REFERENCES

- Abdul Karim, M., & Amran, U. (2009). the effectiveness of brainstorming for the scientific fifth class pupils in chemistry. *AlFath*, *43*, 381-440.
- Abrami, P. C., Bernard, R. M., Borokhovski, E., Wade, A., Surkes, M. A., Tamim, R., & Zhang, D. (2008). Instructional interventions affecting critical thinking skills and dispositions: A stage 1 meta-analysis. *Review of Educational Research*, 78(4), 1102-1134.
- AbuMhadi, S. (2011). Critical thinking skills are included in the Palestinian physics curriculum for the secondary stage and the extent of students it. Published Master Thesis, Islamic University of Gaza- Palestine. http://library.iugaza.edu.ps/thesis/95820.pdf
- Aizikovitsh-Udi, E., & Amit, M. (2011). Developing the skills of critical and creative thinking by probability teaching. *Procedia-Social and Behavioral Sciences*, *15*, 1087-1091.
- Alaatari, M. (2006). The effect of using brainstorming method in teaching science on developing the creative thinking of the second grade intermediate pupils in Arar City. Published Master Thesis Umm Al-Qura University Mecca Saudi Arabia. http://www.abegs.org/sites/Upload/DocLib3/6176
- Alencar, E. M. L. S., Fleith, D. S., & Martinez, A. M. (2003). Obstacles to personal creativity between Brazilian and Mexican university students: A comparative study. *The Journal of Creative Behavior*, *37*(3), 179-192.
- Alimen, R. A. (2009). Attitude towards Physics and Physics Performance, Theories of Learning, and Prospects in Teaching Physics. *Science and Technology*, 6(1).
- Alwani, M. S. (1999). The effect of using strategies Kluzmaar and Discrepant Events in learning physics concepts and the development of critical

- *thinking*: Library and Archives of Iraq. Unpublished Doctorate Thesis. University of Baghdad, College of Education / Ibn al-Haytham- Iraq.
- Anderson, J. R. (1993). Problem solving and learning. *American Psychologist*, 48(1), 35.
- Authority, CDC and HKEAA [Curriculum Development Council and Hong Kong Examinations and Assessment Authority]. (2007c). Science education key learning area: Physics Curriculum and Assessment Guide (Secondary 4 6). Hong Kong: HKSAR Government Logistic Department. http://www.edb.gov.hk/en/curriculumdevelopment/kla/science-edu/curriculum-documents.html.
- Al-Chalabi, F. Q. (2011). The effect of using brainstorming method in the achievement of the first grade intermediate students in mathematics and mathematical communication skills. *AlFath*, *46*, 286-327.
- Bacanll, H., Dombaycl, M. A., Demir, M., & Tarhan, S. (2011). Quadruple Thinking: Creative Thinking. *Procedia-Social and Behavioral Sciences*, 12, 536-544.
- Bailin, S. (2002). Critical thinking and science education. *Science & Education*, 11(4), 361-375.
- Bailin, S., Case, R., Coombs, J. R., & Daniels, L. B. (1999). Conceptualizing critical thinking. *Journal of Curriculum Studies*, 31(3), 285-302.
- Barak, M., & Dori, Y. J. (2009). Enhancing higher order thinking skills among inservice science teachers via embedded assessment. *Journal of Science Teacher Education*, 20(5), 459-474.
- Beatty, I. D., & Gerace, W. D. (2005). Teaching vs. Learning: Changing Perspectives on Problem Solving in Physics Instruction. Proceedings of the 9th Common Conference of the Cyprus Physics Association and Greek Physics Association (Developments and Perspectives in Physics: New Technologies and Teaching of Science), Nicosia, Cyprus, Feb 4-6 2005.

- Benedek, M., Franz, F., Heene, M., & Neubauer, A. C. (2012). Differential effects of cognitive inhibition and intelligence on creativity. *Personality and individual differences*, 53(4), 480-485.
- Beyer, B. K. (1995). *Critical Thinking. Fastback* 385: Phi Delta Kappa Educational Foundation,, 408 N. Union, PO Box 789, Bloomington, IN 47402-0789.
- Bloom, B., Englehart, M., Furst, E., Hill, W., & Krathwohl, D. (1956).

 *Taxonomy of educational objectives: The classification of educational goals.: Handbook I: Cognitive domain. New York: Longmans Green.
- Bradly, Ch. (2011). The role of brainstorming in improving student writing performance in the EFL classrooms. [Online] Available: http://www.edwarddebono.com (October 14, 2011).
- Bonk, C. J., & Smith, G. S. (1998). Alternative instructional strategies for creative and critical thinking in the accounting curriculum. *Journal of Accounting Education*, 16(2), 261-293.
- Brodbeck, F. C., & Greitemeyer, T. (2000). Effects of individual versus mixed individual and group experience in rule induction on group member learning and group performance. *Journal of Experimental Social Psychology*, 36(6), 621-648.
- Brookfield, S. D. (1987). Developing critical thinkers: Challenging adults to explore alternative ways of thinking and acting: Jossey-Bass.
- Brown, V. R., & Paulus, P. B. (2002). Making group brainstorming more effective: Recommendations from an associative memory perspective. *Current Directions in Psychological Science*, 11(6), 208-212.
- Burdett, J. (2003). Making groups work: University students' perceptions. International Education Journal, 4(3), 177-191.

