

DAFTAR PUSTAKA

- Abela, J. 2009. Adult learning theories and medical education: A review. *Malta Med. J.*, 21(1): 11–18 Available from: https://www.researchgate.net/publication/281060971_Adult_learning_theories_and_medical_education_A_review.
- ADA. 2016. Professional Competencies of the Newly Qualified Dentist 2016 (Australian Dental Council). (February 2019). Available from: https://www.adc.org.au/sites/default/files/Media_Libraries/PDF/Accreditation/Professional%20Competencies%20of%20the%20Newly%20Qualified%20Dentist_rebrand.pdf
- Adam, A. M. 2020. Sample Size Determination in Survey Research, *J. Sci. Res.*, 26(5): 90–97. doi: 10.9734/jsrr/2020/v26i530263. Available from: <https://doi.org/10.9734/jsrr/2020/v26i530263>.
- Adcock, C, J. 1997. Sample size determination: A review, *J. R. Stat. Soc., Ser. D Stat.* (Online)., 46(2): 261–283. doi: 10.1111/1467-9884.00082. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/1467-9884.00082>.
- ADEA, 2017. ADEA Foundation Knowledge and Skills for the New General Dentist, *J. Dent. Educ.*, 81(7): 848–852. doi: 10.1002/j.0022-0337.2017.81.7.tb06300.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2017.81.7.tb06300.x>.
- Adom, D, Mensah, J. A. and Dake, D. A. 2020. Test, measurement, and evaluation: Understanding and use of the concepts in education, *IJERE*, 9(1): 109–119. doi: 10.11591/ijere.v9i1.20457. Available from: <http://ijere.iaescore.com/index.php/IJERE/article/view/20457>.
- Ahmad, P, Alam, M. K, Jakubovics, N. S, Schwendicke, F, and Asif, J. A. 2019. 100 Years of the Journal of Dental Research: A Bibliometric Analysis. *J Dent Res.* 98(13): 1425–1436. doi: 10.1177/0022034519880544. Available from: <http://journals.sagepub.com/doi/10.1177/0022034519880544>.
- Ajzen, I. 2001. Nature and operation of attitudes. *Annu. Rev. Psychol.* 52(1): 27–58. doi: 10.1146/annurev.psych.52.1.27. Available from: <http://www.annualreviews.org/doi/10.1146/annurev.psych.52.1.27>.
- Albino, J. E, Young, S. K, Neumann, L. M, Kramer, G. A, Andrieu, S. C, Henson, L, Horn, B. and Hendricson, W. D. 2008. Assessing dental students' competence: best practice recommendations in the performance assessment literature and investigation of current practices in predoctoral dental education. *J. Dent. Educ.*, 72(12): 1405-1435. doi: 10.1002/j.0022-0337.2008.72.12.tb04620.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2008.72.12.tb04620.x>.
- Alfano, M. C. 2012. Connecting Dental Education to Other Health Professions. *J. Dent. Educ.*, 76(1): 46–50. doi: 10.1002/j.0022-0337.2012.76.1.tb05233.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22262549>.

- Ali, Z, Roudsari, R. V. and Satterthwaite, J. 2016. Clinical scenario-based assessments to measure reasoning in complex cases: Are we fully realising their potential in specialty training? *Fac. Dent. J.*, 7(1): 28–33. doi: 10.1308/rcsfdj.2016.28. Available from: <https://publishing.rcseng.ac.uk/doi/10.1308/rcsfdj.2016.28>.
- Allen, K. L. and More, F. G. 2004. Clinical Simulation and Foundation Skills: An Integrated Multidisciplinary Approach to Teaching, *J. Dent. Educ*, 68(4): 468–474. doi: 10.1002/j.0022-0337.2004.68.4.tb03765.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2004.68.4.tb03765.x>
- Alpert, P. T. 2017. Oral Health: The Oral-Systemic Health Connection, *Home Health Care Manag Pract*, 29(1): 56–59. doi: 10.1177/1084822316651658. Available from: <http://journals.sagepub.com/doi/10.1177/1084822316651658>
- Amey, L, Donald, K. J. and Teodorczuk, A. 2017. Teaching clinical reasoning to medical students, *Brit. J. of Hosp.l Med.* 78(7): 399–401. doi: 10.12968/hmed.2017.78.7.399. Available from: <http://www.magonlinelibrary.com/doi/10.12968/hmed.2017.78.7.399>
- Amin, H. U. and Malik, A. S. 2014. Memory Retention and Recall Process Hafeez, in Kamel, N. and Malik, A. S. (eds) *EEG/ERP Analysis*. 1st edn. CRC Press, pp. 172–189. doi: 10.1201/b17605-11. Available from: <https://www.taylorfrancis.com/books/9781482224719/chapters/10.1201/b17605-11>
- Anders, P. L, Stellrecht, E. M, Davis, E. L. and McCall Jr, W. D. 2019. A systematic review of critical thinking instruments for use in dental education. *J. Dent. Educ*, 83(4): 381-397. doi: 10.21815/JDE.019.043. Available from: <http://doi.wiley.com/10.21815/JDE.019.043>
- Anders, P. L, Davis, E. L. and McCall, W. D. 2020. Psychometric properties of an instrument to assess critical thinking disposition and metacognition in dental students, *J. Dent. Educ*, 84(5): 559–565. doi: 10.1002/jdd.12038. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/jdd.12038>
- Andrews, E. A. 2017. The Future of Interprofessional Education and Practice for Dentists and Dental Education. *J. Dent. Educ.* 81(8): eS186–eS192. doi: 10.21815/JDE.017.026. Available from: <http://doi.wiley.com/10.21815/JDE.017.026>
- Apelian, N, Vergnes, J-N. and Bedos, C. 2014. Humanizing clinical dentistry through a person-centred model, *Int J Qual Health Care*, 1(2): 30–50. doi: 10.26443/ijwpc.v1i2.2. Available from: <https://ijwpc.mcgill.ca/article/view/2>
- Arocha, J. F. and Patel, V. L. 2008. Methods in the study of clinical reasoning, in Higgs, J. Jones, M. A. Loftus S. and Christensen, N. (eds). *Clinical Reasoning in the Health Professions*. 3rd ed. Elsevier Inc, Philadelphia. pp. 193–204.
- Arocha, J. F. and Patel, V. L., 2008. Methods in the study of clinical reasoning. In: Higgs, J. Jones, M. A. Loftus S. and Christensen, N. (eds) *Clinical reasoning*

in the health professions. 3rd. ed. Elsevier, Philadelphia. pp. 193-211.

- Artino Jr, A. R, Cleary, T. J, Dong, T, Hemmer, P. A. and Durning, S. J. 2014. Exploring clinical reasoning in novices: a self-regulated learning microanalytic assessment approach. *Med. Edu.* 48(3): 280-291. doi: 10.1111/medu.12303. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/medu.12303>
- Allen, K. L. and More, F. G., 2004. Clinical Simulation and Foundation Skills: An Integrated Multidisciplinary Approach to Teaching, *J. Dent. Educ*, 68(4): 468–474. doi: 10.1002/j.0022-0337.2004.68.4.tb03765.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2004.68.4.tb03765.x>.
- Alpert, P. T. 2017. Oral Health: The Oral-Systemic Health Connection. *Home Health Care Manag. Pract.*, 29(1): 56–59. doi: 10.1177/1084822316651658. <https://doi:10.1177/1084822316651658>. Available from: <http://journals.sagepub.com/doi/10.1177/1084822316651658>
- Amey, L, Donald, K. J. and Teodorczuk, A. 2017. Teaching clinical reasoning to medical students. *Br. J. Hosp. Med.*, 78(7): 399–401. doi: 10.12968/hmed.2017.78.7.399. Available from: <http://www.magonlinelibrary.com/doi/10.12968/hmed.2017.78.7.399>.
- Amin, H. U. and Malik, A. S. 2014. Memory Retention and Recall Process Hafeez, in Kamel, N. and Malik, A. S. (eds) **EEG/ERP Analysis**. 1st ed. pp.172–189. CRC Press. doi: 10.1201/b17605-11. Available from: <https://www.taylorfrancis.com/books/9781482224719/chapters/10.1201/b17605-11>.
- Anders, P. L, Stellrecht, E. M, Davis, E. L. and McCall Jr, W. D. 2019. A systematic review of critical thinking instruments for use in dental education. *J. Dent. Educ*, 83(4): 381-397. doi: 10.21815/JDE.019.043. Available from: <http://doi.wiley.com/10.21815/JDE.019.043>.
- Anders, P. L, Davis, E. L. and McCall, W. D. 2020. Psychometric properties of an instrument to assess critical thinking disposition and metacognition in dental students, *J. Dent. Educ*, 84(5): 559–565. doi: 10.1002/jdd.12038. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/jdd.12038>.
- Andrews, E. A. 2017. The Future of Interprofessional Education and Practice for Dentists and Dental Education., *J. Dent. Educ*, 81(8): eS186–eS192. doi: 10.21815/JDE.017.026. Available from: <http://doi.wiley.com/10.21815/JDE.017.026>.
- Apelian, N, Vergnes, J-N. and Bedos, C. 2014. Humanizing clinical dentistry through a person-centred model. *Int J Qual Health Care.*, 1(2): 30–50. doi: 10.26443/ijwpc.v1i2.2. Available from: <https://ijwpc.mcgill.ca/article/view/2>.
- Arocha, J. F. and Patel, V. L. 2008. Methods in the study of clinical reasoning, in Higgs, J, Jones, M. A, Loftus, S and Christensen, N. (eds)., *Clinical*

Reasoning in the Health Professions. 3rd. ed. Elsevier Inc, pp. 193–204.

- Artino Jr, A. R, Cleary, T. J, Dong, T, Hemmer, P. A. and Durning, S. J. 2014. Exploring clinical reasoning in novices: a self-regulated learning microanalytic assessment approach. *Med. Edu.*, 48(3), pp.280-291. doi: 10.1111/medu.12303. Available from: <http://doi.wiley.com/10.1111/medu.12303>.
- Atkinson, R. and Shiffrin, R. 1968. Human Memory: A Proposed System and its Control Processes, in, *The Psychology of Learning and Motivation*, pp.89–195. doi: 10.1016/S0079-7421(08)60422-3. Available from: <http://linkinghub.elsevier.com/retrieve/pii/S0079742108604223>.
- Auclair, F. 2007. Problem formulation by medical students: An observation study, *BMC Med. educ.*, 7(1):16. doi: 10.1186/1472-6920-7-16. Available from: <http://bmcmmededuc.biomedcentral.com/articles/10.1186/1472-6920-7-16>.
- Audétat, M. C, Laurin, S, Sanche, G, Béïque, C, Fon, N. C, Blais, J. G. and Charlin, B. 2013. Clinical reasoning difficulties: a taxonomy for clinical teachers. *Med.Teach*, 35(3), e984-e989. doi: 10.3109/0142159X.2012.733041. Available from: <http://www.tandfonline.com/doi/full/10.3109/0142159X.2012.733041>.
- Baartman, L. K. J. and de Bruijn, E. 2011. Integrating knowledge, skills and attitudes: Conceptualising learning processes towards vocational competence, *Educ. Res. Rev.* 6(2): 125–134. doi: 10.1016/j.edurev.2011.03.001. Available from: <http://dx.doi.org/10.1016/j.edurev.2011.03.001>.
- Baddeley, A, Papagno, C and Vallar, G. 1988. When long-term learning depends on short-term storage, *J Mem Lang.* 27(5): 586–595. doi: 10.1016/0749-596X(88)90028-9. Available from: <https://linkinghub.elsevier.com/retrieve/pii/0749596X88900289>.
- Bader, J. D. and Shugars, D. A. 1992. Understanding dentists' restorative treatment decisions. *J Public Health Dent* , 52, 52(2): 102-110. doi: 10.1111/j.1752-7325.1992.tb02251.x. Available from: <http://doi.wiley.com/10.1111/j.1752-7325.1992.tb02251.x>.
- Bader, J. D. and Shugars, D. A. 1995. Variation in dentists' clinical decisions. *J Public Health Dent* , 55(3): 81-188. doi: 10.1111/j.1752-7325.1995.tb02364.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1752-7325.1995.tb02364.x>.
- Bader, J. D. and Shugars, D. A. 1997. What do we know about how dentists make caries-related treatment decisions? *Comm. Dent. and Oral Epid.* 25(1): 97–103. doi: 10.1111/j.1600-0528.1997.tb00905.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1600-0528.1997.tb00905.x>.
- Bader, J. D. and Shugars, D. A. 1998. Descriptive Models of Restorative Treatment Decisions. *J. of Pub. Health Dent.* 58(3): 210–219. doi: 10.1111/j.1752-7325.1998.tb02996.x. Available from: <http://doi.wiley.com/10.1111/j.1752-7325.1998.tb02996.x>.

- Baelum, V. 2011. Dentistry and population approaches for preventing dental diseases. *J. Dent.* 39(Suppl 2): s9-s19. doi: 10.1016/j.jdent.2011.10.015. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0300571211002636>.
- Baghdady, M. T, Carnahan, H, Lam, E. W. and Woods, N. N. 2014. Dental and dental hygiene students' diagnostic accuracy in oral radiology: effect of diagnostic strategy and instructional method. *J. Dent. Educ*, 78(9): 1279-1285. doi: 10.1002/j.0022-0337.2014.78.9.tb05799.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2014.78.9.tb05799.x>.
- Bailit, H. L. and Formicola, A. J. 2017. Introduction to "Advancing Dental Education in the 21 st Century" Project, *J. Dent. Educ*, 81(8): 1004–1007. doi: 10.21815/JDE.017.052. Available from: <http://doi.wiley.com/10.21815/JDE.017.052>.
- Bakouli, V. and Jimoyiannis, A. 2016. Concept mapping as cognitive tool in science education: An analysis of students' learning using SOLO taxonomy, in Smyrnaiou, Z., Riopel, M., and Sotiriu, M. (eds) *Recent Advances in Science and Technology Education, Ranging from Modern Pedagogies to Neuroeducation and Assessment*. pp. 43–58. Cambridge Scholars Publishing, Available from: <https://www.researchgate.net/publication/327252136%0AConcept>.
- Balasubramanian, M, Short, S. D, and Gallagher, J. E 2018. Dental professionals for a new century: Transforming dentistry through interprofessional education and collaborative practice.', *IJDR*, 29(4): 401–403. doi: 10.4103/ijdr.IJDR_495_18 Available from: <http://www.ijdr.in/text.asp?2018/29/4/401/239398>.
- Banda, S. 2010. Overview of diagnostic reasoning: Hypothetical-deductive strategy, problem representation, semantic qualifiers, illness scripts, pattern recognition and prototypes, *Med. J. of Zambia*, 36(3): 110–113. doi: 10.4314/mjz.v36i3.56074. Available from: <http://www.ajol.info/index.php/mjz/article/view/56074>.
- Banning, M. 2007. A review of clinical decision making: models and current research, *J. Clin. Nurs.*, 17(2):187-95. doi: 10.1111/j.1365-2702.2006.01791.x. Available from: <http://doi.wiley.com/10.1111/j.1365-2702.2006.01791.x>.
- Baron, P. 1999. The development of dentistry, 1000-2000, *The Lancet*, 354(9196 Suppl.), p. SIV11. doi: 10.1016/S0140-6736(99)90354-9. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0140673699903549>.
- Barrows, H. S. and Tamblyn, R. M.1981, Problem-Based Learning: An Approach to Medical Education. New York: springer Publishing Company. Available at: <https://app.nova.edu/toolbox/instructionalproducts/edd8124/fall11/1980-BarrowsTamblyn-PBL.pdf>.
- Barrows, H. S. 1986. A taxonomy of problem-based learning methods, *Med. Educ.*, 20(6): 481–486. doi: 10.1111/j.1365-2923.1986.tb01386.x. Available from:

<http://doi.wiley.com/10.1111/j.1365-2923.1986.tb01386.x>.

Barrows, H.S. and Feltovich, P.J., 1987. The clinical reasoning processes. *Med Educ*, 21(2): 86-91. doi: 10.1111/j.1365-2923.1987.tb00671.x. Available from: <http://doi.wiley.com/10.1111/j.1365-2923.1987.tb00671.x>.

Bedos, C., Apelian, N. and Vergnes, J. N. (2018). Social dentistry: An old heritage for a new professional approach, *BDJ*, 225(4), pp. 357–362. <https://doi:10.1038/sj.bdj.2018.648>.

Baxter, P and Jack, S. 2015., Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers, *Qual. Rep.*, 13(4): 544–559. doi: 10.46743/2160-3715/2008.1573. Available from: <https://nsuworks.nova.edu/tqr/vol13/iss4/2/>.

Bedos, C, Apelian, N, and Vergnes, J. N. 2018., Social dentistry: an old heritage for a new professional approach. *Br. Dent. J.*, 225(4): 357–362. doi: 10.1038/sj.bdj.2018.648. Available from: <http://www.nature.com/articles/sj.bdj.2018.648>.

Bedos, C., Apelian, N. and Vergnes, J. N. 2020. Towards a biopsychosocial approach in dentistry: the Montreal-Toulouse Model, *Br. Dent. J.*, 228(6): 465–468. doi: 10.1038/s41415-020-1368-2. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/32221451>

Behar-Horenstein, L. S, Dolan, T. A, Courts, F. J. and Mitchell, G. S. 2000. Cultivating critical thinking in the clinical learning environment. *J. Dent. Educ*, 64(8): 610-615. doi: 10.1002/j.0022-0337.2000.64.8.tb03367.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2000.64.8.tb03367.x>.

Behar-Horenstein, L. S, Schneider-Mitchell, G. and Graff, R. 2009. Promoting the Teaching of Critical Thinking Skills Through Faculty Development, *J. Dent. Educ*, 73(6): 665–675. doi: 10.1002/j.0022-0337.2009.73.6.tb04746.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2009.73.6.tb04746.x>.

Behar-Horenstein, L. 2014. Dental Education and Making a Commitment to The Teaching of Critical Thought, *Inquiry*. 29(3): 27–38. doi: 10.5840/inquiryct201429316. Available from: http://www.pdcnet.org/oom/service?url_ver=Z39.88-2004&rft_val_fmt=&rft.imuse_id=inquiryct_2014_0029_0003_0027_0038&svc_id=info:www.pdcnet.org/collection.

Beier, U. S, Kapferer, I, Burtscher, D, Ulmer, H. and Dumfahrt, H. 2012. Impact of a prior medical degree on students' dental school performance in Innsbruck, Austria. *J. Dent. Educ*, 76(3): 341-347. doi: 10.1002/j.0022-0337.2012.76.3.tb05264.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2012.76.3.tb05264.x>.

Benfield, A. and Krueger, R. B. 2021. Making Decision-Making Visible-Teaching the Process of Evaluating Interventions. *IJERPH*, 18(7): 3635. doi:

10.3390/ijerph18073635. Available from: <https://www.mdpi.com/1660-4601/18/7/3635>.

Benner, P, Hughes, R. G. and Sutphen, M. 2008. Clinical reasoning, decision making, and action: Thinking critically and clinically. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*, AHRQ Publication No. 08-0043. Rockville, MD: Agency for Healthcare Research and Quality; March, Chapter 6, pp. 87–110. PMID: 21328752. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21328745>.

Bennett, J. H, Beeley, J. A, Anderson, P, Belfield, L, Brand, H. S, Didilescu, A. C, Dymock, D, Guven, Y, Hector, M. P, Holbrook, P, Jayasinghe, J. A. P, O'Sullivan, J, Riggio, M, Roger-Leroi, V, Scheven, B, Sloan, A. J, Vandamme, K, and Manzanares, M. 2020, A core curriculum in the biological and biomedical sciences for dentistry, *Eur J Dent Educ*, 24(3): 433–441. doi: 10.1111/eje.12518. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1111/eje.12518>.

Benzian, H, Greenspan, J. S, Barrow, J, Hutter, J. W, Loomer, P. M, Stauff, N. and Perry, D. A. 2015. A competency matrix for global oral health. *J. Dent. Educ*, 79(4): 353–361. doi: 10.1002/j.0022-0337.2015.79.4.tb05891.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2015.79.4.tb05891.x>.

von Bergmann, H. and Shuler, C. F. 2019. The Culture of Certainty in Dentistry and Its Impact on Dental Education and Practice. *J. Dent. Educ*, 83(6): 609–613. doi: 10.21815/JDE.019.075. Available from: <http://doi.wiley.com/10.21815/JDE.019.075>.

Bernabe, E, Marcenes, W, Hernandez, C. R, Bailey, J, Abreu, L. G, Alipour, V, Amini, S, Arabloo, J, Arefi, Z, Arora, A, Ayanore, M. A, Bärnighausen, T. W, Bijani, A, Cho, D. Y, Chu, D. T, Crowe, C. S, Demoz, G. T, Demsie, D. G, Dibaji-Forooshani, Z. S, Du, M, El Tantawi, M, Fischer, F, Folayan, M. O, Futran, N. D, Geramo, Y. C. D, Haj-Mirzaian, A, Hariyani, N, Hasanzadeh, A, Hassanipour, S, Hay, S. I, Hole, M. K, Hostiuc, S, Illic, M. D, James, S. L, Kalhor, R, Kemmer, L, Keramati, M, Khader, Y. S, Kisa, S, Kisa, A, Koyanagi, A, Lalloo, R, Le Nguyen, Q, London, S. D, Manohar, N. D, Massenburg, B. B, Mathur, M. R, Meles, H. G, Mestrovic, T, Mohammadian-Hafshejani, A, Mohammadpourhodki, R, Mokdad, A. H, Morrison, S. D, Nazari, J, Nguyen, T. H, Nguyen, C. T, Nixon, M. R, Olagunju, T. O, Pakshir, K, Pathak, M, Rabiee, N, Rafiei, A, Ramezanzadeh, K, Rios-Blancas, M. J, Roro, E. M, Sabour, S, Samy, A. M, Sawhney, M, Schwendicke, F, Shaahmadi, F, Shaikh, M. A, Stein, C, Tovani-Palone, M. R, Tran, B. X, Unnikrishnan, B, Vu, G. T, Vukovic, A, Warouw, T. S. S, Zaidi, Z, Zhang, Z. J, and Kassebaum, N. J. 2020. Global, Regional, and National Levels and Trends in Burden of Oral Conditions from 1990 to 2017: A Systematic Analysis for the Global Burden of Disease 2017 Study. *J. Dent. Res*. 99(4): 362–373. doi: 10.1177/0022034520908533. Available from: <http://journals.sagepub.com/doi/10.1177/0022034520908533>.

