

## References

- Abbott, C., & Cribb, A. (2001). Special schools, inclusion and the World Wide Web—the emerging research agenda. *British Journal of Educational Technology*, 32(3), 331–342. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/1467-8535.00202/pdf>
- Albrecht, U., Folta-Schoofs, K., & Behrends, M. (2013). Effects of mobile augmented reality learning compared to textbook learning on medical students: randomized controlled pilot study. *Journal of Medical Internet Research*, 5(8), e182.
- Allenby, B. (2007). *From Human to Transhuman: Technology and the Reconstruction of the World Templeton Research Lecture*, Arizona, 22 Oct.
- Anand, M., Pearson, V., Kelley, S., Tindle, A., Whalley, P., & Koeberl, K. (2010). Virtual microscope for extra-terrestrial samples. *European Planetary Science Congress*, 10, Rome, Italy. Paper presented at the European Planetary Science Congress (19–24 Sept.).
- Anderson, P. (2007). *What Is Web 2.0? Ideas, Technologies and Implications for Education*. Bristol: JISC.
- Armstrong, A., & Hagel III, J. (1998). *The Real Value of On-line Communities*. London: Butterworth-Heinemann.
- Arpaia, P., Baccigalupi, A., Cennamo, F., and Daponte, P. (1997). A remote measurement laboratory for educational experiments. *Measurement*, 21(4), 157–169.
- Arthur, C. (2011). TomTom satnav data used to set police speed traps. *guardian.co.uk* (28 Apr.).
- @atheistpunk. Tweet, 16 Apr. 2013, 4.09pm. <https://twitter.com/atheistpunk/status/324177739609423872>
- Arvanitis, T. N., Petrou, A., Knight, J. F., Savas, S., Sotiriou, S., Gargalakos, M., & Gialouri, E. (2007). Human factors and qualitative pedagogical evaluation of a mobile augmented reality system for science education used by learners with physical disabilities. *Personal and Ubiquitous Computing*, 13(3), 243–250. doi:10.1007/s00779-007-0187-7
- Ashraf, B. (2006) Lecturer adds value with iTunes. Retrieved from <http://education.guardian.co.uk/elearning/story/0,,1969517,00.html> (Accessed 2 May 2008)

- Attie, S. (1992). The writing on the wall: projections in Berlin's Jewish quarter. Retrieved from [http://www.shimonattie.net/index.php?option=com\\_content&view=article&id=13](http://www.shimonattie.net/index.php?option=com_content&view=article&id=13)
- Audeo Development Partnership. (2010). *Audeo Development Partnership*. Retrieved from <http://www.theaudeo.com/> (14 Feb. 2010)
- Azuma, R. (1997a). A survey of augmented reality. *Presence-Teleoperators and Virtual Environments*, 4(Aug.), 355–385. Retrieved from [http://nzdis.otago.ac.nz/projects/projects/berlin/repository/revisions/22/raw/trunk/Master's\\_Docs/Papers/A\\_Survey\\_of\\_Augmented\\_Reality.pdf](http://nzdis.otago.ac.nz/projects/projects/berlin/repository/revisions/22/raw/trunk/Master's_Docs/Papers/A_Survey_of_Augmented_Reality.pdf)
- Azuma, R. (1997b). A survey of virtual reality. *Presence: Teleoperators and Virtual Environments*, 6(4), 355–385.
- Azuma, R., Bailiot, Y., Behringer, R., Feiner, S., Julier, S., & MacIntyre, B. (2001). Recent advances in augmented reality. *IEEE Computer Graphics and Applications* (Nov./Dec.).
- Bailenson, J. (2008). Why digital avatars make the best teachers. *Chronicle of Higher Education*, 54(30), B27. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=ejh&AN=31767512&site=ehost-live>
- Ballestrini, K. (2011a). Operation LAPIS: the collection grind (17 Feb. 2011). <http://www.playthepast.org/?p=792>
- Ballestrini, K. (2011b). Operation LAPIS: iteration of the CARDS (21 July 2011). <http://www.playthepast.org/?p=1709>
- Ballestrini, K. (2011c). Play the past roundup (4 Dec. 2011). <http://kevinbal.blogspot.co.uk/2011/04/play-past-roundup.html>
- Ballestrini, K., Travis, R., & Slota, S. (2010). The Pericles Group: theory behind practice—the case for practomimetic learning. Retrieved from <http://www.practomime.com/about/theory-behind-practice.php>
- Barthel, R., Leder Mackley, K., Hudson-Smith, A., Karpovich, A., De Jode, M., & Speed, C. (2013). An internet of old things as an augmented memory system. *Personal and Ubiquitous Computing*, 17, 321–333.
- Bau, O., & Poupyrev, I. (2012). REVEL: tactile feedback technology for augmented reality. In *ACM Transactions on Graphics (TOG)—SIGGRAPH 2012 Conference Proceedings*. Retrieved from <http://dl.acm.org/citation.cfm?id=2185585&preflayout=flat>.
- Beaudouin, V., & Velkova, J. (1999). The Cyberians: an empirical study of sociality in a virtual community. *Esprit i3 Workshop on Ethnographic Studies in Real and Virtual Environments: Inhabited Information Spaces and Connected Communities*, Edinburgh.
- Bekerman, Z., Burbules, N., & Silberman-Keller, D. (2006). *Learning in Places: The Informal Education Reader*. New York: Peter Lang.
- Bell, M. W. (2008). Toward a definition of “Virtual Worlds.” *Journal of Virtual Worlds Research*, 1(11–15).
- Berkenheger, S. (2010). Cultural heritage of Second Life threatened by destruction: explorers appeal to UNESCO. *The Last Days of Second Life*. [http://www.berkenheger.netzliteratur.net/sl/last\\_days/wordpress](http://www.berkenheger.netzliteratur.net/sl/last_days/wordpress) [Online].

- Berners-Lee, T., Hendler, J., & Lassila, O. (2001). The Semantic Web. *Scientific American*, *May 2001*, 35–43.
- Billinghurst, M. (2002). Augmented reality in education. *New Horizons for Learning* (figure 1). Retrieved from [http://it.civil.aau.dk/it/education/reports/ar\\_edu.pdf](http://it.civil.aau.dk/it/education/reports/ar_edu.pdf).
- Billinghurst, M., & Duenser, A. (2012). Augmented reality in the classroom. *Computer*, *45*(7), 56–63. doi:10.1109/MC.2012.111.
- Billinghurst, M., & Kato, H. (2002). Collaborative augmented reality. *Communications of the ACM*, *45*(7), 64–70. doi:10.1145/514236.514265.
- Billinghurst, M., Kato, H., & Poupyrev, I. (2001). The MagicBook: a transitional AR interface. *Computers & Graphics*, *25*(5), 745–753. doi:10.1016/S0097-8493(01)00117-0.
- Birmingham University. (2006). Caerus. Retrieved from <http://portal.cetadl.bham.ac.uk/caerus/default.aspx> (Accessed 18 Mar. 2009).
- Blanchard, A., & Horan, T. (1998). Virtual communities and social capital. *Social Science Computer Review*, *16* (3), 293–307.
- Blum, J. R., Bouchard, M., & Cooperstock, J. R. (2012). What's around me? Spatialized audio augmented reality for blind users with a smartphone. *Mobile and Ubiquitous Systems: Computing, Networking, and Services Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering*, *104*, 49–62. Retrieved from [http://link.springer.com/chapter/10.1007/978-3-642-30973-1\\_5](http://link.springer.com/chapter/10.1007/978-3-642-30973-1_5).
- Bostrom, N. (2005). A History of Transhumanist Thought. *Technology*, *1*(Apr.), 1–25.
- Boulos, M., Maramba, I., & Wheeler, S. (2006). Wikis, blogs and podcasts: a new generation of Web-based tools for virtual collaborative clinical practice and education. *BMC Medical Education*, *6*(41), 1472–6920.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, (Aug. 2013), 37–41. Retrieved from <http://www.tandfonline.com/doi/abs/10.1191/1478088706qp063oa>
- Brodeur, M. (2013). Pedagogy of practical science via remote and virtual experiments. Retrieved from <http://www.slideshare.net/glyphery/pedagogy-of-practical-science-via-remote-and-virtual-experiments-25236038>
- Brown, D. J., McHugh, D., Standen, P., Evett, L., Shopland, N., & Battersby, S. (2011). Designing location-based learning experiences for people with intellectual disabilities and additional sensory impairments. *Computers & Education*, *56*(1), 11–20. doi:10.1016/j.compedu.2010.04.014
- Bryant, B. L. (2010). *Geoffrey Chaucer Hath a Blog*. New York: Palgrave Macmillan.
- Bujak, K. R., Radu, I., Catrambone, R., MacIntyre, B., Zheng, R., & Golubski, G. (2013). A psychological perspective on augmented reality in the mathematics classroom. *Computers & Education*, 1–9. doi:10.1016/j.compedu.2013.02.017
- Burton, N. (1997). *World Heritage Sites and GIS*. <http://www.eng-h.gov.uk/cas/whs/shenge.htm> (accessed 30 June 2008) [Online].
- Capturataalk. (2009). Capturataalk. Retrieved from <http://www.capturataalk.com/> (Accessed May 1, 2013).