- Burns, J. C., Okey, J. R., & Wise, K. C. (1985). Development of an integrated process skill test: TIPS II. *Journal of Research in Science Teaching*, 22(2), 169-177.
- Burnard, P., Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Analysing and presenting qualitative data. *British dental journal*, 204(8), 429-432.
- Butler, D. L., & Kline, M. A. (1998). Good versus creative solutions: A comparison of brainstorming, hierarchical, and perspective-changing heuristics. *Creativity Research Journal*, 11(4), 325-331.
- Campbell, D. T., Stanley, J. C., & Gage, N. L. (1963). *Experimental and quasi-experimental designs for research*: Houghton Mifflin Boston.
- Carson, S. H., Peterson, J. B., & Higgins, D. M. (2005). Reliability, validity, and factor structure of the Creative Achievement Questionnaire. *Creativity Research Journal*, 17(1), 37-50.
- Cartrette, D. P., & Bodner, G. M. (2009). Non-mathematical problem solving in organic chemistry. *Journal of Research in Science Teaching*, 47(6), 643-660.
- Case, R. (2005). Moving critical thinking to the main stage. *Education Canada*, 45(2), 45-49.
- Chen, H. Y., & Boore, J. R. (2010). Translation and back-translation in qualitative nursing research: methodological review. *Journal of Clinical Nursing*, 19(1-2), 234-239.
- Cheng, V. M. (2004). Developing physics learning activities for fostering student creativity in Hong Kong context. Asia-Pacific Forum on Science Learning and Teaching. Vol. 5. No. 2.
- Cheng, V. M. (2010). Teaching creative thinking in regular science lessons: potentials and obstacles of three different approaches in an Asian context. Asia-Pacific Forum on Science Learning and Teaching. Vol. 11, No. 1, pp. 1-21.
- Cheng, V. M. (2011). Infusing creativity into Eastern classrooms: Evaluations from student perspectives. *Thinking Skills and Creativity*, 6(1), 67-87.

- Clark, C. H. (1958). Brainstorming the dynamic new way to create successful ideas. Literary Licensing, LLC Publishing.
- Claxton, G., Edwards, L., & Scale-Constantinou, V. (2006). Cultivating creative mentalities: a framework for education. *Thinking Skills and Creativity*, *1*(1), 57-61.
- Claxton, G.L. and Lucas, B., 2004, Be Creative, BBC Books: London.
- Claxton, G.L., 1997, Hare Brain, Tortoise Mind: Why Intelligence Increases When You Think Less, Fourth Estate: London, HarperPerennial: San Francisco.
- Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). New Jersey: Lawrence Erlbaum.
- Conklin, W. (2007). Instructional strategies for diverse learners: Shell Education Pub.
- Coombs, C. P. (2001). *Reflective practice: Developing habits of mind.* Doctoral dissertation, University of Toronto.
- Cotton, K. (1991). *Teaching thinking skills*: Northwest Regional Educational Laboratory, School Improvement Program *Series (SIRS)*, Northwest Regional Educational Laboratory. http://www.nwrel.org/scpd/sirs.
- Cropley, A. J. (1992). *More ways than one: Fostering creativity*: Ablex Publishing Corporation.
- Cropley, A. J. (2001). Creativity in education & learning: A guide for teachers and educators: London: Kogan Page, Routledge.
- Dagher, Z. R., & BouJaoude, S. (2011). Science education in Arab states: bright future or status quo? *Studies in Science Education*, 47(1), 73-101.
- Dass, P. M. (2004). New science coaches: Preparation in the new rules of science education. *In J. Weld (Ed.). The game of science education*, 48-79.Boston: Pearson.

- Davis, G. (1986). Creativity is forever. Iowa: Kendall: hunt Publishing company.
- Davis, G. (1992). Creativity is forever . Dubuque, IA: Kendall: Hunt Publishing.
- DeHaan, R. L. (2009). Teaching creativity and inventive problem solving in science. *CBE-Life Sciences Education*, 8(3), 172-181.
- Denzin, N. K., & Lincoln, Y. S. (2005). *The Sage handbook of qualitative research*: Sage Publications, Incorporated.
- Dewey, J. (1903). Democracy in education. *The elementary school teacher*, 4(4), 193-204.
- DfES (Department for Education and Employment). (2002). *The* Ntional Curriculum. *London: HMSO*.
- Diakidoy, I. A. N., & Constantinou, C. P. (2001). Creativity in physics: Response fluency and task specificity. *Creativity Research Journal*, 13(3-4), 401-410.
- Diehl, M., & Stroebe, W. (1987). Productivity loss in brainstorming groups: Toward the solution of a riddle. *Journal of Personality and Social Psychology; Journal of Personality and Social Psychology, 53*(3), 497.
- Dillenbourg, P., Baker, M. J., Blaye, A., & O'Malley, C. (1995). The evolution of research on collaborative learning. *Learning in Humans and Machine: Towards an interdisciplinary learning science.*, 189-211.
- Dugosh, K. L., Paulus, P. B., Roland, E. J., & Yang, H. C. (2000). Cognitive stimulation in brainstorming. *Journal of personality and social psychology*, 79(5), 722.
- Dugosh, K. L., & Paulus, P. B. (2005). Cognitive and social comparison processes in brainstorming. *Journal of Experimental Social Psychology*, 41(3), 313-320.

