interpretasi (24%), eksplanasi (17%), analisis (14%), regulasi diri (10%), dan evaluasi (3%). Temuan ini mengindikasikan adanya ketidakseimbangan dalam pengembangan pertanyaan berpikir kritis, di mana aspek evaluasi, yang penting dalam penilaian, sangat jarang muncul. Contoh pertanyaan evaluasi seperti “mengapa kalian kesulitan membaca warna?”, melatih siswa menilai tingkat keyakinan dari pengalamannya dalam melakukan uji efek Stroop. Implikasi dari hasil ini menunjukkan perlunya revisi dalam penyusunan pertanyaan agar lebih seimbang dalam mendukung pengembangan berbagai aspek keterampilan berpikir kritis, maupun tambahan suplemen pertanyaan dari guru guna memperkuat kemampuan siswa dalam berpikir kritis secara komprehensif.

Kata kunci: keterampilan berpikir kritis, buku teks IPA, konsep-konsep biologi

ABSTRACT

This study analyzes the profile of critical thinking questions in ninth-grade science textbooks focusing on biology concepts based on the Merdeka Curriculum. The research aims to determine the percentage of occurrence of various types of critical thinking questions according to Facione's theory and provide concrete examples of these questions in the textbook. The study is motivated by the importance of critical thinking skills in both education and personal life, as these skills are essential for helping students understand, assess, and investigate biological concepts more deeply. Textbooks as the main source of learning, mean that they have the opportunity to develop critical thinking skills through practice questions. The approach used is quantitative with a descriptive method, utilizing content analysis techniques to explore the profile of questions. In this study, a codebook was used as the main instrument to analyze and label the questions found in the textbook. The results show that inference questions are the most dominant, with a percentage of 32%, followed by interpretation (24%), explanation (17%), analysis (14%), self-regulation (10%), and evaluation (3%). These findings indicate an imbalance in the creation of critical thinking questions, where the evaluation aspect, crucial for assessment, rarely appears. An example of an evaluation question, such as "Why did you have difficulty reading the colors?" helps students assess their confidence level in conducting the Stroop effect test. The implications of these results suggest the need to revise the formulation of questions to be more balanced in supporting the development of various aspects of critical thinking skills, as well as adding supplementary questions from teachers to strengthen students' critical thinking abilities comprehensively.

Keywords: critical thinking skills, biology concepts, science textbooks

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DAFTAR PUSTAKA

- Abrami, P. C., Bernard, R. M., Borokhovski, E., Waddington, D. I., Wade, C. A., & Persson, T. (2015). Strategies for Teaching Students to Think Critically: A Meta-Analysis. *Review of Educational Research*, 85(2), 275–314. <https://doi.org/10.3102/0034654314551063>
- Aldahmash, A. H., Mansour, N. S., Alshamrani, S. M., & Almohi, S. (2016). An Analysis of Activities in Saudi Arabian Middle School Science Textbooks and Workbooks for the Inclusion of Essential Features of Inquiry. *Research in Science Education*, 46(6), 879–900. <https://doi.org/10.1007/s11165-015-9485-7>
- Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., & Wittrock, M. C. (2001). A taxonomy for learning, teaching, and assessing: A revision of bloom's taxonomy of educational objectives, abridged edition. White Plains, NY: Longman
- Ali, K. (2022). Digital Information Literacy Skills among Library and Information Science Professionals in University Libraries of Sindh Pakistan. *Journal of Information Management and Practices*, 2(1). <https://doi.org/https://doi.org/10.52461/jimp.v2i1.1035>
- Al-Qahtani, E. M. (2019). Critical Thinking Pedagogy: Using Textbooks Evaluation and Content Analysis Techniques for Saudi University Students. *International Journal of Linguistics, Literature and Translation (IJLLT)*, 2(5). <https://doi.org/10.32996/ijllt.2019.2.5.28>
- Aybek, B., & Aslan, S. (2016). An Analysis of the Units “I’m Learning my Past” and “The Place where We Live” in the Social Studies Textbook Related to Critical Thinking Standards. *Egitim Arastirmalari - Eurasian Journal of Educational Research*, 2016(65), 35–54. <https://doi.org/10.14689/ejer.2016.65.03>
- Bagheri, F., & Ghanizadeh, A. (2015). The effect of inference-making, deduction, and self-monitoring on EFL learners’ language achievement, reading, and writing ability. *International Journal of Research Studies in Language Learning*, 5(4). <https://doi.org/10.5861/ijrsll.2015.1320>
- Barnett, J. E., & Francis, A. L. (2012). Using higher order thinking questions to foster critical thinking: A classroom study. *Educational Psychology*, 32(2), 201–211. <https://doi.org/10.1080/01443410.2011.638619>
- Birjandi, P., & Alizadeh, I. (2012). Manifestation of critical thinking skills in the English textbooks employed by language institutes in Iran. *International Journal of Research Studies in Language Learning*, 2(1). <https://doi.org/10.5861/ijrsll.2012.100>
- Børhaug, K. (2014). Selective critical thinking: A textbook analysis of education for critical thinking in Norwegian social studies. *Policy Futures in Education*, 12(3), 431–444. <https://doi.org/10.2304/pfie.2014.12.3.431>