- Carlson, M. (Translator). (2013). *Lascaux: A Visit to the Cave* [Online]. French Ministry of Culture and Communication. Available: <http://www.lascaux.culture.fr/—/en/00.xml>
- Castronova, E. (2007). *Exodus to the Virtual World*. Basingstoke: Palgrave Macmillan.
- Cereijo Roibás, A., & Arnedillo Sánchez, I. (2002). Pathways to m-learning. *Proceedings of the First European Workshop on Mobile and Contextual Learning*, Birmingham, UK (pp. 53–56).
- Chao, P.-Y., & Chen, G.-D. (2009). Augmenting paper-based learning with mobile phones. *Interacting with Computers*, 21(3), 173–185. doi:10.1016/j.intcom.2009.01.001
- “Chaucer,” G. (2006, Mar.). Abbreviaciouns (Samedi, Mars 25). <http://houseof-fame.blogspot.co.uk/2006/03/abbreviaciouns.html>
- Chaucer, G. (c1394). *The Canterbury Tales (2005 edition)*. London: Penguin.
- Chien-Yu, L., Chao, J. T., & Wei, H. (2010). Augmented reality-based assistive technology for handicapped children. In *Computer Communication Control and Automation 3CA 2010 International Symposium* (Vol. 1, pp. 1–4). IEEE. doi:10.1109/3CA.2010.5533735
- Childs, M., & Peachey, A. (eds.). (2013). *Understanding Learning in Virtual Worlds*. London: Springer.
- Clarke, A. (2013). Adam Clarke on bringing history to life with Minecraft for Museums at Night (17 June 2013). *Museums at Night* <http://museumsatnight.wordpress.com/2013/06/17/adam-clarke-minecraft-tullie-house-museums-at-night/> [Online].
- Clough, G. (2009). *Geolearners: Informal Learning with Mobile and Social Technologies*. Institute of Educational Technology: Milton Keynes, The Open University.
- Clough, G., Jones, A. C., McAndrew, P., & Scanlon, E. (2008). Informal learning with PDAs and smartphones. *Journal of Computer Assisted Learning*, 24(5), 359–371.
- Conole, G., & Dyke, M. (2004). What are the affordances of information and communication technologies? *ALT-J*, 12(2), 113–124.
- Cooperstock, J. R. (2001). The classroom of the future: enhancing education through augmented reality. *Proc HCI Inter 2001 Conf on Human-Computer Interaction* (pp. 688–692). Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.15.4355&rep=rep1&type=pdf>
- Correa, A., Klein, A., & de Deuse Lopez, R. (2011). Augmented reality musical system for rehabilitation of patients with Duchenne muscular dystrophy. *intechopen.com*. Retrieved from [http://www.intechopen.com/source/pdfs/9305/InTech-Augmented\\_reality\\_musical\\_system\\_for\\_rehabilitation\\_of\\_patients\\_with\\_duchenne\\_muscular\\_dystrophy.pdf](http://www.intechopen.com/source/pdfs/9305/InTech-Augmented_reality_musical_system_for_rehabilitation_of_patients_with_duchenne_muscular_dystrophy.pdf)
- Council. (2013). *The Internet of Things*. <http://www.theinternetofthings.eu/> [Online].
- Crain, W. (2005). *Theories of Development: Concepts and Applications* (Vol. 3rd, pp. 335–347). Upper Saddle River, NJ: Pearson Education. Retrieved from <http://www.amazon.co.uk/dp/0139554025>

- Crook, C., Fisher, T., Graber, R., Harrison, C., & Lewin, C. (2008). *Implementing Web 2.0 in Secondary Schools: Impacts, Barriers and Issues*. Coventry: Becta.
- Csikszentmihályi, M. (1990). *Flow: The Psychology of Optimal Experience*. New York: Harper & Row.
- Cuendet, S., & Bonnard, Q. (2013). Designing augmented reality for the classroom. *Computers & Education*. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0360131513000547>
- Cuendet, S., Jermann, P., & Dillenbourg, P. (2012). Tangible interfaces: when physical-virtual coupling may be detrimental to learning. *Proceedings of the 2012 British Computer Society Conference on Human-Computer Interactions* (pp. 49–58).
- Cuendet, S., Bonnard, Q., Do-Lenh, S., & Dillenbourg, P. (2013). Designing augmented reality for the classroom. *Computers & Education*, 1–13. doi:10.1016/j.compedu.2013.02.015
- Daniels, H. (2007). Pedagogy. In Daniels, H., Cole, M., & Wertsch J. (eds.). *Cambridge Guide to Vygotsky* (pp. 307–331).
- Davis, E. A., & Miyake, N. (2004). Explorations of scaffolding in complex classroom systems. *The Journal of the Learning Sciences*, 13(3), 265–272. doi:10.1207/s15327809jls1303\_1
- De Crom, E. P., & De Jager, A. (2005). The “ME”-learning experience: PDA technology and e-learning in ecotourism at the Tshwane University of Technology (TUT). Retrieved from <http://www.mlearn.org.za/papers-full.html> (Accessed 11 Apr. 2007).
- De Lucia, A., Francese, R., Passero, I., & Tortora, G. (2012). A collaborative augmented campus based on location-aware mobile technology. *International Journal of Distance Education Technologies*, 10(1), 55–73. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ970010>
- Derrickson, K. (2008). Second Life and the sacred: Islamic space in a virtual world. In Sisler, V. (ed.) *Digital Islam*. <http://www.digitalislam.eu/article.do?articleId=1877>
- Dillenbourg, P. (1999). *Collaborative Learning: Cognitive and Computational Approaches*. Oxford: Pergamon.
- Downes, S. (2005). E-learning 2.0. Retrieved from <http://www.elearnmag.org/subpage.cfm?section=articles&article=29-1> (Accessed 22 Mar. 2009).
- Drake, E., & Steer, D. A. (2009). *Drake's Comprehensive Compendium of Dragonology*. Massachusetts: Candlewick (p. 192).
- Dramas, F., Oriola, B., Katz, B. G., Thorpe, S. J., & Jouffrais, C. (2008). Designing an assistive device for the blind based on object localization and augmented auditory reality. *Proceedings of the 10th International ACM SIGACCESS Conference on Computers and Accessibility Assets 08*, 263. doi:10.1145/1414471.1414529
- Dunleavy, M., Dede, C., & Mitchell, R. (2013). Affordances and limitations of immersive participatory augmented reality simulations for teaching and learning. *Education and Technology* 18(1), 7–22. Retrieved from <http://www.edutlib.org/p/76260>
- Dünser, A., & Hornecker, E. (2007). An observational study of children interacting with an augmented story book. *Lecture Notes in Computer Science*

