

DAFTAR PUSTAKA

- Akinoglu, O., & Tandogan, R. O. (2007). The effects of problem-based active learning in science education on students' academic achievement, attitude and concept learning. *Eurasia Journal of Mathematics, Science & Technology Education*, 3(1), 71–81.
- Anderson, L. W., & Krathwohl, D. R. (2001). *A Taxonomy for learning, teaching, and assessing: a revision of Bloom's taxonomy of educational objectives*. New York: Longman.
- Anderson, L. W., & Krathwol, D. R. (2010). *Kerangka landasan untuk pembelajaran, pengajaran, dan asesmen*. Yogyakarta: Pustaka Pelajar.
- Anonim. (2016). *Kompetensi inti dan kompetensi dasar sekolah menengah atas/madrasah aliyah (SMA/MA) mata pelajaran kimia*. Jakarta: Kementerian Pendidikan dan Kebudayaan.
- Amir, T. (2009). *Inovasi pendidikan melalui problem based learning*. Jakarta: Kencana Prenada.
- Anyafulude, J. C. (2013). Effects of problem-based and discovery-based instructional strategies on students' academic achievement in chemistry. *Journal of Educational and Social Research*, 3(6), 105–112. <https://doi.org/10.5901/jesr.2013.v3n6p105>
- Arends, R. I. (2009). *Learning to teach*. <https://doi.org/10.1017/CBO9781107415324.004>
- Arikunto, S. (2012). *Prosedur penelitian : suatu pendekatan praktik. (edisi revisi)*. Jakarta: Rineka Cipta.
- Aryana, I. B. P. (2006). Pengaruh penerapan strategi pembelajaran inovatif pada pembelajaran biologi terhadap kemampuan berpikir kreatif peserta didik SMA. *Jurnal Pendidikan dan Pengajaran IKIP Negeri Singaraja*, 3, 496–518.
- Awang, H., & Ramly, I. (2008). Through problem-based learning : pedagogy and practice in the engineering classroom. *International Journal of Human and Social Sciences*, 18–23.
- Balim, A. G., Deniz Çeliker, H., Türkoğuz, S., Evrekli, E., & Inel Ekici, D. (2015). The effect of concept cartoons-assisted problem-based learning method on conceptual understanding levels and problem solving skill perceptions of students. *Journal of Turkish Science Education*, 12(4), 53–76. <https://doi.org/10.12973/tused.10151a>
- Barran, M. (2016). Teaching gases through problem-based learning. *Journal of Education and Training Studies*, 4(4), 281–294.

Berly Dwikaryani, 2018

ANALISIS TINDAKAN KREATIF DAN PENGUASAAN KONSEP PESERTADIDIK SMA MELALUI PROBLEM-BASED LEARNING (PBL) DAN READ-ANSWER-DISCUSS-EXPLAIN-CREATE (RADEC) PADA KONTEKS KOMPOSISI PENGEMBANG KUE

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

- Barrett, T. (2005). Understanding problem-based learning. *UCD*.
- Barrows, H. S. (1996). Problem-based learning in medicine and beyond: A brief overview. *New Directions for Teaching and Learning*, 1996(68), 3–12. <https://doi.org/10.1002/tl.37219966804>
- Barrow, W. J., Lyte, G., Butterworth, T. (2002). An evaluation of problembased learning in a nursing theory and practice module, *Nurse Education in Practice*, 2, 55–62. <https://doi.org/10.1054/nepr.2002.0043>
- Benli, E., & Sarikaya, M. (2012). The investigation of the effect of problem based learning to the academic achievement and the permanence of knowledge of prospective science teacher: the problem of the boiler stone. *Procedia - Social and Behavioral Sciences*, 46, 4317–4322. <http://doi.org/10.1016/j.sbspro.2012.06.247>
- Bilgin, I., Şenocak, E., & Sözbilir, M. (2009). The effects of problem-based learning instruction on university students' performance of conceptual and quantitative problems in gas concepts. *Eurasia Journal of Mathematics, Science and Technology Education*, 5(2), 153–164.
- Burrows, N.L., & Mooring, S.R. (2015). Using concept mapping to uncover students' knowledge structures of chemical bonding concepts. *Chemistry Education Research and Practice*, <https://doi.org/10.1039/c4rp00180j>
- Cetin-dindar, A., & Geban, O. (2016). Conceptual understanding of acids and bases concepts and motivation to learn chemistry, 671(September). <https://doi.org/10.1080/00220671.2015.1039422>
- Chan, Z. C. (2013). Exploring creativity and critical thinking in traditional and innovative problem-based learning groups. *Journal of Clinical Nursing*, 22(15–16), 2298–2307. <https://doi.org/10.1111/jocn.12186>
- Cowden, C. D., & Santiago, M. F. (2016). Interdisciplinary explorations: promoting critical thinking via problem-based learning in an advanced biochemistry class. *Journal of Chemical Education*. 93(3), 464–469. <http://doi.org/10.1021/acs.jchemed.5b00378>
- Creswell, J. W. (2010). *Research design: pendekatan kualitatif, kuantitatif, dan mixed*. Yogyakarta: PT Pustaka Pelajar.
- Cropley, A. J. (1990). Creativity and mental health in everyday life. *Creativity Research Journal*, 3(3), 167–178. <https://doi.org/10.1080/10400419009534351>
- Dahar, R.W. (1989). *Teori-teori belajar*. Jakarta: Erlangga.
- Dariyo, A. (2003). Menjadi orang kreatif sepanjang masa. *Jurnal psikologi*, 1(1), 29–37.