Bernardini, F, Tuniz, C, Coppa, A, Mancini, L, Dreossi, D, Eichert, D, Turco, G,

- Biasotto, M, Terrasi, F, De Cesare, N, Hua, Q. and Levchenko, V. 2012. Beeswax as dental filling on a Neolithic human tooth. *PLoS ONE*, 7(9): e44904. doi: 10.1371/journal.pone.0044904. Available from: <https://dx.plos.org/10.1371/journal.pone.0044904>.
- Berner, E. S. and Graber, M. L. 2008. Overconfidence as a Cause of Diagnostic Error in Medicine, *Am. J. Med*, 121(5 Suppl.): S2-23. doi: 10.1016/j.amjmed.2008.01.001. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0002934308000405>.
- Best, L, Walton, J. N, Walker, J, and von Bergmann, H. 2016. Reaching Consensus on Essential Biomedical Science Learning Objectives in a Dental Curriculum, *J. Dent. Educ*, 80(4): 422–429. doi: 10.1002/j.0022-0337.2016.80.4.tb06100.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2016.80.4.tb06100.x>.
- Bez, C, Sklavounou, A, and Carrozzo, M. 2017. Oral medicine in Europe: Past, present and future. *Br. Dent. J.* 223(9): 726–728. doi: 10.1038/sj.bdj.2017.891. Available from: <http://dx.doi.org/10.1038/sj.bdj.2017.891>.
- Biggs, J. 1991. Approaches to learning in secondary and tertiary students in Hong Kong: Some comparative studies, *Educ. Res. J.* 6(1): 27–39. Available from: https://www.hkier.cuhk.edu.hk/journal/document/ERJ/erj_v6_27-39.pdf
- Biggs, J. 1999. Teaching for Quality Learning at University. Assessing for learning quality: II. Practice, Teaching for Quality Learning at University, pp. 165–203. doi: 10.1097/00005176-200304000-00028. Available from: <http://journals.lww.com/00005176-200304000-00028>
- Bishop, M. 2014. Dentists' and the establishment of the Anglo-American profession in the eighteenth century: Part 2. Public recognition. *Br. Dent. J.* 217(10): 593–596. doi: 10.1038/sj.bdj.2014.1003. Available from: <http://dx.doi.org/10.1038/sj.bdj.2014.1003>.
- Bissessur, S. W, Geijteman, E. C. T, Al-Dulaimy, M, Teunissen, P. W, Richir, M. C, Arnold, A. E. R, and de Vries, T. P. G. M. 2009. Therapeutic reasoning: From hiatus to hypothetical model, *J Eval Clin Pract*, 15(6): 985–989. doi: 10.1111/j.1365-2753.2009.01136.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2753.2009.01136.x>.
- Bleakley, A, Farrow, R, Gould, D. and Marshall, R. 2003. Making sense of clinical reasoning: judgement and the evidence of the senses. *Med Educ*, 37(6): 544–552. doi: 10.1046/j.1365-2923.2003.01542.x. Available from: <http://doi.wiley.com/10.1046/j.1365-2923.2003.01542.x>.
- Blumenthal-Barby, J. S. and Krieger, H. 2015. Cognitive biases and heuristics in medical decision making: A critical review using a systematic search strategy, *Med Decis Making*. 35(4): 539–557. doi: 10.1177/0272989X14547740. Available from: <http://journals.sagepub.com/doi/10.1177/0272989X14547740>.
- Boet, S, Sharma, S, Goldman, J. and Reeves, S. 2012. Medical education research: an

- overview of methods. *Can J Anaesth*. 59(2):159-170. doi: 10.1007/s12630-011-9635-y. Available from: <http://link.springer.com/10.1007/s12630-011-9635-y>.
- Bonnevier, A, Josephson, A. and Scheja, M. 2012. Potentialities for learning in medical students' ways of approaching a diagnostic task. *High. Educ*. 64(3): 371–384. doi: 10.1007/s10734-011-9499-7. Available from: <http://link.springer.com/10.1007/s10734-011-9499-7>.
- Bordage, G. 1999. Why did I miss the diagnosis? Some cognitive explanations and educational implications. *Acad. Med*. 74(10): S138-43. doi: 10.1097/00001888-199910000-00065. Available from: <http://journals.lww.com/00001888-199910000-00065>.
- Bordage, G. 2007. Prototypes and semantic qualifiers: from past to present. *Med Educ*, 41(12): 1117-1121. doi: 10.1111/j.1365-2923.2007.02919.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.2007.02919.x>.
- Bordage, G, Grant, J. and Marsden, P. 1990. Quantitative assessment of diagnostic ability. *Med Educ*, 24(5): 413–425. doi: 10.1111/j.1365-2923.1990.tb02650.x. Available from: <http://doi.wiley.com/10.1111/j.1365-2923.1990.tb02650.x>.
- Bordage, G. and Lemieux, M. 1991. Semantic structures and diagnostic thinking of experts and novices, *Acad Med*, 66(9): S70-2. doi: 10.1097/00001888-199109000-00045. Available from: <http://journals.lww.com/00001888-199109000-00045>.
- Bordage, G. and Zacks, R. 1984. The structure of medical knowledge in the memories of medical students and general practitioners: categories and prototypes. *Med Educ*, 18(6): 406-416. doi: 10.1111/j.1365-2923.1984.tb01295.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.1984.tb01295.x>.
- ten Bosch, J. J. 1997. Problem solving and problem-solving education in dentistry. *Eur J Dent Educ*, 1(1): 18-24. doi: 10.1111/j.1600-0579.1997.tb00005.x. Available from: <http://doi.wiley.com/10.1111/j.1600-0579.1997.tb00005.x>.
- Boshuizen, H. and Schmidt, H. 1990. Biomedical knowledge and clinical expertise, Paper presented at the Annual Conference of the American Educational Research Association (New York, NY, April 8-14, 1996). Available from: http://repub.eur.nl/res/pub/2782/eur_schmidt_197.pdf.
- Boshuizen, H. P. and Schmidt, H. G. 2008. The development of clinical reasoning expertise. In: Higgs, J, Jones, M. A, Loftus, S and Christensen, S. (eds.) *Clinical reasoning in the health professions*. 3rd. ed. Elsevier (Butterworth Heinemann). pp.113–121.
- Boulton-Lewis, G. 1994. Tertiary students' knowledge of their own learning and a SOLO Taxonomy. *High. Educ*, 28(3): 387–402. doi: 10.1007/BF01383724. Available from: <http://link.springer.com/10.1007/BF01383724>.

- Boulton-Lewis, G. M. 1995. The SOLO Taxonomy as a Means of Shaping and Assessing Learning in Higher Education, *High. Educ. Res. Dev.* 14(2): 143–154. doi: 10.1080/0729436950140201. Available from: <http://www.tandfonline.com/doi/abs/10.1080/0729436950140201>.
- Bowen, J. L. 2006. Educational strategies to promote clinical diagnostic reasoning. *N Engl J Med*, 355(21): 2217-2225. doi: 10.1056/NEJMr054782. Available from: <http://www.nejm.org/doi/10.1056/NEJMr054782>
- Bowen, J. L. and Ilgen, J. S. 2014. Now You See It, Now You Don't: What Thinking Aloud Tells Us About Clinical Reasoning. *J Grad Med Educ*, 6(4): 783-785. doi: 10.4300/JGME-D-14-00492.1. Available from: <http://www.jgme.org/doi/abs/10.4300/JGME-D-14-00492.1>.
- Bowen, J. L. and ten Cate, O. 2018. Prerequisites for Learning Clinical Reasoning, in ten Cate, O, Custers, E. J, and Durning, S. J. (eds), *Principles and practice of case-based clinical reasoning education: a method for preclinical students*. Springer Nature, Cham, Switzerland. pp. 47–63. doi: 10.1007/978-3-319-64828-6_4. Available from: https://doi.org/10.1007/978-3-319-64828-6_4.
- Bowers, N, Brandon, M. and Hill, C. D. 2005. The Use of a Knowledge Survey as an Indicator of Student Learning in an Introductory Biology Course, *Cell Biol. Educ.*, 4(4): 311–322. doi: 10.4300/JGME-D-14-00492.1. Available from: <https://www.lifescied.org/doi/10.1187/cbe.04-11-0056>.
- Brabrand, C. and Dahl, B. 2009. Using the SOLO taxonomy to analyze competence progression of university science curricula, *High. Educ.* 58(4): 531–549. doi: 10.1187/cbe.04-11-0056. Available from: <http://link.springer.com/10.1007/s10734-009-9210-4>.
- Bradbury-Jones, C, Taylor, J. and Herber, O. R. 2014. Vignette development and administration: A framework for protecting research participants. *Int. J. Soc. Res.* 17(4): 427–440. doi: 10.1007/s10734-009-9210-4. Available from: <http://www.tandfonline.com/doi/abs/10.1080/13645579.2012.750833>.
- Bramer, W. M, Giustini, D, Kramer, B. M, and Anderson, P. 2013. The comparative recall of Google Scholar versus PubMed in identical searches for biomedical systematic reviews: a review of searches used in systematic reviews, *Systematic Reviews*, 2(1): 115. doi: 10.1186/2046-4053-2-115. Available from: <https://systematicreviewsjournal.biomedcentral.com/articles/10.1186/2046-4053-2-115>.
- Braun, L. T, Borrmann, K. F, Lottspeich, C, Heinrich, D. A, Kiesewetter, J, Fischer, M. R. and Schmidmaier, R. 2019. Guessing right—whether and how medical students give incorrect reasons for their correct diagnoses. *GMS J. Med. Educ.* 36(6): 1–12. doi: 10.3205/zma001293. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/31844657>.
- Bredo, E. 1997. The Social Construction of Learning, in Phye, G. D. (ed.) *Handbook of Academic Learning - Construction of Knowledge*. pp. 3–42. London:

- Elsevier. doi: 10.1016/B978-0-12-554255-5.X5000-5., Available from: <https://linkinghub.elsevier.com/retrieve/pii/B9780125542555X50005>.
- Brondani, M. A. and Rossoff, L. P. 2010. The “Hot Seat” Experience: A Multifaceted Approach to the Teaching of Ethics in a Dental Curriculum, *J. Dent. Educ.*, 74(11): 1220–1229. doi: 10.1002/j.0022-0337.2010.74.11.tb04996.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2010.74.11.tb04996.x>.
- Brown, C. T. 2018. Correlation between working memory, intelligence, and cognitive functions. *J Altern Med Res*, 10(2): 139–154. Available from: https://www.researchgate.net/publication/327075430_Correlation_between_working_memory_intelligence_and_cognitive_functions
- De Bruin, A. B, Schmidt, H. G. and Rikers, R. M. 2005. The role of basic science knowledge and clinical knowledge in diagnostic reasoning: A structural equation modeling approach. *Acad Med*, 80(8): 765–773. doi: 10.1097/00001888-200508000-00014. Available from: <http://journals.lww.com/00001888-200508000-00014>.
- Bunniss, S. and Kelly, D. R. 2010. Research paradigms in medical education research, *Med Educ*. 44(4): 358–366. doi: 10.1111/j.1365-2923.2009.03611.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.2009.03611.x>.
- Carrozzo, M. 2017. Oral medicine in Europe and the European Association of Oral Medicine, *Med. Buccale Chir. Buccale*, 23(3): 121–122. doi: 10.1051/mbcb/2017014. Available from: <https://www.jomos.org/10.1051/mbcb/2017014>.
- Cartes-Velásquez, R. and Manterola Delgado, C. 2014. Bibliometric analysis of articles published in ISI dental journals, 2007-2011, *Scientometrics*, 98(3): 2223–2233. doi: 10.1007/s11192-013-1173-7. Available from: <http://link.springer.com/10.1007/s11192-013-1173-7>.
- Carvalho, E. C, Oliveira-Kumakura, A. R. de S. and Morais, S. C. R. V. 2017. Clinical reasoning in nursing: teaching strategies and assessment tools. *Rev. Bras. Enferm*, 70(3): 662–668. doi: 10.1590/0034-7167-2016-0509. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28562818>.
- Casamassimo, P. S, Flaitz, C. M, Hammersmith, K, Sangvai, S. and Kumar, A. 2018. Recognizing the relationship between disorders in the oral cavity and systemic disease. *Pediat. Clin. N.* 65(5): 1007-1032. doi: 10.1016/j.pcl.2018.05.009. Available from: <https://doi.org/10.1016/j.pcl.2018.05.009>.
- Case, S. M. and Swanson, D. B. 2001. *Constructing written test questions for the basic and clinical sciences*. Director. 27(21): 1–181. Available at: http://www.nbme.org/PDF/ItemWriting_2003/2003IWGwhole.pdf.
- Castillo, J. M, Park, Y. S, Harris, I, Cheung, J. J, Sood, L, Clark, M. D, Kulasegaram, K, Brydges, R, Norman, G. and Woods, N. 2018. A critical narrative review

- of transfer of basic science knowledge in health professions education. *Med Educ*, 52(6): 592-604. doi: 10.1111/medu.13519. Available from: <http://doi.wiley.com/10.1111/medu.13519>.
- ten Cate, O. and Durning, S. J. 2018. Approaches to Assessing the Clinical Reasoning of Preclinical Students, in ten Cate, O, Custers, E. J. F. M, and Durning, S. J. (eds), *Principles and practice of case-based clinical reasoning education: A method for preclinical students*. Springer open, Gewerbestrasse 11, 6330 Cham, Switzerland. P. 65–72. doi: 10.1007/978-3-319-64828-6_5. Available from: http://link.springer.com/10.1007/978-3-319-64828-6_5.
- Ten Cate, O, Snell, L, Mann, K. V. and Vermunt, J. 2004. Orienting teaching toward the learning process. *Acad. Med.* 79(3): 219-228. doi: 10.1097/00001888-200403000-00005. Available from: <http://journals.lww.com/00001888-200403000-00005>.
- Cerullo, J. A. da S. B. and da Cruz, D. de A. L. M. 2010. Clinical reasoning and critical thinking. *Rev Lat Am Enfermagem*. 18(1): 124–129. doi: 10.1590/S0104-11692010000100019. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692010000100019&lng=en&tlng=en.
- Chambers, D. W. 2009. Lessons from students in a critical thinking course: a case for the third pedagogy. *J. Dent. Educ*, 73(1): 65-82. doi: 10.1002/j.0022-0337.2009.73.1.tb04640.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2009.73.1.tb04640.x>.
- Chambers, D. W, Mirchel, R. and Lundergan, W. 2010. An Investigation of Dentists' and Dental Students' Estimates of Diagnostic Probabilities, *J. Am. Dent. Assoc.* 141(6): 656–666. doi: 10.14219/jada.archive.2010.0253. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0002817714647413>.
- Chan, C. C, Tsui, M. S, Chan, M. Y. and Hong, J. H. 2002. Applying the structure of the observed learning outcomes (SOLO) taxonomy on student's learning outcomes: An empirical study. *Assess. Eval. High. Educ.* 27(6): 511-527. doi: 10.1080/0260293022000020282. Available from: <http://www.tandfonline.com/doi/abs/10.1080/0260293022000020282>.
- Chapple, I. L. C, Bouchard, P, Cagetti, M. G, Campus, G, Carra, M-C, Cocco, F, Nibali, L, Hujoel, P, Laine, M. L, Lingström, P. and Manton, D. J, Montero, E, Pitts, N, Rangé, H, Schlueter, N, Teughels, W, Twetman, S, Van Loveren, C, Van der Weijden, F, Vieira, A. R. and Schulte, A. G. 2017. Interaction of lifestyle, behaviour or systemic diseases with dental caries and periodontal diseases: consensus report of group 2 of the joint EFP/ORCA workshop on the boundaries between caries and periodontal diseases. *J. Clin. Periodontol.* 44: S39-S51. doi: 10.1111/jcpe.12685. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/jcpe.12685>.
- Charbonneau, A, Dagenais, M, Morin, S, Walton, J, Best, L, Esfandiari, S, Patterson, S, Bohay, R, Bannerman, R, Lai, J, Brothwell, D, and Sutherland, K. 2016.

- ACFD Educational Framework for the Development of Competency in Dental Programs, 2015, p. 22. Available from: https://acfd.ca/wp-content/uploads/ACFD-Educational-Framework-for-the-Development-of-Competency-in-Dental-Programs_2016.pdf.
- Charlin, B., Tardif, J. and Boshuizen, H. P. A. 2000. Scripts and Medical Diagnostic Knowledge'. *Acad. Med.*, 75(2): 182–190. doi: 10.1097/00001888-200002000-00020. Available from: <http://journals.lww.com/00001888-200002000-00020>.
- Charlin, B, Boshuizen, H. P. A, Custers, E. J. and Feltovich, P. J. 2007. Scripts and clinical reasoning. *Med Educ*, 41(112): 1178-1184. doi: 10.1111/j.1365-2923.2007.02924.x. Available from: <http://doi.wiley.com/10.1111/j.1365-2923.2007.02924.x>.
- Chiappelli, F. 2019, Evidence-Based Dentistry: Two Decades and Beyond. *J Evid Based Dent Pract.* 19(1):7–16. doi: 10.1016/j.jebdp.2018.05.001. Available from: <https://doi.org/10.1016/j.jebdp.2018.05.001>.
- Choy, L. T. 2014. The Strengths and Weaknesses of Research Methodology: Comparison and Complimentary between Qualitative and Quantitative Approaches, *Int. j. humanit. soc. sci.*, 19(4): 99–104. doi: 10.9790/0837-194399104. Available from: <http://www.iosrjournals.org/iosr-jhss/papers/Vol19-issue4/Version-3/N0194399104.pdf>.
- Christian, B, Hall, M. and Martin, R. 2015. A paradigm shift in models of oral health care: an example and a call to action. *Fam Med Community Health.* 3(4): 32-37. doi: 10.15212/FMCH.2015.0131. Available from: <http://www.ingentaconnect.com/content/10.15212/FMCH.2015.0131>.
- Chuenjitwongsa, S, Oliver, R. G. and Bullock, A. D. 2018. Competence, competency-based education, and undergraduate dental education: a discussion paper, *Eur J Dent Educ.* 22(1): 1–8. doi: 10.1111/eje.12213. Available from: <http://doi.wiley.com/10.1111/eje.12213>.
- Clark, J. M. and Paivio, A. 1991. Dual coding theory and education. *Educ Psychol Rev.*, 3(3): 149-210. doi: 10.1007/BF01320076. Available from: <https://www.jstor.org/stable/23359208>.
- Coderre, S, Mandin, H. P, Harasym, P. H. and Fick, G. H. 2003. Diagnostic reasoning strategies and diagnostic success. *Med Educ*, 37(8): 695-703. doi: 10.1046/j.1365-2923.2003.01577.x. Available from: <http://doi.wiley.com/10.1046/j.1365-2923.2003.01577.x>.
- Cohen, L, Dahlen, G, Escobar, A, Fejerskov, O, Johnson, N, and Manji, F. 2017. Dentistry in crisis: time to change. La Cascada Declaration. *Aust. Dent. J.*, 62(3): 258–260. doi: 10.1111/adj.12546. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/adj.12546>.
- Cohen, L., Manion, L. and Morrison, K. 2018. Research Methods in Education, 8th. Ed. New York: Routledge. doi: 10.4324/9781315456539. Available from: <https://www.taylorfrancis.com/books/9781315456522>

- Cohen, M. M. 2002. Major Long-Term Factors Influencing Dental Education in the Twenty-First Century. *J. Dent. Educ.* 66(3): 360–373. doi: 10.1002/j.0022-0337.2002.66.3.tb03516.x.
<https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2002.66.3.tb03516.x>.
- Coleman, G. C, Flaitz, C. M, and Vincent, S. D. 2002. Differential Diagnosis of Oral Soft Tissue Lesions, *Tex Dent J.* 119(6): 484–8, 490–2, 494–503. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/12141128>.
- Collard, A, Brédart, S. and Bourguignon, J-P. 2016. Context impact of clinical scenario on knowledge transfer and reasoning capacity in a medical problem-based learning curriculum. *High. Educ. Res. Dev.* 35(2): 242–253. doi: 10.1080/07294360.2015.1087383. Available from: <https://doi.org/10.1080/07294360.2015.1087383>.
- Converse, L, Barrett, K, Rich, E. and Reschovsky, J. 2015. Methods of observing variations in physicians' decisions: the opportunities of clinical vignettes. *J. Gen. Intern. Med.*, 30(Suppl. S3): S586-594. doi: 10.1007/s11606-015-3365-8. Available from: <http://link.springer.com/10.1007/s11606-015-3365-8>.
- Cook, D. A and West, C. P. 2012. Conducting systematic reviews in medical education: a stepwise approach, *Med. Educ.* 46(10): 943–952. doi: 10.1111/j.1365-2923.2012.04328.x. Available from: <http://doi.wiley.com/10.1111/j.1365-2923.2012.04328.x>.
- Cook, D. A, Durning, S. J, Sherbino, J, and Gruppen, L. D. 2019. Management Reasoning, *Acad. Med.* 94(9): 1310–1316. doi: 10.1097/ACM.0000000000002768. Available from: <http://journals.lww.com/00001888-201909000-00019>.
- Cooke, A, Smith, D, and Booth, A. 2012. Beyond PICO: the SPIDER tool for qualitative evidence synthesis. *Qual. Health Res.* 22(10): 1435–43. doi: 10.1177/1049732312452938. Available from: <http://journals.sagepub.com/doi/10.1177/1049732312452938>.
- Cooper, C, Booth, A, Varley-Campbell, J, Britten, N, and Garside, R. 2018. Defining the process to literature searching in systematic reviews: a literature review of guidance and supporting studies. *BMC Med. Res. Methodol.* 18(1): 85. doi: 10.1186/s12874-018-0545-3. Available from: <https://bmcmmedresmethodol.biomedcentral.com/articles/10.1186/s12874-018-0545-3>.
- Coppa, A, Bondioli, L, Cucina, A, Frayer, D. W, Jarrige, C, Jarrige, J. F, Quivron, G, Rossi, M, Vidale, M. and Macchiarelli, R. 2006. Palaeontology: Early Neolithic tradition of dentistry. *Nature*, 440(7085): 755-756. doi: 10.1038/440755a. Available from: <http://www.nature.com/articles/440755a>.
- Crespo, K. E, Torres, J. E. and Recio, M. E, 2004. Reasoning process characteristics in the diagnostic skills of beginner, competent, and expert dentists. *J. Dent. Educ.* 68(12): 1235-1244. doi: 10.1002/j.0022-0337.2004.68.12.tb03873.x.

Available from: <http://www.ncbi.nlm.nih.gov/pubmed/15576812>.

- Creswell, J. W. 2003. Research design: Qualitative, quantitative, and mixed method, in Creswell, J. W. (ed.) *Research design: Qualitative, quantitative, and mixed method*. 2nd ed. SAGE Publications Ltd, thousand Oaks, London. pp.3–26. doi: 10.7591/9781501721144-016. Available from: <https://www.degruyter.com/document/doi/10.7591/9781501721144-016/html>.
- Creswell, J. W, Hanson, W. E, Clark, P. V. L. and Morales, A. 2007. Qualitative research designs: Selection and implementation. *Couns Psychol*, 35(2): 236-264. doi: 10.1177/0011000006287390. Available from: <http://journals.sagepub.com/doi/10.1177/0011000006287390>
- Creswell, J. W, Klassen, A. C, Plano Clark, V. L. and Smith, K. C. 2013. *Best practices for mixed methods research in the health sciences*. Meissner, H.I (ed). National Institutes of Health, Bethesda (Maryland), pp.541-545. Available from: https://www.csun.edu/sites/default/files/best_prac_mixed_methods.pdf
- Cronin, P, Ryan, F, and Coughlan, M., 2008, Undertaking a literature review: a step-by-step approach. *Br. J. Community Nurs*. 17(1): 38–43. doi: 10.12968/bjon.2008.17.1.28059. Available from: <http://www.magonlinelibrary.com/doi/10.12968/bjon.2008.17.1.28059>.
- Croskerry, P. 2009. A universal model of diagnostic reasoning. *Acad. Med.*, 84(8): 1022-1028. doi: 10.1097/ACM.0b013e3181ace703. Available from: <http://journals.lww.com/00001888-200908000-00014>.
- Croskerry, P. 2017. Medical Education and the Diagnostic Process, in Croskerry, P. Cosby, K. S, Graber, M. L, and Singh, H (eds), *Diagnosis: Interpreting the Shadows*. CRC Press, Boca Raton: Taylor & Francis, pp. 243–256. doi: 10.1201/9781315116334. Available from: <https://www.taylorfrancis.com/books/9781351652926>.
- Crowe, A, Dirks, C. and Wenderoth, M. P. 2008. Biology in Bloom: Implementing Bloom's Taxonomy to Enhance Student Learning in Biology, *CBE Life Sci. Educ*. 7(4): 368–381. doi: 10.1187/cbe.08-05-0024. Available from: <https://www.lifescied.org/doi/10.1187/cbe.08-05-0024>.
- Cruess, R. L, Cruess, S. R. and Steinert, Y. 2018. Medicine as a Community of Practice: Implications for Medical Education, *Acad. Med.*, 93(2): 185–191. doi: 10.1097/ACM.0000000000001826. Available from: <http://journals.lww.com/00001888-201802000-00019>.
- Custers, E. J, Regehr, G, and Norman, G.R .1996, Mental representations of medical diagnostic knowledge, *Acad. Med.*, 71(10): S55-61. doi: 10.1097/00001888-199610000-00044. Available from: <http://journals.lww.com/00001888-199610000-00044>.
- Custers, E. J. F. M. 2010. Long-term retention of basic science knowledge: a review study. *Adv. Health Sci. Educ*. 15(1): 109–128. doi: 10.1007/s10459-008-9101-

- y. Available from: <http://link.springer.com/10.1007/s10459-008-9101-y>.
- Custers, E. J. F. M. 2015. Thirty years of illness scripts: Theoretical origins and practical applications. *Med.Teach*, 37(5): 457–462. doi: 10.3109/0142159X.2014.956052. Available from: <http://www.tandfonline.com/doi/full/10.3109/0142159X.2014.956052>.
- Custers, E. J. F. M. 2018. Training Clinical Reasoning: Historical and Theoretical Background, in ten Cate, O, Custers, E. J. F. M, and Durning, S. J. (eds.) *Principles and Practice of Case-based Clinical Reasoning Education, Innovation*. pp. 21–33. Springer Nature, Cham, Switzerland. doi: 10.1007/978-3-319-64828-6_2. Available from: http://link.springer.com/10.1007/978-3-319-64828-6_2.
- Cutrer, W. B, Sullivan, W. M. and Fleming, A. E. 2013. Educational Strategies for Improving Clinical Reasoning, *Curr Probl Pediatr Adolesc Health Care*. 43(9): 248–257. doi: 10.1016/j.cppeds.2013.07.005. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1538544213000941>.
- Daly, P. 2018. A concise guide to clinical reasoning. *J Eval Clin Pract*. 24(5): 966–972. doi: 10.1111/jep.12940. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/jep.12940>.
- Daniel, M, Rencic, J, Durning, S. J, Holmboe, E, Santen, S. A, Lang, V, Ratcliffe, T, Gordon, D, Heist, B, Lubarsky, S. and Estrada, C. A, Ballard, T, Artino, AR, Sergio Da Silva, A, Cleary, T, Stojan, J, and Gruppen, L. D. 2019. Clinical reasoning assessment methods: a scoping review and practical guidance. *Acad. Med.*, 94(6): 902-912. doi: 10.1097/ACM.0000000000002618. Available from: <http://journals.lww.com/00001888-201906000-00052>.
- Davis, J. M, Janczukowicz, J, Stewart, J, Quinn, B. and Feldman, C. A., 2018, Interprofessional education in dental education: An international perspective. *Eur. J. of Dent. Ed*. 22(Suppl 1): 10-16. doi: 10.1111/eje.12341. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/eje.12341>.
- Dehghan, M, Harrison, J, Langham, S, Scarbecz, M and Amini, M. 2015. Comparing comprehensive care and departmental clinical education models: students' perceptions at the University of Tennessee College of Dentistry. *J. Dent. Educ*, 79(2):133-139. doi: 10.1002/j.0022-0337.2015.79.2.tb05867.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2015.79.2.tb05867.x>.
- Dennis, M. J. 2010. Integration of medicine and basic science in dentistry: the role of oral and maxillofacial surgery in the pre-doctoral dental curriculum. *Eur J Dent Educ*. 14(2): 124-128. doi: 10.1111/j.1600-0579.2009.00605. x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1600-0579.2009.00605.x>.
- Densen, P. 2011. Challenges and opportunities facing medical education. *Trans Am Clin Climatol Assoc*, 122(319): 48-58. Available from:

<http://www.ncbi.nlm.nih.gov/pubmed/21686208>.

