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Bibliography Shape of the Australian Curriculum:
Technologies

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Introduction

This bibliography complements the *Shape of the Australian Curriculum: Technologies*. It is a more comprehensive version of the bibliography provided in the Technologies Shape paper. It includes the references that informed the development of the Technologies Position paper, the Technologies Initial Advice paper, the draft *Shape of the Australian Curriculum: Technologies* and the final Technologies Shape paper.

It is presented in the following sections:

General

Design and Technologies

Digital Technologies

Engineering

Food and fibre production

Food and nutrition

Spatial cognition, drawing and modelling

General capabilities and Cross-curriculum priorities

      Numeracy

      Critical and creative thinking

      Sustainability

Relationships with other areas of the Australian Curriculum

Technologies bibliography

General

American Association for the Advancement of Science (AAAS) 2007, *Atlas of Science Literacy*, 2 volumes, AAAS, Washington.

Australian Curriculum, Assessment and Reporting Authority 2011, *The Shape of the Australian Curriculum*, version 3.0, ACARA, Sydney.

Australian Government Department of Education, Employment and Workplace Relations for the Council of Australian Governments 2009, *Belonging, Being & Becoming: the early years learning framework for Australia*, DEEWR, ACT.

Australian Science, Technology and Engineering Council (ASTEC) 1996, *Developing Long-term Strategies for Science and Technology in Australia: Outcomes of the study: matching science and technology to future needs 2010,* Australian Government Publishing Service, Canberra.

Bransford, J.D., Brown, A.L. & Cocking, R.R. (eds) 1999, *How People Learn: Brain, mind experience, and school*, National Academy Press, Washington.

Cambridge Assessment 2010, 'Could do better: using international comparisons to refine the national curriculum in England', paper by T. Oates, University of Cambridge.

de Vries, M. 2009, 'The developing field of technology education: an introduction', in A. Jones & M. de Vries (eds), *International Handbook of Research and Development in Technology Education*, Sense Publishers, Rotterdam, pp. 1–9.

Department of Education, Training and the Arts 2007, 'Towards a 10-year plan for science, technology, engineering and mathematics (STEM) education and skills in Queensland', discussion paper, Queensland Government Department of Education, Training and the Arts, Brisbane, Queensland.

Home Economics Institute of Australia 2010, 'Home economics and the Australian curriculum', position paper, HEIA, Victoria.

Jones, A. 2009, 'Looking back to look forward, the future of technology education' in A. Jones & M. de Vries (eds), *International Handbook of Research and Development in Technology Education*, Sense Publishers, Rotterdam, p. 685.

McLaren, P. 2003, 'Foreword' in I. Goodson (ed.), *School Subjects and Curriculum Change*, The Falmer Press, London, pp. iix-xxii.

Ministerial Council on Education, Employment, Training & Youth Affairs 2008, *Melbourne Declaration on Educational Goals for Young Australians,* Curriculum Corporation, Melbourne, accessed 23 November 2011, http://www.curriculum.edu.au/verve/_resources/National_Declaration_on_the_Educational_Goals_for_Young_Australians.pdf.

National Academy of Sciences 2011, *A Framework for K–12 Science Education: Practices, crosscutting concepts and core ideas*, National Academies Press, Washington.

National Advisory Committee on Creative and Cultural Education 1999, *All Our Futures: Creativity, Culture and Education,* report to the Secretary of State for Education and Employment and the Secretary of State for Culture, Media and Sport, May 1999, accessed 23 July 2012, http://sirkenrobinson.com/skr/pdf/allourfutures.pdf.

NSW Board of Studies 1993, *Science and Technology K–6 Syllabus and Support Document,* NSW Board of Studies, Sydney, p. 1.

Peacock, L.1994, 'Curriculum presage and technology education', *AARE Conference Papers Collection,* Newcastle Australian Association for Research in Education, March 1995, accessed 23 July 2012, http://www.aare.edu.au/94pap/peacl94257.txt.