- including *Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics*. Retrieved from <http://www.scopus.com/inward/record.url?eid=2-s2.0-38049119416&partnerID=40&cmd5=b101db6e58065336b7236efe939e6852>
- Engelbart, D. C. (1962). *Augmenting Human Intellect: A Conceptual Framework*. Menlo Park, California: Stanford Research Institute for the Air Force Office of Scientific Research, Washington.
- Enyedy, N., Danish, J. A., Delacruz, G., & Kumar, M. (2012). Learning physics through play in an augmented reality environment. *International Journal of Computer Supported Collaborative Learning*, 7(3), 347–378. doi:10.1007/s11412-012-9150-3
- Facer, K. (2012). Taking the 21st century seriously: young people, education and socio-technical futures. *Oxford Review of Education*, 38(1).
- Facer, K., Joiner, R., Standon, D., Reid, J., Hull, R., & Kirk, D. (2004). Savannah: mobile gaming and learning? *Journal of Computer Assisted Learning*, 20(6), 399–409.
- Ferguson, R. (2011). Meaningful learning and creativity in virtual worlds. *Thinking Skills And Creativity*, 6(3), 169–178. Retrieved from <http://oro.open.ac.uk/296660/>
- Ferguson, R. (2012). Death of an avatar: implications of presence for learners and educators in virtual worlds. *Journal of Gaming and Virtual Worlds*, 4, 137–152.
- Ferguson, R., Clough, G., & Hosein, A. (2007). Postgraduate blogs: beyond the ordinary research journal. In Wheeler, S., & Whitton, N. (eds.) *ALT-C 2007: Beyond Control—Learning Technology for the Social Network Generation*. Nottingham: Association for Learning Technology.
- Ferguson, R., Faulkner, D., Whitelock, D., & Sheehy, K. (2011). Knowing how to collaborate: collaborating to know with Web 2.0 tools. Paper presented at the *EARLI 2011 Conference*, Exeter, UK.
- Ferguson, R., Faulkner, D., Whitelock, D., & Sheehy, K. (2013). Pre-teens' informal learning with ICT and Web 2.0. *Technology, Pedagogy and Education*, 22. Retrieved from <http://oro.open.ac.uk/38180/>
- Ferguson, R., Harrison, R., & Weinbren, D. (2010). Heritage and the recent and contemporary past. In Benton, T. (ed.) *Understanding Heritage and Memory*. Manchester: Manchester University Press. [http://www.academia.edu/776673/Heritage\\_and\\_the\\_recent\\_and\\_contemporary\\_past](http://www.academia.edu/776673/Heritage_and_the_recent_and_contemporary_past)
- Ferguson, R., Sheehy, K., & Clough, G. (2010). Challenging education in virtual worlds. In Sheehy, K., Ferguson, R., & Clough, G. (eds.) *Virtual Worlds: Controversies at the Frontier of Education* (pp. 1–16). New York: Nova Science.
- Fischer, G., & Scharff, E. (1998). Learning technologies in support of self-directed learning. *Journal of Interactive Media in Education*, 98,( 4), 92–112.
- FitzGerald, E., Adams, A., Ferguson, R., Gaved, M., Mor, Y., & Thomas, R. (2012). Augmented reality and mobile learning: the state of the art. *11th World Conference on Mobile and Contextual Learning (mLearn 2012)*, Helsinki, Finland.
- Fleck, M., Frid, M., Kindberg, T., Rajani, R., O'Brien-Strain, E., & Spasojevic, M. (2002). From informing to remembering: deploying a ubiquitous system in an interactive science museum. *IEEE Pervasive Computing*, 1(2), 13–21.

- Flory, V. (2012). *The Effect of Interactive Whiteboard Technology on a Math Curriculum Unit*. Retrieved full text from ERIC available online: <http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED538111>
- Fraser, F. C. (2001). From chance to choice: genetics and justice, by Allen Buchanan, Dan W. Brock, Norman Daniels, and Daniel Wikler. *American Journal of Medical Genetics*, 103(3), 263–264. doi:10.1002/ajmg.1539
- Freitas, R., & Campos, P. (2008). SMART: a System of Augmented Reality for Teaching 2nd grade students. *Culture, Creativity, Interaction*, 2, 27–30. Retrieved from <http://dl.acm.org/citation.cfm?id=1531834>
- Furió, D., González-Gancedo, S., Juan, M.-C., Seguí, I., & Rando, N. (2013). Evaluation of learning outcomes using an educational iPhone game vs. traditional game. *Computers & Education*, 64, 1–23. doi:10.1016/j.compedu.2012.12.001
- Futurelab (2006) Mudlarking in Deptford—mini-report. Retrieved from [http://archive.futurelab.org.uk/resources/documents/project\\_reports/mini\\_reports/mudlarking\\_mini\\_report.pdf](http://archive.futurelab.org.uk/resources/documents/project_reports/mini_reports/mudlarking_mini_report.pdf) (Accessed 19 Jan. 2013).
- Gamito, P., Oliveira, J., Morais, D., & Rosa, P. (2012). NeuAR—a review of the VR/AR applications in the neuroscience domain. Retrieved from [http://www.intechopen.com/source/pdfs/24828/InTech-Neuar\\_a\\_review\\_of\\_the\\_vr\\_ar\\_applications\\_in\\_the\\_neuroscience\\_domain.pdf](http://www.intechopen.com/source/pdfs/24828/InTech-Neuar_a_review_of_the_vr_ar_applications_in_the_neuroscience_domain.pdf)
- Garrison, D. R., & Anderson, T. (eds.). (2003). *E-learning in the 21st Century: A Framework for Research and Practice*. London and New York: RoutledgeFalmer.
- Gee, J. P. (2003). *What Video Games Have To Teach Us about Learning and Literacy*. New York: Palgrave Macmillan.
- Gee, J. P. (2004). *Situated Language and Learning: A Critique of Traditional Schooling*. New York: Routledge.
- Gee, J. P. (2009). Keynote address. Paper presented at *Handheld Learning*. Retrieved from <http://www.handheldlearning2009.com/proceedings/video/905-video/307-james-paul-gee>
- Gibbs, M., Mori, J., Arnold, M., & Kohn, T. (2012). ‘Tombstones, uncanny monuments and epic quests: memorials in World of Warcraft’. *Game Studies*, 12. Retrieved from [http://gamestudies.org/1201/articles/gibbs\\_martin](http://gamestudies.org/1201/articles/gibbs_martin)
- Gillen, J. (2012). Archaeology in a virtual world: Scheme Park. In Jones, R. (ed.) *Discourse and Creativity*. Harlow: Pearson.
- Gillen, J., Twining, P., Ferguson, R., Butters, O., Clough, G., Gaved, M., & Sheehy, K. (2009). A learning community for teens on a virtual island—The Scheme Park Teen Second Life Pilot Project. *October*, 15(June), 1–15. Retrieved from [http://scholar.google.co.uk/scholar?hl=en&q=gill+clough&btnG=Search&as\\_sdt=2000&as\\_ylo=&as\\_vis=0#7](http://scholar.google.co.uk/scholar?hl=en&q=gill+clough&btnG=Search&as_sdt=2000&as_ylo=&as_vis=0#7)
- Glyn. (2003). The diary of Samuel Pepys: Sunday 20 May 1660 (comment). Retrieved from <http://www.pepysdiary.com/diary/1660/05/20/>
- Godwin-Jones, R. (2003). Emerging technologies: blogs and wikis: environments for on-line collaboration. *Language Learning & Technology* 7 (2), 12–16.
- Gokhale, A. (1995). Collaborative learning enhances critical thinking. *Journal of Technology Education*, 7(1), 22–30.