- DePaola, D. P. and Slavkin, H. C. 2004. Reforming dental health professions education: a white paper. *J. Dent. Educ*, 68(11): 1139-1150. doi: 10.1002/j.0022-0337.2004.68.11.tb03859.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2004.68.11.tb03859.x>.
- DePaola, D.P. 2008, The revitalization of U.S. dental education., *J. Dent. Educ*, 72(2 Suppl): 28–42. doi: [10.1002/j.0022-0337.2008.72.2_suppl.tb04476.x](https://doi.org/10.1002/j.0022-0337.2008.72.2_suppl.tb04476.x) Available from: https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2008.72.2_suppl.tb04476.x.
- Deshpande, S and Chahande, J. 2014. Impact of computer-based treatment planning software on clinical judgment of dental students for planning prosthodontic rehabilitation, *Adv Med Educ Pract*. 5: 269–274. doi: 10.2147/AMEP.S66264. Available from: <http://www.dovepress.com/impact-of-computer-based-treatment-planning-software-on-clinical-judgm-peer-reviewed-article-AMEP>.
- Deshpande, S, Chahande, J, and Rath, A. 2017. Mobile learning app: A novel method to teach clinical decision making in prosthodontics, *Educ Health*, 30(1): 31. doi: 10.4103/1357-6283.210514. Available from: <http://www.educationforhealth.net/text.asp?2017/30/1/31/210514>.
- Deshpande, S, Lambade, D, and Chahande, J. 2015. Development and evaluation of learning module on clinical decision-making in Prosthodontics, *J. Indian Prosthodont. Soc*. 15(2): 158. doi: 10.4103/0972-4052.158080. Available from: <http://www.j-ips.org/text.asp?2015/15/2/158/158080>.
- Ditmyer, M. M, Mobley, C. C. and Davenport, W. D. 2014. Evaluation of an Integrative Model for Professional Development and Research in a Dental Curriculum, *J. Dent. Educ*, 78(3): 368–379. doi: 10.1002/j.0022-0337.2014.78.3.tb05687.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2014.78.3.tb05687.x>.
- Donaldson, M. E, Gadbury-Amyot, C. C, Khajotia, S. S, Nattestad, A, Norton, N. S, Zubiaurre, L. A. and Turner, S. P. 2008. Dental education in a flat world: advocating for increased global collaboration and standardization. *J. Dent. Educ*, 72(4): 408-421. doi: 10.1002/j.0022-0337.2008.72.4.tb04506.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2008.72.4.tb04506.x>.
- Donner-Banzhoff, N, Seidel, J, Sikeler, A. M, Bösner, S, Vogelmeier, M, Westram, A, Feufel, M, Gaissmaier, W, Wegwarth, O. and Gigerenzer, G. 2017. The phenomenology of the diagnostic process: A primary care-based survey. *Med Decis Making*, 37(1): 27-34. doi: 10.1177/0272989X16653401. Available from: <http://journals.sagepub.com/doi/10.1177/0272989X16653401>.
- Donoff, R. B. 2006. It is time for a new Gies report. *J. Dent. Educ*, 70(8): 809-819.

- doi: 10.1002/j.0022-0337.2006.70.8.tb04146.x. Available from:
<https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2006.70.8.tb04146.x>.
- Doody, O and Bailey, M. E. 2016, Setting a research question, aim and objective, *Nurse Res.* 23(4): 19–23. doi: 10.7748/nr.23.4.19.s5. Available from:
<http://journals.rcni.com/doi/10.7748/nr.23.4.19.s5>.
- Dornan, T, Boshuizen, H, King, N. and Scherpbier, A. 2007. Experience-based learning: a model linking the processes and outcomes of medical students' workplace learning. *Med. educ.*, 41(1): 84-91. doi: 10.1111/j.1365-2929.2006.02652.x. Available from:
<https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2929.2006.02652.x>.
- Dory, V, Gagnon, R. and Charlin, B. 2010. Is case-specificity content-specificity? An analysis of data from extended-matching questions, *Adv. Health Sci. Educ.* 15(1): 55–63. doi: 10.1007/s10459-009-9169-z. Available from:
<http://link.springer.com/10.1007/s10459-009-9169-z>
- Doust, J. 2009. Using probabilistic reasoning, *BMJ*, 339(2): b3823–b3823. doi: 10.1136/bmj.b3823. Available from:
<https://www.bmj.com/lookup/doi/10.1136/bmj.b3823>.
- Dunbar, K. N. and Klahr, D. 2012. Scientific Thinking and Reasoning, in Holyoak, K. J. and Morrison, R. G. (eds), *The Oxford Handbook of Thinking and Reasoning thinking and Reasoning*. 1st ed. Oxford University Press (OUP), pp. 701–718.
- Durning, S, Artino Jr, A. R, Pangaro, L, van der Vleuten, C. P. and Schuwirth, L. 2011. Context and clinical reasoning: understanding the perspective of the expert's voice. *Med. educ.*, 45(9): 927-938. doi: 10.1111/j.1365-2923.2011.04053.x. Available from:
<https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.2011.04053.x>.
- Durning, S. J, Dong, T, Artino, A. R, van der Vleuten, C, Holmboe, E. and Schuwirth, L. 2015. Dual processing theory and experts' reasoning: exploring thinking on national multiple-choice questions. *Perspectives on Med. educ.*, 4(4): 168-175. doi: 10.1007/s40037-015-0196-6. Available from:
<http://link.springer.com/10.1007/s40037-015-0196-6>.
- Duron, R, Limbach, B. and Waugh, W. 2006. Critical thinking framework for any discipline. *Int. J. Learn. High.*, 17(2): 160-166. Available from:
<https://www.isetl.org/ijtlhe/pdf/ijtlhe55.pdf>.
- Dwyer, C. P, Hogan, M. J. and Stewart, I. 2014. An integrated critical thinking framework for the 21st century, *Think. Ski. Creat.* 12: 43–52. doi: 10.1016/j.tsc.2013.12.004. Available from:
<http://dx.doi.org/10.1016/j.tsc.2013.12.004>.
- Dye, B. A. 2017. The Global Burden of Oral Disease: Research and Public Health Significance', *J. Dent. Res.* 96(4): 361–363. doi: 10.1177/0022034517693567 Available from:

<http://journals.sagepub.com/doi/10.1177/0022034517693567>.

- Eberhard, J, Klomp, H. J, Föge, M, Hedderich, J. and Schmidt, H. G. 2009. The intermediate effect and the diagnostic accuracy in clinical case recall of students and experts in dental medicine. *Eur. J. of Dent. Ed.* 13(3): 128-134. doi: 10.1111/j.1600-0579.2008.00550.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1600-0579.2008.00550.x>.
- Eccles, D. W. and Arsal, G. 2017. The think aloud method: what is it and how do I use it? *Qual. Res. Sport Exerc. Health.* 9(4):514–531. doi: 10.1080/2159676X.2017.1331501. Available from: <http://doi.org/10.1080/2159676X.2017.1331501>.
- Edel, E. M. 2011. Critical Thinking and Clinical Judgment, *AORN Journal*, 93(4): 514–515. doi: 10.1016/j.aorn.2010.12.016. Available from: <http://doi.wiley.com/10.1016/j.aorn.2010.12.016>.
- Edwards, I, Braunack-Mayer, A. and Jones, M. 2005. Ethical reasoning as a clinical-reasoning strategy in physiotherapy, *Physiotherapy*, 91(4): 229–236. doi: 10.1016/j.physio.2005.01.010. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0031940605000441>.
- Eggen, P. and Kauchak, D. 2010. *Educational psychology: windows on classrooms*. 8th ed., Prentice Hall. Edited by. Pearson Education.
- Elangovan, S, Venugopalan, S. R., Srinivasan, S, Karimbux, N. Y, Weistroffer, P. and Allareddy, V. 2016. Integration of basic-clinical sciences, PBL, CBL, and IPE in US dental schools' curricula and a proposed integrated curriculum model for the future. *J. Dent. Educ*, 80(3): 281-290. doi: 10.1002/j.0022-0337.2016.80.3.tb06083.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2016.80.3.tb06083.x>.
- Elangovan, S, Guzman-Armstrong, S, Marshall, T. A. and Johnsen, D. C. 2018. Clinical decision making in the era of evidence-based dentistry. *J. Am. Dent. Assoc.* 149(9): 745-747. doi: 10.1016/j.adaj.2018.06.001. Available from: <https://doi.org/10.1016/j.adaj.2018.06.001>.
- Elledge, R. 2018. Current thinking in medical education research: an overview, *Br J Oral Maxillofac Surg.* 56(5): 380–383. doi: 10.1016/j.bjoms.2018.04.005. Available from: <http://dx.doi.org/10.1016/j.bjoms.2018.04.005>.
- Elstein, A. S, Kagan, N, Shulman, L.S., Jason, H. and Loupe, M. J. 1972. Methods and theory in the study of medical inquiry. *Acad. Med.* 47(2): 85-92. doi: 10.1097/00001888-197202000-00002. Available from: <http://journals.lww.com/00001888-197202000-00002>.
- Elstein, A. S. 2002. Evidence base of clinical diagnosis: Clinical problem solving and diagnostic decision making: selective review of the cognitive literature. *BMJ*, 324(7339): 729-732. doi: 10.1136/bmj.324.7339.729. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/11909793>.
- Elstein, A. S. 2009. Thinking about diagnostic thinking: a 30-year perspective. *Adv*

- Health Sci Educ*, 14(1):7-18. doi: 10.1007/s10459-009-9184-0. Available from: <http://link.springer.com/10.1007/s10459-009-9184-0>.
- Engel, F. and Hendricson, W. 1994. A case-based learning model in orthodontics, *J. Dent. Educ*, 58(10): 762–767. doi: 10.1002/j.0022-0337.1994.58.10.tb02897.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.1994.58.10.tb02897.x>.
- Engel, P. J. H. 2008. Tacit knowledge and visual expertise in medical diagnostic reasoning: Implications for medical education, *Med. Teach*, 30(7): e184–e188. doi: 10.1080/01421590802144260. Available from: <http://www.tandfonline.com/doi/full/10.1080/01421590802144260>
- Ennis, R.H. 1985. A logical basis for measuring critical thinking skills. *Educ Leadersh.*, 43(2): 44–48. Available from: <https://pdfs.semanticscholar.org/80a7/c7d4a98987590751df4b1bd9adf747fd7aaa.pdf>.
- Ennis, R. H. 1989. Critical Thinking and Subject Specificity: Clarification and Needed Research, *Educ. Res*, 18(3): 4–10. doi: 10.3102/0013189X018003004. Available from: <http://journals.sagepub.com/doi/10.3102/0013189X018003004>.
- Entwistle, N. J. 1991. Approaches to learning and perceptions of the learning environment - Introduction to the Special Issue, *High. Educ.* 22(3): 201–204. doi: 10.1007/BF00132287. Available from: <http://link.springer.com/10.1007/BF00132287>.
- Epstein, R. M. 2007. Assessment in medical education. *N Engl J Med*, 356(4): 387–396. doi: 10.1056/NEJMra054784. Available from: <http://www.nejm.org/doi/10.1056/NEJMra054784>.
- Ericsson, K. A. 2007. An expert-performance perspective of research on medical expertise: the study of clinical performance. *Med Educ*, 41(12): 1124–1130. doi: 10.1111/j.1365-2923.2007.02946.x. Available from: <http://doi.wiley.com/10.1111/j.1365-2923.2007.02946.x>.
- Escudier, M. P, Woolford, M. J. and Tricio, J. A. 2018. Assessing the application of knowledge in clinical problem-solving: The structured professional reasoning exercise. *Eur J Dent Educ*, 22(2): e269–e277. doi: 10.1111/eje.12286. Available from: <http://doi.wiley.com/10.1111/eje.12286>.
- Etikan, I, Musa, SA, & AlKassim, RS 2016, 'Comparison of Convenience Sampling and Purposive Sampling', *Am. j. theor. appl. stat.* 5(1): 1. doi: 10.11648/j.ajtas.20160501.11 Available from: <http://www.sciencepublishinggroup.com/journal/paperinfo?journalid=146&doi=10.11648/j.ajtas.20160501.11>.
- Ettinger, R. L. 1984. Clinical Decision Making in the Dental Treatment of the Elderly, *Gerodontology*, 3(2): 157–165. doi: 10.1111/j.1741-2358.1984.tb00367.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1741->

[2358.1984.tb00367.x.](https://doi.org/10.1111/j.1754-4505.1990.tb00762.x)

- Ettinger, R. L, Beck, J. D. and Martin, W. E. 1990. Clinical decision making in evaluating patients: a process study. *Spec Care Dentist*. 10(3): 78–83. doi: 10.1111/j.1754-4505.1990.tb00762.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1754-4505.1990.tb00762.x>.
- Ettinger, R. L. 2015. Treatment planning concepts for the ageing patient. *Aust. Dent. J.* 60(Suppl 1): 71–85. doi: 10.1111/adj.12286. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/adj.12286>.
- Eva, K. W, Neville, A. J. and Norman, G. R. 1998. Exploring the etiology of content specificity: factors influencing analogic transfer and problem solving. *Acad. Med.* 73(10 Suppl): S1-5. doi: 10.1097/00001888-199810000-00028. Available from: <http://journals.lww.com/00001888-199810000-00028>.
- Eva, K.W. 2005. What every teacher needs to know about clinical reasoning. *Med Educ*, 39(1): 98-106. doi: 10.1111/j.1365-2929.2004.01972.x. Available from: <http://doi.wiley.com/10.1111/j.1365-2929.2004.01972.x>.
- Evans, J. S. B. T. 2003, In two minds: Dual-process accounts of reasoning, *Trends Cogn. Sci.* 7(10): 454–459. doi: 10.1016/j.tics.2003.08.012. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1364661303002250>
- Evans, S.C., Roberts, M. C., Keeley, J. W, Blossom, J. B, Amaro, C. M, Garcia, A. M, Stough, C. O, Canter, K. S, Robles, R. and Reed, G. M. 2015. Vignette methodologies for studying clinicians' decision-making: validity, utility, and application in ICD-11. *Int J Clin Health Psychol.*, 15(2): 160-170. doi: 10.1016/j.ijchp.2014.12.001. Available from: <http://dx.doi.org/10.1016/j.ijchp.2014.12.001>.
- Everett, A. C. Anderson, O. S, Wright, M. C, and Fontana, M. 2018. Longitudinal Assessment of Critical Thinking Skills Across a Dental Curriculum, *J. Dent. Educ*, 82(9): 921–928. doi: 10.21815/jde.018.088. Available from: <http://doi.wiley.com/10.21815/JDE.018.088>.
- Eversole, L. R. and Silverman, S. 2001. Procurement of the History, in Silverman, S., Eversole, L. R., and Truelove, E. L. (eds), *Essentials of Oral medicine*. Hamilton, Ontario: BC Decker Inc, pp. 1–5. Available from: <http://www.nature.com/articles/sj.bdj.2017.933>.
- Facione, N. C. and Facione, P. A. 1996. Externalizing the critical thinking in knowledge development and clinical judgment, *Nurs. Outlook*, 44(3): 129–136. doi: 10.1016/S0029-6554(06)80005-9. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0029655406800059>.
- Facione, P.A. 2011. Critical thinking: What it is and why it counts. *Insight assessment*, 2007(1): 1-23. Available from: <https://www.insightassessment.com/CT-Resources/Teaching-For-and-About-Critical-Thinking/Critical-Thinking-What-It-Is-and-Why-It-Counts/Critical-Thinking-What-It-Is-and-Why-It-Counts-PDF>.

- Faucher, C. 2011. Differentiating the Elements of Clinical Thinking. *J. Optometric Ed.*, 36(3): 140-5. Available from: https://journal.opted.org/articles/Volume_36_Number_3_CriticalThinking.pdf.
- FDI. 2015, Basic Dental Education, Available from: <https://www.fdiworldddental.org/resources/policy-statements-and-resolutions/basic-dental-education>.
- Fejerskov, O, Escobar, G, Jøssing, M. and Baelum, V. 2013. A functional natural dentition for all—and for life? The oral healthcare system needs revision. *J. Oral Rehabil.* 40(9): 707-722.doi: 10.1111/joor.12082. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/joor.12082>.
- Feller, L, Lemmer, J, Nemutandani, M. S, Ballyram, R. and Khammissa, R. A. G. 2020. Judgment and decision-making in clinical dentistry. *J. Int. Med. Res.* 48(11): 300060520972877. doi: 10.1177/0300060520972877. Available from: <http://journals.sagepub.com/doi/10.1177/0300060520972877>.
- Ferrari, R. 2015, Writing narrative style literature reviews, *Medical Writ*, 24(4): 230–235. doi: 10.1179/2047480615Z.0000000000329. Available from: <http://www.tandfonline.com/doi/full/10.1179/2047480615Z.0000000000329>.
- Field, M. J. 1995. *Dental education at the crossroads: challenges and change..* An Institute of Medicine Report. Field, M, J (ed). Washington, DC: National Academy Press. doi: 10.17226/4925. Available from: <http://www.nap.edu/catalog/4925>.
- Field, J. C, Walmsley, A. D, Paganelli, C, McLoughlin, J, Szep, S, Kavadella, A, Manzanares Cespedes, M. C, Davies, J. R, DeLap, E, Levy, G. and Gallagher, J. 2017. The Graduating European Dentist: contemporaneous methods of teaching, learning and assessment in dental undergraduate education. *Eur J Dent Educ.* 21: 28-35. doi: 10.1111/eje.12312. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/eje.12312>
- Field, J. C, Cowpe, J. G, and Walmsley, A. D. 2017, The Graduating European Dentist: A New Undergraduate Curriculum Framework, *Eur J Dent Educ.* 21: 2–10. doi: 10.1111/eje.12307. Available from: <http://doi.wiley.com/10.1111/eje.12307>.
- Field, J, Stone, S, Orsini, C, Hussain, A, Vital, S, Crothers, A, and Walmsley, D 2018, Curriculum content and assessment of pre-clinical dental skills: A survey of undergraduate dental education in Europe', *Eur J Dent Educ.* 22(2): 122–127. doi: 10.1111/eje.12276. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28636116>.
- Fincham, A. G. and Shuler, C. F. 2001, The changing face of dental education: the impact of PBL. *J. Dent. Educ.*, 65(5): 406–21. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/11425245>.
- Finkeissen, E, 2002. *Dental Decision Making, A Foundation for Knowledge-Based,*

- Finkeissen, E (ed). Die Deutsche Bibliothek – CIP-Einzelaufnahme Based, Lindberg, Heidelberg.
- Finnerty, E. P, Chauvin, S, Bonaminio, G, Andrews, M, Carroll, R. G. and Pangaro, L. N. 2010. Flexner revisited: the role and value of the basic sciences in medical education. *Acad. Med.* 85(2): 349-355.doi: 10.1097/ACM.0b013e3181c88b09. Available from: <http://journals.lww.com/00001888-201002000-00039>.
- Fish, D and Higgs, J. 2008, The context for clinical decision making in the 21st century', in Higgs, J, Jones, M. A, Loftus, S and Christensen, N. (eds), *Clinical reasoning in the health professions*, Elsevier (Butterworth Heinemann). pp.19–30.
- Fleming, M. H. 1991. The therapist with the three-track mind. *Am. J. Occup. Ther.* 45(11): 1007–1014. doi: 10.5014/ajot.45.11.1007. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/1793114>
- Fleming, M. H. and Mattingly, C. 2008. Action and narrative: Two dynamics of clinical reasoning. In: Higgs, J, Jones, M. A, Loftus S. and Christensen, N (eds). *Clinical reasoning in the health professions*. Butterworth-Springer, pp. 55-64.
- Florance, V. 1992. Medical knowledge for clinical problem solving: a structural analysis of clinical questions. *J Med Libr Assoc*, 80(2): 140–9. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/1600423>.
- Flynn, J. L. 1992. Cooperative Learning and Gagné's Events of Instruction: A Syncretic View, *Educ. Technol. Res. Dev*, 32(10): 53–60. Available from: <http://www.jstor.com/stable/44427642>
- Fontana, M., González-Cabezas, C., de Peralta, T. and Johnsen, D. C., 2017. Dental education required for the changing health care environment. *J. Dent. Educ*, 81(8): eS153-eS161. doi: 10.21815/JDE.017.022. Available from: <http://www.jdentaed.org/content/81/8/eS153.full>.
- Fonteyn, M. E. and Ritter, B. J. 2008. Clinical reasoning in nursing. In: Higgs, J, Jones, M. A, Loftus S. and Christensen, N. (eds). *Clinical Reasoning in the Health Professions*. Philadelphia: Butterworth-Heinemann, pp. 235–243.
- Formicola, A. J, Myers, R, Hasler, J. F, Peterson, M, Dodge, W, Bailit, H. L, Beazoglou, T. and Tedesco, L. A. 2006. Evolution of dental school clinics as patient care delivery centers. *J. Dent. Educ*, 70(12): 1271-1288. doi: 10.1002/j.0022-0337.2008.72.2_suppl.tb04488.x. Available from: https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2008.72.2_suppl.tb04488.x.
- Formicola, A. J. 2008. Dental School Clinics as Patient Care Delivery Centers: A Paradigm Shift in Dental Education. *J. Dent. Educ*, 72(3): 18–20. doi: 10.1002/j.0022-0337.2008.72.2_suppl.tb04473.x. Available from: http://doi.wiley.com/10.1002/j.0022-0337.2008.72.2_suppl.tb04473.x.

- Forshaw, R. J. 2009a. Dental health and disease in ancient Egypt. *Br. Dent. J.* 206(8): 421–424. doi: 10.1038/sj.bdj.2009.309. Available from: <http://www.nature.com/articles/sj.bdj.2009.309>.
- Forshaw, R. J. 2009b. The practice of dentistry in ancient Egypt. *Br. Dent. J.* 206(9): 481–486. doi: 10.1038/sj.bdj.2009.355. Available from: <http://dx.doi.org/10.1038/sj.bdj.2009.355>.
- Forshaw, R. J. 2013. Hesyre: The first recorded physician and dental surgeon in history. *Bull. John Rylands Libr.* 89(Suppl.): 181–202. doi: 10.7227/bjrl.89.s.10. Available from: <http://www.manchesterhive.com/view/journals/bjrl/89/10001/article-p181.xml>.
- Frenk, J, Chen, L, Bhutta, Z. A, Cohen, J, Crisp, N, Evans, T, Fineberg, H, Garcia, P, Ke, Y, Kelley, P, Kistnasamy, B, Meleis, A, Naylor, D, Pablos-Mendez, A, Reddy, S, Scrimshaw, S, Sepulveda, J, Serwadda, D, and Zurayk, H. 2010. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *The lancet*, 376(9756): 1923–1958. doi: 10.1016/S0140-6736(10)61854-5. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0140673610618545>.
- Fried, J. L. 2017, The Allied Dental Professions: Executive Summary, *J. Dent. Educ.* 81(9): 1130–1136. doi: 10.21815/JDE.017.069. Available from: <http://doi.wiley.com/10.21815/JDE.017.069>.
- Friedlander, L. T, Meldrum, A. M. and Lyons, K. 2019. Curriculum development in final year dentistry to enhance competency and professionalism for contemporary general dental practice, *Eur J Dent Educ*, 23(4): 498–506. doi: 10.1111/eje.12458. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1111/eje.12458>.
- Friesen, L. R, Walker, M. P, Kisling, R. E, Liu, Y. and Williams, K. B. 2014. Knowledge of risk factors and the periodontal disease-systemic link in dental students' clinical decisions. *J. Dent. Educ*, 78(9): 1244–1251. doi: 10.1002/j.0022-0337.2014.78.9.tb05795.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2014.78.9.tb05795.x>.
- Fu, Y, Ling, J, Jiang, B. and Yin, H. 2006. Perspectives on dental education in mainland China. *Int. Dent. J.* 56(5): 265–271. doi: 10.1111/j.1875-595x.2006.tb00099.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/17069068>.
- Fulton, J. F. 1953. History of medical education, *Br. Med. J.* 2(4834): 457–461. doi: 10.1136/bmj.2.4834.457. Available from: <https://www.bmj.com/lookup/doi/10.1136/bmj.2.4834.457>.
- Gaba, A. 2019. Teaching Clinical Judgment: A Review with Consideration of Applications for Health Professions, *Open Nutr J*, 9(1): 53–64. doi: 10.2174/1876396001509010053. Available from:

<https://opennutritionjournal.com/VOLUME/9/PAGE/53/>.

