

## DAFTAR PUSTAKA

- Acar, O. & Patton B. R. (2012). Argumentation and formal reasoning skills in argumentation-based guided inquiry course. *Procedia – Social and Behavioral Science*. 46(17), 4756-4760.
- Aizikovitsh, E. & Chen, D. (2015). Developing critical thinking skills from dispositions to abilities: Mathematics education from early childhood to high school. *Journal Scientific Research Publising*. 6(3), 455-462.
- Akinaglu, O. & Tandogan, R. O. (2007). The effects of problem based active learning of student' academic achievement, attitude and concept learning. *Eurasia Journal of Mathematics, Science & Technology Education*. 3(1), 71-81
- Anabelie V., Annaliza L., Samsia P. D., & Manis M. D. (2014). Developing critical thinking through activity-based and cooperative learning approach in teaching high school chemistry. *International Journal of Social Science and Humanity*. 5(1), 139-141.
- Anggoro, T. M. (2011). *Metode Penelitian*. Universitas Terbuka. Jakarta.
- Arends, R. I. (2004). *Learning to Teach Belajar untuk Mengajar*. (Edisi Ketujuh/ Buku Dua). Terjemahan Helly Pajitno Soetjipto & Sri Mulyantini
- Arends, R. I. (2008). *Belajar untuk mengajar. Edisi ketujuh alih bahasa oleh Helly Prayitno dan Sri Mulyantani Prayitno dari judul Learning to Teach. Seven edition*. Yogyakarta: Penerbit Pustaka Pelajar.
- Balitbang. (2011). Hasil Survey TIMSS: 2011. *Trend International Mathematics and Science Study*. US. TIMSS and PIRL International Study Center.
- Barnet, S. & Bedau, H. (2011). *Critical Thinking, Reading, and Writing. A Brief Guide to Argument*. Seventh Edition. Boston: Bedford/St. Martin's.
- Bekiroglu, F. O. & Eskin, H. (2012). Examination of The Relationship Between Engagement in Scientific Argumentation and Conceptual Knowledge. *International Journal of Science and Matematics Education*, 10 (6), 1415-1443
- Berland, L.K., Hammer, D. (2012). Framing for Scientific Argumentation. *Journal of Research in Science Teaching*. 49 (1), 68-9

- Boucaud, D. W. et al. (2013). Oxford-Style Debates in Microbiology course for Major: A method for Content and Engaging Critical Thinking Skill. *Journal of Microbiology & Biology Educational*. 14(1), 341-349.
- Boud, D. & Felletti, G.I. (1997). *The challenge of problem based learning*. London: Kogapage.
- Brown, N. J. S., et al. (2010). The Evidence –Based Reasoning Framework: Assessing Scientific Reasoning. *Educational Assessment*. 15, 123-141.
- Buesseler, K. O., Lamborg, C. H., Boyd W Philip., Phoebe J. L, Trull, T. W., Bidigare, R. R. (2007). Revisiting carbon flux through the ocean's twilight zone. *Science*. 316, 567-570.
- Chen, C. T. & She, H. C. (2014). The effectiveness of Scientific Inquiry with/without Integration of Scientific Reasoning. *International Journal of Science and Mathematics Education*. 13(1), 1-20
- Choi, A. Hand, B. & Norton-Meier, L. (2013). *Grade 5 student's Online Argumentation about Their In-Class Inquiry Investigations*. Research Science Education. 44(2) 267-287.
- Creswell, W. (2010). *Research Design, Pendekatan Kualitatif, Kuantitatif dan Mixed*. Yogyakarta. Pustaka Pelajar.
- Costa, A.L. (1985). *Developing Mind: A Resource Book for Teaching Thinking*. Virginia: ASCD Alexandria.
- Darland, C & Carmichael, S. (2012). Long-Term Retention of Knowledge and Critical thinking Skill in Developmental Biology. *Journal of Microbiology & Biology Educational*. 13(2) 125-132
- Dawson, V., & Venville, G. J., (2010). Teaching Strategies for Developing Student' Argumentation Skill about Socioscientific in High School Genetics. *Research in Science Education*. 40(1), 133-148.
- DeJenger T. (2012). Can first year students critical thinking skills develop in a space of three months?. *Science Direct*, 47.1374 – 1381
- Depdiknas .(2003). *Undang-Undang RI Nomor 20 Tahun 2003. Tentang Sistem Pendidikan Nasional*.
- Dewi, N. (2015). *Penerapan Model Pembelajaran Berbasis Masalah Berbantuan Mind Mapping Dalam Meningkatkan Kemampuan Berpikir Kompleks dan Sikap Peduli Siswa Terhadap Lingkungan Pada Tema Pemanasan Global*. Tesis. UPI Bandung. Tidak Diterbitkan.