- Goldiez, B. F., Ahmad, A. M., Stanney, K. M., Hancock, P. A., & Dawson, J. W. (2005). Augmented reality as a human computer interaction device for augmented cognition. *Proceedings of the 11th International Conference on Human-Computer Interaction Augmented Cognition International*.
- Goldiez, B., Livingston, M., & Brown, D. (2004). Advancing human centered augmented reality research, 8. Retrieved from <http://www.stormingmedia.us/08/0843/A084334.html>
- Golding, W. (1964). *The Spire*. Faber and Faber.
- Gorard, S., Furlong, J., & Selwyn, N. (2004). How do adults learn at home. *British Educational Research Association Annual Conference*, University of Manchester, UK.
- Granott, N. (2005). Scaffolding dynamically toward change: previous and new perspectives. *New Ideas in Psychology*, 23(3), 140–151. doi:10.1016/j.newideapsych.2006.07.002
- Gray, E. (2003). Informal learning in an online community of practice. *Journal of Distance Education*, 19(1), 20–35.
- Greaves, A. (2007). *Reconstructing Hadrian's Wall in Second Life* [Online]. Available: <http://www.liv.ac.uk/sace/organisation/people/greaves.htm> (Accessed 29 June 2008).
- H. A. R. P. (2013). Handheld Augmented Reality Project (HARP ) alien contact! unit overview. Retrieved from <http://sites.harvard.edu/fs/docs/icb.topic135310.files/AlienContactOverview012907.pdf>
- Ha, T., Lee, Y., & Woo, W. (2010). Digilog book for temple bell tolling experience based on interactive augmented reality. *Virtual Reality*, 15(4), 295–309. doi:10.1007/s10055-010-0164-8
- Hales, S., and Earle, N. (2011). Crystal Palace Project blog. Available from <http://sydenhamcrystalpalace.wordpress.com>
- Hamel, C., Sandrine Turcotte, S., & Laferrière, T. (2013). Evolution of the conditions for successful innovation in remote networked schools. *International Education Studies*, 6(3), 1–14. doi:10.5539/ies.v6n3p1
- Hart Research Associates. (2012). Parents' and teachers' attitudes and opinions on technology in education. Retrieved from [www.leadcommission.org/sites/default/files/LEAD Poll Deck.pdf](http://www.leadcommission.org/sites/default/files/LEAD%20Poll%20Deck.pdf) (3 Sept. 2013)
- Harward, V. J., del Alamo, J. A., Lerman, S. R., Bailey, P. H., Carpenter, J., DeLong, K., et al. (2008). The iLab shared architecture: a web services infrastructure to build communities of internet accessible laboratories. *Proceedings of the IEEE*, 96(6), 931–950.
- Hennessy, S. (2000). Graphing investigations using portable (palmtop) technology. *Journal of Computer Assisted Learning*, 16, 243–258.
- Henri, F., & Pudelko, B. (2003). Understanding and analysing activity and learning in virtual communities. *Journal of Computer Assisted Learning*, 19(4), 474–487.
- Hick, P. (2010). Supporting the development of more inclusive practices using the index for inclusion. *Educational Psychology*, 21(2), 117–122. Retrieved from <http://hdl.handle.net/2173/97560>
- Hiltz, S. (1998). Collaborative learning in asynchronous learning networks: building learning communities. Invited Address at “WEB98,” Orlando, Florida,



- Nov. 1998. Retrieved from [http://web.njit.edu/~hiltz/collaborative\\_learning\\_in\\_async.htm](http://web.njit.edu/~hiltz/collaborative_learning_in_async.htm) (Accessed 10 Apr. 2008)
- Hockenberry, J. (2001). The next Brainiacs. *Wired*, 9(8). Retrieved from <http://www.wired.com/wired/archive/9.08/assist.html>
- Holland, D. C., & Valsiner, J. (1988). Cognition, symbols, and Vygotsky's developmental psychology. *Developmental Psychology*, 16(3), 247–272.
- Holmes, S., Kolb, U., Haswell, C., Burwitz, V., Lucas, R., Rodriguez, J., et al. (2011). PIRATE: a remotely operable telescope facility for research and education. *Publications of the Astronomical Society of the Pacific*, 123(908), 1177–1187.
- Hoppe, H. U., Joiner, R., Milrad, M., & Sharples, M. (2003). Guest editorial: wireless and mobile technologies in education. *Journal of Computer Assisted Learning*, 19(3), 255–259.
- Howard, A. M., Roberts, L., Garcia, S., & Quarells, R. (2012). Using mixed reality to map human exercise demonstrations to a robot exercise coach. *IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*, 291–292. doi:10.1109/ISMAR.2012.6402579
- Hsi, H. (2003). A study of user experiences mediated by Nomadic web content in a museum. *Journal of Computer Assisted Learning*, 19(3), 308–319.
- Hsiao, K.-F. (2010). The effects of augmented reality on learning. *Studies in Health Technology And Informatics*, 154, 160–164. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/20543290>
- Hsiao, K.-F. (2012). Using augmented reality for students health—case of combining educational learning with standard fitness. *Multimedia Tools and Applications*, 1–15. doi:10.1007/s11042–011–0985–9
- Hsiao, K.-F., Chen, N.-S., & Huang, S.-Y. (2010). Learning while exercising for science education in augmented reality among adolescents. *Interactive Learning Environments*, (934045965), 1–19. doi:10.1080/10494820.2010.486682
- Hung, D. (2002). Situated cognition and problem-based learning: implications for learning and instruction with technology. *Journal of Interactive Learning Research*, 13(4), 393–414.
- Hung, D., & Chen, D. (2002) Understanding how thriving internet quasi-communities work: distinguishing between learning about and learning to be. *Educational Technology*, 42(1), 23–27.
- Hutchins, E. (2006). The distributed cognition perspective on human interaction. In Enfield, N., & Levinson, S. C. (eds.) *Roots of Human Sociality Culture Cognition and Interaction* (pp. 375–398). Oxford: Berg Publishers. Retrieved from <http://hci.ucsd.edu/102a/readings/RootsSocialityHutchins.pdf>
- Huxley, J. (1927). *Religion Without Revelation*. London: Harper & Brothers.
- Huxley, J. (1957). *New Bottles for New Wine*. London: Chatto & Windus.
- Huxley, J. (1968). Transhumanism. *Journal of Humanistic Psychology*, 8(1), 73–76.
- Initiative, E. L. (2005). 7 Things you should know about augmented reality. *Initiative*, Available: <http://www.educause.edu>. Retrieved from <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:7+Things+You+Should+Know+About+Augmented+Reality#0>

- Ironbridge Gorge Museum Trust. (2008). *Learning* [Online]. Available: <http://www.ironbridge.org.uk/learning/> (Accessed 30 June 2008).
- @jgrant1570. Tweet, 7 Nov. 2012, 8.30 pm. <https://twitter.com/jgrant1570/status/266276342042066944>
- Johnson, L., Levine, A., Smith, R., & Stone, S. (2010). *The Horizon Report. Reading* (p. 35). New Media Consortium and EDUCAUSE Learning Initiative. Retrieved from <http://www.nmc.org/pdf/2008-Horizon-Report.pdf>
- Jones, A., & Preece, J. (2006). Online communities for teachers and lifelong learners: a framework for comparing similarities and identifying differences in communities of practice and communities of interest. *International Journal of Learning Technology*, 292/3), 112–137.
- Juan, C. M., Llop, E., Abad, F., & Lluch, J. (2010). Learning words using augmented reality. *10th IEEE International Conference on Advanced Learning Technologies*, 422–426. doi:10.1109/ICALT.2010.123
- Kadyte, V. (2004). Learning can happen anywhere: a mobile system for language learning. In Attewell, J., & Savill-Smith, C. (eds.) *Learning with Mobile Devices—Research and Development*. London: Learning and Skills Development Agency.
- Kamarainen, A. M., Metcalf, S., Grotzer, T., Browne, A., Mazzuca, D., Tutwiler, M. S., & Dede, C. (2013). EcoMOBILE: integrating augmented reality and probeware with environmental education field trips. *Computers & Education*, 440, 1–12. doi:10.1016/j.compedu.2013.02.018
- Katz, B. F. G., Dramas, F., Parsehian, G., Gutierrez, O., Kammoun, S., Brilhault, A., Brunet, L., Gallay, M., Oriola, B., Auvrary, M., Truillet, P., Denis, M., Thorpe, S., & Jouffrais, C. (2012). NAVIG guidance system for the visually impaired using virtual augmented reality. *Technology and Disability*, 24, 2 163–178.
- Kaufmann, H. (2003). Collaborative augmented reality in education. *Learning*. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.12.2215&rep=rep1&type=pdf>
- Kaufmann, H., Schmalstieg, D., & Wagner, M. (2000). Construct3D : A virtual reality application for mathematics and geometry education. *Education and Information Technologies*, 4, 263–276.
- Kearsley, G. (2000). *Online Education: Learning and Teaching in Cyberspace*. New York: Wadsworth Publishing.
- Keegan, G. (2011). The academic experience of key stage 3 pupils with physical disabilities in mainstream secondary school settings: pupil perspectives. Doctoral Thesis, The Open University.
- @KenBavier. Tweet, 2 May 2013, 11.48 pm <https://twitter.com/kenbavier/status/330091392795811840>
- Kerawalla, L., Luckin, R., Seljeflot, S., & Woolard, A. (2006). “Making it real”: exploring the potential of augmented reality for teaching primary school science. *Virtual Reality*, 10(3–4), 163–174. doi:10.1007/s10055–006–0036–4
- Kirriemuir, J. (2007). *A July 2007 “Snapshot” of UK Higher and Further Education Developments in Second Life*. Bath: Eduserv Foundation.
- Kirriemuir, J. (2009a). *An Academic Year of Expectation? Snapshot #7: Winter 2009: Virtual World Watch*.