- Gagne, R. M. 1984. Learning outcomes and their effects, *Am. Psychol.* 39(4): 377–385. doi: 10.1037/0003-066X.39.4.377. Available from: <http://content.apa.org/journals/amp/39/4/377>.
- Geissberger, M. J, Jain, P, Kluemper, G. T, Paquette, D. W, Roeder, L. B, Scarfe, W. C. and Potter, B. J. 2008. Realigning biomedical science instruction in predoctoral curricula: a proposal for change. *J. Dent. Educ*, 72(2): 135-141. doi: 10.1002/j.0022-0337.2008.72.2.tb04461.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2008.72.2.tb04461.x>.
- Geng, Y, Zhao, L, Wang, Y, Jiang, Y, Meng, K. and Zheng, D. 2018. Competency model for dentists in China: results of a Delphi study. *PloS One*, 13(3): e0194411. doi: 10.1371/journal.pone.0194411. Available from: <https://dx.plos.org/10.1371/journal.pone.0194411>.
- Ghasemi, A. and Zahediasl, S. 2012. Normality tests for statistical analysis: A guide for non-statisticians, *Int J Endocrinol Metab.* 10(2): 486–489. doi: 10.5812/ijem.3505. Available from: <https://sites.kowsarpub.com/ijem/articles/71904.html>.
- Ghoneim, A, Yu, B, Lawrence, H, Glogauer, M, Shankardass, K. and Quiñonez, C. 2020. What influences the clinical decision-making of dentists? A cross-sectional study. *PloS One*, 15(6): e0233652. doi: 10.1371/journal.pone.0233652. Available from: <https://dx.plos.org/10.1371/journal.pone.0233652>.
- Giddon, D. B, Swann, B, Donoff, R. B. and Hertzman-Miller, R. 2013. Dentists as oral physicians: the overlooked primary health care resource. *J Prim Prev.*, 34(4): 279-291. doi: 10.1007/s10935-013-0310-7. Available from: <http://link.springer.com/10.1007/s10935-013-0310-7>.
- Giddon, D. B, Donoff, R. B, Edwards, P. C. and Goldblatt, L. I. 2017. Should dental schools train dentists to routinely provide limited preventive primary medical care? Two viewpoints. *J. Dent. Educ*, 81(5): 561-570. doi: 10.21815/JDE.016.023. Available from: <http://www.jdentaled.org/content/81/5/561.full>.
- Glick, M. and Greenberg, B. L. 2017. The role of oral health care professionals in providing medical services. *J. Dent. Educ*, 81(8): eS180-eS185. doi: 10.21815/jde.017.025. Available from: <http://doi.wiley.com/10.21815/JDE.017.025>.
- Glick, M. and Carrasco-Labra, A. 2019. Raison d'être for clinical reasoning, *J. Am. Dent. Assoc.* 150(12): 987–990. doi:10.1016/j.adaj.2019.10.009 Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0002817719307366>.
- Goldie, J. G. S. 2016. Connectivism: A knowledge learning theory for the digital age? *Med.Teach*, 38(10): 1064–1069. doi:10.3109/0142159X.2016.1173661. Available from:

<https://www.tandfonline.com/doi/full/10.3109/0142159X.2016.1173661>.

- Goldszmidt, M, Minda, J. P. and Bordage, G. 2013. Developing a unified list of physicians' reasoning tasks during clinical encounters, *Acad. Med.* 88(3): 390–397. doi: 10.1097/ACM.0b013e31827fc58d. Available from: <http://journals.lww.com/00001888-201303000-00030>.
- Gonzalez-Cabezas, C, Anderson, O. S, Wright, M. C. and Fontana, M. 2015. Association between dental student-developed exam questions and learning at higher cognitive levels. *J. Dent. Educ.* 79(11): 1295-1304. doi:10.1002/j.0022-0337.2015.79.11.tb06025.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2015.79.11.tb06025.x>.
- Gonzalez, L. 2018. Teaching Clinical Reasoning Piece by Piece: A Clinical Reasoning Concept-Based Learning Method, *J. Nurs. Educ.* 57(12): 727–735. doi: 10.3928/01484834-20181119-05. Available from: <http://journals.healio.com/doi/10.3928/01484834-20181119-05>.
- Gopalan, M., Rosinger, K. and Ahn, J. Bin. 2020. Use of Quasi-Experimental Research Designs in Education Research: Growth, Promise, and Challenges, *Rev. Educ. Res.*, 44(1): 218–243. Available from: <http://journals.sagepub.com/doi/10.3102/0091732X20903302> doi: 10.3102/0091732X20903302.
- Gopinath, V and Nallaswamy, D. 2017, A Systematic Review on the Most Effective Method Teaching Dentistry to Dental Students Compared to Video Based Learning, *Am. J. Educ. Res.*, 5(1): 63–68. doi:10.12691/education-5-1-10. Available from: <http://pubs.sciepub.com/education/5/1/10>.
- Gordan, V. V, Bader, J. D, Garvan, C. W, Richman, J. S, Qvist, V, Fellows, J. L, Rindal, D. B, Gilbert, G. H. 2010. Restorative treatment thresholds for occlusal primary caries among dentists in 'the dental practice-based research network. *J Am Dent Assoc*, 141(2): 171-184. doi:10.14219/jada.archive.2010.0136. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20123876>
- Gotsch, A. R, Keck, C. W. and Spencher, H. C. 2012. Knowledge, Skills and Attitudes (KSAS) for the Public Health Preparedness and Response Core Competency Model, CDC, Office of Public Health Preparedness Response. Association of Schools of Public Health. Available from: <https://emeraldcoasthcc.org/sites/emeraldcoasthcc.site/files/ksa-public-health.pdf>
- Gowda, D. and Lamster, I. B. 2011. The diagnostic process. *Dent. Clin. N. Am.* 55(1): 1-14. doi: 10.1016/j.cden.2010.08.002. Available from: <http://dx.doi.org/10.1016/j.cden.2010.08.002>.
- Grace, S, Orrock, P, Vaughan, B, Blaich, R. and Coutts, R. 2016. Understanding clinical reasoning in osteopathy: a qualitative research approach. *Chiropr. Man. Ther.*, 24(1): 1-10. doi: 10.1186/s12998-016-0087-x. Available from:

<http://dx.doi.org/10.1186/s12998-016-0087-x>.

- Greenhalgh, T, Thorne, S, and Malterud, K. 2018, Time to challenge the spurious hierarchy of systematic over narrative reviews?, *Eur. J. Clin. Invest.* 48(6): e12931. doi: 10.1111/eci.12931. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/eci.12931>.
- Greeno, J. G, Collins, A. M. and Resnick, L. B. 2013. Cognition and learning, In *Handbook of Educational Psychology*, Routledge. pp. 15–46. doi: 10.4324/9780203053874-8. Available from: <https://www.taylorfrancis.com/books/9781136500244/chapters/10.4324/9780203053874-8>.
- Grembowski, D, Milgrom, P. and Fiset, L. 1988. Factors influencing dental decision making. *J Public Health Dent*, 48(3): 159-167. doi: 10.1111/j.1752-7325.1988.tb03186. x. Available from: <http://doi.wiley.com/10.1111/j.1752-7325.1988.tb03186.x>.
- Griffits, S, Hines, S, Moloney, C. and Ralph, N. 2017. Characteristics and processes of clinical reasoning in nurses and factors related to its use: a scoping review protocol. *JBIS Database Syst. Rev. Implement. Rep.* 15(12): 2832-2836. doi: 10.11124/JBISRIR-2016-003273. Available from: <http://journals.lww.com/01938924-201712000-00002>.
- Groen, G. J. and Patel, V. L. 1985. Medical problem-solving: some questionable assumptions. *Med Educ*, 19(2): 95-100. doi: 10.1111/j.1365-2923.1985.tb01148. x. Available from: <http://doi.wiley.com/10.1111/j.1365-2923.1985.tb01148.x>.
- Gross, D. and Schäfer, G. 2011. Feminization in German dentistry. Career paths and opportunities - A gender comparison, *Women's Stud. Int. Forum.* 34(2): 130–139. doi: 10.1016/j.wsif.2010.12.003. Available from: <http://dx.doi.org/10.1016/j.wsif.2010.12.003>.
- Groves, M, Scott, I. and Alexander, H. 2002. Assessing clinical reasoning: A method to monitor its development in a PBL curriculum', *Med.Teach*, 24(5): 507–515. doi: 10.1080/01421590220145743. Available from: <http://www.tandfonline.com/doi/full/10.1080/01421590220145743>.
- Groves, M, O'Rourke, P. and Alexander, H., 2003. The clinical reasoning characteristics of diagnostic experts. *Med Teach.*, 25(3): 308-313. doi: 10.1080/0142159031000100427. Available from: <http://www.tandfonline.com/doi/full/10.1080/0142159031000100427>.
- Gruppen, L. D. and Frohna, A. Z. 2002. Clinical Reasoning, in Leithwood, K. Chapman, J, Corson, D, Hallinger, P and Hart A (eds), *International Handbook of Research*. Dordrecht: Kluwer International Handbooks of Education, Dordrecht. p. 205-230. doi: 10.1007/978-94-010-0462-6. Available from: <http://link.springer.com/10.1007/978-94-010-0462-6>
- Gruppen, L.D. 2017. Clinical Reasoning: Defining It, Teaching It, Assessing It, Studying It. *West J Emerg Med.* 18(1): 4–7. doi:

- 10.5811/westjem.2016.11.33191. Available from:
<http://escholarship.org/uc/item/8249101m>.
- Guzmán-Armstrong, S. and Johnsen, D. C. 2019. Caries Management Decision-Making: Diagnosis and Synthesis, *Dent. Clin. North Am.* 63(4): 679–693. doi: 10.1016/j.cden.2019.06.007. Available from:
<https://doi.org/10.1016/j.cden.2019.06.007>.
- Haddaway, N. R, Collins, A. M, Coughlin, D, and Kirk, S. 2015. The Role of Google Scholar in Evidence Reviews and Its Applicability to Grey Literature Searching, *PLOS One*, 10(9): e0138237. doi: 10.1371/journal.pone.0138237 Available from: <https://dx.plos.org/10.1371/journal.pone.0138237>.
- Haden, N. K, Andrieu, S. C, Chadwick, D. G, Chmar, J. E, Cole, J. R, George, M. C, Glickman, G. N, Glover, J. F, Goldberg, J. S, Hendricson, W. D, Meyerowitz, C, Neumann, L, Pyle, M, Tedesco, L. A, Valachovic, R. W, Weaver, R. G, Winder, R. L, Young, S. K, and Kalkwarf, K. L. 2006. The dental education environment. *J. Dent. Educ*, 70(12): 1265-1270. doi: 10.1002/j.0022-0337.2006.70.12.tb04228. Available from:
<http://doi.wiley.com/10.1002/j.0022-0337.2006.70.12.tb04228.x>.
- Haden, N. K, Hendricson, W. D, Kassebaum, D. K, Ranney, R. R, Weinstein, G, Anderson, E. L. and Valachovic, R. W. 2010. Curriculum change in dental education, 2003–09. *J. Dent. Educ*, 74(5): 539-557. doi: 10.1002/j.0022-0337.2010.74.5.tb04901. Available from:
<https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2010.74.5.tb04901.x>.
- Haladyna, T. M. 2012. Developing and validating multiple-choice test items, third edition, *Developing and Validating Multiple-Choice Test Items*, 3rd ed. doi: 10.4324/9780203825945. Available from:
<https://www.taylorfrancis.com/books/9781136790669>.
- Haladyna, T. M, Rodriguez, M. C. and Stevens, C. 2019. Are Multiple-choice Items Too Fat? *Appl. Meas. Educ.* 32(4): 350–364. doi: 10.1080/08957347.2019.1660348. Available from:
<https://doi.org/10.1080/08957347.2019.1660348>.
- Hanlon, J. P, Prihoda, T. J, Verrett, R. G, Jones, J. D, Haney, S. J. and Hendricson, W. D. 2018. Critical thinking in dental students and experienced practitioners assessed by the health sciences reasoning test. *J. Dent. Educ*, 82(9): 916-920. doi: 10.21815/jde.018.089. Available from:
<http://doi.wiley.com/10.21815/JDE.018.089>.
- Harasym, P. H, Tsai, T. C. and Hemmati, P. 2008. Current trends in developing medical students' critical thinking abilities. *Kaohsiung J Med Sci.* 24(7): 341-355. doi: 10.1016/S1607-551X(08)70131-1. Available from:
[http://doi.wiley.com/10.1016/S1607-551X\(08\)70131-1](http://doi.wiley.com/10.1016/S1607-551X(08)70131-1).
- Hawk, T. F. and Shah, A. J. 2007. Using Learning Style Instruments to Enhance Student Learning, *Decis. Sci. J. Innov. Educ.* 5(1): 1–19. doi: 10.1111/j.1540-

4609.2007.00125.x. Available from: <http://doi.wiley.com/10.1111/j.1540-4609.2007.00125.x>.

Head, E. 2009. The ethics and implications of paying participants in qualitative research, *Int. J. Soc. Res*, 12(4): 335–344. doi: 10.1080/13645570802246724. Available from: <http://www.tandfonline.com/doi/abs/10.1080/13645570802246724>.

Heiberg-Engel, P. J. 2008. Tacit knowledge and visual expertise in medical diagnostic reasoning: Implications for medical education, *Med. Teach*, 30(7): e184–e188. doi: 10.1080/01421590802144260. Available from: <http://www.tandfonline.com/doi/full/10.1080/01421590802144260>

Hendricson, W. D. and Cohen, P. A. 1999. Future Directions in Dental School Curriculum, Teaching, and Learning, in *Leadership for the future: the dental school in the university*. Washington, DC: American Association of Dental Schools, pp. 90–95. Available from: https://www.researchgate.net/profile/William-Hendricson/publication/228555367_Future_Directions_in_Dental_School_Curriculum_Teaching_and_Learning/links/0c960528d2b841c2c1000000/Future-Directions-in-Dental-School-Curriculum-Teaching-and-Learning.pdf

Hendricson, W. D. and Cohen, P. A. 2001. Oral health care in the 21st century: implications for dental and medical education. *Acad. Med.*, 76(12): 1181–1206. doi: 10.1097/00001888-200112000-00009. Available from: <http://journals.lww.com/00001888-200112000-00009>.

Hendricson, W. D, Andrieu, S. C, Chadwick, D. G, Chmar, J. E, Cole, J. R, George, M. C, Glickman, G. N, Glover, J. F, Goldberg, J. S, Haden, N. K. and Meyerowitz, C. 2006. Educational strategies associated with development of problem-solving, critical thinking, and self-directed learning. *J. Dent. Educ*, 70(9): 925–936. doi: 10.1002/j.0022-0337.2006.70.9.tb04163.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/16954414>.

Henzi, D, Davis, E, Jasinevicius, R. and Hendricson, W. 2007. In the students' own words: what are the strengths and weaknesses of the dental school curriculum? *J. Dent. Educ*, 71(5): 632–645. doi: 10.1002/j.0022-0337.2007.71.5.tb04320.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2007.71.5.tb04320.x>

Hertzog, M. A. 2008. Considerations in determining sample size for pilot studies. *Res Nurs Health*, 31(2): 180–191. doi: 10.1002/nur.20247. Available from: <http://doi.wiley.com/10.1002/nur.20247>.

Hicks, E. P. and Kluemper, G. T. 2011. Heuristic reasoning and cognitive biases: Are they hindrances to judgments and decision making in orthodontics? *Am. J. Orthod. Dentofac. Orthop*. 139(3): 297–304. doi: 10.1016/j.ajodo.2010.05.018. Available from: <http://dx.doi.org/10.1016/j.ajodo.2010.05.018>.

- Higgs, J. and Jones, M. A. 2008a. Clinical decision making and multiple problem spaces. In: Higgs, J, Jones, M. A, Loftus, S and Christensen, N. (eds). *Clinical reasoning in the health professions*, 3rd ed. Elsevier (Butterworth Heinemann), pp. 3–18.
- Higgs, J. and Jones, M. A. 2008b. Collaborative decision making, in Higgs, J, Jones, M. A, Loftus, S and Christensen, N. (eds.) *Clinical Reasoning in the Health Professions*. 3rd ed. Elsevier (Butterworth Heinemann), p. 519.
- Hobbins, S, Chapple, I. L, Sapey, E. and Stockley, R. A. 2017. Is periodontitis a comorbidity of COPD or can associations be explained by shared risk factors/behaviors? *Int J Chron Obstruct Pulmon Dis*, 12:1339–1349. doi: 10.2147/COPD.S127802. Available from: <https://www.dovepress.com/is-periodontitis-a-comorbidity-of-copd-or-can-associations-be-explaine-peer-reviewed-article-COPD>.
- Hobdell, M, Clarkson, J, Petersen, P. E. and Johnson, N. 2003. Global goals for oral health 2020. *Int. Dent. J.* 53(5): 285-288. doi: 10.1111/j.1875-595X.2003.tb00761. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/14560802>.
- Holyoak, J. 1995. Problem Solving, in Smith, E. E. and Osherson, D. N. (eds) *An Invitation to Cognitive Science*. 2nd ed. The MIT Press, pp. 267-. doi: 10.7551/mitpress/3966.001.0001. Available from: <https://direct.mit.edu/books/book/3959/an-invitation-to-cognitive-sciencethinking>.
- Holyoak, K. J. and Morrison, R. G. 2012. Thinking and Reasoning: A Reader's Guide, in Holyoak, K. J. and Morrison, R. G. (eds), *The Oxford Handbook of Thinking and Reasoning*. 1st ed. Oxford: Oxford University Press (OUP), pp. 1–10. Available from: <http://oxfordhandbooks.com/view/10.1093/oxfordhb/9780199734689.001.001/oxfordhb-9780199734689-e-1>.
- Hoskin, E. R, Johnsen, D. C, Saksena, Y, Horvath, Z, de Peralta, T, Fleisher, N, Marshall, T. A. and Leone, C. 2019. Dental educators' perceptions of educational learning domains. *J. Dent. Educ*, 83(1): 79-87. doi: 10.21815/JDE.019.010. Available from: <http://doi.wiley.com/10.21815/JDE.019.010>.
- Hox, J. J. and Boeije, H. R. 2005. Data Collection, Primary vs. Secondary, in *Encyclopedia of Social Measurement*. Elsevier, pp. 593–599. doi: 10.1016/B0-12-369398-5/00041-4. Available from: <https://linkinghub.elsevier.com/retrieve/pii/B0123693985000414>.
- Hsu, T. C, Tsai, S. S. L, Chang, J. Z. C, Yu, S. H, Lai, E. H. H. and Lin, C. P. 2015. Core clinical competencies for dental graduates in Taiwan: Considering local and cultural issues. *J. Dent. Sci.*, 10(2): 161-166. doi: 10.1016/j.jds.2014.05.005. Available from: <http://dx.doi.org/10.1016/j.jds.2014.05.005>.

- Huang, C, Bian, Z, Tai, B, Fan, M. and Chiu-Yin, K. 2007. Dental education in Wuhan, China: challenges and changes. *J. Dent. Educ*, 71(2): 304-311. doi: 10.1002/j.0022-0337.2007.71.2. tb04279.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/17314393>.
- Huitt, W. 1998. Critical thinking: An overview. *Educ. Psychol.* [interactive], 3(6): 34–50. Available from: <http://www.edpsycinteractive.org/topics/cogsys/critthnk.html>.
- Huitt, W. 2003. The Information Processing Approach to Cognition, *Educ. Psychol.* [interactive], Valdosta, GA: Valdosta State University. Available from: <http://www.edpsycinteractive.org/topics/cognition/infoproc.html>.
- Hughes, M and Nimmo, G. 2017, Models of Clinical Reasoning, in Cooper, N and Frain, J (eds), *ABC Clinical Reasoning*, Wiley-Blackwell BMJ Books, Hoboken, US. pp.17–21.
- Hunt, T, Jones, T. A. and Carney, P. A. 2020. Peer-Assisted Learning in Dental Students' Patient. Case Evaluations: An Assessment of Reciprocal Learning, *J. Dent. Educ*, 84(3): 343–349. doi: 10.21815/jde.019.182. Available from: <http://doi.wiley.com/10.21815/JDE.019.182>
- Hussain, A. and Khan, F. A. 2014. History of dentistry, *Arch Med Health Sci*, 2(1): 106–110. doi: 10.4103/2321-4848.133850. Available from: <http://www.amhsjournal.org/text.asp?2014/2/1/106/133850>.
- Ihm, J, Shin, Y. and Seo, D-G. 2020. Did Clinical Reasoning and Knowledge Questions During Team-Based Learning Enhance Dental Students' Performance in Esthetic Dentistry? *J. Dent. Educ*, 84(4): 495–501. doi: 10.21815/jde.019.191. Available from: <http://doi.wiley.com/10.21815/JDE.019.191>.
- Ilgen, J. S, Humbert, A. J, Kuhn, G, Hansen, M. L, Norman, G. R, Eva, K. W, Charlin, B. and Sherbino, J. 2012. Assessing diagnostic reasoning: a consensus statement summarizing theory, practice, and future needs. *Acad Emerg Med*, 19(12): 1454-1461. doi: 10.1111/acem.12034. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23279251>
- Ilgen, J. S, Eva, K. W. and Regehr, G. 2016. What's in a Label? Is Diagnosis the Start or the End of Clinical Reasoning? *J. Gen. Intern. Med.* 31(4): 435–437. doi: 10.1007/s11606-016-3592-7. Available from: <http://link.springer.com/10.1007/s11606-016-3592-7>.
- İlgüy, M, İlgüy, D, Fişekçioğlu, E. and Oktay, I. 2014. Comparison of case-based and lecture-based learning in dental education using the SOLO Taxonomy. *J. Dent. Educ*, 78(11): 1521-1527. doi: 10.1002/j.0022-0337.2014.78.11.tb05827.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2014.78.11.tb05827.x>.
- Impellizzeri, F. M and Bizzini, M. 2012. Systematic review and meta-analysis: a primer. *Int. J. Sports Phys. Ther.* 7(5): 493–503. PMID: [23091781](https://pubmed.ncbi.nlm.nih.gov/23091781/) Available

from: <http://www.ncbi.nlm.nih.gov/pubmed/23091781>.

- Irby, D. M, Cooke, M. and O'Brien, B. C, 2010. Calls for reform of medical education by the Carnegie Foundation for the Advancement of Teaching: 1910 and 2010. *Acad. Med.*, 85(2): 220-227. doi: 10.1097/ACM.0b013e3181c88449. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20107346>.
- Ismail, A.I. and Bader, J.D. 2004. Evidence-based dentistry in clinical practice. *J Am Dent Assoc*, 135(1): 78–83. doi: 10.14219/jada.archive.2004.0024. available from: <https://linkinghub.elsevier.com/retrieve/pii/S000281771465354X>.
- Ivanoff, C. S. and Hottel, T. L. 2013. A Four-Tier Problem-Solving Scaffold to Teach Pain Management in Dental School, *J. Dent. Educ*, 77(6): 723–731. doi: 10.1002/j.0022-0337.2013.77.6.tb05524.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2013.77.6.tb05524.x>
- Jäkel, F. and Schreiber, C. 2013. Introspection in Problem Solving, *J. Probl. Solving*. 6(1): 20–34. doi: 10.7771/1932-6246.1131. Available from: <https://docs.lib.purdue.edu/jps/vol6/iss1/4>.
- Javed, F. and Warnakulasuriya, S. 2016. Is there a relationship between periodontal disease and oral cancer? A systematic review of currently available evidence, *Crit. Rev. Oncol. Hematol.* Elsevier Ireland Ltd, 97, pp. 197–205. doi: 10.1016/j.critrevonc.2015.08.018. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1040842815300330>.
- Jayaratne, Y. S. N and Zwahlen, R. A. 2015. The evolution of dental journals from 2003 to 2012: a bibliometric analysis., *PloS one*, 10(3): e0119503. doi: 10.1371/journal.pone.0119503. Available from: <https://dx.plos.org/10.1371/journal.pone.0119503>.
- Jenicek, M. M. 2012. *A Primer on Clinical Experience in Medicine*. doi: 10.1201/b12730. Available from: <https://www.taylorfrancis.com/books/9781466515598>
- Jensen, G, Resnik, L. and Haddad, A. 2008. Expertise and clinical reasoning. In: Higgs, J. Jones, M. A. Loftus, S. and Christensen, N. (eds). *Clinical reasoning in the health professions*. 3rd ed. Elsevier (Butterworth Heinemann), pp. 123–136.
- Jin, L. J, Lamster, I. B, Greenspan, J. S, Pitts, N. B, Scully, C. and Warnakulasuriya, S. 2016. Global burden of oral diseases: emerging concepts, management and interplay with systemic health. *Oral Dis*. 22(7): 609-619. doi: 10.1111/odi.12428. Available from: <http://doi.wiley.com/10.1111/odi.12428>.
- Johnsen, D. C, Finkelstein, M. W, Marshall, T. A. and Chalkley, Y. M. 2009. A model for critical thinking measurement of dental student performance. *J. Dent. Educ*, 73(2): 177-183. doi: 10.1002/j.0022-0337.2009.73.2.tb04652.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2009.73.2.tb04652.x>.