- Dolan, E. & Grady, J. (2010). Recognizing Student's Scientific Reasoning: A Tool for Categorizing Complexity of Reasoning During Teaching by Inquiry. *Journal of Science Teacher Education*. 21(7), 31-55.
- Duschl, R.A. (2007). Quality Argumentation and Epistemic Criteria. Dalam S. Erduran & M Jimenez-Aleixandre (eds). *Argumentation in Science Education, Science & Technology Education Library*. 35, 159-175.
- Eggen, P. & Kuchak (2012). *Strategi dan Model Pembelajaran. Mengajarkan Konten dan Keterampilan Berpikir*. Edisikeenam. Jakarta. PT. Indeks.
- Erduran, S., Ardac, D., & Yakmaci-Guzel, B., (2006). Learning to Teach Argumentation: Case Studies of Pre-Service Secondary Science Teacher. *Eurasia Journal of Mathematics, Science and Technology Education*. 2(2), 1-14.
- Fisher, A. (2009). *Berpikir Kritis Sebuah Pengantar*. Jakarta. Erlangga.
- Fogarty, R. (1997). *Problem-based Learning and Other Curriculum Models for The Multiple Intelligences Classroom*. Arlington Heights, Illinois: Sky Light.
- Fraenkel, R.J., Wallen, E. N., Hyun, H. H. (2012). *Design and Evaluate Research in Education*. McGraw-Hill, a business unit of The McGraw-Hill Companies, Inc. New York.
- Furtak, E. M., Hardy, I., Beinbrech, T., Shavelson, J. R., Shemwell, T. J. (2008). A Framework For Analyzing Reasoning in Science Classroom Discourse. *Paper presented at the Annual Meeting of the American Educational*. New York: The McGraw-Hill Companies, Inc.
- Gracia-Mila, M., Gilabert, S. Erduran, S., Felton M, (2013). The effect of argumentative task goal on the quality of argumentative discourse. 97(4), 497-523.
- Gealson, Karen K., Simon Karecki, and Rafael Reif (2007). Climate classroom; what's up with global warming?. *National Wildlife Federation*. URL diakses 1-12-2015
- Hake, R.R. (1999). *Analyzing Change/ Gain Scores*. Indiana University. United States of America.
- Hakyolu, H. & Bekiroglu, F. O. (2011). Assessment of students' science knowledge levels and involvement with argumentation. *International Journal for Cross-Disciplinary Subject in Education*. 2(1), 346-3454

- HartatiRisa (2015). *Implementasi Model Problem Based Learning (PBL) Pada Pembelajaran IPA Terpadu Untuk Meningkatkan Literasi Sains dan Kemampuan Berpikir Kritis Siswa Kelas VII SMP Pada Materi Pencemaran Lingkungan*. Tesis UPI Bandung. Tidak Diterbitkan
- Harasym, H. P., Tsai Tsuen-Chiuan, Munsu, M. F. (2013). Is problem-based learning an ideal format developing ethical decision skill. *Kasoshiung Journal of Medical Sciences*. 29, 523-529
- Herawati, Desti. (2015). *Penalaran Ilmiah (Scientifik Reasoning) Siswa Sekolah Berorientasi Lingkungan dan Sekolah Multi Nasional*. Tesis UPI Bandung. Tidak Diterbitkan.
- Ibrahim, M. dan Nur, M. 2000. *Pengajaran Berdasarkan Masalah*. Surabaya: Unesa University Press
- Ibrahim, B., Erdal, S., Mustafa, S. (2009). The effect of problem-based learning instruction on university students' performance of conceptual and quantitative problems in gas concepts. *Euroasia Journal of Mathematics, Science & Technology Education*. 5(2), 153-156.
- Inch, E., Warnick, B. & Endres, D. (2006). *Critical Thinking and Communication*. United States of America : Person Education, Inc.
- Jalal, F., Samani M., Chang, C. M., Stevenson, R., Ragatz, B., ANegara, D. S (2009). Teacher certification in Indonesia : A strategy for teacher quality improvement. *Jurnal Departemen Pendidikan Nasional RI*. 1-219.
- Jawarneh, M., Iyadat, W., Al-Shudaifat, S., Khasawneh, L. (2010). Developing critical thinking skills of secondary students in Jordan Utilizing Monro and Slater Strategy, and McFarland Strategy. *IJAES*. 3(1), 82-91.
- Kaya, E., Erduran, S., & Cetin, P.S. (2010). High school students' perception of argumentation. *Procedia Sosial and Behavioral Sciences*. 2, 3971-3975.
- Kemendiknas. (2008). *Panduan Analisis Butir Soal*. Direktorat Pembinaan Sekolah Menengah Atas. Jakarta.
- Kementerian Pendidikan dan Kebudayaan (Kemendikbud). (2013). *Panduan Pengembangan Pembelajaran Kurikulum 2013*. Jakarta: Direktorat Pembinaan Sekolah Menengah Pertama
- Kind, P. M., Kind, V., Hofstein, A. & Wilson, J. (2011). Peer argumentation in the school science laboratory-exploring effect of task features. *International Journal of Science Education*. 33(18), 2527-2558.