- Kirriemuir, J. (2009b). *The Spring 2009 Snapshot of Virtual World Use in UK Higher and Further Education*: Virtual World Watch / Eduserv.
- Kirriemuir, J. (2010). *What Now? Snapshot #9: Summer 2010* (revised Dec. 2010). Virtual World Watch.
- Kirschner, A., Sweller, J., & Clark, R. E. (2006). Why minimal guidance during instruction does not work: an analysis of the failure of constructivist; discovery; problem-based; experiential; and inquiry-based teaching. *Educational Psychologist*, *41*, 75–86.
- Klopfer, E., & Yoon, S. (2005). Developing games and simulations for today and tomorrow's tech savvy youth. *TechTrends*, *49*(3), 33–42. Retrieved from <http://www.springerlink.com/index/GG35JN569475J63G.pdf>
- Klopfer, E., Perry, J., Squire, K., & Jan, M.-F. (2005). Collaborative learning through augmented reality role playing. In Koschman, T., Chan, T. W., & Suthers, D. (eds.). *Proceedings of the 2005 Conference on Computer Support for Collaborative Learning 2005 the Next 10 years CSCL 05* (pp. 311–315). doi:10.3115/1149293.1149333
- Klopfer, E., & Squire, K. (2007). Environmental detectives—the development of an augmented reality platform for environmental simulations. *Educational Technology Research and Development*, *56*(2), 203–228. doi:10.1007/s11423-007-9037-6
- Knobel, M., & Lankshear, C. (eds.). (2007). *A New Literacies Sampler*. Oxford: Peter Lang.
- Koh, J., & Kim, Y. (2004). Sense of virtual community: A conceptual framework and empirical validation. *International Journal of Electronic Commerce*, *8*(2), 75–93. Retrieved from <http://mesharpe.metapress.com/index/fnf7cnges8u8v0fqb.pdf>
- Kollock, P. (1998). Design principles for online communities. *PC Update* *15* (5), 58–56.
- Kreijns, K., Kirschner, P. A., & Jochems, W. (2003). Identifying the pitfalls for social interaction in computer-supported collaborative learning environments: a review of the research. *Computers in Human Behavior*, *19* (3), 335–353.
- Kreylos, O. (2013). Augmented reality sandbox. Retrieved from <http://idav.ucdavis.edu/~okreylos/ResDev/SARndbox/index.html> (22 June 2013)
- Krippendorf, B. B., & Lough, J. (2005). Complete and rapid switch from light microscopy to virtual microscopy for teaching medical histology. *The Anatomical Record Part B: The New Anatomist*, *285B*, 19–25.
- Kucirkova, N., Messer, D., Sheehy, K., & Flewitt, R. (2013). Sharing personalized stories on iPads: a close look at one parent-child interaction. *Literacy*, *47*(3) pp. 115–122.
- Lamolnara, G. (2007). *Digital Preservation Program Makes Awards to Preserve American Creative Works* (press release) [Online]. Library of Congress. Available <http://www.loc.gov/today/pr/2007/07-156.html> (Accessed 29 June 2008).
- Larenkov, S. (2013). Link to the past. Retrieved from <http://sergey-larenkov.livejournal.com/>
- Lave, J., & Wenger, E. (1991) *Situated Learning—Legitimate Peripheral Participation*. New York: Cambridge University Press.
- Lawrenson, A. (2013). D-Day: as it happens—turning Second Screen on its head. Retrieved from <http://mediatel.co.uk/newsline/2013/06/12/d-day-as-it-happens-turning-second-screen-on-its-head/>

- Lee, K. (2012). Augmented reality in education and training. *TechTrends*, 56(2), 13–21. Retrieved from <http://www.springerlink.com/index/H751N484250K3834.pdf>
- Lehdonvirta, V., & Ernkvist, M. (2011). *Knowledge Map of the Virtual Economy*. Washington, DC: The International Bank for Reconstruction and Development/ The World Bank.
- Lemke, J. L. (2002). Becoming the village: education across lives. In Wells, G., & Claxton, G. (eds.) *Learning for Life in the 21st Century*. Oxford: Blackwell.
- Lily, A. (2006). Temples in Second Life (forum posting). Retrieved from <http://www.tiltedmill.com/forums/showthread.php?t=7337&page=2> (30 June 2008)
- Lin, C., Lin, C., & Chen, C. (2012). Real-time interactive teaching materials for students with disabilities. *Future Communication, Computing*. Retrieved from <http://www.springerlink.com/index/N755PJ0227786865.pdf>
- Lindsay, G. (2003). Inclusive education: a critical perspective. *British Journal of Special Education*, 30(1), 3–12. doi:10.1111/1467-8527.00275
- Littleton, K., & Mercer, N. (2012). Educational dialogues. *British Journal of Educational Technology*, 42. Retrieved from <http://oro.open.ac.uk/31351/>
- Liu, W., Cheok, A. D., Lim, C. M. L., & Theng, Y. L. (2007). Mixed reality classroom: learning from entertainment. In *DIMEA '07 Proceedings of the 2nd International Conference on Digital Interactive Media in Entertainment and Arts* (pp. 65–72). ACM New York, NY, USA ©2007.
- Livingstone, D. W. 1999. *Exploring the Icebergs of Adult Learning: Findings of the First Canadian Survey of Informal Learning Practices*. Toronto, Canada: Centre for the Study of Education and Work.
- Lombard, M., & Ditton, T. (1997). At the heart of it all: the concept of presence. *Journal of Computer-mediated Communication*, 3(2), 1–42.
- Lucariello, J. M., Hudson, J. A., Fivush, R., & Bauer, P. J. (eds.). (2004). *The Development of the Mediated Mind: Sociocultural Context and Cognitive Development*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Macaes, G., Pimenta, W., & Carvalho, E. (2011). Using augmented reality virtual assistants to teach the traditional leather tanning process. *Leather*. Retrieved from [http://ieeexplore.ieee.org/xpl/freeabs\\_all.jsp?arnumber=5974179](http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=5974179)
- Madrigal, A. (2008). @MarsPhoenix's Twitter Epitaphs. *Wired Magazine*. Retrieved from <http://www.wired.com/wiredscience/2008/11/marsphoenixs-tw/>
- Manaf, A. (2012). Color recognition system with augmented reality concept and finger interaction: case study for color blind aid system. *ICT and Knowledge Engineering*. Retrieved from [http://ieeexplore.ieee.org/xpls/abs\\_all.jsp?arnumber=6152389](http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=6152389)
- Margetis, G., Zabulis, X., Koutlemanis, P., Antona, M., & Stephanidis, C. (2012). Augmented interaction with physical books in an Ambient Intelligence learning environment. *Multimedia Tools and Applications*, 1–23. doi:10.1007/s11042-011-0976-x
- Marsick, V. J. (ed.). (2009). Special Issue: Towards a unifying framework to support informal learning theory, research and practice. *Journal of Workplace Learning*, 21. @MarsPhoenix. Tweet, 31 May 2008, 7.25am. <https://twitter.com/marsphoenix/status/823849886>