- Dharma, S. (2008). *Kreativitas*. Jakarta: Departemen Pendidikan Nasional.
- Denton, R. E., & Snajdr, E. A. (2014). Integrating chemical information skills in a problem-based second semester organic chemistry laboratory toward the synthesis of adipic acid. *Chemical Educator*, 19, 64–69.
- DePorter, B., & Hernacki, M. (2000). *Quantum teaching, orchestrating student success*. Bandung: KAIFA.
- Dewi, S. M., Harjono, A., & Gunawan. (2016). Pengaruh model pembelajaran berbasis masalah berbantuan simulasi virtual terhadap penguasaan konsep dan kreativitas fisika siswa SMAN 2 mataram. *Jurnal Pendidikan Fisika dan Teknologi*, 2(3), 123–128.
- Dods, R.F. (1996). A problem-based learning design for teaching biochemistry. *Journal of Chemical. Education*, 73(3), 225–22.
- Drăghicescu, L. M., Petrescu, A., Cristea, G.C., Gorghiu, L. M., & Gorghiu, G. (2014). Application of problem-based learning strategy in science lessons - examples of good practice. *Procedia - Social and Behavioral Sciences*, 149, 297–301. <https://doi.org/10.1016/j.sbspro.2014.08.245>
- Drechsler, M., & Schmidt, H. (2005). Textbooks' and teachers' understanding of acid-base models used in chemistry teaching, 6(1), 19–35.
- Duch, J. B. (1995). Problem based learning in physics: the power of student teaching. Retrieved from <http://www.udel.edu/pbl/cte/jan95-phys.html>.
- Duch, J. B. (1995). Problems: a key factor in PBL. Retrieved from <http://www.udel.edu/pbl/cte/spr96-phys.html>.
- Ekapti, R. F. (2016). Respon siswa dan guru dalam pembelajaran ipa terpadu konsep tekanan melalui problem based learning. *Jurnal Pena Sains*, 3(2).
- Ersoy, E., & Başer, N. (2014). The effects of problem-based learning method in higher education on creative thinking. *Procedia - Social and Behavioral Sciences*, 116, 3494–3498. <https://doi.org/10.1016/j.sbspro.2014.01.790>
- Fanatri, R. (2015). Pengaruh pembelajaran berbasis masalah pada teknik isolasi indikator alam terhadap pemahaman konsep dan kreativitas siswa. *Tesis SPs UPI*: Tidak diterbitkan.
- Ferreira, M. M., & Trudel, A. R. (2012). The impact of problem-based learning (PBL) on student attitudes toward science, problem-solving skills, and sense of community in the classroom. *Journal of Classroom Interaction*, 47(1), 23–30.