- Johnsen, D. C, Marshall, T. A, Finkelstein, M. W, Cunningham-Ford, M. A, Straub-Morarend, C. L, Holmes, D. C, Armstrong, S. R, Aquilino, S. A, Sharp, H. M, Solow, C. M. and McQuistan, M. R. 2011. A model for overview of student learning: a matrix of educational outcomes versus methodologies. *J. Dent. Educ*, 75(2): 160-168. doi: 10.1002/j.0022-0337.2011.75.2.tb05033.x Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2011.75.2.tb05033.x>.
- Johnsen, D. C, Lipp, M. J, Finkelstein, M. W. and Cunningham-Ford, M. A. 2012. Guiding dental student learning and assessing performance in critical thinking with analysis of emerging strategies. *J. Dent. Educ*, 76(12): 1548-1558. doi: 10.1002/j.0022-0337.2012.76.12.tb05418.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2012.76.12.tb05418.x>.
- Johnsen, D. C, Williams, J. N, Baughman, P. G, Roesch, D. M. and Feldman, C. A. 2015. New dental accreditation standard on critical thinking: a call for learning models, outcomes, assessments. *J. Dent. Educ*, 79(10): 1137-1139. doi: 10.1002/j.0022-0337.2015.79.10.tb06007.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26427773>.
- Johnsen, D.C. and Glick, M. 2016. The future is not ours to see, but there is always critical thinking, *J. Am. Dent. Assoc*. 147(9): 693–695. doi: 10.1016/j.adaj.2016.06.015 Available from: <http://dx.doi.org/10.1016/j.adaj.2016.06.015>.
- Johnsen, D. C, Flick, K, Butali, A, Cunningham-Ford, M. A, Holloway, J. A, Mahrous, A, Marchini, L. and Clancy, J. M. 2020. Two critical thinking models—probing questions and conceptualization—adding 4 skillsets to the teacher's armamentarium. *J. Dent. Educ*, 84(7): 733-741. doi: 10.1002/jdd.12177. Available from: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/jdd.12177>.
- Jonassen, D. H. 1997. Instructional design models for well-structured and III-structured problem-solving learning outcomes, *Educ. Technol. Res. Dev*. 45(1): 65–94. doi: 10.1007/BF02299613. Available from: <http://link.springer.com/10.1007/BF02299613>.
- Jonassen, D. H. and Henning, P. 1999. Mental Models: Knowledge in the Head and Knowledge in the World, *Educ. Technol*. 39(3): 433–438. Available from: <https://www.jstor.org/stable/44428530>.
- Jonassen, D. H. 2000. Toward a design theory of problem solving, *Educ. Technol. Res. Dev*. 48(4): 63–85. doi: 10.1007/BF02300500. Available from: <http://link.springer.com/10.1007/BF02300500>.
- Jonassen, D. 2003. Using Cognitive Tools to Represent Problems, *J. Res. Technol. Educ*, 35(3): 362–381. doi: 10.1080/15391523.2003.10782391. Available from: <http://www.tandfonline.com/doi/abs/10.1080/15391523.2003.10782391>.
- Jonassen, D. H. 2010, Learning to Solve Problems, In. Jonassen, DH (ed). *A Handbook for Designing Problem-Solving Learning Environments*. Routledge, New

- York. Available from:
<https://www.taylorfrancis.com/books/9781136941894>.
- Jones, M. 1995. Clinical reasoning and pain, *Man. Ther.* 1(1): 17–24. doi: 10.1054/math.1995.0245. Available from:
<https://linkinghub.elsevier.com/retrieve/pii/S1356689X85702457>.
- Jones, U. F. 1997. The reliability and validity of the Bordage, Grant and Marsden diagnostic thinking inventory for use with physiotherapists, *Med. Teach.* 19(2):133–140. doi: 10.3109/01421599709019366. Available from:
<http://www.tandfonline.com/doi/full/10.3109/01421599709019366>.
- de Jong, T. and Fergsuon-Hessler, M. G. M. 1996. Types and qualities of knowledge, *Educ. Psychol.* 31(2): 105–113. doi: 10.1207/s15326985ep3102_2. Available from:
<https://ris.utwente.nl/ws/files/6401593/types.pdf>.
- Joseph, B. K., Kullman, L. and Sharma, P. N. 2016. The oral-systemic disease connection: a retrospective study. *Clin. Oral Investig.* 20(8): 2267–2273. doi: 10.1007/s00784-016-1725-3. Available from:
<http://dx.doi.org/10.1007/s00784-016-1725-3>.
- Joseph, G-M. and Patel, V. L. 1990. Domain Knowledge and Hypothesis Generation in Diagnostic Reasoning, *Med. Decis. Making*, 10(1), pp. 31–44. doi: 10.1177/0272989X9001000107. Available from:
<http://journals.sagepub.com/doi/10.1177/0272989X9001000107>.
- Juma, S. and Goldszmidt, M. 2017. What physicians reason about during admission case review, *Adv. Health Sci. Educ.* 22(3): 691–711. doi: 10.1007/s10459-016-9701-x. Available from: <http://link.springer.com/10.1007/s10459-016-9701-x>.
- Junemann, M. A. P, Contreras, R. and Salcedo, L. P. 2010. Problem-based learning: A graph theory experience, in CSEDU 2010 - 2nd International Conference on Computer Supported Education, Proceedings, pp. 79–83. Available from:
https://www.researchgate.net/publication/221130736_Problem-based_Learning_-_A_Graph_Theory_Experience
- Kahlke, R. and White, J. 2013. Critical Thinking in Health Sciences Education: Considering “Three Waves”, *Creat.* 04(12): 21–29. doi: 10.4236/ce.2013.412a1004. Available from:
<http://www.scirp.org/journal/doi.aspx?DOI=10.4236/ce.2013.412A1004>.
- Kahlke, R. and Eva, K. 2018. Constructing critical thinking in health professional education, *Perspect. Med. Educ.* 7(3): 156–165. doi: 10.1007/s40037-018-0415-z. Available from: <http://link.springer.com/10.1007/s40037-018-0415-z>.
- Kane, S. F. 2017. The effects of oral health on systemic health. *Gen. Dent.*, 65(6): 30–34. PMID: 29099363 Available from:
<http://www.ncbi.nlm.nih.gov/pubmed/29099363>.
- Kassebaum, D. K, Hendricson, W. D, Taft, T. and Haden, N. K. 2004. The dental

curriculum at North American dental institutions in 2002–03: a survey of current structure, recent innovations, and planned changes. *J. Dent. Educ.*, 68(9): 914-31. doi: 10.1002/j.0022-0337.2004.68.9.tb03840.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2004.68.9.tb03840.x>.

Kassebaum, D. K. and Tedesco, L. A. 2017. The 21st-Century Dental Curriculum: A Framework for Understanding Current Models. *J. Dent. Educ.*, 81(8): eS13-eS21. doi: 10.21815/jde.017.002. Available from: <http://doi.wiley.com/10.21815/JDE.017.002>.

Kassebaum, N. J, Smith, A. G. C, Bernabé, E, Fleming, T. D, Reynolds, A. E, Vos, T, Murray, C. J. L, Marcenes, W. Abyu, G. Y, Alsharif, U, Asayesh, H, Benzian, H, Dandona, L, Dandona, R, Kasaeian, A, Khader, Y. S, Khang, Y. H, Kokubo, Y, Kotsakis, G. A, Lalloo, R, Misganaw, A, Montero, P, Nourzadeh, M, Pinho, C, Qorbani, M, Blancas, M. J. R, Sawhney, M, Steiner, C, Traebert, J, Tyrovolas, S, Ukwaja, K. N, Vollset, S. E, and Yonemoto, N. 2017. Global, regional, and national prevalence, incidence, and disability-adjusted life years for oral conditions for 195 countries, 1990–2015: a systematic analysis for the global burden of diseases, injuries, and risk factors. *J Dent Res.*, 96(4): 380-387. doi: 10.1177/0022034517693566. Available from: <http://journals.sagepub.com/doi/10.1177/0022034517693566>.

Kassirer, J. P. 1989. Diagnostic reasoning. *Ann Intern Med.* 110(11): 893-900. doi: 10.7326/0003-4819-110-11-893. Available from: <http://annals.org/article.aspx?doi=10.7326/0003-4819-110-11-893>.

Kassirer, J. P. 2010. Teaching clinical reasoning: case-based and coached. *Acad. Med.* 85(7): 1118-1124. doi: 10.1097/ACM.0b013e3181d5dd0d. Available from: <http://journals.lww.com/00001888-201007000-00011>.

Kaufman, D. R, Yoskowitz, N. A. and Patel, V. L. 2008. Clinical reasoning and biomedical knowledge: implications for teaching, in Higgs, J, Jones, M. A, Loftus, S, Christensen, N. (eds.) *Clinical Reasoning in the Health Professions*. 3rd ed. Elsevier (Butterworth Heinemann), pp. 137–150.

Kaufman, D. M. 2010. Applying Educational Theory in Practice. In: Cantillon, P and Wood, D. (eds). *Learning and Teaching in Medicine*. Oxford: BMJ Books - Wiley Blackwell, Singapore. pp. 1-5. Available from: <http://edc.tbzmed.ac.ir/uploads/39/CMS/user/file/56/scholarship/ABC-LTM.pdf>.

Kaufman, D. M. and Mann, K. V. 2014. Teaching and learning in medical education: How theory can inform practice. In: Swanwick, T (ed.) *Understanding Medical Education: Evidence, Theory and Practice*. John Wiley & Sons, Ltd, Chichester, UK. pp. 7–29. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/9781118472361.ch2>.

Kay, E. J. and Nuttall, N. 1995. Clinical decision making--an art or a science? Part II: Making sense of treatment decisions. *Br. Dent. J.* 178(3): 113-116. doi: 10.1038/sj.bdj.4808664. Available from:

<http://www.nature.com/articles/4808664>.

- Kay, E. J. and Blinkhorn, A. S. 1996. A qualitative investigation of factors governing dentists' treatment philosophies. *Br. Dent. J.* 180(5): 171–176. doi: 10.1038/sj.bdj.4809010. Available from: <http://www.nature.com/articles/4809010>.
- Kempainen, R. R, Migeon, M. B. and Wolf, F. M. 2003. Understanding our mistakes: a primer on errors in clinical reasoning. *Med Teach.* 25(2): 177-181. doi: 10.1080/0142159031000092580. Available from: <http://www.tandfonline.com/doi/full/10.1080/0142159031000092580>.
- Kennedy, M. M. 2007. Defining a Literature, *Educ. Res.* 36(3): 139–147. doi: 10.3102/0013189X07299197. Available from: <http://journals.sagepub.com/doi/10.3102/0013189X07299197>.
- Kezian, S. A. 2020. The History of the Dental Profession - From Ancient Origins to Modern Day, *Pacific Journal of Health.* 3(1): Article 2. Available from: <https://scholarlycommons.pacific.edu/pjh/vol3/iss1/2>.
- Kharlamova, N, Jiang, X, Sherina, N, Potempa, B, Israelsson, L, Quirke, A. M, Eriksson, K, Yucel-Lindberg, T, Venables, P. J, Potempa, J. and Alfredsson, L. 2016. Antibodies to Porphyromonas gingivalis indicate interaction between oral infection, smoking, and risk genes in rheumatoid arthritis etiology. *Arthritis Rheumatol*, 68(3): 604-613. doi: 10.1002/art.39491. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/art.39491>
- Khatami, S, MacEntee, M. I. and Loftus, S. 2008. Clinical reasoning in dentistry, in Higgs, J, Jones, M. A, Loftus, S. and Christensen, N. (eds.) *Clinical reasoning in the health professions*. 3rd ed. Elsevier (Butterworth Heinemann), pp. 257–264.
- Khatami, S. and MacEntee, M. I. 2011. Evolution of clinical reasoning in dental education. *J. Dent. Educ*, 75(3): 321-328. doi: 10.1002/j.0022-0337.2011.75.3.tb05045.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2011.75.3.tb05045.x>.
- Khatami, S, MacEntee, M. I, Pratt, D. D. and Collin, J. B. 2012. Clinical reasoning in dentistry: a conceptual framework for dental education. *J. Dent. Educ*, 76(9): 1116-1128. doi: 10.1002/j.0022-0337.2012.76.9.tb05366.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22942407>.
- Kicklighter, T, Barnum, M, Geisler, P. R. and Martin, M. 2016. Validation of the Quantitative Diagnostic Thinking Inventory for athletic training: a pilot study. *Athl. Train. Educ. J.* 11(1): 58-67. doi: 10.4085/110158. Available from: <https://meridian.allenpress.com/atej/article/11/1/58/60769/Validation-of-the-Quantitative-Diagnostic-Thinking>.
- Kiesewetter, J, Ebersbach, R, Görlitz, A, Holzer, M, Fischer, M. R. and Schmidmaier, R. 2013. Cognitive problem-solving patterns of medical students correlate with success in diagnostic case solutions. *PloS one*, 8(8): e71486. doi: 10.1371/journal.pone.0071486. Available from:

<https://dx.plos.org/10.1371/journal.pone.0071486>.

- Kiesewetter, J, Fischer, F. and Fischer, M. R. 2017. Collaborative clinical reasoning- a systematic review of empirical studies, *J Contin Educ Health Prof*, 37(2): 123–128. doi: 10.1097/CEH.0000000000000158. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28562501>
- Kinchin, I. M. and Cabot, L. B. 2009. An introduction to concept mapping in dental education: The case of partial denture design, *Eur J Dent Educ*, 13(1): 20–27. doi: 10.1111/j.1600-0579.2008.00532.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1600-0579.2008.00532.x>.
- Kinchin, I. M. and Cabot, L. B. 2010. Reconsidering the dimensions of expertise: From linear stages towards dual processing, *Lond. Rev. Educ.* 8(2): 153–166. doi: 10.1080/14748460.2010.487334. Available from: <https://scienceopen.com/document?vid=7155ea86-ebe9-4f03-9eb8-90305f80b728>.
- Kinchin, I.M, Streatfield, D, and Hay, D.B. 2010. Using Concept Mapping to Enhance the Research Interview', *Int J of Qual Meth*, 9(1): 52–68. doi: 10.1177/160940691000900106 Available from: <http://journals.sagepub.com/doi/10.1177/160940691000900106>.
- Kinchin, I. M. 2014. Concept Mapping as a Learning Tool in Higher Education: A Critical Analysis of Recent Reviews, *J. Contin. High. Educ.* 62(1): 39–49. doi: 10.1080/07377363.2014.872011. Available from: <http://www.tandfonline.com/doi/abs/10.1080/07377363.2014.872011>.
- Kirschner, P. A. 2002. Cognitive load theory: implications of cognitive load theory on the design of learning, *Learn Instr.* 12(1): 1–10. doi: 10.1016/S0959-4752(01)00014-7. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0959475201000147>.
- Kivunja, C. 2018. Distinguishing between theory, theoretical framework, and conceptual framework: A systematic review of lessons from the field, *Int. J. High. Educ.* 7(6): 44–53. doi: 10.5430/ijhe.v7n6p44. Available from: <http://www.sciedupress.com/journal/index.php/ijhe/article/view/14566>.
- Klomp, H. J, Eberhard, J, Hren, S, Hedderich, J. and Schmidt, H. G., 2009. The role of pathophysiological explanations in clinical case representations of dental students and experts. *Eur J Dent Educ*, 13(1): 58-65. doi: 10.1111/j.1600-0579.2008.00539.x Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1600-0579.2008.00539.x>.
- Kolb, A. Y. and Kolb, D. A. 2009. Experiential learning theory: A dynamic, holistic approach to management learning, education and development, In. *The SAGE Handbook of Management Learning, Education and Development*, SAGE Publications Ltd, London., pp. 42–68. doi: 10.4135/9780857021038.n3. Available from: http://sk.sagepub.com/reference/hdbk_mgmtlearning/n3.xml.
- Kolb, D. A, Boyatzis, R. E. and Mainemelis, C. 2014. Experiential Learning Theory:

Previous Research and New Directions, in *Perspectives on Thinking, Learning, and Cognitive Styles*. Routledge, pp. 227–248. doi: 10.4324/9781410605986-9. Available from: <https://www.taylorfrancis.com/books/9781135663629/chapters/10.4324/9781410605986-9>.

Konsil Kedokteran Indonesia. 2015, Standar Kompetensi Dokter Gigi Indonesia. Jakarta: Konsil Kedokteran Indonesia.

Konsil Kedokteran Indonesia. 2019. Standar Pendidikan Profesi Dokter Indonesia, Jakarta: Konsil Kedokteran Indonesia. Available from: http://www.kki.go.id/assets/data/arsip/Final_SPPDI_21_Maret_20131.pdf.

Koole, S, Christians, V, Cosyn, J. and De Bruyn, H. 2016. Facilitating dental student reflections: using mentor groups to discuss clinical experiences and personal development. *J. Dent. Educ.* 80(10): 1212-1218. doi: 10.1002/j.0022-0337.2016.80.10.tb06204.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2016.80.10.tb06204.x>.

Koufidis, C, Manninen, K, Nieminen, J, Wohlin, M. and Silén, C. 2021. Unravelling the polyphony in clinical reasoning research in medical education. *J Eval Clin Pract*, 27(2): 438-450. doi: 10.1111/jep.13432. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/jep.13432>.

Koufidis, C, Manninen, K, Nieminen, J, Wohlin, M. and Silén, C, 2020. Grounding judgement in context: A conceptual learning model of clinical reasoning. *Med. educ.*, 54(11): 1019-1028. doi: 10.1111/medu.14222. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/medu.14222>.

Krathwohl, D. R. 2002. A revision of Bloom's taxonomy: An overview. *Theory Pract.*, 41(4): 212-218. doi: 10.1207/s15430421tip4104_2. Available from: http://www.tandfonline.com/doi/abs/10.1207/s15430421tip4104_2.

Kress, G. C. 1980. Toward a definition of the appropriateness of dental treatment. *Public Health Rep.* 95(6): 564–71. PMID. 7001530 Available from: <http://www.ncbi.nlm.nih.gov/pubmed/7001530>.

Krupat, E, Sprague, J. M, Wolpaw, D, Haidet, P, Hatem, D. and O'Brien, B. 2011. Thinking critically about critical thinking: ability, disposition or both? *Med. educ.* 45(6): 625-635. doi: 10.1111/j.1365-2923.2010.03910.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.2010.03910.x>

Kulasegaram, K. M, Chaudhary, Z, Woods, N, Dore, K, Neville, A. and Norman, G. 2017. Contexts, concepts and cognition: principles for the transfer of basic science knowledge. *Med. Educ.*, 51(2): 184-195. doi: 10.1111/medu.13145. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/medu.13145>.

Lai, E. R. 2011. Critical Thinking: A Literature Review, *Pearson's Research Reports*, 6: 40–41. Available from: <http://images.pearsonassessments.com/images/tmrs/CriticalThinkingReview>

[FINAL.pdf.](#)

- Lamster, I. B. and Eaves, K. 2011. A model for dental practice in the 21st century. *Am J Public Health.*, 101(10): 1825-1830. doi: 10.2105/AJPH.2011.300234. Available from: <http://ajph.aphapublications.org/doi/10.2105/AJPH.2011.300234>.
- Lamster, I. B. and Myers-Wright, N. 2017. Oral Health Care in the Future: Expansion of the Scope of Dental Practice to Improve Health. *J. Dent. Educ.*, 81(9): eS83-eS90. doi: 10.21815/JDE.017.038. Available from: <http://doi.wiley.com/10.21815/JDE.017.038>.
- Laskin, D. M. 2001. Establishing the scope of dentistry, *Int. J. Oral Maxillofac. Surg.* 59(10): 1127. doi: 10.1053/joms.2001.27741. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0278239101095106>.
- Lawson, A. E. and Daniel, E. S. 2011. Inferences of clinical diagnostic reasoning and diagnostic error, *J. Biomed. Inform.* 44(3): 402–412. doi: 10.1016/j.jbi.2010.01.003. Available from: <http://dx.doi.org/10.1016/j.jbi.2010.01.003>.
- Lee, H, Chalmers, N. I, Brow, A, Boynes, S, Monopoli, M, Doherty, M, Croom, O. and Engineer, L. 2018. Person-centered care model in dentistry. *BMC Oral Health*, 18(1): 198. doi: 10.1186/s12903-018-0661-9. Available from: <https://bmcoralhealth.biomedcentral.com/articles/10.1186/s12903-018-0661-9>.
- Lemieux, M. and Bordage, G. 1992. Propositional versus structural semantic analyses of medical diagnostic thinking, *Cogn. Sci.* 16(2): 185–204. doi: 10.1016/0364-0213(92)90023-N. Available from: [http://doi.wiley.com/10.1016/0364-0213\(92\)90023-N](http://doi.wiley.com/10.1016/0364-0213(92)90023-N).
- Leon, A. C, Davis, L. L. and Kraemer, H. C. 2011. The role and interpretation of pilot studies in clinical research, *J. Psychiatr. Res.* 45(5): 626–629. doi: 10.1016/j.jpsychires.2010.10.008. Available from: <http://dx.doi.org/10.1016/j.jpsychires.2010.10.008>.
- Lin, C. S, Wu, S. Y. and Yi, C. A. 2017. Association between Anxiety and Pain in Dental Treatment, *J. Dent. Res.* 96(2): 153–162. doi: 10.1177/0022034516678168. Available from: <http://journals.sagepub.com/doi/10.1177/0022034516678168>.
- Lisk, K, Agur, A. M. R. and Woods, N. N. 2016. Exploring cognitive integration of basic science and its effect on diagnostic reasoning in novices, *Perspect. Med. Educ.* 5(3):147–153. doi: 10.1007/s40037-016-0268-2. Available from: <http://link.springer.com/10.1007/s40037-016-0268-2>.
- Lockhart, P. B, Wray, D, Peterson, D. E. and Greenberg, M. S. 2007. Fourth World Workshop on Oral Medicine. Introduction. *Oral Surg. Oral Med. Oral Pathol. Oral Radiol.* 103(2.Suppl): S1-2. doi: 10.1016/j.tripleo.2007.01.028. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1079210407001254>.

- Loevy, H. T. and Kowitz, A. A. 1997. The dawn of dentistry: Dentistry among the Etruscans, *Int. Dent. J.* 47(5): 279–284. doi: 10.1002/j.1875-595X.1997.tb00790.x. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0020653920301271>.
- Lucander, H, Bondemark, L, Brown, G, and Knutsson, K, 2010, The structure of observed learning outcome (SOLO) taxonomy: a model to promote dental students' learning', *Eur J of Dent Ed*, 14(3): 145–150. doi: 10.1111/j.1600-0579.2009.00607.x Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20646040>.
- Lunney, M. 2010. Use of critical thinking in the diagnostic process, *Int. J. Nurs. Terminol. Classif.* 21(2): 82–88. doi: 10.1111/j.1744-618X.2010.01150.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1744-618X.2010.01150.x>.
- Lutz, S. and Huitt, W. 2003. Information processing and memory: Theory and applications. *Educ. Psyc. Int.* pp. 1-17. Available from: <http://www.edpsycinteractive.org/topics/cognition/infoproc.html>.
- Lynch, C. D, O'Sullivan, V. R, and McGillicuddy, C. T. 2006. Pierre Fauchard: the 'Father of Modern Dentistry', *Br. Dent. J.* 201(12): 779–781. doi: 10.1038/sj.bdj.4814350. Available from: <http://www.nature.com/articles/4814350>.
- Lyon, L. J, Hoover, T. E, Giusti, L, Booth, M. T. and Mahdavi, E. 2016. Teaching Skill Acquisition and Development in Dental Education. *J. Dent. Educ.*, 80(8): 983-993. doi: 10.1002/j.0022-0337.2016.80.8.tb06179.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2016.80.8.tb06179.x>.
- Mackenzie, N. and Knipe, S. 2006. Research dilemmas: Paradigms, methods and methodology. *Issues Educ. Res.* 16(2): 193-205. Available from: <https://brainmass.com/file/125444/mackenzie.pdf%0Ahttp://msessd.ioe.edu.np/wp-content/uploads/2017/04/Handout4L4pages11-Research-Dilemmas-etc.pdf>.
- Magner, L. N. and Kim, O. J. 2005. *A history of medicine*. 3rd ed. Boca Raton: CRC Press, Taylor and Francis Group. Available from: <https://api.taylorfrancis.com/content/books/mono/download?identifierName=doi&identifierValue=10.1201/9781315113814&type=googlepdf>
- Majoer, G. D, Schmidt, H, Moust, J, Snellen, H. A. M. and Stalenhoef, B. 1990. Construction of problems for problem-based learning. In Schmidt, H. G., Nooman, Z. M. and Ezzat, E. S. (eds). *Innovation in medical education: an evaluation of its present status*. New York: Springer, pp. 114–122. Available at: <https://repub.eur.nl/pub/2779/20502.pdf>
- Malau-Aduli, B. S. and Zimitat, C. 2012. Peer review improves the quality of MCQ examinations. *Assess Eval High Edu.*, 37(8): 919-931. doi: 10.1080/02602938.2011.586991. Available from:

<https://www.tandfonline.com/doi/full/10.1080/02602938.2011.586991>.