- Cain, K., & Oakhill, J. v. (2001). *Comprehension skill, inference-making ability, and their relation to knowledge*.
- Carley, K. (1993). Coding Choices for Textual Analysis: A Comparison of Content Analysis and Map Analysis. *Source: Sociological Methodology*, 23, 75–126.
- Chiappetta, E. L., & Fillman, D. A. (2007). Analysis of five high school biology textbooks used in the United States for inclusion of the nature of science. *International Journal of Science Education*, 29(15), 1847–1868. <https://doi.org/10.1080/09500690601159407>
- Crowe, A., Dirks, C., & Wenderoth, M. P. (2008). Article *Biology in Bloom: Implementing Bloom's Taxonomy to Enhance Student Learning in Biology*. <https://doi.org/10.1187/cbe.08>
- Davies, M. (2013). Critical thinking and the disciplines reconsidered. *Higher Education Research and Development*, 32(4), 529–544. <https://doi.org/10.1080/07294360.2012.697878>
- Ennis, R. (2011). *Critical Thinking: Reflection and Perspective Part 1*. 26(1), 4–18.
- Ennis, R. H. (1985). *A Logical Basis for Measuring Critical Thinking Skills*.
- Erdiana, N., & Panjaitan, S. (2023). How is HOTS Integrated into the Indonesian High School English Textbook? *Studies in English Language and Education*, 10(1), 60–77. <https://doi.org/10.24815/siele.v10i1.26052>
- Facione. (2020). *Permission to Reprint for Non-Commercial Uses Critical Thinking: What It Is and Why It Counts*.
- Facione, P. A. (1990). *Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction. Research Findings and Recommendations*.
- Facione, P. A. (2000). *The Disposition Toward Critical Thinking: Its Character, Measurement, and Relationship to Critical Thinking Skill*.
- Friday, J., Joshua, M., & Yusuf, S. (2019). Assessment of information literacy competency among students of College of Nursing and Midwifery, Kafanchan, Kaduna State, Nigeria. *International Journal of Library and Information Science*, 11(5), 58–65. <https://doi.org/10.5897/ijlis2019.0906>
- Halpern, D. F. (2014). *Thought and Knowledge: An Introduction to Critical Thinking*.
- Hamna Naseer, Yaar Muhammad, & Sajid Masood. (2020). Critical Thinking Skills in a Secondary School Pakistan Studies Textbook: A Qualitative Content Analysis. *sjesr*, 3(4), 84–95. [https://doi.org/10.36902/sjesr-vol3-iss4-2020\(84-95\)](https://doi.org/10.36902/sjesr-vol3-iss4-2020(84-95))

- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288. <https://doi.org/10.1177/1049732305276687>
- Ilyas, H. P. (2015). *Critical Thinking: Its Representation in Indonesian ELT Textbooks and Education*.
- Kemendikbudristek. (2021). *Panduan Pengembangan Projek Penguatan Profil Pelajar Pancasila*.
- Krippendorff, Klaus. (2004). *Content analysis : an introduction to its methodology*.
- Lai, E. R. (2011). *Critical Thinking: A Literature Review Research Report*. <http://www.pearsonassessments.com/research>.
- Maly, H. (2014). *Textbook Analysis: Level of Critical Thinking in Cambodian Biology Textbooks Published by Ministry of Education Youth and Sport*.
- Martin, C. M., Garcia, E. P., & McPhee, M. (2012). Information Literacy Outreach: Building a High School Program at California State University Northridge. Dalam *Education Libraries* (Vol. 34).
- Milama, B., Sabrina, R. N., & Yunita, L. (2022). Analisis Pertanyaan Pada Buku Teks Kimia SMA ANALISIS PERTANYAAN PADA BUKU TEKS KIMIA SMA KELAS X BERDASARKAN KEMAMPUAN BERPIKIR KRITIS. *JTK (Jurnal Tadris Kimiya)*, 7(1), 135–146. <https://doi.org/10.15575/jtk.v7i1.4973>
- Naseer, H., Muhammad, Y., & Masood, S. (2020). Critical Thinking Skills in a Secondary School Pakistan Studies Textbook: A Qualitative Content Analysis. *sjesr*, 3(4), 84–95. [https://doi.org/10.36902/sjesr-vol3-iss4-2020\(84-95\)](https://doi.org/10.36902/sjesr-vol3-iss4-2020(84-95))
- Niu, L., Behar-Horenstein, L. S., & Garvan, C. W. (2013). Do instructional interventions influence college students' critical thinking skills? A meta-analysis. Dalam *Educational Research Review* (Vol. 9). <https://doi.org/10.1016/j.edurev.2012.12.002>
- Nold, H. (2017). Using Critical Thinking Teaching Methods to Increase Student Success: An Action Research Project. *International Journal of Teaching*, 29(1), 17–32. <http://www.isetl.org/ijtlhe/>
- OECD. (2023). *PISA 2022 Results Factsheets Indonesia PUBE*. <https://oecdch.art/a40de1dbaf/C108>.
- Parsazadeh, N., Parsazadeh, N., Ali, R., Ibrahim, I., & Saeed, R. (2015). *DIGITAL INFORMATION EVALUATION SKILLS AMONG STUDENTS IN HIGHER EDUCATION* (Vol. 75). www.jurnalteknologi.utm.my
- Petress. (2004). *Critical thinking an extended definition*.

Presiden Republik Indonesia. (2013). *PERATURAN PEMERINTAH REPUBLIK INDONESIA*.

Purnama Yani, I., Iranie, R., Jonuarti, R., & Rahmatina Rahim, F. (2021). *Analysis Indicator of Critical Thinking Skills In Physics Textbooks For Senior High School Grade X Semester 1 In Padang*. 81(2), 81–88.

Remillard, J. T., Harris, B., & Agodini, R. (2014). The influence of curriculum material design on opportunities for student learning. *ZDM - Mathematics Education*, 46(5), 735–749. <https://doi.org/10.1007/s11858-014-0585-z>

Richard Paul, B., & Elder, L. (2006). *The International Critical Thinking Reading & Writing Test How to Assess Close Reading and Substantive Writing*. www.criticalthinking.org

Richard Paul, B., & Elder, L. (2008). *The Miniature Guide to The Foundation for Critical Thinking*. www.criticalthinking.org

Richards, J. C. (2001). *The Role of Textbooks in a Language Program*.

Rosyida, E. (2016). *Teachers' Perceptions Toward The Use of English Textbook* (Vol. 9, Nomor 1).

Sahin, S. A., Tunca, N., Altinkurt, Y., & Yilmaz, K. (2016). Relationship between professional values and critical thinking disposition of science-technology and mathematics teachers. *Eurasia Journal of Mathematics, Science and Technology Education*, 12(1), 25–40. <https://doi.org/10.12973/eurasia.2016.1371a>

Saldaña, J. (2013). *The Coding Manual for Qualitative Researchers*. www.sagepublications.com

Salsabella, S., & Juanengsih, N. (2021). Analysis of cognitive level biology exercise questions in science text books based on TIMSS frame work. *Journal of Physics: Conference Series*, 1836(1). <https://doi.org/10.1088/1742-6596/1836/1/012063>

Samiee Zafarghandi, M., Seadatee Shamir, A., & Shamsolahi, M. (2020). A Comparative Study of Fifth Grade Mathematics Textbooks in Iranian and International Schools based on Critical Thinking Components. *Iranian Journal of Comparative Education*, 3(1), 624–635. <https://doi.org/10.22034/IJCE.2020.214609.1088>

Santharoban, S. (2016). Analyzing the Level of Information Literacy Skills of Medical Undergraduate of Eastern University, Sri Lanka. Dalam *Journal of the University Librarians' Association of Sri Lanka* (Vol. 19).