Ade Supriatna, 2016

**PENINGKATAN KEMAMPUAN BERPIKIR KRITIS DAN PENALARAN SISWA SMP MELALUI MODEL PEMBELAJARAN PROBLEM BASED LEARNING (PBL) PADA KONSEP PEMANASAN GLOBAL**

Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

- Kurniawan, S. I. (2015). *Implementasi Problem Based Learning Open ended Dalam Meningkatkan Penguasaan Konsep dan Kemampuan Berpikir Kritis Siswa Pada Materi Sistem Sirkulasi Pada Sekolah Di Perkotaan dan Di Pedesaan*. Tesis UPI Bandung. Tidak Diterbitkan.
- Lambros, A. (2004). *Problem Based Learning In Middle and High School Classroom. A Teacher's Guide to Implementation*. California : Corwin Press.
- Lee, C. Q., & She, H. C. (2010). Facilitating students' conceptual change and scientific reasoning involving the unit of combustion. *Research in Science Education*. 40, 479-504.
- Levin B. B. (2001). *Energizing Teacher Education and Professional Development with Problem-Based Learning*. Association for Supervision and Curriculum Development. USA.
- Marin, L. M., & Diane F. H. (2011). . Pedagogy for developing critical thinking in adolescents : Explicit instruction produces greater gain. *Science Direct*. Elsevier. 6, 1-13.
- Maggi, S. & Claire H.M. (2004). *Foundations of problem-based learning*. New York: Open University Press.
- Manurung, S. R. (2013). *Pengembangan Model Pembelajaran Dengan Media Hiperteks Berdasarkan Skema Pemecahan Masalah Berintikan Argumentasi Toulmin. Suatu Studi Penerapan Pada Topik Kinematika*. (Disetasi). Sekolah Pascasarjana, Universitas Pendidikan Indonesia, Bandung.
- Masek, A. and Yamin, S. (2012). The impact of instructional methods on critical thinking: A comparison of Problem-Based Learning and conventional approach in engineering education. *ISRN Education*. 20(12), 1-6.
- Matlin, M. E. (2009). *Cognitive Psychology*. Seventh Edition. Internasional Student Version. Jhon Wiley & Sons, Inc.
- Marsh, Nigel, Henrik, Svensmark (2000). Cosmic Rays, Clouds, and Climate. *Space Science Reviews*. 94, 215-230. URL diakses pada 01-12-2015.
- McDonald, C.V. (2013). An Examination of pre-service primary teachers' written argumen in an open inquirilaboratory task. *Science Education International*. 24(3), 254-281.