- Duron, R., Limbach, B., & Waugh, W. (2006). Critical thinking framework for any discipline. *International Journal of Teaching and Learning in Higher Education*, 17(2), 160-166.
- Edwards, C. P., & Springate, K. W. (1995). The Lion Comes out of the Stone: Helping Young Children Achieve Their Creative Potential. *Dimensions of Early Childhood*, 23(4), 24-29.
- Ennis. (1985). A logical basis for measuring critical thinking skills *Educational Lesdership*, 44-48.
- Ennis. (2009). *Investigating and assessing multiple-choice critical thinking tests*.: Critical thinking education and assessment: Can higher order thinking be tested?, London, Ontario: Althouse.
- Facione, P. A. (1990). Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction. Principle investigator, The California Academic Press, Millbrae, CA.
- Facione, P. A. (1998). Critical thinking: What it is and why it counts. *Millbrae*, *CA: California Academic Press. Retrieved April*, *1*, 2004.
- Fanona, Z., N. (2012). The effect of using the model of generative learning and brainstorming in the development of concepts and the Attitude towards Biology for the Eleventh Grade Male Students in Gaza Governorate. Published Master Thesis, Islamic University of Gaza- Palestine. http://library.iugaza.edu.ps/thesis/101525.pdf
- Faour, M., & Muasher, M. (2011). Education for citizenship in the Arab world key to the future: Carnegie Endowment for International Peace.
- Finney, S. (2008). Renewed objectives for the common essential learning of critical and creative thinking (CCT) and personal and social development (PSD). *Regina, SK: Saskatchewan Ministry of Education*.
- Fisher, R. (2002). *Creative Minds: Building communities of learning for the creative age.* Paper presented at the Teaching Qualities Initiative Conference, Hong Kong Baptist University, 2002.

- Fisher, R. (2006a). Expanding Minds: Developing Creative Thinking in Young Learners. *CATS: The IATEFL Young Learners SIG Journal*, 5-9.
- Fisher, R. (2006b). Thinking skills. *Learning to Teach in the Primary School*, 374-386.
- Forrester, J. C. (2008). Thinking Creatively; Thinking Critically. *Asian Social Science*, 4(5).
- Gallupe, R. B., Bastianutti, L. M., & Cooper, W. H. (1991). Unblocking brainstorms. *Journal of Applied Psychology*, 76(1), 137.
- Gallupe, R. B., Dennis, A. R., Cooper, W. H., Valacich, J. S., Bastianutti, L. M., & Nunamaker Jr, J. F. (1992). Electronic brainstorming and group size. *Academy of Management Journal*, 350-369.
- Gardner, H. E. (1993). Creating Minds: An Anatomy of Creativity Seen Through the Lives of Freud, Einstein, Picasso, Stravinsky, Eliot, Graham, and Gandhi
- Gibbs, G. R., Friese, S., & Mangabeira, W. C. (2002). *The use of new technology in qualitative research. Introduction to Issue 3 (2) of FQS*.

 Paper presented at the Forum Qualitative Sozialforschung/Forum: Qualitative Social Research.
- Glassner, A., & Schwarz, B. B. (2007). What stands and develops between creative and critical thinking? Argumentation? *Thinking Skills and Creativity*, 2(1), 10-18.
- Gokhale, A. A. (1995). Collaborative learning enhances critical thinking. Journal of Technology Education. Vol. 7, No. 1.
- Goldenberg, O., & Wiley, J. (2011). Quality, conformity, and conflict: Questioning the assumptions of Osborn's brainstorming technique. *The Journal of Problem Solving*, 3(2), 5.
- Good, C., V. (1959). Dictionary of Education: New York: McGraw-Hill.
- Guilford, J. P. (1950). Creativity. American Psychologist, 5, 444–454.