- @MarsPhoenix. Tweet, 20 June 2008, 1.14am. <https://twitter.com/MarsPhoenix/status/839088619>
- @MarsPhoenix. Tweet, 29 Sept. 2008, 9.30pm. <https://twitter.com/MarsPhoenix/status/939695914>
- @MarsPhoenix. Tweet, 29 Sept. 2008, 9.40pm. <https://twitter.com/MarsPhoenix/status/939708240>
- Martin, S., Diaz, G., Sancristobal, E., Gil, R., Castro, M., & Peire, J. (2011). New technology trends in education: seven years of forecasts and convergence. *Computers & Education*, 57(3), 1893–1906. doi:10.1016/j.compedu.2011.04.003
- Mccall, J. (2012). Hegemony: Philip of Macedon and the inspiration of simulation games (8 May 2012). *Play the Past*. <http://www.playthepast.org/?p=2785> [Online].
- Meijer, P. (2011). Camera-based sensory substitution and augmented reality for the blind. *Clinical and Experimental Optometry*. Retrieved from [http://www.artificialvision.com/extra/ACIVS2011\\_MeijerPBL.pdf](http://www.artificialvision.com/extra/ACIVS2011_MeijerPBL.pdf)
- Mentira. (2013). Mentira overview. Retrieved from <http://www.mentira.org/overview> (22 June 2013)
- Merchant, G. (2009). Literacy in virtual worlds. *Journal of Research in Reading*, 32(1), 38–56. doi:10.1111/j.1467-9817.2008.01380.x
- Meyers, K. (2011). Lessons from Assassin's Creed for constructing educational games (25 Oct. 2011). *Play the Past*. <http://www.playthepast.org/?p=2077> [Online].
- Migliano, O., & Nigrelli, M. (2011). Role-games, computer simulations, robots and augmented reality as new learning technologies: A guide for teacher educators and trainers. t3.unina.it (pp. 1–216). Retrieved from <http://www.t3.unina.it/dvd/resources/ebook-eng.pdf>
- Milgram, P., Takemura, H., Utsumi, A., & Kishino, F. (1994). Mixed reality ( MR ) reality-virtuality (RV) Continuum. In Das, H. (ed.). *Systems Research*, 235I (Telemanipulator and Telepresence Technologies), 282–292. doi:10.1.1.83.6861
- Milne, M. (2010). Virtual agents for social tutoring. Retrieved from caef.flinders.edu.au/assets/files/Milne\_Presentation.ppt (22 July 2011)
- Minocha, S. (2013a). 3D Virtual geology field trip. Retrieved from <http://www.heacademy.ac.uk/assets/documents/STEM/GEES/05-07-2013-GEES/2013-07-05-TELGEES-Shailey-Minocha.pdf>
- Minocha, S. (Producer). (2013b). Skiddaw Trailer Part 2 (video). Retrieved from <http://www.youtube.com/watch?v=MOdu5jQukUk>
- Mitchell, D. (2010). Twitter and the teaching of history #gtp2010 (comment). Retrieved from <http://lilian-mlearning.blogspot.co.uk/2010/11/twitter-and-teaching-of-history-gtp2010.html>
- Mount, N. J., Chambers, C., Weaver, D., & Priestnall, G. (2009). Learner immersion engagement in the 3D virtual world: principles emerging from the DELVE project. *Higher Education Academy*, 8(3).
- Munnerley, D., Bacon, M., Wilson, A., Steele, J., Hedberg, J., & Fitzgerald, R. (2012). Confronting an augmented reality. *Research in Learning Technology*, 5,

- 39–48. Retrieved from <http://www.researchinlearningtechnology.net/index.php/rlt/article/view/19189>
- Naismith, L., Sharples, M., & Ting, J. (2005). Evaluation of CAERUS: a context aware mobile guide. In H. van der Merwe & T. Brown, *Mobile Technology: The Future of Learning in Your Hands, mLearn* (pp. 112–115). Cape Town: mLearn.
- Naismith, L., Sharples, M., Vavoula, G., & Lonsdale, P. (2004). Literature review in mobile technologies and learning. Retrieved from [http://elearning.typepad.com/thelearnedman/mobile\\_learning/reports/futurelab\\_review\\_11.pdf](http://elearning.typepad.com/thelearnedman/mobile_learning/reports/futurelab_review_11.pdf)
- Nakevska, M., Hu, J., Langereis, G., & Rauterberg, M. (2012). Alice's adventures in an immersive mixed reality environment. In *IEEE International Symposium on Mixed and Augmented Reality* (pp. 303–304).
- NASA. (2013). Press release 13–103: NASA's Twitter account wins back-to-back Shorty awards. Retrieved from [http://www.nasa.gov/home/hqnews/2013/apr/HQ\\_13-103\\_NASA\\_Gets\\_Shorty.html](http://www.nasa.gov/home/hqnews/2013/apr/HQ_13-103_NASA_Gets_Shorty.html)
- New York Times. (2007). An amputee sprinter: is he disabled or too-abled? Retrieved from <http://www.nytimes.com/2007/05/15/sports/othersports/15runner.html?pagewanted=all>
- Nichani, M., & Hung, D. (2002). Can a community of practice exist online? *Educational Technology*, 42(4), 49–54.
- Nicholson, D. (2013). Augmented reality grows up. *Engineering & Technology* (May). Retrieved from <http://digital-library.theiet.org/content/journals/10.1049/et.2013.0404>
- Nino, T. (2010). The virtual whirl: a brief history of Second Life (26 June 2010). *Massively*. <http://massively.joystiq.com/2010/06/26/the-virtual-whirl-a-brief-history-of-second-life/> [Online].
- Nischelwitzer, A., Lenz, F., Searle, G., & Holzinger, A. (2007). Some aspects of the development of low-cost augmented reality learning environments as examples for future interfaces in technology enhanced learning. *Access*, 728–737.
- Norman, D. A. (1998). *The Design of Everyday Things*. London: The MIT Press.
- Normand, J., Servières, M., & Moreau, G. (2012). A new typology of augmented reality applications. *Augmented Human*, 1–8. doi:10.1145/2160125.2160143
- Okreylos. (2012). Augmented reality sandbox with real-time water flow simulation. *You Tube Video*. Retrieved from <http://www.youtube.com/watch?v=j9JXtTj0mzE> (2 Feb. 2013)
- Oliver, K. J., & Burnett, G. E. (2008). Learning-oriented vehicle navigation systems: a preliminary investigation in a driving simulator. In *10th International Conference on Human–Computer Interaction with Mobile Devices and Services* (pp. 119–126).
- Olson, D. R. (1994). *The World on Paper: The Conceptual and Cognitive Implications of Writing and Reading*. Cambridge: Press Syndicate of the University of Cambridge.
- Olsson, T., & Kärkkäinen, T. (2012). User evaluation of mobile augmented reality scenarios. *Journal of Ambient Intelligence and Smart Environments*, 4, 29–47. doi:10.3233/AIS-2011-0127

- Ong, W. J. (1982). *Orality and Literacy: The Technologizing of the Word*. London: Methuen.
- @OReilly028. Tweet, 20 May 2013, 10.23pm. <https://twitter.com/OReilly028/status/336593165815529473>
- O'Reilly, T. (2007). What is Web 2.0: design patterns and business models for the next generation of software. *Communications & Strategies*, 65(1), 17–37.
- Papert, S. (1993). Obsolete skill set: the 3 Rs. Retrieved from [http://www.wired.com/wired/archive/1.02/1.2\\_papert.html](http://www.wired.com/wired/archive/1.02/1.2_papert.html) (11 May 2009)
- Papert, S. (1996). Looking at technology through school-colored spectacles. Retrieved from <http://www.papert.org/articles/LookingatTechnologyThroughSchool.html> (19 Aug. 2013)
- Parsons, S., & Cobb, S. (2011). State-of-the-art of virtual reality technologies for children on the autism spectrum. *European Journal of Special Needs Education*, 26(3), 355–366. doi:10.1080/08856257.2011.593831
- Paton, G. (2011). Text messaging “improves children’s spelling skills”. *The Telegraph*, 20 Jan. Retrieved from <http://www.telegraph.co.uk/education/educationnews/8272502/Text-messaging-improves-childrens-spelling-skills.html>
- Pea, R. D. (1985). Beyond amplification: Using the computer to reorganize mental functioning. *Educational Psychologist*, 20(4), 167–182. doi:10.1207/s15326985ep2004\_2
- Pemberton, L., & Winter, M. (2009). Collaborative AR in schools. *Proceedings of the 9th International Conference on Computer Supported Collaborative Learning—Volume 2*.
- “Pepys,” E. (2009). Pepys Peeps (Facebook page). Retrieved from <https://http://www.facebook.com/pepys.peeps>
- @petersinnott. Tweet, 16 Apr. 2012, 6.43pm. <https://twitter.com/petersinnott/status/324216596635725824>
- Pleeth, R. (2010). Free your pockets. *Think Data*. Retrieved from <http://www.think-withgoogle.co.uk/quarterly/data/near-field-communication-revolution.html>
- Plester, B., & Wood, C. (2009). Exploring relationships between traditional and new media literacies: British preteen texters at school. *Journal of Computer-Mediated Communication*, 14(4), 1108–1129. doi:10.1111/j.1083–6101.2009.01483.x
- Preece, J. (2001). *On-line Communities: Designing Usability, Supporting Sociability*. New York: Wiley.
- Price, S., & Rogers, Y. (2004). Let’s get physical: the learning benefits of interacting in digitally augmented physical spaces. *Computers & Education*, 43(1–2), 137–151. doi:10.1016/j.compedu.2003.12.009
- Primperfect. (2011). Sic Transit Gloria Mundi... The Dresden Art Museum Closes in Second Life (15 Dec. 2011). <https://primperfectblog.wordpress.com/2011/12/15/sic-transit-gloria-mundi-the-dresden-art-museum-closes-in-second-life/>
- Proctor, N., & Burton, J. (2004). Tate Modern multimedia tour pilots 2002–2003. In Attewell, J., & Savill-Smith, C. (eds.) *Learning with Mobile Devices—Research and Development*. London: Learning and Skills Development Agency.
- Pursell, C. (2011). The safe and rational children’s playground century. *History Australia*, 8(3), 47–74.