- Malmberg, K. J, Raaijmakers, J. G. W. and Shiffrin, R. M. 2019. 50 years of research sparked by Atkinson and Shiffrin (1968), *Memory & Cognition*, 47(4), pp. 561–574. doi: 10.3758/s13421-019-00896-7. Available from: <http://link.springer.com/10.3758/s13421-019-00896-7>.
- Malomo, A. O, Idowu, O. E. and Osuagwu, F. C. 2006. Lessons from history: Human anatomy, from the origin to the renaissance, *Int J Morphol*. 24(1): 99–104. doi: 10.4067/S0717-95022006000100018. Available from: <https://repub.eur.nl/pub/2779/20502.pdf>
- Malterud, K, Siersma, V. D. and Guassora, A. D. 2016. Sample Size in Qualitative Interview Studies: Guided by Information Power, *Qual. Health Res*. 26(13): 1753–1760. doi: 10.1177/1049732315617444. Available from: <http://journals.sagepub.com/doi/10.1177/1049732315617444>.
- Malterud, K, Reventlow, S. and Guassora, A. D. 2019. Diagnostic knowing in general practice: interpretative action and reflexivity, *Scand J Prim Health Care*. 37(4): 393–401. doi: 10.1080/02813432.2019.1663592. Available from: <https://doi.org/10.1080/02813432.2019.1663592>.
- Manetti, W. 2019. Sound clinical judgment in nursing: A concept analysis, *Nurs. Forum*, 54(1): 102–110. doi: 10.1111/nuf.12303. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/30380153>
- Mann, K. V. 2011. Theoretical perspectives in medical education: past experience and future possibilities. *Med Educ*, 45(1): 60-68. doi: 10.1111/j.1365-2923.2010.03757.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21155869>
- Mar, C. Del, Doust, J. and Glasziou, P. 2006. Principles of clinical problem solving, in Mar, C. del, Doust, J. and Glasziou, P. (eds). *Clinical Thinking - Evidence, Communication and Decision-Making*. Oxford, England: Blackwell Publishing Ltd, pp. 1–11. doi: 10.1002/9780470750568.ch1 Available from: <https://onlinelibrary.wiley.com/doi/10.1002/9780470750568.ch1>
- Marchini, L, Hartshorn, J. E, Cowen, H, Dawson, D. V. and Johnsen, D. C. 2017. A teaching tool for establishing risk of oral health deterioration in elderly patients: development, implementation, and evaluation at a US dental school. *J. Dent. Educ.*, 81(11): 1283-1290. doi: 10.21815/jde.017.086. Available from: <http://doi.wiley.com/10.21815/JDE.017.086>.
- Marewski, J. N. and Gigerenzer, G. 2012. Heuristic decision making in medicine, *Dialogues Clin. Neurosci.* 14(1): 77–89. doi: 10.31887/dcns.2012.14.1/jmarewski. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22577307>.
- Marshall, T. A, Straub-Morarend, C. L. Handoo, N. Solow, C. M, Cunningham-Ford, M. A. and Finkelstein, M. W. 2014. Integrating critical thinking and evidence-based dentistry across a four-year dental curriculum: a model for independent learning. *J. Dent. Educ.*, 78(3): 359-367. doi: 10.1002/j.0022-

- 0337.2014.78.3.tb05686.x. Available from:
<https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2014.78.3.tb05686.x>.
- Marshall, T. A, Marchini, L, Cowen, H, Hartshorn, J. E, Holloway, J. A, Straub-Morarend, C. L, Gratton, D, Solow, C. M, Colangelo, N. and Johnsen, D. C. 2017. Critical Thinking Theory to Practice: Using the Expert's Thought Process as Guide for Learning and Assessment. *J. Dent. Educ.*, 81(8): 78-985. doi: 10.21815/jde.017.045. Available from: <http://doi.wiley.com/10.21815/JDE.017.045>.
- Marton, F. and Säljö, R., 1976. On qualitative differences in learning — II Outcome as a function of the learner's conception of the task. *Br. J. Educ. Psychol.* 46(2), pp.115-127. doi:10.1111/j.2044-8279.1976.tb02304.x Available from: <https://doi.org/10.1111/j.2044-8279.1976.tb02304.x>
- Marzano, R. J, Brandt, R. S, Hughes, C. S, Jones, B. F, Presseisen, B. Z, Rankin, S. C, Suhor, C, and Publi 1988, Dimensions of Thinking: A Framework for Curriculum and Instruction. ERIC Clearinghouse on Reading and Communication Skills. Available from: <https://files.eric.ed.gov/fulltext/ED294222.pdf>.
- Mason, D. 1989. First Oral Medicine World Workshop - June 1988, *J. Oral Pathol. Med.*, 18(1): 18–20. doi: 10.1111/j.1600-0714.1989.tb00726.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1600-0714.1989.tb00726.x>.
- Mason, M. 2010. Sample size and saturation in PhD studies using qualitative interviews, *Forum Qual. Sozialforschung.* 11(3). doi: 10.17169/fqs-11.3.1428. Available from: <https://www.proquest.com/scholarly-journals/sample-size-saturation-phd-studies-using/docview/869912466/se-2>.
- Mason, A, Locke, R, Lusznat, R. M, Coles, C. and Masding, M. G. 2020. How Do Contexts Affect Physicians' Clinical Reasoning? A Narrative Review. *MedEdPublish*, 9(1): 1-13. doi: 10.15694/mep.2020.000032.1. Available from: <https://www.mededpublish.org/manuscripts/2506>.
- Maudsley, G. 2011. Mixing it but not mixed-up: mixed methods research in medical education (a critical narrative review). *Med Teach.* 33(2): e92-e104. doi: 10.3109/0142159X.2011.542523. Available from: <http://www.tandfonline.com/doi/full/10.3109/0142159X.2011.542523>.
- Maupomé, G. and Sheiham, A. 2000. Clinical decision-making in restorative dentistry. Content-analysis of diagnostic thinking processes and concurrent concepts used in an educational environment. *Eur J Dent Educ.* 4(4): 143-152. doi: 10.1034/j.1600-0579.2000.040401.x. Available from: <http://doi.wiley.com/10.1034/j.1600-0579.2000.040401.x>.
- Maupomé, G, Schrader, S, Mannan, S, Garetto, L. and Eggertsson, H. 2010. Diagnostic thinking and information used in clinical decision-making: a qualitative study of expert and student dental clinicians. *BMC oral health*,

- 10(1): 11. doi: 10.1186/1472-6831-10-11. Available from: <https://bmcoralhealth.biomedcentral.com/articles/10.1186/1472-6831-10-11>.
- Mayer, R. E. 2010. Applying the science of learning to medical education, *Med. educ.*, 44(6): 543–549. doi: 10.1111/j.1365-2923.2010.03624.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.2010.03624.x>.
- McBee, E, Ratcliffe, T, Goldszmidt, M, Schuwirth, L, Picho, K, Artino, A. R, Masel, J. and Durning, S. J, 2016. Clinical reasoning tasks and resident physicians: what do they reason about? *Acad. Med.*, 91(7): 1022-1028. doi: 10.1097/ACM.0000000000001024. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26650677>
- McBee, E, Ratcliffe, T, Picho, K, Schuwirth, L, Artino, A. R, Yepes-Rios, A. M, Masel, J, Van Der Vleuten, C. and Durning, S. J. 2017. Contextual factors and clinical reasoning: differences in diagnostic and therapeutic reasoning in board certified versus resident. *BMC Med. Educ.* 17(1): 1-8. doi: 10.1186/s12909-017-1041-x Available from: <https://bmcmmededuc.biomedcentral.com/articles/10.1186/s12909-017-1041-x>.
- McBee, E, Ratcliffe, T, Schuwirth, L, O'Neill, D, Meyer, H, Madden, S. J. and Durning, S. J. 2018. Context and clinical reasoning. *Perspect. Med. Educ.* 7(4): 256-263. doi: 10.1007/s40037-018-0417-x. Available from: <http://link.springer.com/10.1007/s40037-018-0417-x>.
- McCoubrie, P. 2004. Improving the fairness of multiple-choice questions: a literature review. *Med Teach.* 26(8): 709-712. doi: 10.1080/01421590400013495. Available from: <http://www.tandfonline.com/doi/full/10.1080/01421590400013495>.
- McCoubrie, P. and McKnight, L. 2008. Single best answer MCQs: a new format for the FRCR part 2a exam, *Clin. Radiol.* 63(5): 506–510. doi: 10.1016/j.crad.2007.08.021. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0009926007004758>.
- McCoubrie, P., 2010. Metrics in medical education. *Ulster Med J*, 79(2): 54-56. PMID: [21116419](https://pubmed.ncbi.nlm.nih.gov/21116419/) Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21116419>.
- McHarg, J. and Kay, E. J. 2008. The anatomy of a new dental curriculum, *Br. Dent. J.* 204(11): 635–638. doi: 10.1038/sj.bdj.2008.464. Available from: <http://www.nature.com/articles/sj.bdj.2008.464>
- McKay, J. C. and Quinonez, C. R. 2012. The Feminisation of Dentistry: Implications for the Profession, *J Can Dent Assoc*, 78(c1): 1–7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22322017>.
- McLaughlin, K, Rikers, R. M. and Schmidt, H. G. 2008. Is analytic information processing a feature of expertise in medicine?' *Adv Health Sci Educ.* 13(1): 123–128. doi: 10.1007/s10459-007-9080-4 Available from: <http://link.springer.com/10.1007/s10459-007-9080-4>.

- McMillan, W. J. 2010. Teaching for clinical reasoning – helping students make the conceptual links, *Med.Teach*, 32(10): e436–e442. doi: 10.3109/01421591003695303. Available from: <http://www.tandfonline.com/doi/full/10.3109/01421591003695303>.
- Mercier, H. and Sperber, D. 2011. Why do humans' reason? Arguments for an argumentative theory, *Behav. Brain Sci.* 34(2): 57–74. doi: 10.1017/S0140525X10000968. Available from: <https://www.tandfonline.com/doi/full/10.1080/13546783.2013.802256>.
- Merijohn, G.K, Bader, J.D, Frantsve-Hawley, J, and Aravamudhan, K. 2008. Clinical decision support chairside tools for evidence-based dental practice. *Evid Based Dent*, 8(3): 119–32. doi: 10.1016/j.jebdp.2008.05.016. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1532338208001206>.
- van Merriënboer, J. J. and Sweller, J. 2010. Cognitive load theory in health professional education: design principles and strategies. *Med Educ*, 44(1): 85-93. doi: 10.1111/j.1365-2923.2009.03498.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.2009.03498.x>.
- Mertz, E. A 2016. The Dental–Medical Divide, *Health Aff.*, 35(12): 2168–2175. doi: 10.1377/hlthaff.2016.0886. Available from: <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2016.0886>.
- Methley, A. M, Campbell, S, Chew-Graham, C, McNally, R, and Cheraghi-Sohi, S. 2014. PICO, PICOS and SPIDER: a comparison study of specificity and sensitivity in three search tools for qualitative systematic reviews., *BMC Health Serv. Res.* 14(1): 579. doi: 10.1186/s12913-014-0579-0. Available from: <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-014-0579-0>.
- Metsämuuronen, J. 2020. Generalized Discrimination Index. *Int J Educ Methodol.* 6(2): 237-257. doi: 10.12973/ijem.6.2.237. Available from: https://pdf.ijem.com/IJEM_6_2_237.pdf
- Migliorati, C. A. and Madrid, C. 2007. The interface between oral and systemic health: the need for more collaboration. *Clin Microbiol Infect*, 13(4): 11-6. doi: 10.1111/j.1469-0691.2007.01799.x. Available from: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1469-0691.2007.01799.x>.
- Min-Simpkins, A. A, Koch, B, Spear-Ellinwood, K. and St. John, P. 2019. A developmental assessment of clinical reasoning in preclinical medical education. *Med. educ. online*, 24(1): 1591257. doi: 10.1080/10872981.2019.1591257. Available from: <https://www.tandfonline.com/doi/full/10.1080/10872981.2019.1591257>.
- Mingers, J. 1997. Multi-Paradigm Multimethodology, in Mingers, J. and Gill, A. (eds) *Multimethodology: Theory and Practice of Combining Management Science Methodologies*. Chichester, UK: Wiley, pp. 1–20. Available from: <https://www.researchgate.net/publication/23794114%0D>.
- Mingers, J. and Brocklesby, J. 1997. Multimethodology: Towards a framework for

- mixing methodologies, *Omega int. J. Mgmt Sci*, 25(5): 489–509. doi: 10.1016/S0305-0483(97)00018-2. Available from: <http://linkinghub.elsevier.com/retrieve/pii/S0305048397000182>.
- Miri, B., David, B. C. and Uri, Z. 2007. Purposely teaching for the promotion of higher-order thinking skills: A case of critical thinking, *Res. Sci. Educ*, 37(4): 353–369. doi: 10.1007/s11165-006-9029-2. Available from: <http://link.springer.com/10.1007/s11165-006-9029-2>.
- Mishra, P, Pandey, C. M, Singh, U, Gupta, A, Sahu, C, and Keshri, A. 2019. Descriptive statistics and normality tests for statistical data, *Ann. Card. Anaesth*. 22(1): 67–72. doi: 10.4103/aca.ACA_157_18. Available from: <https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC6350423/pdf/ACA-22-67.pdf>
- Modi, J. N, Anshu, Gupta, P, and Singh, T. 2015. Teaching and assessing clinical reasoning skills, *Indian Pediatr*. 52(9): 787–794. doi: 10.1007/s13312-015-0718-7. Available from: <https://link.springer.com/content/pdf/10.1007/s13312-015-0718-7.pdf>.
- Monteiro, S. M. and Norman, G. 2013. Diagnostic Reasoning: Where We've Been, Where We're Going, *Teach Learn Med*, 25(Suppl.1): S26–S32. doi: 10.1080/10401334.2013.842911. Available from: <http://www.tandfonline.com/doi/abs/10.1080/10401334.2013.842911>.
- Monteiro, S., Norman, G. and Sherbino, J. 2018., The 3 faces of clinical reasoning: Epistemological explorations of disparate error reduction strategies, *J Eval Clin Pract*, 24(3): 666–673. doi: 10.1111/jep.12907. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/jep.12907>.
- Moore, J. R. 1984. Dental education and dental practice. *J. R. Soc. Med.* 77(5): 360–368. PMID: [6374141](https://pubmed.ncbi.nlm.nih.gov/6374141/) Available from: <http://www.ncbi.nlm.nih.gov/pubmed/6374141>
- Morris, R. B. 1999. *Strategies in Dental Diagnosis and Treatment Planning, Strategies in Dental Diagnosis and Treatment Planning*. London: Martin Dunitz.
- Moseley, D, Baumfield, V, Elliott, J, Gregson, S, Higgins, S, Lin, M, Miller, J, Newton, D. and Robson, S. 2004. *Thinking skills frameworks for post-16 learners: an evaluation*. A research report for the Learning and Skills Research Centre. Surrey. doi: 10.1016/S0022-5371(81)90483-7. Available from: http://www.voced.edu.au/td/tnc_79.72.
- Mossey, P. 2020. Oral health matters: it is time for a culture change in dentistry, *Br. Dent. J.* 228(11): 829–830. doi: 10.1038/s41415-020-1634-3. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/32541739>
- Munn, Z, Stern, C, Aromataris, E, Lockwood, C, and Jordan, Z. 2018. What kind of systematic review should I conduct? A proposed typology and guidance for systematic reviewers in the medical and health sciences, *BMC Med Res Methodol*, 18(1): 5. doi: 10.1186/s12874-017-0468-4. Available from: <https://bmcmmedresmethodol.biomedcentral.com/articles/10.1186/s12874-017-0468-4>

[017-0468-4.](#)

- Murtomaa, H. 2009. Dental Education in Europe, *Eur. J. Dent.* 03(1): 1–2. doi: 10.1055/s-0039-1697398. Available from: <http://www.thieme-connect.de/DOI/DOI?10.1055/s-0039-1697398>.
- Musgrove, J. L, Morris, J, Estrada, C. A. and Kraemer, R. R. 2016. Clinical reasoning terms included in clinical problem solving exercises? *J Grad Med Educ*, 8(2): 180-184. doi: 10.4300/JGME-D-15-00411.1. Available from: <https://meridian.allenpress.com/jgme/article/8/2/180/34511/Clinical-Reasoning-Terms-Included-in-Clinical>.
- Nadershahi, N. A, Salmon, E. S, Fathi, N, Schmedders, K. and Hargis, J. 2010. Review of outcomes from a change in faculty clinic management in a US dental school. *J. Dent. Educ.*, 74(9): 961-969. doi: 10.1002/j.0022-0337.2010.74.9.tb04951.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2010.74.9.tb04951.x>.
- Nafea, E. T. and Dennick, R. 2018. Clinical reasoning skills in final-year dental students: A qualitative cross-curricula comparison. *Eur J Dent Educ.* 22(2): 101-108. doi: 10.1111/eje.12256. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/eje.12256>.
- Nash, D, Ruotoistenmäki, J, Argentieri, A, Barna, S, Behbehani, J, Berthold, P, Catalanotto, F, Chidzonga, M, Goldblatt, L, Jaafar, N, Kikwilu, E, Konoo, T, Kouzmina, E, Lindh, C, Mathu-Muju, K, Mumghamba, E, Nik Hussein, N, Phantumvanit, P, Runnel, R, Shaw, H, Forna, N, Orliaguet, T, and Honkala, E. 2008. Profile of the oral healthcare team in countries with emerging economies, *Eur J Dent Educ*, 12(s1): 111–119. doi: 10.1111/j.1600-0579.2007.00493.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1600-0579.2007.00493.x>.
- Neistadt, M. E. 1998. Teaching Clinical Reasoning as a Thinking Frame, *Am. J. Occup. Ther.* 52(3): 221–229. doi: 10.5014/ajot.52.3.221. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/9521998>.
- Newble, D and Cannon, R. 2002. A Handbook for Medical Teachers, 4th ed. Kluwer Academic Publishers New York. Available from: <https://link.springer.com/book/10.1007/0-306-47506-5>
- Newton, D. 2005. The nature of thinking and thinking skills. In Moseley, D, Baumfeld, V, Elliott, J, Gregson, M, Higgins, S, Miller, J and Newton, D (eds), *Frameworks for thinking : a handbook for teaching and learning*, Cambridge University Press, Cambridge. pp.8–32. doi: 10.1017/CBO9780511489914.004. Available from: https://www.cambridge.org/core/product/identifier/CBO9780511489914A021/type/book_part.
- Nierenberg, R. 2017. The chief complaint driven medical history: implications for medical education. *Int. J. Med. Educ*, 8(1): 205–206. doi:

- 10.5116/ijme.5907.74d8. Available from:
<http://www.jispcd.org/text.asp?2011/1/1/14/86376>.
- Nikitakis, N. G. 2003. Oral soft tissue lesions: A guide to differential diagnosis. Part I: Introduction and changes in color, *Braz J Oral Sci.* 2(6): 291–299. doi: 10.20396/bjos.v2i6.8641711. Available from:
<https://periodicos.sbu.unicamp.br/ojs/index.php/bjos/article/view/8641711>
- Nikitakis, N. G. 2005., Oral soft tissue lesions: a guide to differential diagnosis: part II: surface alterations, *Braz J Oral Sci.* 4(13): 707–715. doi: 10.20396/bjos.v4i13.8641818. Available from:
<https://periodicos.sbu.unicamp.br/ojs/index.php/bjos/article/view/8641818>
- Norman, G. T. and Schmidt, H. G., 1992. The psychological basis of problem-based learning: A review of the evidence. *Acad. Med.* 67(9): 557-565. Available from: <http://hdl.handle.net/1765/2718>
- Norman, G. R. and Brooks, L. R. 1997. The non-analytical basis of clinical reasoning. *Adv Health Sci Educ Theory Pract*, 2(2): 173-184. doi: 10.1023/A:1009784330364. Available from:
<http://www.ncbi.nlm.nih.gov/pubmed/12386407>.
- Norman, G. R. Brooks, L. R. Colle, C. L. and Hatala, R. M. 1999. The benefit of diagnostic hypotheses in clinical reasoning: experimental study of an instructional intervention for forward and backward reasoning. *Cogn Instr.*, 17(4): 433-44. doi: 10.1207/S1532690XCI1704_3. Available from:
http://www.tandfonline.com/doi/abs/10.1207/S1532690XCI1704_3.
- Norman, G. 2005. Research in clinical reasoning: past history and current trends. *Med Educ*, 39(4): 418-427. doi: 10.1111/j.1365-2929.2005.02127.x. Available from: <http://doi.wiley.com/10.1111/j.1365-2929.2005.02127.x>.
- Norman, G. 2009. Teaching basic science to optimize transfer. *Med Teach.*, 31(9): 807-811. doi: 10.1080/01421590903049814. Available from:
<http://www.tandfonline.com/doi/full/10.1080/01421590903049814>.
- Norman, G, Barraclough, K, Dolovich, L, and Price, D. 2009, Iterative diagnosis, *BMJ*, 339(1): b3490–b3490. doi: 10.1136/bmj.b3490. Available from:
<https://www.bmj.com/lookup/doi/10.1136/bmj.b3490>.
- Norman, G. R, Monteiro, S. D, Sherbino, J, Ilgen, J. S, Schmidt, H. G. and Mamede, S. 2017. The causes of errors in clinical reasoning: cognitive biases, knowledge deficits, and dual process thinking. *Acad. Med.*, 92(1): 23-30. doi: 10.1097/ACM.0000000000001421. Available from:
<http://journals.lww.com/00001888-201701000-00013>.
- Novak, J. D. and Cañas, A. J. 2007. Theoretical Origins of Concept Maps, How to Construct Them, and Uses in Education, *Reflective Pract.* 3(1): 29–42. Available from:
https://www.informationtamers.com/PDF/Theoretical_origins_of_concept_maps,_how_to_construct_them,_and_uses_in_education.pdf.

- NN, 1994. *Kurikulum Inti Pendidikan Dokter Gigi di Indonesia*, s.l.: s.n.
- NN, 2013. *FAKULTAS KEDOKTERAN GIGI*. [Online] Available at: <http://fkg.ugm.ac.id/profile/visi-and-misi> [Accessed tuesday 12 2018].
- Orb, A, Eisenhauer, L. and Wynaden, D. 2001. Ethics in qualitative research, *J. Nurs. Scholarsh*, 33(1): 93–96. doi: 10.1111/j.1547-5069.2001.00093.x. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/11253591>
- Orlich, D. C, Harder, R. J, Callahan, R. C, Trevisan, M. S. and Brown, A. H. 2012. *Teaching Strategies: A Guide to Effective Instruction*. Cengage Learning. Available from: <http://books.google.com/books?id=aKuEYJdGyTIC&pgis=1>.
- Ormond, M, Sanderson, J. D. and Escudier, M. 2015. Disorders of the mouth, *Medicine*, 43(4):187–191. doi: 10.1016/j.mpmed.2015.01.009. Available from: <http://dx.doi.org/10.1016/j.mpmed.2015.01.009>.
- Paas, F, Van Gog, T. and Sweller, J. 2010. Cognitive load theory: New conceptualizations, specifications, and integrated research perspectives. *Educ Psychol Rev.*, 22(2): 115-121. doi: 10.1007/s10648-010-9133-8. Available from: <http://link.springer.com/10.1007/s10648-010-9133-8>.
- Paivio, A. 2006. Dual Coding Theory and Education, in *Pathways to Literacy Achievement for High Poverty Children*, pp. 1–20. Available from: https://www.researchgate.net/profile/Jim-Clark-10/publication/225249172_Dual_Coding_Theory_and_Education/links/542d58970cf277d58e8cc084/Dual-Coding-Theory-and-Education.pdf
- Palatta, A, Cook, B. J, Anderson, E. L. and Valachovic, R. W. 2015. 20 years beyond the crossroads: the path to interprofessional education at US dental schools. *J. Dent. Educ.*, 79(8): 982-996. doi: 10.1002/j.0022-0337.2015.79.8.tb05990.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26466391>.
- Palatta, A. M, Kassebaum, D. K, Gadbury-Amyot, C. C, Karimbux, N. Y, Licari, F. W, Nadershahi, N. A, Walji, M. F, Stewart, J. C. and Valachovic, R. W. 2017. Change is here: ADEA CCI 2.0—a learning community for the advancement of dental education. *J. Dent. Educ.*, 81(6): 640-648. doi: 10.21815/jde.016.040. Available from: <http://doi.wiley.com/10.21815/JDE.016.040>.
- Papa, F. J. and Harasym, P. H. 1999. Medical curriculum reform in North America, 1765 to the present: a cognitive science perspective. *Acad. med.* 74(2): 154–64. doi: 10.1097/00001888-199902000-00015. Available from: <http://journals.lww.com/00001888-199902000-00015>.
- Papp, K. K, Huang, G. C, Clabo, L. M. L, Delva, D, Fischer, M, Konopasek, L, Schwartzstein, R. M. and Gusic, M. 2014. Milestones of critical thinking: a developmental model for medicine and nursing. *Acad. Med.* 89(5): 715-720. doi: 10.1097/ACM.0000000000000220. Available from: <http://journals.lww.com/00001888-201405000-00014>.