- Gunn, T. M., Grigg, L. M., & Pomahac, G. A. (2008). Critical Thinking in Science Education: Can Bioethical Issues and Questioning Strategies Increase Scientific Understandings? *The Journal of Educational Thought*, 42(2), 165-183.
- Hake, R. R. (1998). Interactive-engagement versus traditional methods: A sixthousand-student survey of mechanics test data for introductory physics courses. *American Journal of Physics*, 66, 64.
- Halpern, D. F. (1998). Teaching critical thinking for transfer across domains:
 Disposition, skills, structure training, and metacognitive monitoring.
 American Psychologist, 53(4), 449.
- Halpern, D. F. (2007). The nature and nurture of critical thinking. *Critical thinking in psychology*, 1-14.
- Harbi, A. S. (2002). The impact of brainstorming method in the development of critical thinking and academic achievement for students in secondary first grade in biology course in Arar city. Unpublished Masters thesis, University in Makkah, Umm Al-Qura.
- Hargreaves, M. H., & Grenfell, A. T. (2003). *The use of assessment strategies to develop critical thinking skills in science*. 2nd ATN Evaluation and Assessment Conference; 2003 Nov 24-25; Adelaide, South Australia.
- Harris, R. (1998). Introduction to creative thinking. *Retrieved July*, 15, 2012.
- Herriott, R. E., & Firestone, W. A. (1983). Multisite qualitative policy research: Optimizing description and generalizability. *Educational researcher*, 12(2), 14-19.
- Heyman, G. D. (2008). Children's critical thinking when learning from others. Current directions in psychological science, 17(5), 344-347.
- Ho, L. (1998). The effects of individualism-collectivism on brainstorming: A comparison of Canadian and Taiwanese samples. Concordia University.
- Hobson, A. (2001). Teaching relevant science for scientific literacy. *J. Coll. Sci. Teach*, 30, 238-243.

- Hogan, D. M., & Tudge, J. R. (1999). Implications of Vygotsky's theory for peer learning. In A. M. O'Donnell & A. King (Eds.), Cognitive perspectives on peer learning (pp. 39–65). Mahwah, NJ: Erlbaum
- Holubová, R. (2010). Improving the Quality of Teaching by Modern Teaching Methods. *Problems of Education in the Twenty-First Century*, 25, 58-66.
- Hu, W., & Adey, P. (2002). A scientific creativity test for secondary school students. *International Journal of Science Education*, 24(4), 389-403.
- Huitt, W. (1998). Critical thinking: An overview. Educational PsychologyInteractive. Valdosta, GA: Paper presented at the Critical ThinkingConference sponsored by Gordon College, Barnesville.
- IAU. (2010). Inter-agency Information and Analysis Unit. Education in Iraq, from w w w. i a u i ra q. o rg
- Isaksen, S. G. (1998). A review of brainstorming research: Six critical issues for inquiry: Creative Research Unit, Creative Problem Solving Group-Buffalo., New York.
- Jeffrey, B., & Craft, A. (2004). Teaching creatively and teaching for creativity: distinctions and relationships. *Educational Studies*, *30*(1), 77-87.
- Jeng, Y. C., Hsu, S. L., Xie, J., Lin, R., & Huang, C. C. (2010). The Influence of creative-thinking teaching on learning effectiveness. *3*, 33-38.
- Jessop, J. L. P. (2002). Expanding our students' brainpower: idea generation and critical thinking skills. *Antennas and Propagation Magazine, IEEE,* 44(6), 140-144.
- Johnson, & Christensen, L. B. (2010). *Educational Research: Quantitative, Qualitative, and Mixed Approaches* (4 ed.): Sage Publications.
- Johnson, & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher*, 33(7), 14-26.

- Jones, & Ratcliff, G. (1993). Critical Thinking Skills for College Students.

 National Center on Postsecondary Teaching, Learning, and Assessment,

 University Park, PA. (Eric Document ERIC-No.: ED358772).
- Jones, & Wyse, D. (2004). *Creativity in the Primary Curriculum: Theory and Practice*. London: David Fulton Publishers.
- Kadir, S. (2011). Private education or public education. Who is the winner? Retrieved from The Kurdish Globe website: http://www.kurdishglobe.net/displayarticle.html?id=43C34288941F8B0 0859548A83590F820
- Kawulich, B. B. (2004). Data Analysis Techniques in Qualitative Research. Journal of Research in Education, 14(1), 96-113.
- Kim, K. H. (2005). Can only intelligent people be creative? A meta-analysis. *Prufrock Journal*, 16(2-3), 57-66.
- Kim, K. H. (2006). Can we trust creativity tests? A review of the Torrance Tests of Creative Thinking (TTCT). *Creativity Research Journal*, 18(1), 3-14.
- Kind, P. M., & Kind, V. (2007). Creativity in science education: Perspectives and challenges for developing school science. Studies in Science Education, 43, 1-37.
- Kizlik, B. (2012). Thinking Skills Vocabulary and Definitions. Adprima Education Information for New and Future Teachers, online, viewed 21 November 2012, http://www.adprima.com/thinkskl.htm.
- Koh, A. (2002). Towards a critical pedagogy: creating'thinking schools' in Singapore. *Journal of curriculum studies*, *34*(3), 255-264.
- Kohn, N. W., & Smith, S. M. (2010). Collaborative fixation: Effects of others' ideas on brainstorming. *Applied Cognitive Psychology*, 25(3), 359-371.
- Kurfiss, J. G. (1988). Critical thinking: Theory, research, practice, and possibilities: ASHE-ERIC Higher Education Report No. 2, 1988. ASHE-ERIC Higher Education Reports, The George Washington University, One Dupont Circle, Suite 630, Dept. RC, Washington, DC 20036-1183.