- Rachel, S., Cobcroft, R., Towers, S., Smith, J., & Bruns, A. (2006). Mobile learning in review: opportunities and challenges for learners, teachers, and institutions. *Proceedings Online Learning and Teaching (OLT) Conference 2006* (pp. 21–30). Retrieved from <http://eprints.qut.edu.au/5399/1/5399.pdf>
- Radu, I. (2012). Why should my students use AR? A comparative review of the educational impacts of augmented-reality. *2012 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)* (pp. 313–314). doi:10.1109/ISMAR.2012.6402590
- Radu, I., & MacIntyre, B. (2012). Using children's developmental psychology to guide augmented-reality design and usability. *2012 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)* (pp. 227–236). doi:10.1109/ISMAR.2012.6402561
- @rcatesby1572. Tweet, 7 Nov. 2012, 8.14pm. <https://twitter.com/rcatesby1572/status/266272522612400128>
- @rcatesby1572. Tweet, 7 Nov. 2012, 10pm. <https://twitter.com/rcatesby1572/status/266299002193051648>
- RealTimeWWII. (2011). Gizmodo: real-time World War II is the best thing to ever come out of Twitter (comment). Retrieved from <http://gizmodo.com/475124521—comments>
- @RealTimeWWII. Tweet, 11 Nov. 2011, 7.04pm. <https://twitter.com/RealTimeWWII/status/135070412777328640>
- @RealTimeWWII. Tweet, 11 Nov. 2011, 7.05pm. <https://twitter.com/RealTimeWWII/status/135070564279795712>
- @RealTimeWWII. Tweet, 16 Apr. 2013, 4.02pm. <https://twitter.com/RealTimeWWII/status/324176047425855488/photo/1>
- @RealTimeWWII. Tweet, 12 May 2013, 11.18pm. <https://twitter.com/RealTimeWWII/status/330083917229080576>
- @RealTimeWWII. Tweet, 11 May 2013, 2.19am. <https://twitter.com/RealTimeWWII/status/333028599324110849/photo/1>
- @RealTimeWWII. Tweet, 24 May 2013, 8.58am. <https://twitter.com/RealTimeWWII/status/337839919647047680>
- Regenbrecht, H., McGregor, G., Ott, C., Hoermann, S., Schubert, T., Hale, L., Franz, E. (2011). Out of reach?—A novel AR interface approach for motor rehabilitation. *10th IEEE International Symposium on Mixed and Augmented Reality* (pp. 219–228). doi:10.1109/ISMAR.2011.6092389
- Reiser, B. J. (2004). Scaffolding complex learning: the mechanisms of structuring and problematizing student work. *The Journal of the Learning Sciences*, 13(3), 273–304. doi:10.1207/s15327809jls1303\_2
- Rheingold, H. (2000). *The Virtual Community: Homesteading on the Electronic Frontier*, revised edition. Cambridge, MA: MIT Press.
- Richard, E. E., Billaudeau, V., Richard, P., & Gaudin, G. (2007). Augmented reality for rehabilitation of cognitive disabled children: a preliminary study. *2007 Virtual Rehabilitation* (pp. 102–108). Venice, Italy: IEEE. doi:10.1109/ICVR.2007.4362148



- Rix, J. (2010). 21st century skills... all dressed up in the technology of the knowledge age. In Sheehy, K., Ferguson, R., & Clough, G. (eds.) *Virtual Worlds: Controversies at the Frontier of Education*. New York: Nova Science Publishers.
- Rix, J., Sheehy, K., Fletcher-Campbell, F., Crisp, M., & Harper, A. (2013). *Continuum of Education Provision for Children with Special Educational Needs: Review of International Policies and Practices*. Dublin: NCSE.
- Robodance. (2010). WowWee Rovio robot controlled by thoughts, facial gestures and head movements using the Emotiv EEG headset over Skype. Retrieved from <http://www.robodance.com/mind-controlled-robot.php>
- Roccetti, M., Marfia, G., Amoroso, A., & Palazzi, C. (2012). Entertainment technology transfer toward serious use. *Technology*. Retrieved from <http://www.cs.unibo.it/~marfia/publicazioni/c036.pdf>
- Rogers, Y., Price, S., Fitzpatrick, G., Fleck, R., Harris, E., Smith, H., Randell, C., Muller, H., O'Malley, C., Stanton, D., Thompson, M., & Weal, M. (2004). Ambient wood: designing new forms of digital augmentation for learning outdoors. *Proceedings of the 2004 Conference on Interaction Design and Children: Building a Community*. Maryland: ACM.
- Rollett, H., Lux, M., Strohmaier, M., & Dosinger, G. (2007). The Web 2.0 way of learning with technologies. *International Journal of Learning Technology*, 3(1), 87–107.
- Romano, D. M., & Brna, P. (2000). *ACTIVE* world: manipulating time and point of view to promote a sense of presence in a collaborative virtual environment for training in emergency situation. Paper presented at the *3rd International Workshop on Presence*, Delft University of Technology, Delft.
- Roschelle, J. (2003). Unlocking the learning value of wireless mobile devices. *Journal of Computer Assisted Learning*, 12 (3), 260–272.
- Rosenbaum, E., Klopfer, E., & Perry, J. (2006). On location learning: authentic applied science with networked augmented realities. *Journal of Science Education and Technology*, 16(1), 31–45. doi:10.1007/s10956-006-9036-0
- Rosner, D. K., & Ryokai, K. (2010). Spyn: augmenting the creative and communicative potential of craft. *CHI 2010*. Atlanta, Georgia: ACM.
- Salmon, G. (2009). The future for (second) life and learning. *British Journal of Educational Psychology*, 40(3), 526–538.
- Salmon, J., & Nyhan, J. (2013). Augmented reality potential and hype: towards an evaluative framework in foreign language teaching. arastirmax.com. Retrieved from [http://www.arastirmax.com/system/files/dergiler/20415/makaleler/1/1/arastirmax\\_26494\\_pp\\_54-68.pdf](http://www.arastirmax.com/system/files/dergiler/20415/makaleler/1/1/arastirmax_26494_pp_54-68.pdf)
- Salomon, G. (2000). It's not just the tool, but the educational rationale that counts. Retrieved from <http://www.aace.org/conf/edmedia/00/salomonkeynote.htm> (Accessed 17 Apr. 2005).
- @samuelpepys. Tweet, 20 May 2013, 6.05am. <https://twitter.com/samuelpepys/status/336346916017295360>
- Sanderson, K. (2008). Yes, there's ice on Mars. *Nature*. Retrieved from [http://www.nature.com/news/2008/080620/full/news.2008.904.html?s=news\\_rss](http://www.nature.com/news/2008/080620/full/news.2008.904.html?s=news_rss)