- Firman, H. (2013). *Evaluasi pembelajaran kimia*. Bandung: Jurusan Pendidikan Kimia Universitas Pendidikan Indonesia.
- Fitri, A. D. (2016). Penerapan problem-based learning (PBL) dalam kurikulum berbasis kompetensi. *JMJ*, 4(1), 95–100.
- Gall, M. D, Gall, J. P, & Borg, W. R (2003). *Educational Research An Introduction*. United States of America: Pearson Education Inc.
- Gallagher, S. A. (1997). Problem-based learning : where did it come from , what does it do , and where is it going ?, *20*(4), 332–362.
- Glazer, E. (2001). Problem based instruction. In. M. Orey(Ed.),. *Emerging perspectives on learning, teaching, and technology*. Retrieved from <http://www.coe.uga.edu/epltt/ProblemBasedInstruct.htm>.
- Graaff, E.D., & Kolmos, A. (2003). Characteristics of problem-based learning. *Int. J. Engng Ed*, 19(5), 657–662.
- Guilford, J. P. (1967). *The nature of human intelligence*. New York: McGraw-Hill.
- Guilford, J.P. (1977). *Way beyond the IQ*. Buffalo : Creative Learning Press.
- Gulo, W. (2008). *Strategi belajar mengajar*. Jakarta: Grafindo.
- Gürses, A., Açıkıldız, M., Doğar, Ç., & Sözbilir, M. (2007). An investigation into the effectiveness of problem-based learning in a physical chemistry laboratory course. *Research in Science & Technological Education*, 25(1), 99–113. <https://doi.org/10.1080/02635140601053641>
- Hake, R. R. (1999). Analyzing change/gain scores. *Unpublished.[online] URL: Http://www. Physics. Indiana. Edu/~ sdi/AnalyzingChange-Gain. Pdf*, 16(7), 1073–1080. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/22025883> <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:ANALYZING+CHANGE/GAIN+SCORES#0> <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Analyzing+change/gain+scores#0>
- Harun, N. F., Yusof, K. M., Jamaludin, M. Z., & Hassan, S. A. H. S. (2012). Motivation in problem-based learning implementation. *Procedia - Social and Behavioral Sciences*, 56(June), 233–242. <https://doi.org/10.1016/j.sbspro.2012.09.650>
- Hidayat, B. (2008). *Pengembangan kreativitas menurut tipologi berpikir*. Yogyakarta.
- Holme, T. A., Luxford, C. J., & Brandriet, A. (2015). Defining conceptual understanding in general chemistry. <https://doi.org/10.1021/acs.jchemed.5b00218>

- Jonassen, D. (2011). Supporting problem solving in PBL. *The Interdisciplinary Journal of Problem-Based Learning*, 5(2), 95–119. <https://doi.org/10.7771/1541-5015.1256>
- Kelly, O. C., & Finlayson, O. E. (2007). Providing solutions through problem-based learning for the undergraduate 1st year chemistry laboratory. *Chemistry Education Research and Practice*, 8(3), 347–361. <https://doi.org/10.1039/B7RP90009K>
- Klegeris, A., Bahniwal, M., & Hurren, H. (2013). Improvement in generic problem-solving abilities of students by use of tutor-less problem-based learning in a large classroom setting. *CBE Life Sciences Education*, 12(1), 73–79. <https://doi.org/10.1187/cbe.12-06-0081>
- Lidinillah, D. A. M. (2009). Pembelajaran berbasis masalah (problem based learning). *Jurnal Penelitian*, 3.
- Liu, M. (2005). *Motivating students through problem-based learning*. University of Texas - Austin.
- Mahfud. (2017). Berpikir dalam belajar; membentuk karakter kreatif peserta didik. *Jurnal Al Tarbawi Al Haditsah*, 1(1).
- Mahmud. (2006). *Psikologi pendidikan*. Bandung : Sahifa.
- Malmi, L., & Kinnunen, P. (2004). Problems in problem-based learning – experiences, analysis and lessons learned on an introductory programming course. *Informatics in Education*, 4(2), 193–214.
- Martiyasari, R., Suswanto, H., & Sukarnati (2016). Kontribusi kreativitas dan motivasi terhadap penguasaan kompetensi SMK. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan*, 1(7), 1383–1390.
- Maudsley, G., & Strivens, J. (2000). Promoting professional knowledge, experiential learning and critical thinking for medical students. *Med Educ*, 34(7), 535–544. <https://doi.org/10.1046/j.1365-2923.2000.00632.x>
- McMurry, J., & Fay, R.C. (2012). *Chemistry sixth edition*. New Jersey: Prentice Hall.
- Meri, R., Rosilawati, I., Efkar, T., & Rudibyani, R. B. (2013). Perbedaan penguasaan konsep ikatan kimia pembelajaran kooperatif NHT dengan pembelajaran kooperatif TPS. *Jurnal Pendidikan dan Pembelajaran Kimia*, 2(3).
- Mossuto, M. (2008). Problem-based learning: Student engagement, learning and contextualised problem-solving. *Managing*. Retrieved from <http://www.ncver.edu.au/publications/2198.html>