- McMichael, A.J. and R.E. Woodruff.(2008). *Climate change and infectious diseases*.In the social ecology of infectious diseases 1st Edition.
- Meltzer, E., David. (2002). The relationship between mathematics preparation and conceptual learning gains in physics: A possible “hidden variable” in diagnostic pretest scores. *American Journal Physics*.70(12), 213-211.
- Mercier, H., & Heinz, C. (2014).Scientist’Sargumentative reasoning. *Springer Science and Business Media*. 33(2), 513-524.
- Mimbs A. Cheryl. (2005). Teaching from the critical thinking, problem based learning curricular approach: Atrategies, challenges, and recommendations. *Journal of Family and Consumer Sciences education*.23(2). 312-326
- Moedjiono.(1991). StrategiBelajarMengajar. Jakarta. Depdikbud.
- Nuangchalerm, P. &Kwuanthong, B. (2010).Teaching “Global Warming” through socioscientificissues-based intruction..*Journal Asian Social Science*. 6(8), 42-47.
- OECD. (2014). *PISA 2012 Result: What Student Know and Can Do*. Vol. 1.Canada.: OCD.
- Okumus, S. &Unal (2012). The efek of argumentation model on students’ achievment and argumentation skills in science.*Procedia-Sosial and Behavior Sciences*. 46, 457-461.
- Oliveras B.,Márquez, C.,Sanmartí, N. (2013). The use of newspaper article as a tool to develop critical thinking in science classes.*International Journal of science*. 35(6),885–905.
- Osborne, J. Erduran,S.,Simon,S.(2001). Enhancing the quality of argument in school science.*School Sciences Review*.41(10), 994–1020.
- Purwanto, N. (2010). *Prinsip-PrinsipdanTeknikEvaluasiPengajaran*. Bandung. RemajaRosdaKarya.
- PusatBahasa (2008), *KamusBahasa Indonesia*. PusatBahasa. Jakarta.
- Quitadamo, I.J (2007). Learning to improve: Using writing to increase critical thinking performance in general education biology . *CBE-Life Sciences Educational*.6(2),140-154.
- Redjeki, S. (2014).Model-Model Pembelajaran Yang MendukungKurikulum 2013.*Makalah*.UniversitasKuningan.

- Roshayanti, F. (2012). *Pengembangan Model Asesmen Argumentatif Untuk Mengukur Keterampilan Argumentasi Mahasiswa Pada Konsep Fisiologi Manusia*. Desertasi. UPI Bandung. Tidak diterbitkan.
- Rustaman, N., et al. (2003). *Strategi Belajar Mengajar Biologi*. Bandung. FMIPA UPI.
- Sadler, T. D., & Zeidler, D. L. (2005). The significance of content knowledge for informal reasoning regarding socioscientific issues: Applying genetics knowledge to genetic engineering issues. *International Journal of Science Education*. 89(1), 71-93.
- Sadler, T. D., & Zeidler, D. L. (2005). Patterns of informal reasoning in the context of socio-scientific decision making. *International Journal of Science Education*. 28(12), 1463-1488.
- Sagala, S. (2010). *Konsep dan Makna Pembelajaran*. Bandung. Alfabeta.
- Salandanan, G. G. (2000). *Teaching Approaches and Strategy*. Quezon City: Katha Publishing Co., Inc.
- Santrock, J. W. (2013). *Children*. New York: The McGraw Hill Companies, Inc.
- Setiono K. (2010). *Psikologi Perkembangan Kajian Teori Piaget, Selman, Kohlberg dan Terapannya dalam Riset*. Widya Padjadjaran. Bandung.
- Setyorini, U., Sukiswo, E. S., Subali, B. (2011). Penerapan model problem based learning untuk meningkatkan kemampuan berpikir kritis siswa SMP. *Jurnal Pendidikan Fisika Indonesia*. 7 (1), 52-56.
- Simbolon Radien Erin. (2015). *Pengaruh Pembelajaran Berbasis Masalah dan Pembelajaran Kontekstual Terhadap Penguasaan Konsep dan Berpikir Kritis Siswa SMP Pada Interaksi Makhluk Hidup Dengan Lingkungan*. Tesis. UPI Bandung. Tidak diterbitkan.
- Simosi, M. (2003). Using Toulmin's framework for the analysis of everyday argumentation: Some Methodological Considerations. *Argumentation*, 17(2) 185-202.
- Sitohang, K., Rima, F., Molan, B. (2012). *Critical Thinking. Membangun Pemikiran Logis*. Jakarta. Sinar Harapan.
- Soden, Brian J., Held, Isacc M. (2005). An Assessment of climate feedbacks in coupled ocean-atmosphere models. *Journal of Climate*. 19(14), 1-32
- Spord, T. (1998). I can change your opinion on that social constructivist whole class discussions and their effect on scientific reasoning. *Research in Science Education*. 28(4), 463-480.