- Lai, E. R. (2011). Critical thinking: A literature review. *Pearson research report*.

 Retrieved 17 November 2011, from

 http://pearsonassessments.com/hai/images/tmrs/CriticalThinkingReviewFINAL.
 pdf.
- Lamb, A. (2003). Critical and creative thinking—Bloom's Taxonomy. http://eduscapes.com/tap/topic69.htm.
- Lamm, H., & Trommsdorff, G. (1973). Group versus individual performance on tasks requiring ideational proficiency (brainstorming): A review. *European journal of social psychology*, *3*(4), 361-388.
- Lawson, A. E. (1989). A Theory of Instruction: Using the Learning Cycle To Teach Science Concepts and Thinking Skills. NARST Monograph, Number One, 1989.
- Lawson, A. E., McElrath, C. B., Burton, M. S., & James, B. D. (1991). Hypothetico-deductive reasoning skill and concept acquisition: Testing a constructivist hypothesis. Journal of Research in Science Teaching; 28(10), 953-970.
- Lincoln, YS. & Guba, EG. (1985). Naturalistic Inquiry. Newbury Park, CA: Sage Publications.
- Lizarraga, d. A., Baquedano, d. A., & Rufo, M. P. (2010). Effects of an instruction method in thinking skills with students from Compulsory Secondary Education. *The Spanish journal of psychology*(1), 127-137.
- Maheshwai, V. K., Singh, P., & Agarwal, S. (2003). Brainstorming- An Interactive teaching Technique, from http://www.scribd.com/doc/32187461/Brainstorming-an-Inter-Active-Teaching-Technique
- Maitah, K. A.-R., Al-qamesh, M. N. M., Sa'aydah, N. M., & Sarayreh, A. N. K. A. (2011). The Effectiveness of the Training Program that is Based on Brainstorming to Teach the Introduction to the Special Education Course to the Students in the Department of Educational Sciences in the

- Middle University Faculties to Develop the Critical Thinking that They Have. *European Journal of Social Sciences*, 25(3), 344-363.
- Marrapodi, J., & Education, A. (2003). Critical thinking and creativity, an overview and comparison of the theories. A Paper Presented in Partial Fulfillment Of the equirements of ED7590 Critical Thinking and Adult Education.

http://www.applestar.org/capella/CRITICAL%20THINKING%20AND%20C REATIVITY.pdf.

- Martindale, C., 1999, 'Biological bases for creativity', in Sternberg, R. (ed), *Handbook of Creativity*, Cambridge University Press: Cambridge.
- Mased, A., & Yamin, S. (2012). The Impact of Instructional Methods on Critical Thinking: A Comparison of Problem-Based Learning and Conventional Approach in Engineering Education. *ISRN Education*, 2012. doi: 10.5402/2012/759241
- Mayer, R. E. (1992). *Thinking, problem solving, cognition*: WH Freeman/Times Books/Henry Holt & Co.
- McClure, J. R., Sonak, B., & Suen, H. K. (1999). Concept map assessment of classroom learning: Reliability, validity, and logistical practicality. *Journal of Research in Science Teaching*, *36*(4), 475-492.
- McGuinness, C. (1999). From thinking skills to thinking classrooms. A review and evalutation of approaches for developing pupils thinking, research report RR115, London: Department of education and employment:

 Available on line at www.highreliabilityschools.co.uk/resources/files/downloads../dfesa.pdf
- McIntyre, F. S., Hite, R. E., & Rickard, M. K. (2003). Individual characteristics and creativity in the marketing classroom: Exploratory insights. *Journal of Marketing Education*, 25(2), 143-149.

- Meador, K. S. (1997). *Creative thinking and problem solving for young learners*: Englewood, Colorado: New York: Teacher Ideas Press.
- Meador, K. S. (2003). Thinking Creatively about Science: Suggestions for Primary Teachers. *Gifted child today*, 26(1), 25-29.
- Mestre, J. P., Dufresne, R. J., Gerace, W. J., Hardiman, P. T., & Tougher, J. S. (1992). Enhancing higher-order thinking skills in physics. *Enhancing thinking skills in the sciences and mathematics: Hillsdale, NJ, Lawrence Erlbaum Associates, Publishers*, 77-94.
- Miri, B., David, B. C., & Uri, Z. (2007). Purposely teaching for the promotion of higher-order thinking skills: A case of critical thinking. *Research in science education*, 37(4), 353-369.
- Mohammed, B. (2010). The Effect of Using Brainstorm Strategy on Developing learning. Processes by Fifth Secondary/ Scientic Branch in Biology. *Journal of the Research College of Basic Education 10* (1), pp48-83.
- Monica, K. M. M. (2005). Development and validation of a test of integrated science process skills for the further education and training learners. Published Master Thesis. Science. **Mathematics** and Technology Education, University of Pretoria South Africa. http://upetd.up.ac.za/thesis/available/etd-04302008-145702/
- Morehouse, R. (2011). A Developmental Perspective of Creativity, Critical thinking, and Problem Solving: Toward a Framework for Educators. *Education Today*, 61(1), 7—13.
- Morris, W. (2008). Creativity–Its Place in Education. New Zealand http://www.jpb.com/creative/Creativity_in_Education.pdf
- Mumford, M. D. (2003). Where have we been, where are we going? Taking stock in creativity research. *Creativity Research Journal*, 15(2-3), 107-120.
- Narode, R. (1987). *Teaching Thinking Skills: Science*: NEA Professional Library, PO Box 506, West Haven, CT 06516.