- Munandar, U. (1992). *Mengembangkan bakat dan kreativitas anak sekolah*. Jakarta : Gramedia Widiasarana.
- Munandar, U. (1985). *Anak-anak berbakat, pembinaan dan pendidikannya*. Jakarta: Rajawali.
- Munandar, U. (2009). *Pengembangan kreativitas anak berbakat*. Jakarta: Rineka Cipta.
- Nafisah, A. (2016). Implementasi problem-based learning untuk meningkatkan kemampuan kognitif dan kreativitas pada sub-materi sel elektrolisis. *Tesis SPs UPI*: Tidak diterbitkan.
- Nata, A. (2009). *Perspektif islam tentang strategi pembelajaran*. Jakarta: Kencana Prenada Media Group.
- Nieswandt, M. (2007). Student affect and conceptual understanding in learning chemistry, *44*(7), 908–937. <https://doi.org/10.1002/tea>
- Nugraha, B. (2015). Pengaruh pembelajaran problem-based learning terhadap pemahaman konsep, keterampilan berpikir kreatif dan self-efficacy siswa sma pada proses penjernihan air. *Tesis SPs UPI*: Tidak diterbitkan.
- Nurhayati, L., Martini, K. S., & Redjeki, T. (2013). Peningkatan kreativitas dan prestasi belajar pada materi minyak bumi melalui penerapan model pembelajaran problem based learning (PBL) dengan media crossword, *2*(4), 151–158.
- Nurmalasari, R. (2010). Analisis penguasaan konsep siswa kelas XI pada pembelajaran efek tyndall menggunakan metode discovery inquiry. *Skripsi pada Jurusan Pendidikan Kimia FPMIPA UPI*: Tidak diterbitkan.
- Nuswowati, M., & Taufiq, M. (2015). Developing creative thinking skills and creative attitude through problem based green vision chemistry environment learning. *Jurnal Pendidikan IPA Indonesia*, *4*(2), 170–176. <https://doi.org/10.15294/jpii.v4i2.4187>
- Overton, T. L., & Randles, C. A. (2015). Beyond problem-based learning: using dynamic PBL in chemistry. *Chem. Educ. Res. Pract.*, *16*(2), 251–259. <https://doi.org/10.1039/C4RP00248B>
- Papu, J. (2001). *Menumbuhkan kreativitas di tempat kerja*. Retrieved from: www.e-psikologi.com
- Permana, W. D. (2015). Pengaruh pembelajaran problem-based learning pada materi larutan buffer terhadap penguasaan konsep dan kreativitas siswa. *Tesis SPs UPI*: Tidak diterbitkan.

- Pinarbasi, T. (2007). Turkish undergraduate students' misconceptions on acids and bases, *6*(1), 23–34.
- Poikela, S., Vuoskoski, P., & Kärnä, M. (2009). Developing creative learning environments in problem-based learning. *In book: Problem-based Learning and Creativity, Chapter: Chapter 5. Developing Creative Learning Environments in Problem-based Learning*, Publisher: Cengage Learning Asia Pte Ltd, Editors: Oon-Seng Tan, pp.67–85.
- Prijosaksono, A., & Sembel, R. (2002). *Menjadi kreatif dan produktif*. Harian Sinar Harapan.
- Purwanto, N. (2007). *Psikologi pendidikan*. Bandung: PT Remaja Rosdakarya.
- Rahayu. (2011). Pembelajaran sains dengan pendekatan ketrampilan proses untuk meningkatkan hasil belajar dan kemampuan berpikir kreatif siswa. *Jurnal Pendidikan Fisika Indonesia*, *7*, 106–110
- Rahmi, D., Rusman, & Erlidawati. (2015). Identifikasi kemampuan berpikir kreatif siswa kelas menggunakan soal tes open-ended problem pada materi koloid. *Jurnal Ilmiah Mahasiswa Pendidikan Kimia (JIMPK)*, *1*(4), 60–69.
- Riduan. (2003). *Dasar-dasar statistika*. Bandung: Alfabeta.
- Riduwan & Sunarto (2011). *Pengantar statistika: untuk penelitian pendidikan, sosial, ekonomi, komunikasi, dan bisnis*. Bandung: Alfabeta.
- Sandi-Urena, S., Cooper, M. M., Gatlin, T. A., & Bhattacharyya, G. (2011). Students' experience in a general chemistry cooperative problem based laboratory. *Chem. Educ. Res. Pract.*, *12*(4), 434–442. <https://doi.org/10.1039/C1RP90047A>
- Sani, R. A. (2014). *Pembelajaran saintifik untuk implementasi kurikulum 2013*. Jakarta: Bumi Aksara.
- Sanjaya, S. (2011). *Perencanaan dan desain sistem pembelajaran*. Edisi Keempat. Jakarta: Kencana Prenada Media Group.
- Sanjaya, W. (2010). *Strategi pembelajaran berorientasi standar proses pendidikan*. Jakarta: Kencana Prenada Media Group.
- Satiadarma, M. P., & Fidelis E. W. (2003). *Mendidik kecerdasan*. Jakarta: Pustaka Populer Obor.