- Sriyono (1992). *Teknik Belajar Mengajar dalam CBSA*. Jakarta. Rineka Cipta.
- Steck . T. R., DiBiase, W., Wang, C. Boukhtiarov, A. (2012) The use of open-ended problem-based learning scenarios in interdisciplinary biotechnology class: Evaluation of a problem-based learning course across three years. *Journal of Microbiology & Biology Education*. 13(1), 2-10
- Stiggin, J. Richard. (1994). *Student-Centred Classroom Assessment*. New York. Macmillan College Publishing Company.
- Sudarman, (2007). Problem based learning suatu model pembelajaran untuk mengembangkan dan meningkatkan kemampuan pemecahan masalah. *Jurnal Pendidikan Inovatif*. 2(2), 86-73
- Surapranata, S. (2009). *Analisis, Validitas, Reliabilitas, dan Interpretasi Hasil Tes*. Bandung: PT Remaja Rosdakarya.
- Sunaryo, W. (2011). *Taksonomi Berpikir*. Bandung. Remaja Rosdakarya.
- Sutopo & Waldrup, B. (2014). Impact of a representational approach on students' reasoning and conceptual understanding in learning mechanics. *International Journal of Science and Mathematics Education*. 12, 741-765.
- Tan, Oon-Seng. (2004). *Enhancing Thinking Through Problem-Based Learning Approaches*. Cengage Learning.
- Tarigan, A. E., (2015). *Penerapan PBL Berbasis Metode Praktikum Terhadap Penguasaan Konsep dan Kemampuan Argumentasi Tertulis Siswa Pada Materi Interaksi Makhluk Hidup Dengan Lingkungan*. Tesis. UPI Bandung. Tidak Diterbitkan.
- Taufik, M., Sukmadinata, N. S., Abdulhak, I., Tumbelaka, Y. B. (2010). Desain model pembelajaran untuk meningkatkan kemampuan pemecahan masalah dalam pembelajaran IPA sekolah menengah pertama di kota Bandung. *Jurnal Berkala Fisika*. 13.(2), E31-E44.
- Tawil, M. dan Liliarsari. (2013). *Berpikir Kompleks dan Implementasinya dalam Pembelajaran IPA*. Makassar. Badan Penerbit UNM.
- Tung An -Chi & Shu- Chang Ying (2009). Developing critical thinking through literature reading. *Feng Chia Journal of Humanities and Social Sciences*, 19 (11), 287-317.
- Venville, G.J. & Dawson, V.M. (2010). The impact of a classroom intervention on grade 10 student's argumentation skill, informal reasoning, and conceptual



- understanding of science. *Journal of Research in Science Teaching*. 47, (8), 952-977.
- Verheij, B. (2005). Evaluating arguments based on Toulmin's scheme. *Argumentation Journal*. 19, 347-371
- Waldrup, B., Prain, V., & Sellings, P. (2013). Explaining Newton's laws of motion: Using student reasoning through representations to develop conceptual understanding. *Instructional Science*. 41, 165-189.
- Widodo, Ari. (2015). *Mengembangkan Keterampilan Berpikir Siswa*. Makalah Seminar Nasional Pendidikan MIPA. Bandar Lampung. (tidak diterbitkan).
- Yang, F.Y. & Tsai, C.C. (2010). Reasoning about science-related uncertain issues and epistemological perspectives among children. *Instructional Science*. 38, 325-354
- Yuan Haobin, et al. (2008). Promoting critical thinking skills through problem-based learning. *CMU Journal of Soc. Sci. and Human*. 2 (2), 234-247
- Zamroni & Mahfudz. (2009). *Panduan Teknis Pembelajaran Yang Mengembangkan Critical Thinking*. Jakarta. Depdiknas.
- Zemal-Saul, C. (2008). Learning to teach elementary school science as argument. *Science Education*. 93(2), 687-719.
- Zhou, Q., Huang, Q., Tian, H. (2013). Developing students critical thinking skill by task-based learning in chemistry experiment teaching. *Scientific research*, 4 (12A), 40-45.
- Zohar, A. Nemet, F. (2002). Fostering students' knowledge and argumentation skills through dilemmas in human genetics. 39(1), 35-62