- Nelson, C. E. (1994). Critical thinking and collaborative learning. *New Directions for Teaching and Learning*, 1994(59), 45-58.
- Ngeow, K. Y. H. (1998). *Enhancing student thinking through collaborative learning*: ERIC Clearinghouse on Reading, English, and Communication, Indiana University.
- (2000).How the Group Affects the Mind: **Effects** Nijstad, В. A. of Communication in Idea Generating Group: Unpublished Doctor of Philosopy. Universiteit Utrecht., Amsterdam, The Netherlands.
- Nijstad, B. A., & Stroebe, W. (2006). How the group affects the mind: A cognitive model of idea generation in groups. *Personality and Social Psychology Review, 10* (3), 186-213.
- Nijstad, B. A., Stroebe, W., & Lodewijkx, H. F. M. (2002). Cognitive stimulation and interference in groups: Exposure effects in an idea generation task. *Journal of Experimental Social Psychology*, 38(6), 535-544.
- Nijstad, B. A., Stroebe, W., & Lodewijkx, H. F. M. (2003). Production blocking and idea generation: Does blocking interfere with cognitive processes? *Journal of Experimental Social Psychology*, 39(6), 531-548.
- OECD. (2000). Measuring student knowledge and skills: the PISA 2000 assessment of reading, mathematical and scientific literacy: Organisation for Economic Co-operation and Development. Available on line at: http://www.oecd.org/edu/school/programmeforinternationalstudentasses smentpisa/measuringstudentknowledgeandskillsthepisa2000assessmento freadingmathematicalandscientificliteracy-publications2000.htm
- Okere, M. I. O. (1986). *Creativity in Physics Education*: Unpublished Doctor of Philosopy. University of London. United Kingdom
- Olsen, W. (2004). Triangulation in social research: qualitative and quantitative methods can really be mixed. *Developments in sociology*, 20, 103-118.

- Osborn, A. (1953). Applied imagination: principles and procedures of creative problem solving. *Charles Scribener's Sons, New York*.
 - Osten, K. D. (1992). The Effects of Evaluation and Production Blocking on the Performance of Brainstorming Groups: Published doctoral dissertation, Purdue University. http://www.dtic.mil/dtic/tr/fulltext/u2/a265495.pdf
- Ostrower, F. (1998). Nonparticipant observation as an introduction to qualitative research. *Teaching Sociology*, 26(1), 57-61.
- Patrick. (1993). Teaching Top-Down Problem Solving. Paper presented at the Annual Conference of the American Vocational Association, Nashville, Tennessee, December 3-7.
- Paul, R. (1992). Critical thinking: What, why, and how. *New Directions for Community Colleges*, 1992(77), 3-24.
- Paul, R., & Binker, A. (1992). *Critical thinking: what every person needs to survive in a rapidly changing world*. [Rohnert Park, CA]: Foundation for Critical Thinking Publishing.
- Paul, R., & Elder, L. (2008). The Thinker's Guide to the Nature and Functions of Critical and Creative Thinking. Dillon Beach, CA: Foundation for Critical Thinking Publishing.
- Paul, R., Willsen, J., & Binker, A. J. A. (1993). *Critical thinking: what every person needs to survive in a rapidly changing world*: Foundation for Critical Thinking. (Revised 3rd. Ed)(pp. 20–23). Santa Rosa, CA: Foundation for Critical Thinking. www.criticalthinking.org.
- Paulus, Kohn, N. W., & Arditti, L. E. (2011). Effects of Quantity and Quality Instructions on Brainstorming. *The Journal of Creative Behavior*, 45(1), 38-46.
- Paulus, Nakui, T., & Putman, V. L. (2005). Group brainstorming and teamwork: Some rules for the road to innovation. . L. Thompson and H. Choi (Eds.) Creativity and innovation in organizational teams, 69-86.