Pendergast, D. 2007, 'Teaching Y generation', *Journal of the HEIA,* vol. 14, no. 3, pp. 15–21.

Rasinen, A. 2003, 'An analysis of the technology education curriculum of six countries', *Journal of Technology Education,* vol. 15, no. 1, Fall 2003.

Technology Education Network 2010, 'Information and communication technology and design and technology learning area', discussion paper, Design and Technology Teachers' Association Victoria, February 2010, accessed 23 July 2012, www.datta.vic.edu.au/resources/discussion_paper_tec2.pdf

World Health Organization (WHO) 1948 Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19–22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.

Design and Technologies

Anderson, L. & Jackson, S. 2006, *The New Design Nexus: ICT, changing demographics and sustainability*, lab.3000, Melbourne.

Australian Deans of Built Environment and Design (ADBED) 2008, 'Review of Australian Higher Education Submission', ADBED July 2008.

Bernstein, B. 1978, 'On the classification and framing of educational knowledge' in M. Young, (ed.), *Knowledge and Control: New directions for the sociology of education*, Collier Macmillan Ltd, London, pp. 47–69.

Burns, C., Cottam, H., Vanstone, C. & Winhall, J. 2006, 'Red paper 02, transformation design', UK Design Council, London.

Cross, N. 2007, *Designerly Ways of Knowing*, Birkhauser Verlag AG, Basel.

Design and Technology Teachers Association 2010, 'Design and Technology Teachers Association – What is DATTA arguing for?', discussion paper, DATTA, Victoria.

Fleer, M. & Jane, B. 2011, *Design and Technology for Children,* 3rd edn, Pearson, Sydney.

Foster, L. 2003 'Changing expectations in technology education: a NSW perspective', paper presented at Technology Education Tasmania conference.

Goldsmiths University 1991, 'The assessment of performance unit design and technology project', Technology Education Research Unit, Goldsmiths University of London, accessed 23 July 2012, http://www.gold.ac.uk/teru/projectinfo/projecttitle,5893,en.php.

Howard, John H. 2008, 'Between a rock and a hard space: design, creative practice and innovation', background paper prepared for the National Innovation Review, CHASS Occasional Paper 5, April 2008, Bruce, ACT, accessed 23 July 2012, www.chass.org.au/papers/pdf/PAP20080521JH.pdf.

Keirl, S. 2009, 'Seeing technology through five phases: a theoretical framing to articulate holism, ethics, and critique in, and for, technological literacy', *Design and Technology Education: An International Journal,* 14.3, pp. 37–46.

King, R. 2002, 'Technology education: a shared vision', Commonwealth Department of Education, Science and Training, Canberra.

Lawler, T. 2005, 'Reflections on the last twenty years of "designing" and projections into the future', paper presented at Pupils Attitudes to Technology PATT-15 conference, Technology Education and Research: Twenty Years in Retrospect, 18-22 April 2005, accessed 23 July 2012, http://www.iteaconnect.org/Conference/PATT/PATT15/PATT15.htm.

Lawson, B. & Dorst, K. 2009, *Design Expertise,* Architectural Press, Oxford.

Mau, B. & Leonard, J. 2007, *Massive Change*, Phaidon, New York.

Reynolds, J. 2006 'School-based nutrition education: making it work', *Journal of the HEIA,* vol. 13, no. 1, pp. 12–18.

Digital Technologies

Ackermann, E. 2004, 'Whole child development guide', Lego Learning Institute.

Ainley, J. 2010, 'ICT literacy on target', *Teacher: The National Education Magazine*, December 2010, pp. 32–36.

Association for Computing Machinery (ACM) and Computer Studies Teachers Association (CSTA) 2010, 'Running on empty: the failure to teach K–12 computer science in the digital age', ACM and CSTA.

Australian Council for Computers in Education (ACCE) 2011, 'ACCE position paper on ICT in the Australian curriculum', ACCE, Victoria.