- Pardamean, B. 2012. Measuring change in critical thinking skills of dental students educated in a PBL curriculum. *J. Dent. Educ.* 76(4): 443-453. doi: 10.1002/j.0022-0337.2012.76.4.tb05276.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2012.76.4.tb05276.x>.
- Paré, G and Kitsiou, S. 2016. Methods for Literature Reviews. in Lau, C, and Kuziemsky, F. (eds), *Handbook of eHealth Evaluation: An Evidence-based Approach*, University of Victoria, Victoria, British Columbia Canada. pp.157–180. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK481583/>.
- Park, S. E, Susarla, H. K, Nalliah, R, Timothé, P, Howell, T. H. and Karimbux, N. Y. 2012. Does a case completion curriculum influence dental students' clinical productivity? *J. Dent. Educ.*, 76(5): 602-608. doi: 10.1002/j.0022-0337.2012.76.5.tb05294.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2012.76.5.tb05294.x>.
- Patel, V. L. and Groen, G. J. 1986. Knowledge based solution strategies in medical reasoning, *Cogn. Sci.*, 10(1): 91–116. doi: 10.1016/S0364-0213(86)80010-6. Available from: [http://doi.wiley.com/10.1016/S0364-0213\(86\)80010-6](http://doi.wiley.com/10.1016/S0364-0213(86)80010-6).
- Patel, V. L, Evan, D. A. and Groen, G. J. 1989. Biomedical Knowledge and Clinical Reasoning', in Evans, D. A. and Patel, V. L. (eds), *Cognitive Science in Medicine*. The MIT Press, pp. 53–112. doi: 10.7551/mitpress/1878.003.0006. Available from: <https://direct.mit.edu/books/book/4709/chapter/215551>.
- Patel, V. L, Evans, D. A. and Kaufman, D. R. 1990. Reasoning strategies and the use of biomedical knowledge by medical students, *Med. educ.*, 24(2): 129–136. doi: 10.1111/j.1365-2923.1990.tb02511.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.1990.tb02511.x>.
- Patel, V. L, Groen, G. J. and Arocha, J. F. 1990. Medical expertise as a function of task difficulty, *Mem Cognit*, 18(4): 394–406. doi: 10.3758/BF03197128. Available from: <http://link.springer.com/10.3758/BF03197128>.
- Patel, V. L, Groen, G. J. and Norman, G. R. 1993. Reasoning and Instruction in Medical Curricula. *Cogn Instr.* 10(4): 335–378. doi: 10.1207/s1532690xc1004_2. Available from: http://www.tandfonline.com/doi/abs/10.1207/s1532690xc1004_2.
- Patel, V. L, Kaufman, D. R. and Magder, S. A. 1996. The acquisition of medical expertise in complex dynamic environments, in Ericsson, K. A. (ed.) *The road to excellence: The acquisition of expert performance in the arts and sciences, sports and games*. Hillsdale, NJ: Lawrence Erlbaum Publishers, pp. 127–165. Available from: https://www.researchgate.net/profile/Vimla-Patel/publication/247744816_The_acquisition_of_medical_expertise_in_complex_dynamic_environments/links/55eb2ee408aeb6516267746c/The-acquisition-of-medical-expertise-in-complex-dynamic-environments.pdf
- Patel, V. L, Arocha, J. F. and Zhang, J. 2012. *Medical Reasoning and Thinking, The*

Cambridge Handbook of Thinking and Reasoning. Holyoak, K. J. and Morrison, R. G. (eds). Oxford University Press.

- Patini, R. 2020. Personalized dentistry: Approaching a new way for diagnosis and treatment of oral diseases, *J. Pers. Med.*, 10(2): 10–13. doi: 10.3390/jpm10020035. Available from: <https://www.mdpi.com/2075-4426/10/2/35>.
- Pelaccia, T, Tardif, J, Tribby, E. and Charlin, B. 2011. An analysis of clinical reasoning through a recent and comprehensive approach: the dual-process theory. *Med Educ Online*, 16(1): 5890. doi: 10.3402/meo.v16i0.5890. Available from: <https://www.tandfonline.com/doi/full/10.3402/meo.v16i0.5890>.
- Pemberton, M. 2017. Oral medicine, *Br. Dent. J.* 223(9): 619. doi: 10.1038/sj.bdj.2017.933. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/29123290>
- Peres, M. A, Macpherson, L. M, Weyant, R. J, Daly, B, Venturelli, R, Mathur, M. R, Listl, S, Celeste, R. K, Guarnizo-Herreño, C. C, Kearns, C. and Benzon, H, 2019. Oral diseases: a global public health challenge. *The Lancet*, 394(10194): 249-260. doi: 10.1016/S0140-6736(19)31146-8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/31327369>
- Perez, A, Green, J. L, Compton, S. M, Patterson, S. and Senior, A. 2020. Thinking ecologically about clinical education in dentistry. *Eur J Dent Educ*, 24(2): 370-374. doi: 10.1111/eje.12500. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/eje.12500>.
- Persky, A. M. and Robinson, J. D. 2017. Moving from novice to expertise and its implications for instruction, *Am. J. Pharm. Educ.* 81(9): 72–80. doi: 10.5688/ajpe6065. Available from: <http://www.ajpe.org/lookup/doi/10.5688/ajpe6065>.
- Petersen, P. E. and Leous, P. 2017. The burden of oral disease and risks to oral health at global and regional levels. *Med. stomatol*, 42(1-2): 7-13. Available from: https://ibn.idsi.md/sites/default/files/imag_file/7_13_The%20burden%20of%20oral%20disease%20and%20risks%20to%20oral%20health.pdf
- Pineda, K, Bueno, R, Alvarado, C, Abella, F, Roig, M, and Duran-Sindreu, F. 2018. Influence of academic training in endodontics and implantology on decision-making in undergraduate students, *Aust. Dent. J.* 44(1): 40–45. doi: 10.1111/aej.12208. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/aej.12208>.
- Pinnock, R. and Welch, P. 2014. Learning clinical reasoning, *J. Paediatr. Child Health*, 50(4): 253–257. doi: 10.1111/jpc.12455. Available from: <http://doi.wiley.com/10.1111/jpc.12455>.
- Pinnock, R, Young, L, Spence, F, Henning, M. and Hazell, W. 2015. Can think aloud be used to teach and assess clinical reasoning in graduate medical education? *J. Grad. Med. Educ.* 7(3): 334-337. doi: 10.4300/JGME-D-14-00601.1. Available from: <http://www.jgme.org/doi/10.4300/JGME-D-14-00601.1>.

00601.1.

- Pinto, A, Khalaf, M. and Miller, C. S. 2015. The practice of oral medicine in the United States in the twenty-first century: An update, *Oral Surg. Oral Med. Oral Radiol.* 119(4):408–415. doi: 10.1016/j.oooo.2014.12.018. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S2212440314014473>.
- Plasschaert, A. J, Verdonschot, E. A, Wilson, N. F. and Blinkhorn, A. S. 1995. Decision making in restorative dentistry: intuition or knowledge based?. *Br. Dent. J.*, 178(6): 320-321. doi: 10.1038/sj.bdj.4808751. Available from: <http://www.nature.com/articles/4808751>.
- Polverini, P. J. and Krebsbach, P. H. 2017. Research and discovery science and the future of dental education and practice. *J Dent Educ.* 81(9): eS97-eS107. doi: 10.21815/JDE.017.040. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28864810>.
- Postma, T. C. 2015. Self-regulation – the key to progress in clinical reasoning?, *Afr. J. Health Prof. Educ.* 7(2): 202-207. doi:10.7196/AJHPE.411 Available from: <http://www.ajhpe.org.za/index.php/ajhpe/article/view/411>.
- Postma, T. C. and White, J. G. 2015. Developing clinical reasoning in the classroom—analysis of the 4C/ID-model. *Eur J Dent Educ.* 19(2): 74-80. doi: 10.1111/eje.12105. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/eje.12105>.
- Postma, T. C. and White, J. G. 2016. Developing integrated clinical reasoning competencies in dental students using scaffolded case-based learning—empirical evidence. *Eur J Dent Educ.* 20(3): 180-188. doi: 10.1111/eje.12159. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/eje.12159>.
- Postma, T. C. and White, J. G. 2017a. Developing students’ clinical reasoning skills: correlates of perceived relevance of two teaching and learning approaches, *Eur J Dent Educ.* 21(1): 52–57. doi: 10.1111/eje.12178. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/eje.12178>.
- Postma, T. C. and White, J. G. 2017b. Socio-demographic and academic correlates of clinical reasoning in a dental school in South Africa. *Eur J Dent Educ.* 21(1): 58-65. doi: 10.1111/eje.12179. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/eje.12179>.
- Postma, T. C. and White, J. G. 2017c. Students’ perceptions of vertical and horizontal integration in a discipline-based dental school. *Eur J Dent Educ.* 21(2): 101-107. doi: 10.1111/eje.12186. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/eje.12186>.
- Pyle, M, Andrieu, S. C, Chadwick, D. G, Chmar, J. E, Cole, J. R, George, M. C, Glickman, G. N, Glover, J. F, Goldberg, J. S. and Haden, N. K., Hendricson, W. D, Meyerowitz, C, Neumann, L, Tedesco, L. A, Valachovic, R. W, Weaver, R. G, Winder, R. L, Young, S. K, and Kalkwarf, K. L. 2006. The case for change in dental education. *J Dent Educ.* 70(9), pp.921-924.

- PMID: 16954413. Available from:
<http://www.ncbi.nlm.nih.gov/pubmed/16954413>.
- Pyle, M. A, 2012. New models of dental education and curricular change: their potential impact on dental education. *J Dent Educ*.76(1): 89-97. PMID: 22262553. Available from:
<http://www.ncbi.nlm.nih.gov/pubmed/22262553>.
- Rahayu, G. R. and McAleer, S. 2008. Clinical reasoning of Indonesian medical students as measured by diagnostic thinking inventory. *South-East Asian J. Med. Educ. (Online)*, 2(1): 42-7. Available from:
<http://www.md.chula.ac.th/jmet/articleVol2No1/OR4GandesRetnoRahayu.pdf>.
- Ramachandra, S. S, Western J, S. and Muttalib, K. A. 2020., Balancing assessment of depth and breadth in the dental curriculum: A bi-dimensional assessment strategy, *J Oral Biol Craniofac Res*. 10(2):54–58. doi: 10.1016/j.jobcr.2020.01.009. Available from:
<https://doi.org/10.1016/j.jobcr.2020.01.009>.
- Randolph, J. J. 2009. A guide to writing the dissertation literature review', Practical Assessment, *Res Eval*, 14(13). doi: 10.7275/b0az-8t74. Available from:
<https://scholarworks.umass.edu/pare/vol14/iss1/13>.
- Reed, D. A, Beckman, T. J, Wright, S. M, Levine, R. B, Kern, D. E, and Cook, D. A. 2008. Predictive Validity Evidence for Medical Education Research Study Quality Instrument Scores: Quality of Submissions to JGIM's Medical Education Special Issue', *J. Gen. Intern. Med.* 23(7): 903–907. doi: 10.1007/s11606-008-0664-3. Available from:
<http://link.springer.com/10.1007/s11606-008-0664-3>.
- Reed, S. G, Adibi, S. S, Coover, M, Gellin, R. G, Wahlquist, A. E, AbdulRahiman, A, Hamil, L. H, Walji, M. F, O'Neill, P. and Kalendarian, E. 2015. Does Use of an Electronic Health Record with Dental Diagnostic System Terminology Promote Dental Students' Critical Thinking?. *J Dent Educ*. 79(6):686-696. doi: 10.1002/j.0022-0337.2015.79.6.tb05942.x. Available from:
<https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2015.79.6.tb05942.x>.
- Reissmann, D. R., Bellows, J. C. and Kasper, J. 2019., Patient Preferred and Perceived Control in Dental Care Decision Making, *JDR Clin Trans Res*, 4(2): 151–159. doi: 10.1177/2380084418811321. Available from:
<http://journals.sagepub.com/doi/10.1177/2380084418811321>.
- Rencic, J, 2011. Twelve tips for teaching expertise in clinical reasoning. *Med.Teach*, 33(11), pp.887-892.doi: 10.3109/0142159X.2011.558142. Available from:
<http://www.tandfonline.com/doi/full/10.3109/0142159X.2011.558142>.
- Rencic, J, Trowbridge, R. L, Fagan, M, Szauter, K. and Durning, S. 2017. Clinical reasoning education at US medical schools: results from a national survey of internal medicine clerkship directors. *J. Gen. Intern. Med.* 32(11): 1242-

1246. doi: 10.1007/s11606-017-4159-y. Available from:
<http://link.springer.com/10.1007/s11606-017-4159-y>.
- Richards, N. D. 1971. Dentistry in Great Britain: Some Sociologic Perspectives, *MIQUES*, 49(3):133–169. Available from:
<https://www.jstor.org/stable/i367056>
- Richards, J, Sweet, L. and Billett, S. 2013. Preparing medical students as agentic learners through enhancing student engagement in clinical education, *APJCE*, 14(4): 252–263. Available from:
<https://files.eric.ed.gov/fulltext/EJ1113697.pdf>.
- Richardson, J. T. E. 2005. Students' approaches to learning and teachers' approaches to teaching in higher education, *Educ Psychol*, 25(6): 673–680. doi: 10.1080/01443410500344720. Available from:
<http://www.tandfonline.com/doi/abs/10.1080/01443410500344720>.
- Richardson, J. T. E, 2011. Approaches to studying, conceptions of learning and learning styles in higher education. *Learn Individ Differ.*, 21(3): 288–293. doi: 10.1016/j.lindif.2010.11.015. Available from:
<http://dx.doi.org/10.1016/j.lindif.2010.11.015>.
- Richir, M. C, Tichelaar, J, Geijteman, E. C. and de Vries, T. P. 2008. Teaching clinical pharmacology and therapeutics with an emphasis on the therapeutic reasoning of undergraduate medical students. *Eur. J. Clin. Pharmacol.* 64(2): 217–224. doi: 10.1007/s00228-007-0432-z. Available from:
<http://link.springer.com/10.1007/s00228-007-0432-z>.
- Rikers, R. M, Loyens, S, Te Winkel, W, Schmidt, H. G. and Sins, P. H. 2005. The role of biomedical knowledge in clinical reasoning: a lexical decision study. *Acad. Med.*, 80(10): 945–949. doi: 10.1097/00001888-200510000-00015. Available from: <http://journals.lww.com/00001888-200510000-00015>.
- Roland, D. 2015. Proposal of a linear rather than hierarchical evaluation of educational initiatives: the 7Is framework', *J. educ. eval. health prof.* 12: 35. doi: 10.3352/jeehp.2015.12.35. Available from:
<http://jeehp.org/DOIX.php?id=10.3352/jeehp.2015.12.35>.
- Rossomando, E. F. and Moura, M. 2008. The Role of Science and Technology in Shaping the Dental Curriculum, *J Dent Educ.* 72(1), pp. 19–25. doi: 10.1002/j.0022-0337.2008.72.1.tb04448.x. Available from:
<http://doi.wiley.com/10.1002/j.0022-0337.2008.72.1.tb04448.x>.
- Rossum, E. J. Van and Schenk, S. M. 1984. the Relationship Between Learning Conception, Study Strategy and Learning Outcome, *Br. J. Educ. Psychol.* 54(1): 73–83. doi: 10.1111/j.2044-8279.1984.tb00846.x. Available from:
<https://onlinelibrary.wiley.com/doi/10.1111/j.2044-8279.1984.tb00846.x>.
- van Ruth, S. and Toonstra, J. 2008. Eponyms of Sir Jonathan Hutchinson. *Int J Dermatol*, 47(7): 754–8. doi: 10.1111/j.1365-4632.2008.03696.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/18613888>

- Ryder, M. I. and Morio, I. 2011. Current challenges for dental education in Japan and the United States, *Japanese Dental Science Review. JADS*, 47(1), pp. 23–30. doi: 10.1016/j.jdsr.2010.05.001. Available from: <http://dx.doi.org/10.1016/j.jdsr.2010.05.001>.
- Saeed, S. 2017. Evidence-Based Education: Faculty Development Workshop to Promote Critical Thinking Skills in Dental Education, *MedEdPORTAL*, 13(1): 2374-8265.10600. doi: 10.15766/mep_2374-8265.10600. Available from: http://www.mededportal.org/doi/10.15766/mep_2374-8265.10600.
- Sale, J. E. M., Lohfeld, L. H. and Brazil, K. 2002. Revisiting the Quantitative-Qualitative Debate: Implications for Mixed-Methods Research. *Qual Quant*, 36(1): 43–53. doi: 10.1023/A:1014301607592. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26523073>.
- Säljö, R. 1979. Learning about learning, *High. Educ*, 8(4):443–451. doi: 10.1007/BF01680533. Available from: <http://link.springer.com/10.1007/BF01680533>.
- Scambler, S. and Asimakopoulou, K. 2014. A model of patient-centred care-turning good care into patient-centred care, *Br. Dent. J.* 217(5): 225–228. doi: 10.1038/sj.bdj.2014.755. Available from: <http://www.nature.com/articles/sj.bdj.2014.755>.
- Schäfer, A. G. M., Sebelin, B. and Spitzer, L. 2019. Cultural adaption and validation of the German version of the diagnostic thinking inventory (DTI-G) / Ein Instrument zur Erhebung diagnostischer Kompetenz: Validierung und kulturelle Adaptation des Diagnostic Thinking Inventory (DTI-G), *Int. J. Health Prof.* 6(1):32–45. doi: 10.2478/ijhp-2019-0002. Available from: <https://www.sciendo.com/article/10.2478/ijhp-2019-0002>.
- Schaye, V, Elias, K. L, Janjigian, M. and Stern, D. T, 2019. Theory-guided teaching: Implementation of a clinical reasoning curriculum in residents. *Med.Teach*, 41(10): 1192-1199. doi: 10.1080/0142159X.2019.1626977. Available from: <https://www.tandfonline.com/doi/full/10.1080/0142159X.2019.1626977>.
- Schifferdecker, K. E. and Reed, V. A. 2009. Using mixed methods research in medical education: basic guidelines for researchers. *Med Educ*, 43(7): 637-644. doi: 10.1111/j.1365-2923.2009.03386.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.2009.03386.x>.
- Schloss, A. J, Verjee, Z. and Spielman, A. I. 2017. The Era of Personalized Dentistry Is Upon Us: It's Time to Include It in Dental Curricula, *J. Dent. Educ.*, 81(4), pp. 363–365. doi: 10.21815/JDE.016.014. Available from: <http://doi.wiley.com/10.21815/JDE.016.014>.
- Schmidmaier, R, Eiber, S, Ebersbach, R, Schiller, M, Hege, I, Holzer, M. and Fischer, M.R. 2013. Learning the facts in medical school is not enough: which factors predict successful application of procedural knowledge in a laboratory setting? *BMC Med. Educ.* 13(1):1-9. doi: 10.1186/1472-6920-13-28.

Available from:
<https://bmcmmededuc.biomedcentral.com/articles/10.1186/1472-6920-13-28>.

Schmidt, H. G, Norman, G. R, and Boshuizen, H. 1990. A cognitive perspective on medical expertise', *Acad. Med.* 65(10): 611–21. doi: 10.1097/00001888-199010000-00001. Available from: <http://journals.lww.com/00001888-199010000-00001>.

Schmidt, H. G. 1993. Foundations of problem-based learning: some explanatory notes, *Med. educ.*, 27(5): 422–432. doi: 10.1111/j.1365-2923.1993.tb00296.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/8208146>.

Schmidt, H. G. and Boshuizen, H. P. A. 1993a. On the origin of intermediate effects in clinical case recall, *Mem Cognit.* 21(3): 338–351. doi: 10.3758/BF03208266. Available from: <http://link.springer.com/10.3758/BF03208266>.

Schmidt, H. G. and Boshuizen, H. P. 1993b. On acquiring expertise in medicine. *Educ Psychol Rev.* 5(3): 205–221. doi: 10.1007/BF01323044. Available from: <http://link.springer.com/10.1007/BF01323044>.

Schmidt, H, Machiels-Bongaerts, M, Hermans, H, Ten Cate, O, Venekamp, R. and Boshuizen, H. 1996. The development of diagnostic competence: A comparison between a problem-based, an integrated, and a conventional medical curriculum. *Acad. Med.*, 71: 658–664. doi: 10.1097/00001888-199606000-00021. Available from: <http://journals.lww.com/00001888-199606000-00021>.

Schmidt, H. G. and Rikers, R M. J. P. 2007. How expertise develops in medicine: knowledge encapsulation and illness script formation. *Med Educ*, 41(12): 1133–1139. doi: 10.1111/j.1365-2923.2007.02915.x. Available from: <http://doi.wiley.com/10.1111/j.1365-2923.2007.02915.x>.

Schuwirth, L. W. and Van Der Vleuten, C. P. 2004. Different written assessment methods: what can be said about their strengths and weaknesses? *Med Educ*, 38(9): 974–979. doi: 10.1111/j.1365-2929.2004.01916.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2929.2004.01916.x>.

Schuwirth, L. W. T, Durning, S. J. and King, S. M. 2020. Assessment of clinical reasoning: three evolutions of thought, *Diagnosis*, 7(3): 191–196. doi: 10.1515/dx-2019-0096. Available from: <https://www.degruyter.com/document/doi/10.1515/dx-2019-0096/html>.

Schwartz, A. and Elstein, A. S. 2008. Clinical reasoning in medicine. In: Higgs, J. Jones, M. A. Loftus, S. and Christensen, N. (eds). *Clinical reasoning in the health professions*. 3rd ed. philadelphia: Butterworth-Heinemann, pp. 223–34.

Schwendicke, F, Samek, W, and Krois, J. 2020. Artificial Intelligence in Dentistry: Chances and Challenges, *J. Dent. Res.* 99(7): 769–774. doi: 10.1177/0022034520915714. Available from: <http://journals.sagepub.com/doi/10.1177/0022034520915714>.

- Scott, J. 2003. Dental education in Europe: the challenges of variety. *J Dent Educ*, 67(1): 69-78. doi: 10.1002/j.0022-0337.2003.67.1.tb03621.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/12540108>.
- Scully, C, Miller, C. S, Urizar, J. M. A, Alajbeg, I, Almeida, O. P, Bagan, J. V, Birek, C, Chen, Q, Farah, C. S, Figueirido, J. P. and Hasséus, B, Jontell, M, Kerr, A. R, Laskaris, G, Lo Muzio, L, Mosqueda-Taylor, A, Nagesh, K. S, Nikitakis, N. G, Peterson, D, Sciubba, J, Thongprasom, K, Tovar, Ş, and Zadik, Y. 2016. Oral medicine (stomatology) across the globe: birth, growth, and future. *Oral Surg. Oral Med. Oral Radiol.* 121(2), pp.149-157. doi: 10.1016/j.oooo.2015.10.009. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S221244031501250X>.
- Scully, D. 2017. Constructing multiple-choice items to measure higher-order thinking, *Pract. Assess. Res. Evaluation.* 22(4): 1–13. doi: 10.7275/swgt-rj52. Available from: <https://core.ac.uk/download/pdf/322850346.pdf>
- Sedgwick, P. 2013. Convenience sampling, *BMJ*, 347(oct25 2): f6304–f6304. doi: 10.1136/bmj.f6304. Available from: <http://dx.doi.org/doi:10.1136/bmj.f6304>.
- Seel, N. M. 2012. Schema Development, in Seel, N. M. (ed.) *Encyclopedia of the Sciences of Learning*. Boston, MA: Springer US, pp. 2936–2939. doi: 10.1007/978-1-4419-1428-6_365. Available from: https://doi.org/10.1007/978-1-4419-1428-6_365.
- Seoane, J, Diz-Dios, P, Martinez-Insua, A, Varela-Centelles, P. and Nash, D. A. 2008. Stomatology and odontology: perspectives of Spanish professors and senior lecturers in dentistry. *Eur J of Dent. Ed.* 12(4): 219-224. doi: 10.1111/j.1600-0579.2008.00522.x. Available from: <https://davidnashdmd.com/wp-content/uploads/2018/11/2008-Stomatology-and-Odontology...Perspectives-of-Spanish-Professors-and-Senior-Lecturers-in-Dentistry.pdf>.
- Shaban, R. 2015. Theories of clinical judgment and decision-making: A review of the theoretical literature, *Australas. J. Paramedicine*, 3(1). doi: 10.33151/ajp.3.1.308. Available from: <https://ajp.paramedics.org/index.php/ajp/article/view/308>.
- Sharma, P, Dietrich, T, Ferro, CJ, Cockwell, P, and Chapple, I. L. C. 2016. Association between periodontitis and mortality in stages 3-5 chronic kidney disease: NHANES III and linked mortality study, *J. Clin. Periodontol.* 43(2): 104–113. doi: 10.1111/jcpe.12502. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26717883>
- Sharma, G. 2017. Pros and cons of different sampling techniques, *Int. j. appl. res.* 3(7), pp. 749–752. Available from: www.allresearchjournal.com.
- Sharples, J. M, Oxman, A. D, Mahtani, K. R, Chalmers, I, Oliver, S, Collins, K, Austvoll-Dahlgren, A. and Hoffmann, T. 2017. Critical thinking in healthcare and education. *BMJ*, 357.doi: 10.1136/bmj.j2234. Available from: <http://www.bmj.com/lookup/doi/10.1136/bmj.j2234>.