- Paulus, & Yang, H. C. (2000). Idea generation in groups: A basis for creativity in organizations. *Organizational Behavior and Human Decision Processes*, 82(1), 76-87.
- Paulus, P. B., & Paulus, L. E. (1997). Implications of research on group brainstorming for gifted education*. *Roeper Review*, 19(4), 225-229.
- Pekmez, E. Ş., Aktamis, H., & Taskin, B. C. (2009). Exploring Scientific Creativity of 7th grade students. *Journal of Qafqaz University*, 26
- Piaget, J. (1929). The child's concept of the world: New York: Harcourt Brace.
- Pithers, R., & Soden, R. (2000). Critical thinking in education: A review. *Educational Research*, 42(3), 237-249.
- Pirsig, R., 1974, Zen and the Art of Motor-Cycle Maintenance, Bodley Head: London.
- Pizzini, E. L., & Shepardson, D. P. (1992). A comparison of the classroom dynamics of a problem-solving and traditional laboratory model of instruction using path analysis. *Journal of Research in Science Teaching*, 29(3), 243-258. doi: 10.1002/tea.3660290305
- Putman, V. L., & Paulus, P. B. (2009). Brainstorming, brainstorming rules and decision making. *The Journal of Creative Behavior*, 43(1), 29-40.
- Raaijmakers, J. G. and R. M. Shiffrin (1981). "Search of associative memory."

 <u>Psychological Review; Psychological Review</u> **88**(2): 93.
- Rabari, J., Indoshi, F., & Okwach, T. (2011). Correlates of divergent thinking among secondary school physics students. *Educational Research (ISSN: 2141-5161)*, 2(3), 982-996.
- Rather, A. R. (2004). *Creativity Its Recognition And*: Sarup Book Publishers Pvt. Limited.

- Rietzschel, E. F., Nijstad, B. A., & Stroebe, W. (2007). Relative accessibility of domain knowledge and creativity: The effects of knowledge activation on the quantity and originality of generated ideas. *Journal of Experimental Social Psychology*, 43(6), 933-946.
- Rietzschel, E. F., Nijstad, B. A., & Stroebe, W. (2010). The selection of creative ideas after individual idea generation: Choosing between creativity and impact. *British Journal of Psychology*, 101(1), 47-68.
- Rodrigues, A., & Oliveira, M. (2008). The Role of Critical Thinking in Physics Learning. Retrieved from http://lsg.ucy.ac.cy/girep
 - 2008/papers/THE%20ROLE%20OF%20CRITICAL%20THINKING.pdf
- Rusbult, C. F. (1997). *A Model of Integrated Scientific Method*. Unpublished doctoral dissertation. University of Wisconsin. Madison.
- Sale, D., & Cheah, S. M. (2011). Developing Critical Thinking Skills Through Dynamic Simulation using an Explicit Model of Thinking. Proceedings of the7th International CDIO Conference, June 20-23,2011; Copenhagen, Denmark.
- Santanen, E. L., Briggs, R. O., & Vreede, G. J. D. (2004). Causal relationships in creative problem solving: Comparing facilitation interventions for ideation. *Journal of Management Information Systems*, 20(4), 167-198.
- Sawyer, R. K. (2011). A call to action: The challenges of creative teaching and learning. To be published in Teachers College Record.
- Schneider, V. (2002). Critical thinking in the elementary classroom:problems and solutions. Educators Publishing Service. EPS Update. Retrieved August 10, 2012, from eps.schoolspecialty.com/downloads/articles/Critical_Thinking-Schneider.pdf

- Scott, G., Leritz, L. E., & Mumford, M. D. (2004). The effectiveness of creativity training: A quantitative review. *Creativity Research Journal*, 16(4), 361-388.
- Seeler, D., Turnwald, G., & Bull, K. (1994). From teaching to learning: Part III. Lectures and approaches to active learning. *Journal of veterinary medical education*, 21(1).
- Seidman, I. (1998). Interviewing as qualitative research: A guide for researchers in education and the social sciences. *New York, NY: Teachers College Press*.
- Shaheen, R. (2010). *An Investigation in to the Factors Enhancing*. Unpublished Doctor of Philosopy, University of Birmingham.
- Shively, C. H. (2011). Grow Creativity! *Learning & Leading with Technology*, 38, 6.
- Simsek, C. L., & Kıyıcı, F. B. (2010). How much science and technology lesson student studying books support creative thinking? *Procedia-Social and Behavioral Sciences*, 2(2), 2105-2110.
- Soh, T. M. T., Arsad, N. M., & Osman, K. (2010). The Relationship of 21st Century Skills on Students' Attitude and Perception towards Physics. *Procedia-Social and Behavioral Sciences*, 7, 546-554.
- Son, J. (2001). CALL and vocabulary learning: A review. *English Linguistic Science*, 7, 27-35.
- Starko, A. J. (2009). Creativity in the classroom: Schools of curious delight (4th ed.). New York: Routledge.
- Steiner, I. (1972). Group Process and Productivity Academic. New York, NY.
- Sternberg. (1986). Critical Thinking: Its Nature, Measurement, and Improvement. National Institute of Education, Washington DC.