Bers, M.U. 2010, 'The tangibleK robotics program: applied computational thinking for young children', *Early Childhood Research & Practice,* vol. 12, no. 2, accessed 23 July 2012, http://ecrp.uiuc.edu/v12n2/bers.html.

The College Board 2010, 'AP Computer Science: Principles, course annotations', The College Board.

Computer Science Teachers Association (CSTA) and International Society for Technology in Education (ISTE) 2011, 'Computational thinking teacher resources', 2nd edn, ISTE, accessed 23 July 2012, http://www.iste.org/learn/computational-thinking/computational-thinking_toolkit.aspx.

de Vere, I. & Melles, G. 2010, 'Integrating "designerly" ways with engineering science: a catalyst for change within product design and development' in A. Silva & R. Simoes (eds), *Handbook of Research on Trends in Product Design and Development: Technological and organisational perspectives*, Business Science Reference, New York.

English, L. 2011, 'Data modelling in the beginning school years', *Mathematics: Traditions and [New] Practices,* proceedings of the 34th annual conference of the Mathematics Education Research Group of Australasia and the Australian Association of Mathematics Teachers, Adelaide, AAMT and MERGA, pp. 226–34.

Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEECDYA) 2010, *National Assessment Program: ICT literacy years 6 & 10 report 2008,* Curriculum Corporation, Melbourne.

Moyle, K. 2010, 'What do students say about learning with technologies?', *ACEC2010: Digital Diversity,* conference proceedings of the Australian Computers in Education Conference 2010, Australian Council for Computers in Education (ACEC), Victoria, accessed 23 July 2012, http://www.acec2010.info/proposal/884/what-do-students-say-about-learning-technologies.

Resnick, M. 2002, 'Rethinking learning in the digital age', The Media Laboratory Massachusetts Institute of Technology, accessed 23 July 2012, http://web.media.mit.edu/~mres/papers/wef.pdf.

The Royal Society 2012, 'Shut down or restart? The way forward for computing in UK schools', The Royal Society, London, accessed 23 July 2012, http://royalsociety.org/education/policy/computing-in-schools/report/.

Stephenson, C. 2007, 'The New Educational Imperative: Improving high school computer science', Computer Science Teachers Association, USA, TCEA keynote presentation, accessed 23 July 2012, http://www.csta.acm.org/Communications/sub/DocsPresentationFiles/TCEAPres07.pdf.

Wing, J.M. 2011, Research notebook: computational thinking – what and why?, *The Link: news from the school of computer science,* Carnegie Mellon University, Spring 2011, accessed 23 July 2012, http://link.cs.cmu.edu/article.php?a=600.

Wing, J.M. 2008, 'Computational thinking and thinking about computing', *The Royal Society Journal,* vol. 366, pp. 3717–25.

Wing, J.M. 2006, 'Computational thinking', *Communications of the ACM,* March, vol. 49, no. 3, p. 33.

Engineering

de Vries, M., Burghardt, D. & Hacker, M. 2010, 'Concepts and contexts in engineering and technology education: a modified Delphi study and expert panel report', ITEEA Conference, Charlotte, NC, March 18, 2010.

International Technology Education Association (ITEA) 2007, *Standards for Technological Literacy: Content for the study of technology,* 3rd edn, Virginia, International Technology and Engineering Educators Association, accessed 23 July 2012, http://www.iteea.org/TAA/PDFs/xstnd.pdf.

Katehi, L., Pearson, G. & Feder, M. (eds) 2009, *Engineering in K–12 Education: Understanding the status and improving the prospects,* National Academy of Engineering and National Research Council, Washington DC, The National Academies Press, accessed 23 July 2012 via www.nap.edu.

Williams, P. John 2009, 'Engineering: good for technology education?', paper presented at Pupils Attitudes to Technology PATT-22 conference, Delft University of Technology, The Netherlands, accessed 23 July 2012, http://www.iteea.org/Conference/PATT/PATT22/Williams.pdf.