Santos, L. F. (2017). *The Role of Critical Thinking in Science Education* (Vol. 8, Nomor 20). Online. www.iiste.org

Sarıtaş, B., Şentürk, M. L., & Aslan, S. (2022). An Examination of the Activities in the Unit “Solar System And Eclipses” in the 6th Grade Science Textbook in Terms of

Critical Thinking Standards. *Journal of Science Learning*, 5(2), 277–290. <https://doi.org/10.17509/jsl.v5i2.44087>

Sebastian, R., Jumadi, J., Winingsih, P. H., & Hapsari, N. A. P. (2023). Content analysis of the independent curriculum physics science textbook from the perspective of critical thinking aspects and HOTS. *Momentum: Physics Education Journal*, 7(2), 232–246. <https://doi.org/10.21067/mpej.v7i2.8293>

Sihotang, H. (2023). Metode Penelitian Kuantitatif. UKI Press. Jakarta

Sobkowiak, P. (2016). Critical thinking in the intercultural context: Investigating EFL textbooks. *Studies in Second Language Learning and Teaching*, 6(4), 697–716. <https://doi.org/10.14746/ssllt.2016.6.4.7>

Solihati, N., & Hikmat, A. (2018). Critical Thinking Tasks Manifested in Indonesian Language Textbooks for Senior Secondary Students. *SAGE Open*, 8(3). <https://doi.org/10.1177/2158244018802164>

Sula, A., Lama, I. N., & Gjokutaj, M. (2011). *IMPROVING THE QUALITY OF LEARNING THROUGH THE QUESTIONS OF TEXTS*.

Sutia, C., dkk. (2022). SMP/MTs KELAS IX. <https://buku.kemdikbud.go.id>

Thrilling, B., & Fadel, C. (2009). *21st Century Skills Learning for Life in Our Times*.

van den Ham, A. K., & Heinze, A. (2018). Does the textbook matter? Longitudinal effects of textbook choice on primary school students' achievement in mathematics. *Studies in Educational Evaluation*, 59, 133–140. <https://doi.org/10.1016/j.stueduc.2018.07.005>

Wallace, E. D., & Jefferson, R. N. (2015). Developing Critical Thinking Skills: Assessing The Effectiveness Of Workbook Exercises. Dalam *Journal of College Teaching & Learning-Second Quarter* (Vol. 12, Nomor 2).

Willingham, D. T. (2008). Critical Thinking: Why Is It So Hard to Teach? *Arts Education Policy Review*, 109(4), 21–32. <https://doi.org/10.3200/AEPR.109.4.21-32>

Wilson, V. (2011). A content analysis of librarianship research. *Journal of Information Science*, 30(3), 227–239. <https://doi.org/10.1177/0165551504044668>

Yacoubian, H. A. (2015). A Framework for Guiding Future Citizens to Think Critically About Nature of Science and Socioscientific Issues. *Canadian Journal of Science, Mathematics and Technology Education*, 15(3), 248–260. <https://doi.org/10.1080/14926156.2015.1051671>

You, J. A., Lee, H. S., & Craig, C. J. (2019). Remaking textbook policy: analysis of national curriculum alignment in Korean school textbooks. *Asia Pacific Journal of Education*, 39(1), 14–30. <https://doi.org/10.1080/02188791.2019.1572591>

Yu, J., Li, C., & Li, G. (2022). Alignment between biology curriculum standards and five textbook editions: a content analysis. *International Journal of Science Education*, 44(14), 1–20. <https://doi.org/10.1080/09500693.2022.2119621>

Zikri, A., Darvina, Y., Silvi,), Sari, Y., Pengajar, S., & Fisika, J. (2020). PERBANDINGAN PENINGKATAN KETERAMPILAN BERPIKIR KRITIS DAN KREATIF SISWA DENGAN MENERAPKAN LKS BERBASIS PROBLEM SOLVING DAN INQUIRI TERBIMBING PADA MATERI KALOR DAN TEORI KINETIK GAS KELAS XI SMAN 2 PADANG Mahasiswa Pendidikan Fisika, FMIPA Universitas Negeri Padang 2). Dalam *Physics Education* (Vol. 13, Nomor 1).