- Schmidt, H.G. (1983). Problem-based learning: rationale and description. *Medical Education*, 49–54.
- Schmidt, H. J. (1991). International journal of science a label as a hidden persuader : chemists' neutralization concept, (October 2014), 37–41. <https://doi.org/10.1080/0950069910130409>
- Shipman, M., & Carolina, N. (2014). The difference between baking soda and baking powder, (May), 2014–2015.
- Silaban, B. (2014). Hubungan antara penguasaan konsep fisika dan kreativitas dengan kemampuan memecahkan masalah pada materi pokok listrik statis. *Jurnal Penelitian Bidang Pendidikan*, 20(1), 65–75.
- Silalahi, E.K., Silaban, R., & Silalahi, A. (2014). Pengembangan model problem based learning (PBL) terintegrasi inkuiri terbimbing pada pelajaran kimia larutan di SMA kelas XI untuk meningkatkan hasil belajar kimia dan nilai karakter DKMTJ siswa. *Jurnal Pendidikan Kimia Universitas Negeri Medan*, 06(02).
- Sircus, A., & Mark. (2010). *Sodium bicarbonate*. Boston: International Medical Veritas Association.
- Smith, C. J. (2012). Improving the school-to-university transition: using a problem-based approach to teach practical skills whilst simultaneously developing students' independent study skills. *Chem. Educ. Res. Pract.*, 13, 490–499. <https://doi.org/10.1039/c2rp20096a>
- Sopandi, W., & Sutinah, C. (2016). Optimize the increase of students' conceptual understanding by learning at the zone of proximal development. *Proceeding. International Seminar on Science Education. Graduate School, Yogyakarta State University*.
- Sopandi, W. (2017). The quality improvement of learning processes and achievements through the read-answer-discuss-explain-and create learning model implementation. *8th Pedagogy International Seminar 2017: Enhancement of Pedagogy in Cultural Diversity Toward Excellence in Education*. Kuala Lumpur 20 September 2017.
- Sopandi, W. & Iswara, P. D. (2017). Pengajuan pertanyaan pra-pembelajaran dalam model pembelajaran RADEC untuk meningkatkan keterampilan membaca pemahaman peserta didik. *Proceeding. 2nd International Multiliteracy Conference and Workshop for Students and Teachers, Universitas Pendidikan Indonesia. Bandung, 5-6 Oktober 2017*
- Strohfeldt, K., & Khutoryanskaya, O. (2015). Using problem-based learning in a chemistry practical class for pharmacy students and engaging them with feedback. *American Journal of Pharmaceutical Education*, 79(9).

Berly Dwikaryani, 2018

ANALISIS TINDAKAN KREATIF DAN PENGUASAAN KONSEP PESERTADIDIK SMA MELALUI PROBLEM-BASED LEARNING (PBL) DAN READ-ANSWER-DISCUSS-EXPLAIN-CREATE (RADEC) PADA KONTEKS KOMPOSISI PENGEMBANG KUE