Food and fibre production

Alexander, S. 2010, Stephanie Alexander Kitchen Garden Foundation, accessed 23 July 2012, http://www.kitchengardenfoundation.org.au/about-the-program.

Dodd, J. 2011 'Sustaining agriculture in NSW high schools: an assessment of the use of examples from alternative agriculture and investigation into the role of high school agriculture in meeting the future needs of the industry', dissertation MSustAgric, Charles Sturt University, accessed 23 July 2012, http://www.nswaat.org.au/prodev/JDoddDissertation.pdf.

The Faculty of Agriculture, Food and Natural Resources 2010, *GR2: a green resolution,* The University of Sydney, accessed 23 July 2012, http://www.sydney.edu.au/agriculture/documents/2012/GR2.pdf.

NSW Farmers Association 2010, 'Educating our children about food and fibre production', NSW Farmers Association, Sydney.

Primary Industries Education Foundation 2010, 'Submission to ACARA for the inclusion of primary industries education in the Australian curriculum', accessed 23 November 2011, http://www.primaryindustrieseducation.com.au/PIEFACARASubm.pdf.

Somerset, S., Ball, R., Flett, M. & Gleissman, R. 2005, 'School-based community gardens: re-establishing healthy relationships with food', *Journal of the HEIA,* vol. 12, no. 2, pp. 25–33.

Food and nutrition

Australian Government Department of Health and Ageing, Get Up & Grow: healthy eating and physical activity for early childhood resources, accessed 23 July 2012, http://www.health.gov.au/internet/main/publishing.nsf/content/phd-early-childhood-nutrition-resources.

Australian Government Department of Health and Ageing 1998, *The Australian Guide to Healthy Eating,* accessed 23 July 2012, http://www.health.gov.au/internet/main/publishing.nsf/Content/FD699468D52A5A2ECA256F19000406D6/$File/fdeduc.pdf.

Australian Government National Health and Medical Research Council 2003, *Australian Dietary Guidelines for Children and Adolescents in Australia,* accessed 23 July 2012, http://www.nhmrc.gov.au/_files_nhmrc/file/publications/synopses/n34.pdf.

Caraher, M. & Seeley, A. 2010, 'Cooking in schools: lessons from the UK', *Journal of the Home Economics Institute of Australia,* vol. 17, no. 1, pp. 2–9.

Fordyce-Voorham, S. 2010, 'Identification of essential food skills for skill-based healthful eating programs in secondary schools', *Journal of Nutrition Education and Behaviour.*

Lai Yeung, W.T. 2007, 'A study of perceptions of food preparation skills in Hong Kong adolescents', *Journal of the HEIA,* vol. 14, no. 2, pp. 16–24.

O'Dea, J. 2007, 'Are we OK or are we not?', *Journal of the HEIA,* vol. 14, no. 3, pp. 6–14.

Rutland, M. 2006, 'The inclusion of food technology as an aspect of technology education in the English school curriculum: a critical review' in M. de Vries, & I. Mottier (eds), *International Handbook of Technology Education,* Sense Publishers, Rotterdam, pp. 273–84.

Seeley, A., Wu, M. & Caraher, M. 2010, 'Should we teach cooking in schools? A systematic review of the literature of school-based cooking interventions', *Journal of the Home Economics Institute of Australia,* vol. 17, no. 1, pp. 10–18.

Stanton, R. 2007 'Nutrition: are we OK?', *Journal of the HEIA,* vol. 14, no. 3, pp. 2–5.

Turner, A. & Seemann, K. 2011, 'The teaching of food technology in secondary schools', *Food Australia,* vol. 63, Issue 11, pp. 34–42.

Vidgen, H.A. & Gallegos, D. 2010, 'Food literacy: time for a new term or just another buzzword?', *Journal of the HEIA,* vol. 17, no. 2, pp. 2–8.