- Shiffrin, R. M. and Atkinson, R. C. 1969. Storage and retrieval processes in long-term memory. *Psychol. Rev.*, 76(2): 179–193. doi: 10.1037/h0027277. Available from: <http://content.apa.org/journals/rev/76/2/179>.
- Shigli, K, Aswini, Y. B, Fulari, D, Sankeshwari, B, Huddar, D. and Vikneshan, M. 2017. Case-based learning: A study to ascertain the effectiveness in enhancing the knowledge among interns of an Indian dental institute. *J. Indian Prosthodont. Soc*, 17(1): 29. doi: 10.4103/0972-4052.194945. Available from: <http://www.j-ips.org/preprintarticle.asp?id=194945>.
- Siddaway, A. P, Wood, A. M, and Hedges, L. V. 2019. How to Do a Systematic Review: A Best Practice Guide for Conducting and Reporting Narrative Reviews, Meta-Analyses, and Meta-Syntheses', *Annu. Rev. Psychol.*, 70(1): 747–770. doi: 10.1146/annurev-psych-010418-102803. Available from: <https://www.annualreviews.org/doi/10.1146/annurev-psych-010418-102803>.
- Sim, J, Saunders, B, Waterfield, J. and Kingstone, T. 2018. Can sample size in qualitative research be determined a priori? *Int. J. Soc. Res. Methodol.* 21(5):619-634. doi: 10.1080/13645579.2018.1454643. Available from: <https://doi.org/10.1080/13645579.2018.1454643>.
- Simmons, B. 2010. Clinical reasoning: concept analysis. *J. Adv. Nurs.*, 66(5): 1151-1158. doi: 10.1111/j.1365-2648.2010.05262.x. Available from: <http://doi.wiley.com/10.1111/j.1365-2648.2010.05262.x>.
- Slavkin, H. C. 2020. From high-definition precision healthcare to precision public oral health: opportunities and challenges, *J. Public Health Dent.* 80(S1): S23–S30. doi: 10.1111/jphd.12296. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/jphd.12296>.
- Smeby, S. S, Lillebo, B, Gynnild, V, Samstad, E, Standal, R, Knobel, H, Vik, A. and Slørdahl, T. S. 2019. Improving assessment quality in professional higher education: Could external peer review of items be the answer? *Cogent Med*, 6(1), p.1659746. doi: 10.1080/2331205X.2019.1659746. Available from: <https://doi.org/10.1080/2331205X.2019.1659746>.
- Smith, M, Higgs, J, and Ellis, E. 2008. Factors influencing clinical decision making', in Higgs, J, Jones, M. A, Loftus, S and Christensen, N. (ed), *Clinical reasoning in the health professions*, Elsevier (Butterworth Heinemann). pp.89–100.
- Smith, P. L and Ragan, T. J. 1996, Impact of R.M. Gagné's Work on Instructional Theory. *National Convention of the Association for Educational Communications and Technology*.
- Snyder, H. 2019. Literature review as a research methodology: An overview and guidelines, *J. Bus. Res.* 104, pp. 333–339. doi: 10.1016/j.jbusres.2019.07.039. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0148296319304564>.

- Sommers, C.L. 2018. Measurement of critical thinking, clinical reasoning, and clinical judgment in culturally diverse nursing students – A literature review, *Nurse Educ Pract*, 30: 91–100. doi: 10.1016/j.nepr.2018.04.002. Available from: <https://doi.org/10.1016/j.nepr.2018.04.002>.
- Sollecito, T. P, Rogers, H, Prescott-Clements, L, Felix, D. H, Kerr, A. R, Wray, D, Shirlaw, P, Brennan, M. T, Greenberg, M. S, and Stoopler, E. T. 2013. Oral medicine: defining an emerging specialty in the United States. *J Dent Educ*, 77(4): 392–4. doi: 10.1002/j.0022-0337.2013.77.4.tb05484.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2013.77.4.tb05484.x>.
- Sousa, V. D. and Rojjanasrirat, W. 2011. Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: A clear and user-friendly guideline, *J Eval Clin Pract*. 17(2): 268–274. doi: 10.1111/j.1365-2753.2010.01434.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20874835>
- Spielman, A. I. 2007. The birth of the most important 18th century dental text: Pierre Fauchard's *Le Chirurgien Dentist*, *J. Dent. Res.* 86(10): 922–926. doi: 10.1177/154405910708601004. Available from: <http://journals.sagepub.com/doi/10.1177/154405910708601004>.
- Spielman, A. I. 2018. The future of oral medicine. *Oral Dis*. 24(1-2); 285–288. doi: 10.1111/odi.12739. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/odi.12739>.
- Srinivasan, M, McElvany, M, Shay, J. M, Shavelson, R. J. and West, D. C. 2008. Measuring knowledge structure: Reliability of concept mapping assessment in medical education. *Acad. Medic.*, 83(12): 1196–1203. doi: 10.1097/ACM.0b013e31818c6e84. Available from: <http://journals.lww.com/00001888-200812000-00036>.
- Stern, C, Jordan, Z. and McArthur, A. 2014. Developing the Review Question and Inclusion Criteria', *AJN*, 114(4): 53–56. doi: 10.1097/01.NAJ.0000445689.67800.86. Available from: <https://journals.lww.com/00000446-201404000-00030>.
- Stoopler, E, Shirlaw, P, Arvind, M, Lo Russo, L, Bez, C, De Rossi, S, Garfunkel, A, Gibson, J, Liu, H, Liu, Q, Thongprasom, K, Wang, Q, Greenberg, M, and Brennan, M. 2011. An international survey of oral medicine practice: Proceedings from the 5th World Workshop in Oral Medicine', *Oral Diss*, 17(Suppl. 1): 99–104. doi: 10.1111/j.1601-0825.2011.01795.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1601-0825.2011.01795.x>.
- Straková, Z. and Cimermanová, I. 2018. Critical thinking development-a necessary step in higher education transformation towards sustainability, *Sustainability*, 10(10). doi: 10.3390/su10103366. Available from: <http://www.mdpi.com/2071-1050/10/10/3366>.

- Straub-Morarend, C. L, Marshall, T. A, Holmes, D. C. and Finkelstein, M. W. 2011. Informational resources utilized in clinical decision making: common practices in dentistry. *J. Dent. Educ.*, 75(4): 441-452. doi: 10.1002/j.0022-0337.2011.75.4.tb05068.x. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21460265>
- Stuppel, E. J, Maratos, F. A, Elander, J, Hunt, T. E, Cheung, K. Y. and Aubeeluck, A.V. 2017. Development of the Critical Thinking Toolkit (CriTT): A measure of student attitudes and beliefs about critical thinking. *Think. Skills Creativity*, 23: 91-100. doi: 10.1016/j.tsc.2016.11.007. Available from: <http://dx.doi.org/10.1016/j.tsc.2016.11.007>.
- Subramanyam, R. 2014. Oral Pathology in Clinical Dentistry: A systematic approach, *J. Int. Clin. Dent. Res. Organ.* 6(2), p. 72. doi: 10.4103/2231-0754.143476. Available from: <http://www.jicdro.org/text.asp?2014/6/2/72/143476>.
- Suebunukarn, S. 2009. Intelligent Tutoring System for Clinical Reasoning Skill Acquisition in Dental Students, *J. Dent. Educ.*, 73(10), pp. 1178–1186. doi: 10.1002/j.0022-0337.2009.73.10.tb04809.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2009.73.10.tb04809.x>.
- Sullivan, G. M. 2011a. A Primer on the Validity of Assessment Instruments, *J. Grad. Med. Educ.* 3(2):119–120. doi: 10.4300/jgme-d-11-00075.1. Available from: <https://meridian.allenpress.com/jgme/article/3/2/119/33876/A-Primer-on-the-Validity-of-Assessment-Instruments>.
- Sullivan, G. M. 2011b. Deconstructing Quality in Education Research, *J. Grad. Med. Educ.* 3(2): 121–124. doi:10.4300/JGME-D-11-00083.1. Available from: <https://meridian.allenpress.com/jgme/article/3/2/121/33905/Deconstructing-Quality-in-Education-Research>.
- Swanwick, T. 2018. Understanding Medical Education, in Swanwick, T. (ed.) *Understanding Medical Education. : Evidence, Theory and Practice*. John Wiley & Sons, Ltd, Chichester, UK. pp. 1–6. doi: 10.1002/9781119373780.ch1. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/9781119373780.ch1>
- Sweller, J. 1988. Cognitive load during problem solving: Effects on learning. *Cogn. Sci.*, 12(2): 257-285. doi: 10.1016/0364-0213(88)90023-7. Available from: [http://doi.wiley.com/10.1016/0364-0213\(88\)90023-7](http://doi.wiley.com/10.1016/0364-0213(88)90023-7).
- Sweller, J, Van Merrienboer, J. J. G. and Paas, F. G. W. C. 1998. Cognitive Architecture and Instructional Design, *Educ. Psychol. Rev.* 10(3): 251–296. doi: 10.1023/A:1022193728205. Available from: <https://link.springer.com/content/pdf/10.1023/A:1022193728205.pdf>
- Sweller, J. 2010. Element interactivity and intrinsic, extraneous, and germane cognitive load, *Educ. Psychol. Rev.* 22(2): 123–138. doi: 10.1007/s10648-010-9128-5. Available from: <http://link.springer.com/10.1007/s10648-010-9128-5>

9128-5.

- Szolovits, P. and Pauker, S. G. 1978. Categorical and probabilistic reasoning in medical diagnosis, *Artif Intell.* 11(1-2): 115-144. doi: 10.1016/0004-3702(78)90014-0. Available from: <https://linkinghub.elsevier.com/retrieve/pii/0004370278900140>.
- Tanaka, K, Honda, T. and Kitamura, K, 2008. Dentistry in Japan should become a specialty of medicine with dentists educated as oral physicians. *J. Dent. Educ.*, 72(9): 1077-1083. doi: 10.1002/j.0022-0337.2008.72.9.tb04582.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2008.72.9.tb04582.x>.
- Tavakol, M. and Dennick, R., 2011. Making sense of Cronbach's alpha. *Int J Med Educ*, 2: 53-55. doi: 10.5116/ijme.4dfb.8dfd. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28029643>
- Taylor, D. C. M. and Hamdy, H. 2013. Adult learning theories: Implications for learning and teaching in medical education: AMEE Guide No. 83, *Med.Teach*, 35(11): 1561-1572. doi: 10.3109/0142159X.2013.828153. Available from: <http://www.tandfonline.com/doi/full/10.3109/0142159X.2013.828153>.
- Tejada, J. and Punzalan, J. 2012., On the misuse of Slovin's formula, *The Philippine Statistician*, 61(1):129-136. Available from: https://www.psai.ph/docs/publications/tps/tps_2012_61_1_9.pdf
- Templier, M. and Paré, G. 2015. A Framework for Guiding and Evaluating Literature Reviews, *Commun. Assoc. Inf. Syst.* 37: 112-137. doi: 10.17705/1CAIS.03706. Available from: <https://aisel.aisnet.org/cais/vol37/iss1/6/>.
- Thabane, L, Ma, J, Chu, R, Cheng, J, Ismaila, A, Rios, L. P, Robson, R, Thabane, M, Giangregorio, L. and Goldsmith, C.H. 2010. A tutorial on pilot studies: the what, why and how. *BMC Med. Res. Methodol*, 10(1): 1-10. doi: 10.1186/1471-2288-10-1. Available from: <https://bmcmmedresmethodol.biomedcentral.com/articles/10.1186/1471-2288-10-1>.
- Thammasitboon, S. and Cutrer, W. B. 2013. Diagnostic decision-making and strategies to improve diagnosis. *Curr. Probl. Pediatr. Adolesc. Health Care*, 43(9): 232-241. doi: 10.1016/j.cppeds.2013.07.003. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1538544213000928>.
- Thampy, H, Willert, E. and Ramani, S. 2019. Assessing Clinical Reasoning: Targeting the Higher Levels of the Pyramid, *J. Gen. Intern. Med.* 34(8):1631-1636. doi: 10.1007/s11606-019-04953-4. Available from: <http://link.springer.com/10.1007/s11606-019-04953-4>.
- Thomas, R. P, Dougherty, M. R, Sprenger, A. M. and Harbison, J. 2008. Diagnostic hypothesis generation and human judgment. *Psychol. Rev*, 115(1), p.155. doi: 10.1037/0033-295X.115.1.155. Available from:

<http://doi.apa.org/getdoi.cfm?doi=10.1037/0033-295X.115.1.155>.

- Tonetti, M. S, Jepsen, S, Jin, L. and Otomo-Corgel, J. 2017. Impact of the global burden of periodontal diseases on health, nutrition and wellbeing of mankind: A call for global action. *J. Clin. Periodontol.* 44(5): 456-462. doi: 10.1111/jcpe.12732. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/jcpe.12732>.
- Torre, D. M, Daley, B. J, Sebastian, J. L. and Elnicki, D. M. 2006. Overview of current learning theories for medical educators. *Am J Med*, 119(10): 903-907. doi: 10.1016/j.amjmed.2006.06.037. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0002934306008370>.
- Townsend, J. A, Bates, M. L, Rodriguez, T. E, Andrieu, S. C, Hagan, J. L, Cheramie, T. J, Smith, C. A, Leigh, J. E. and Fidel Jr, P. L. 2014. Dental rounds: an evolving process of curriculum integration at the LSU School of Dentistry. *J. Dent. Educ.* 78(5): 796-802. doi: 10.1002/j.0022-0337.2014.78.5.tb05732.x. Available from: <http://doi.wiley.com/10.1002/j.0022-0337.2014.78.5.tb05732.x>.
- Trede, F. and Higgs, J. 2008. Collaborative decision making, in Higgs, J, Jones, M. A, Loftus, S and Christensen, N. (eds). *Clinical Reasoning in the Health Professions*. 3rd ed. Philadelphia: Elsevier (Butterworth Heinemann), pp. 43–54.
- Trigwell, K, Prosser, M. and Waterhouse, F. 1997. Relations between teachers' approaches to teaching and students' approaches to learning, *High. Educ.* 37(1), pp. 57–70. doi: 10.1023/A:1003548313194. Available from: <https://link.springer.com/content/pdf/10.1023/A:1003548313194.pdf>
- Trotter II, R. T. 2012. Qualitative research sample design and sample size: Resolving and unresolved issues and inferential imperatives. *Prev. Med.*, 55(5): 398-400. doi: 10.1016/j.ypmed.2012.07.003. Available from: <http://dx.doi.org/10.1016/j.ypmed.2012.07.003>.
- Trowbridge, R. L, and Olson, A. P. J. 2018. Becoming a teacher of clinical reasoning, *Diagnosis*, 5(1): 11–14. doi: 10.1515/dx-2018-0004. Available from: <http://www.degruyter.com/view/j/dx.2018.5.issue-1/dx-2018-0004/dx-2018-0004.xml>.
- Tubert-Jeannin, S. and Jourdan, D. 2018. Renovating dental education: A public health issue, *Eur J Dent Educ*, 22(3): e644–e647. doi: 10.1111/eje.12347. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/29582568>.
- Unsworth, C. A. 2004. Clinical reasoning: How do pragmatic reasoning, worldview and client-centredness fit? *Br J Occup Ther.* 67(1): 10–19. doi: 10.1177/030802260406700103. Available from: <http://journals.sagepub.com/doi/10.1177/030802260406700103>.
- Varenne, B. 2015. Integrating Oral Health with Non-Communicable Diseases as an Essential Component of General Health: WHO's Strategic Orientation for the African Region. *J Dent Educ*, 79(5 Suppl): S32-7. Available at:

<http://www.ncbi.nlm.nih.gov/pubmed/25941239>.

- Vermunt, J. D. and Vermetten, Y. J. 2004. Patterns in student learning: elationships between learning strategies, conceptions of learning, and learning orientations. *Educ Psychol Rev.*, 16(4): 359-384. doi: 10.1007/BF00129106. Available from: <http://link.springer.com/10.1007/BF00129106>.
- Victor-Chmil, J. 2013. Critical thinking versus clinical reasoning versus clinical judgment: Differential diagnosis. *Nurse Educ.* 38(1): 34-36. doi: 10.1097/NNE.0b013e318276dfbe. Available from: <http://journals.lww.com/00006223-201301000-00017>.
- van der Vleuten, C. P. M. and Schuwirth, L. W. T. 2005. Assessing professional competence: From methods to programmes, *Med. educ.* 39(3): 309–317. doi: 10.1111/j.1365-2929.2005.02094.x. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0140673695907637>.
- van der Vleuten, C. and Newble, D. I. 1995. How can we test clinical reasoning? *The Lancet*, 345(8956): 1032-1034. doi: 10.1016/S0140-6736(95)90763-7. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2929.2005.02094.x>.
- Voo, T. C. 2009. Using medical students as research subjects: Is it ethical?' *Ann. Acad. Med. Singap.*, 38(12):1019–1020. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20052433>.
- Walji, M. F, Karimbux, N. Y. and Spielman, A. I. 2017. Person-Centered Care: Opportunities and Challenges for Academic Dental Institutions and Programs, *J. Dent. Educ.*, 81(11): 1265–1272. doi: 10.21815/jde.017.084. Available from: <http://doi.wiley.com/10.21815/JDE.017.084>.
- Walsh, C.M and Hardy, R.C. 1999. Dispositional differences in critical thinking related to gender and academic major. *J Nurs Educ.* 38(4):149–55. doi: 10.3928/0148-4834-19990401-04 Available from: <http://www.ncbi.nlm.nih.gov/pubmed/10225262>
- Wang, P, Bales, S, Rieger, J. and Zhang, Y. 2004. Survey of learners' knowledge structures: Rationales, methods and instruments. *Proceedings of the American Society for Information Science and Technology*, 41(1): 218-228. doi: 10.1002/meet.1450410126. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/meet.1450410126>.
- Watt, R. G, Daly, B, Allison, P, Macpherson, L. M, Venturelli, R, Listl, S, Weyant, R. J, Mathur, M. R, Guarnizo-Herreño, C. C, Celeste, R. K. and Peres, M. A. 2019. Ending the neglect of global oral health: time for radical action. *The Lancet*, 394(10194): 261-272. doi: 10.1016/S0140-6736(19)31133-X. Available from: [http://dx.doi.org/10.1016/S0140-6736\(19\)31133-X](http://dx.doi.org/10.1016/S0140-6736(19)31133-X).
- Weinberger, B. W. 1924. Dental literature: Its origin and development, *J. Dent. Educ.* 6(4): 305–388. doi: 10.1177/00220345240060040201. Available from: <http://journals.sagepub.com/doi/10.1177/00220345240060040201>.

- Weinstein, R. S, Waer, A. L, Weinstein, J. B, Briehl, M. M, Holcomb, M. J, Erps, K. A, Holtrust, A. L, Tomkins, J. M, Barker, G. P. and Krupinski, E. A. 2017. Second Flexner Century: the democratization of medical knowledge: repurposing a general pathology course into multigrade-level “gateway” courses. *Acad. Pathol.* 4, p.2374289517718872. doi: 10.1177/2374289517718872. Available from: <http://journals.sagepub.com/doi/10.1177/2374289517718872>.
- Weitzel, K. W, Walters, E. A. and Taylor, J. 2012. Teaching clinical problem solving: A preceptor’s guide, *Am. J. Health-Syst. Pharm.* 69(18): 1588–1599. doi: 10.2146/ajhp110521. Available from: <https://www.ualberta.ca/pharmacy/media-library/preceptors/documents/training-and-resources/ajhp1588.pdf>
- Whipp, J, Ferguson, D, Wells, L, and Iacopino, A. 2000. Rethinking knowledge and pedagogy in dental education’, *J Dent Educ*, 64(12): 860–866. doi: 10.1002/j.0022-0337.2000.64.12.tb03387.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2000.64.12.tb03387.x>.
- Whitney, P. 2001. Schemas, Frames, and Scripts in Cognitive Psychology, in *International Encyclopedia of the Social & Behavioral Sciences*. Elsevier, pp. 13522–13526. doi: 10.1016/B0-08-043076-7/01491-1. Available from: <https://linkinghub.elsevier.com/retrieve/pii/B0080430767014911>.
- Whitney, E. M, Aleksejuniene, J. and Walton, J. N. 2016. Critical Thinking Disposition and Skills in Dental Students: Development and Relationship to Academic Outcomes, *J Dent Educ*, 80(8): 948–958. doi: 10.1002/j.0022-0337.2016.80.8.tb06175.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/j.0022-0337.2016.80.8.tb06175.x>.
- Van de Wiel M. W. J, Boshuizen H. P. A, Schmidt H. G. 2000. Knowledge restructuring in expertise development: Evidence from pathophysiological representations of clinical cases by students and physicians. *Eur J Dev Psychol.* 12:323–356. doi: 10.1080/09541440050114543. Available from: <http://www.tandfonline.com/doi/abs/10.1080/09541440050114543>.
- Willis, J. 2007. World Views, Paradigms, and the Practice of Social Science Research, in *Foundations of Qualitative Research: Interpretive and Critical Approaches*. SAGE Publications, Inc. California, United States. pp. 1–26. doi: 10.4135/9781452230108. Available from: <http://methods.sagepub.com/book/foundations-of-qualitative-research>.
- Wilson, N. H. F. and Luo, J. 2019. Dentists of the Future, *Prim. Dent. J*, 8(1): 30–33. doi: 10.1308/205016819826439565. Available from: <http://journals.sagepub.com/doi/10.1308/205016819826439565>.
- Winterton, J, LeDeist, F. D, and Stringfellow, E. 2006. Typology of knowledge, skills and competences: clarification of the concept and prototype. *Office for Official Publications of the European Communities*. Available from:

http://www.cpi.si/files/CPI/userfiles/Datoteke/Novice/EKO/Prototype_typology_CEDEFOP_26_January_2005_1.pdf.

- Woods, N. N, Brooks, L. R, and Norman, G. R. 2007. It all make sense: biomedical knowledge, causal connections and memory in the novice diagnostician. *Adv. Health Sci. Educ*, 12(4): 405–415. doi: 10.1007/s10459-006-9055-x. Available from: <http://link.springer.com/10.1007/s10459-006-9055-x>.
- World Medical Association. 2013. World Medical Association Declaration of Helsinki, JAMA, 310(20):2191. doi: 10.1001/jama.2013.281053. Available from: <https://oxford.universitypressscholarship.com/view/10.1093/acprof:oso/9780199241323.001.0001/acprof-9780199241323-chapter-25>.
- Worthington, H. Clarkson, J. and Weldon, J. 2015. Priority oral health research identification for clinical decision-making. *Evid Based Dent*. 16(3): 69–71. doi: 10.1038/sj.ebd.6401110. Available from: <http://dx.doi.org/10.1038/sj.ebd.6401110>.
- Yardley, S. and Dornan, T. 2012. Kirkpatrick’s levels and education “evidence”. *Med. Educ*. 46(1): 97–106. doi: 10.1111/j.1365-2923.2011.04076.x. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.2011.04076.x>.
- Yazdani, S, Hosseinzadeh, M, Hosseini, F. 2017. Models of clinical reasoning with a focus on general practice: A critical review. *J Adv Med Educ Prof*. 5(4):177-184. PMID: 28979912. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28979912>.
- Yazdani, S. and Hoseini Abardeh, M. 2020. A novel model of clinical reasoning: cognitive zipper model. *J Adv Med Educ Prof*. 8(2): 61-71. doi: 10.30476/jamp.2020.82230.1050. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/32426390>.
- Young, J. Q, Van Merrienboer, J, Durning, S. and Ten Cate, O. 2014. Cognitive load theory: Implications for medical education: AMEE guide no. 86. *Med Teach*, 36(5): 371-384. doi: 10.3109/0142159X.2014.889290. Available from: <http://www.tandfonline.com/doi/full/10.3109/0142159X.2014.889290>.
- Young, M, Thomas, A, Lubarsky, S, Ballard, T, Gordon, D, Gruppen, L. D, Holmboe, E, Ratcliffe, T, Rencic, J, Schuwirth, L. and Durning, S. J. 2018. Drawing boundaries: the difficulty in defining clinical reasoning. *Acad. Med.*, 93(7): 990-995. doi: 10.1097/ACM.0000000000002142. Available from: <http://journals.lww.com/00001888-201807000-00017>.
- Young, M, Thomas, A, Gordon, D, Gruppen, L, Lubarsky, S, Rencic, J, Ballard, T, Holmboe, E, Da Silva, A, Ratcliffe, T. and Schuwirth, L. 2019. The terminology of clinical reasoning in health professions education: implications and considerations. *Med.Teach*, 41(11): 1277-1284. doi: 10.1080/0142159X.2019.1635686. Available from: <https://www.tandfonline.com/doi/full/10.1080/0142159X.2019.1635686>.

- Young, M. E, Thomas, A, Lubarsky, S, Gordon, D, Gruppen, L. D, Rencic, J, Ballard, T, Holmboe, E, Da Silva, A, Ratcliffe, T. and Schuwirth, L. 2020. Mapping clinical reasoning literature across the health professions: a scoping review. *BMC Med. Educ.* 20(1):1-11. doi: 10.1186/s12909-020-02012-9. Available from: <https://bmcmmededuc.biomedcentral.com/articles/10.1186/s12909-020-02012-9>.
- Yuan, A. and Woo, S-B. 2015. Adverse drug events in the oral cavity, *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 119(1): 35–47. doi: 10.1016/j.oooo.2014.09.009. Available from: <http://dx.doi.org/10.1016/j.oooo.2014.09.009>.
- van der Zanden, P.J.A.C, Denessen, E, Cillessen, A.H.N, Meijer, P.C. 2018. Domains and predictors of first-year student success: A systematic review. *Educ Res Rev.* 1(23):57–77. doi: 10.1016/j.edurev.2018.01.001 Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1747938X18300174>
- Zayapragassarazan, Z, Menon, V, Kar, S. S. and Batmanabane, G., 2016. Understanding Critical Thinking to Create Better Doctors. *J. adv. med. educ. prof.* 1(3): 9–13. Available from: https://www.researchgate.net/publication/313920029_Understanding_Critical_Thinking_to_Create_Better_Doctors.
- Zhang, L. F. and Sternberg, R. J. 2000. Are learning approaches and thinking styles related? A study in two Chinese populations. *J. Psychol.*, 134(5): 469-489. doi: 10.1080/00223980009598230. Available from: <http://www.tandfonline.com/doi/abs/10.1080/00223980009598230>.
- Zitzmann, N. U, Matthisson, L, Ohla, H, and Joda, T. 2020. Digital Undergraduate Education in Dentistry: A Systematic Review', *Int J Environ Res Public Health*, 17(9): 3269. doi: 10.3390/ijerph17093269. Available from: <https://www.mdpi.com/1660-4601/17/9/3269>.