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

- Sudjana, N. (2002). *Metoda statistika*. Bandung: Tarsito.
- Sudjana, N. (2010). *Dasar-dasar proses belajar mengajar*. Bandung: Sinar Baru Algesindo.
- Sugiyono. (2014). *Metode penelitian pendidikan pendekatan kuantitatif, kualitatif dan R&D*. Bandung: Alfabeta.
- Sukmadinata, N. S. (2013). *Metode Penelitian Pendidikan*. Bandung: PT. Remaja Rosdakarya.
- Supardi. (2016). Peran berpikir kreatif dalam proses pembelajaran matematika. *Jurnal Formatif*, 2(3), 248–262.
- Supriadi, D. (1994). *Kreativitas, kebudayaan & perkembangan iptek*. Bandung : Alfabeta.
- Susanto, H. A. (2011). Pemahaman pemecahan masalah pembuktian sebagai sarana berpikir kreatif. *Prosiding Seminar Nasional Penelitian, Pendidikan, dan Penerapan MIPA, Fakultas MIPA, Universitas Negeri Yogyakarta*, 189–196.
- Tai, G. X., & May Chan, Y. (2007). Authentic assessment strategies in problem based learning. In *ICT: Providing choices for learners and learning/ Proceedings ascilite Singapore*. <http://www.ascilite.org.au/conferences/singapore07/procs/tai.pdf>
- Tan, O. S. (2004). *Problem-based learning: the future frontiers*. Singapore: Nanyang Technological University.
- Tan, O. S. (2009). *Problem-based learning and creativity*. Singapore: Cengage Learning Asia.
- Tarhan, L., & Acar, B. (2007). Problem-based learning in an eleventh grade chemistry class: “factors affecting cell potential”. *Research in Science & Technological Education*, 25(3), 351–369. <https://doi.org/10.1080/02635140701535299>
- Tarhan, L., & Acar-Sesen, B. (2013). Problem based learning in acids and bases: learning achievements and students’ beliefs. *Journal of Baltic Science Education*, 12(5), 565. Retrieved from <http://proxy.kennesaw.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aqh&AN=91985973&site=eds-live&scope=site>
- Tatar, E., & Oktay, M. (2011). The effectiveness of problem-based learning on teaching the first law of thermodynamics. *Research in Science & Technological Education*, 29(3), 315–332. <https://doi.org/10.1080/02635143.2011.599318>

- Torrance, E.P. (1974). *Test of creative thinking*. Lexington. Ginn.
- Trianggono, M. M. (2017). *Analisis kausalitas pemahaman konsep dengan kemampuan berpikir kreatif siswa pada pemecahan masalah fisika*. Jurnal Pendidikan Fisika dan Keilmuan (JPFK).
- Trianto. (2007). *Model-model pembelajaran inovatif berorientasi konstruktivistik*. Jakarta: Prestasi Pustaka.
- Utami, B., Nugroho CS, A., Mahardiani, L., Yamtinah, S., & Mulyani, B. (2009). *Kimia untuk SMA dan MA kelas XI program ilmu alam*. Jakarta: CV HaKa MJ.
- Wahyu, W., Kurnia, K., & Eli, R. N. (2016). Using problem-based learning to improve students' creative thinking skills on water purification. *AIP Conference Proceedings*, 1708. <https://doi.org/10.1063/1.4941158>
- Wahyuddin. (2016). Pengaruh metakognisi, motivasi belajar, dan kreativitas belajar terhadap kemampuan pemecahan masalah siswa kelas VII SMP Negeri 2 Sabangparu Kabupaten Wajo. *Jurnal Daya Matematis*, 4(1).
- Warr, A., & Neill, E. O. (2003). Understanding design as a social creative process. *Creativity Research Journal*, 24(4), 389. <https://doi.org/10.1145/2069618.2069710>
- Williams, F. (1980). *Creativity Assessment Packet*. Buffalo. D.O.K.
- Wu, H., Krajcik, J. S., & Soloway, E. (1997). Promoting conceptual understanding of chemical representations: students' use of a visualization tool in the classroom.
- Wulandari, A. E., & Darminto, B. P. (2016). Hubungan kemampuan berpikir kreatif dan pemahaman konsep terhadap kemampuan memecahkan masalah matematika. *Journal UMPWR*.
- Yoon, H., Woo, A. J., Treagust, D., & Chandrasegaran, A. L. (2014). The efficacy of problem-based learning in an analytical laboratory course for pre-service chemistry teachers. *International Journal of Science Education*, 36(1), 79–102. <https://doi.org/10.1080/09500693.2012.727041>
- Zhou, C. (2012). Integrating creativity training into problem and project-based learning curriculum in engineering education. *European Journal of Engineering Education*, 37(5), 488–499. <https://doi.org/10.1080/03043797.2012.714357>
- Zoller, U., & Pushkin, D. (2007). Matching higher-order cognitive skills (HOCS) promotion goals with problem-based laboratory practice in a freshman

organic chemistry course. *Chemistry Education Research and Practice*, 8(2), 153–171. <https://doi.org/10.1039/B6RP90028C>