Spatial cognition, drawing and modelling

Sutton, K. & Williams, A. 2008, 'Profiling spatial ability performance of novice designers' in H. Middleton & M. Pavlova (eds), *Exploring Technology Education: Solutions to issues in a globalised world,* proceedings of the 5th Biennial International Conference on Technology Education Research, Gold Coast, Griffith Institute for Educational Research, Griffith University, vol. 2, p. 155.

Sutton, K. & Williams, A. 2007, 'Spatial cognition and its implications for design', *Proceedings of the 2nd International Association of Societies of Design Research (IASDR07) Conference,* Hong Kong Polytechnic University, 12–15 November.

Szczerbicki, M. 2008, *Modelling Diagrams: the model in the design process in contemporary European practice,* 2007 recipient Byera Hadley Travelling Scholarship for Architects, accessed 23 July 2012, http://architectureinsights.com.au/media/uploads/resources/Modelling_Diagrams_2007_BHTS_Report.pdf.

Tversky, B. 2002, 'What do sketches say about thinking?', Stanford University, accessed 23 July 2012, http://www-psych.stanford.edu/~bt/diagrams/papers/sketchingaaai02format.doc.pdf.

Van Sommers, P. 1984, *Drawing and Cognition: Descriptive and experimental studies of graphic production processes*, Cambridge University Press, New York.

General capabilities and Cross-curriculum priorities

Numeracy

Dole, S. 2010, 'Making connections to the big ideas in mathematics: promoting proportional reasoning', *Teaching Mathematics? Make it count: What research tells us about effective*

mathematics teaching and learning, ACER Research Conference 2010, Melbourne, 15–17 August 2010, pp. 71–74, accessed 23 July 2012, http://espace.library.uq.edu.au/view/UQ:227073

Newman, A. 1977, 'An analysis of sixth-grade pupils' errors on written mathematical tasks', *Victorian Institute for Educational Research Bulletin,* 39, pp. 31–43.

Critical and creative thinking

Cropley, A.J. & Cropley, D.H. 2009, *Fostering Creativity: a diagnostic approach for higher education and organisations*, Hampton Press.

Robinson, K. 2001, *Out of Our Minds: Learning to be creative,* Capstone, West Sussex.

Sustainability

Caraher, M. & Reynolds, J. 2005, 'Sustainable food futures: lessons for home economics pedagogy and practice', *Journal of the HEIA,* vol. 12, no. 2, pp. 2–15.

The Climate Group 2008, 'SMART 2020: Enabling the low carbon economy in the information age', Global e-Sustainability Initiative, accessed 23 July 2012, via http://www.smart2020.org/publications/.

Department of Sustainability, Environment, Water, Population and Communities 2010, *Sustainability Curriculum Framework,* accessed 23 November 2011, http://www.curriculumsupport.education.nsw.gov.au/env_ed/teaching/framework/index.htm.

Riley, M. 2005, 'Sustainable futures: food choice matters', *Journal of the HEIA,* vol. 12, no. 1, pp. 2–9.

Slaughter, R. 2004, *Futures Beyond Dystopia: Creating social foresight*, Routledge Farmer, London.

UNESCO 2005, *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability,* accessed 23 July 2012, http://unesdoc.unesco.org/images/0014/001433/143370e.pdf.

Relationships with other areas of the Australian Curriculum

Australian Government Department of Education, Employment and Workplace Relations (DEEWR) 2010, Trade Training Centres in Schools Program, Program Guidelines 2010.

Lin, Kuen-Yi, Hu, Ting-Chen and Tsai, Hsiu-Chin 2010, 'Teaching mathematics, science and technology concepts through designing hands-on and reflective activity', *World Transactions on Engineering and Technology Education,* vol. 8, no. 1, pp. 97–100, accessed 23 July 2012, http://www.wiete.com.au/journals/WTE&TE/Pages/Vol.8,%20No.1%20(2010)/15-Lin,K-Y-17.pdf.

Sidawi, M.M. 2009, 'Teaching science through designing technology', *International Journal of Technology and Design Education,* vol. 19, no. 3, pp. 269–87.