- Sternberg, Grigorenko, E. L., & Singer, J. L. (2004). *Creativity: From potential to realization* (pp. 3-19). Washington. DC: American Psychological Association.
- Sternberg, Williams, W., Small, R., & Thomas, A. (1998). Teaching for creativity: two dozen tips: In R. D. Small, & A. P. Thomas (Eds.), Plain talk about education (pp. 153-165). Covington, LA: Center for Development and Learning.
- Stevens, M. (1988). Practical Problem Solving for Managers. London, Kogan Page.
- Stroebe, W., Nijstad, B. A., & Rietzschel, E. F. (2010). Beyond Productivity Loss in Brainstorming Groups:: The Evolution of a Question. *Advances in Experimental Social Psychology*, 43, 157-203.
- Strohm, S., & Baukus, R. A. (1995). Strategies for Fostering Critical-Thinking Skills. *Journalism and Mass Communication Educator*, 50(1), 55-62.
- Sulaiman, F. (2011). The effectiveness of Problem-Based Learning (PBL) online on students' creative and critical thinking in physics at tertiary level in Malaysia. Doctor of Philosophy (PhD). Retrieved from http://hdl.handle.net/10289/4963
- Swartz, R. J., Fischer, S. D., & Parks, S. (1998). *Infusing the Teaching of Critical and Creative Thinking into Secondary Science: A Lesson Design Handbook*: Critical Thinking Books and Software, PO Box 448, Pacific Grove, CA 93950-0448. Tel: 800-458-4849 (Toll Free); Fax: 408-393-3277.
- Taasoobshirazi, G., & Glynn, S. M. (2009). College students solving chemistry problems: A theoretical model of expertise. *Journal of Research in Science Teaching*, 46(10), 1070-1089.
- Taylor, D. W., Berry, P. C., & Block, C. H. (1958). Does group participation when using brainstorming facilitate or inhibit creative thinking? *Administrative Science Quarterly*, 23-47.

- Thurston, A., Topping, K. J., Kosack, W., Gatt, S., Marchal, J., Mestdagh, N., Donnert, K. (2007). Peer learning in primary school science: Theoretical perspectives and implications for classroom practice.
- The Iraqi Ministry of Education. (2010). Physics teacher guide for the second grade intermediate level.
- Torrance, E. P. (1966). The Torrance Tests of Creative Thinking-Norms-Technical Manual Research Edition-Verbal Tests. *Forms A and B-Figural Tests, Forms A and B.*
- Trochim, W. M. K. (2005). Research Methods: The Concise Knowledge Base: Atomic Dog Pub.
- Trochim, W. M. K., & Donnelly, J. P. (2001). Research methods knowledge base (Vol. 32): Atomic Dog Pub.
- UNESCO. (2011). World Data on Education 7. from http://unesdoc.unesco.org/images/0021/002114/211439e.pdf.
- UNSCO. (2003). Situation Analysis of Eduction 7. from http://unesdoc.unesco.org/images/0013/001308/130383e.pdf.
- Vieira, R. M., Tenreiro-Vieira, C., & Martins, I. P. (2011). Critical thinking: conceptual clarification and its importance in science education. Science Education International 22, 43-54.
- Vygotsky, L. S. (1978). Mind in society (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.): Cambridge, MA: Harvard University Press.
- Wade, C. (1995). Using writing to develop and assess critical thinking. *Teaching of Psychology, 22*(1), 24-28.
- Wallach, M. A., & Kogan, N. (1965). Modes of thinking in young children: A Study of the Creativity-intelligence Distinction. New York. Holt, Rinehart and Winston.
- Wallas, G. (1926). The Art of Thought. New York: Harcourt Brace.

- Wang, H. C., Li, T. Y., Rosé, C., Huang, C. C., & Chang, C. Y. (2006). VIBRANT: A brainstorming agent for computer supported creative problem solving. Proceedings of the 8th International Conference, ITS 2006, 4053, pp. 787-789. (NSC 94-2524-S003-014).
- Wang, H. C., Rosé, C. P., & Chang, C. Y. (2011). Agent-based dynamic support for learning from collaborative brainstorming in scientific inquiry. *International Journal of Computer-Supported Collaborative Learning*, 1-25.
- Wang, H. C., Rosé, C. P., Li, T. Y., & Chang, C. Y. (2006). Providing Support for Creative Group Brainstorming: Taxonomy and Technologies. *Intelligent Tutoring Systems for Ill-Defined Domains*, 74.
- Watson, & Glaser, E. M. (1980). Watson-Glaser Watson-Glaser critical thinking manual. San Antonio, TX: The Psychological Corporation, Hartcourt Brace.
- Willingham, D. T. (2008). Critical Thinking: Why Is It So Hard to Teach? *Arts Education Policy Review*, 109(4), 21-32.
- Wood, R. W. (1970). Brainstorming: A Creative Way To Learn. *Education journal*, 91, 2, 160-165.
- Yin, R. K. (2003). *Case Study Research: Design and Methods* (3rd ed.). thousand oaks ca sage
- Zohar, A., & Tamir, P. (1993). Incorporating critical thinking into a regular high school biology curriculum. School Science and Mathematics, 93(3), 136-140.