- Scanlon, E., Jones, A., & Waycott, J. (2005). Mobile technologies: prospects for their use in informal science settings. Retrieved from <http://jime.open.ac.uk/2005/25/scanlon-2005-25-paper.html> – citation26 (Accessed 17 May 2008).
- Schnädélbach, H. (2009). Visibility in architecture extended through audiovisual communication technologies. In Koch, Daniel, Marcus, Lars, & Steen, Jesper (eds.). *Proceedings of the 7th International Space Syntax Symposium*. Stockholm: KTH. Retrieved from [http://www.sss7.org/Proceedings/10\\_Architectural\\_Research\\_and\\_Architectural\\_Design/097\\_Schnadelbach.pdf](http://www.sss7.org/Proceedings/10_Architectural_Research_and_Architectural_Design/097_Schnadelbach.pdf)
- Schrier, K. (2006). Using augmented reality games to teach 21st century skills. *ACM SIGGRAPH 2006 Educators Program on SIGGRAPH 06, 1(1)*, 15. doi:10.1145/1179295.1179311
- Shakespeare, T. (2006). The social model of disability. (L. J. Davis, ed.). *The University of Chicago Law Review*, 74(4), 197–204. doi:10.2307/20141862
- Shakespeare, T. (2008). Debating disability. *Journal of Medical Ethics*, 34(1), 11–14.
- Shams, L., & Seitz, A. R. (2008). Benefits of multisensory learning. *Trends in Cognitive Sciences*, 12(11), 411–417. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/18805039>
- Sharples, M., McAndrew, P., Weller, M., Ferguson, R., FitzGerald, E., Hirst, T., & Gaved, M. (2013). *Innovating Pedagogy 2013: Open University Innovation Report No 2*. Milton Keynes: The Open University.
- Sharples, M., Meek, S., & Priestnall, G. (2012). Zapp: learning about the distant landscape. In Specht, M., Multisilta, J., & Sharples, M. (eds.) *Proceedings of 11th World Conference on Mobile and Contextual Learning (mLearn 2012)*, (pp. 126–133), Helsinki, Finland.
- Sharples, M., Taylor, J., & Vavoula, G. (2007). A theory of learning for the mobile age. In Andrews, R., & Haythornthwaite, C. (eds.) *The Handbook of Elearning Research*. London: Sage Publications (pp. 221–247).
- Sheehy, K. (2002). The effective use of symbols in teaching word recognition to children with severe learning difficulties: a comparison of word alone, integrated picture cueing and the handle technique. *International Journal of Disability, Development and Education*, 49(1), 47–59. doi:10.1080/10349120120115325
- Sheehy, K. (2003). New technology and inclusion: the world (wide web) is not enough. In Sheehy, K., & Nind, M. (eds.) *Inclusive Education: Learners and Learning Contexts* (pp. 115–128). London: David Fulton Publishers.
- Sheehy, K. (2011). Inclusive education and virtual worlds: the teacher embodiment and learning affordance framework (TEALEAF). In Sheehy, K., Ferguson, R., & G. Clough (eds.) *Virtual Worlds: Controversies at the Frontier of Education* (2nd ed.). Hauppauge, NY: Nova Science Publishers.
- Sheehy, K., & Bucknall, S. (2008). How is technology seen in young people's visions of future education systems? *Learning, Media and Technology*, 33(2), 101–114.
- Sheehy, K., Ferguson, R., & Clough, G. (eds.). (2011). *Virtual Worlds: Controversies at the Frontiers of Education*. 2nd ed. Hauppauge, NY: Nova Science Publishers.
- Sheehy, K., and Greene, A. (2011). Beaming children where they cannot go. Telepresence robots and inclusive education: an exploratory study. *Ubiquitous Learning: An International Journal*, 31, 135–146.

- Sheehy, K., Kukulka-Hulme, A., Twining, P., Evans, D., Cook, D., & Jelfs, A. (2005). *Tablet PCs in Schools: A Review of Literature and Selected Projects*. BECTA, Coventry, UK.
- Sheehy, K., & Littleton, T. (2010). The business of child protection in educational virtual worlds. In Sheehy, K., Ferguson, R., & Clough, G. (eds.) *Virtual Worlds: Controversies at the Frontier of Education*. Hauppauge, NY: Nova Science Publishers.
- Sheehy, K., Rix, J., Collins, J., Hall, K., Nind, M., & Wearmouth, J. (2009). A systematic review of whole class, subject-based pedagogies with reported outcomes for the academic and social inclusion of pupils with special educational needs. *Research Evidence in Education Library*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.
- Shelton, B. E. (2002). Augmented reality and education: current projects and the potential for classroom learning. *New Horizons for Learning*, 9(1), 1–7. Retrieved from [http://www.worldcat.org/title/augmented-reality-and-education-current-projects-and-the-potential-for-classroom-learning/oclc/656182183&referer=brief\\_results](http://www.worldcat.org/title/augmented-reality-and-education-current-projects-and-the-potential-for-classroom-learning/oclc/656182183&referer=brief_results)
- Shibata, F., Yoshida, Y., Furuno, K., Sakai, T., Kiguchi, K., Kimura, A., & Tamura, H. (2004). Vivid encyclopedia: MR pictorial book of insects. *The 9th VR Society of Japan Annual Conference* (pp. 611–612).
- Simms Parr, C., Jones, T., & Butler Songer, N. (2004) Evaluation of a handheld data collection interface for science learning. *Journal of Science Education and Technology*, 13(2), 233–243.
- @S\_in\_washington. Tweet, 29 Sept. 2008, 9.35pm. [https://twitter.com/S\\_in\\_washington/status/939703018](https://twitter.com/S_in_washington/status/939703018)
- @skottstyles. Tweet, 20 May 2013, 6.49am. <https://twitter.com/skottstyles/status/336357923431268352>
- Slay, H., Siebörger, I., & Hodgkinson-Williams, C. (2008). Interactive whiteboards: real beauty or just “lipstick”? *Computers & Education*, 51(3), 1321–1341. doi:10.1016/j.compedu.2007.12.006
- Slota, S., Travis, R., and Ballestrini, K. (2012). Operation BIOME: the design of a situated, social constructivist ARG/RPG for biology education. Paper presented at the *GLS 8.0: Games + Learning + Society Conference* (13–15 June), Madison, WI.
- Smith, H., Higgins, S., Walll, K., & Miller, J. (2005). Interactive whiteboards: boon or bandwagon? A critical review of the literature. *Journal of Computer Assisted Learning*, 21, 91–101. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2729.2005.00117.x/full>
- Socrates. (2011). Phaedrus. In Malaki, David (ed.) *Wondermark*. Retrieved from <http://wondermark.com/socrates-vs-writing/>
- Sorrel, C. (2010). Word lens: augmented reality app translates street signs instantly. *Wired.com*. Retrieved from <http://www.wired.com/gadgetlab/2010/12/word-lens-augmented-reality-app-translates-street-signs-instantly/>
- Sprake, J., & Thomas, H. (2007). Transitional spaces: mapping physical change. *International Journal of Art & Design Education*, 26(2), 167–176.
- Squire, K. (2010). From information to experience: place-based augmented reality games as a model for learning in a globally networked society. *Teachers*

- College Record*, 112(10), 2565–2602. Retrieved from <http://www.refdoc.fr/Detailnotice?idarticle=52187574>
- Squire, K., & Klopfer, E. (2007). Augmented reality simulations on hand-held computers. *The Journal of the Learning Sciences*, 16(3), 371–413. doi:10.1080/10508400701413435
- Stangvik, G. (2010). Special education in society and culture: comparative and developmental perspectives. *European Journal of Special Needs Education*, 25(4), 349–358. doi:10.1080/08856257.2010.513539
- Stone, C. A. (1998). The metaphor of scaffolding: its utility for the field of learning disabilities. *Journal of Learning Disabilities*, 31(4), 344–364. Retrieved from <http://ldx.sagepub.com/cgi/doi/10.1177/002221949803100404>
- Strobel, J., Wang, J., Weber, N. R., & Dyehouse, M. (2013). The role of authenticity in design-based learning environments: the case of engineering education. *Computers & Education*, 64, 143–152. doi:10.1016/j.compedu.2012.11.026
- Tan, C. T., & Soh, D. (2010). Augmented reality games : a review. *Proceedings of GAMEONARABIA EUROSIS*, 31(2), 212–218. doi:10.1080/02763869.2012.670604
- Tartaro, A., & Cassell, J. (2008). Playing with virtual peers: bootstrapping contingent discourse in children with autism. *Proceedings of the 8th International Conference on the Learning Sciences* (Vol. 2, pp. 382–389). International Society of the Learning Sciences. Retrieved from [http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list\\_uids=5027430324945433305related:2TJmez4FxUUJ](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=5027430324945433305related:2TJmez4FxUUJ)
- Taylor, J., Sharples, M., O'Maley, C., Vavoula, G., & Waycott, J. (2006). Towards a task model for mobile learning: a dialectical approach. *International Journal of Learning Technology*, 2(2/3), 138–158.
- Thackray, L., Good, J., & Howland, K. (2008). Difficult, dangerous, impossible...crossing the boundaries into immersive virtual worlds. Paper presented at the *Researching Learning in Virtual Environments (ReLIVE)*, Milton Keynes, UK. @tombatesesq. Tweet, 8 Nov. 2010, 2.35pm. <https://twitter.com/tombatesesq/status/1643956198703104>.
- Travis, R., & Young, M. (2010). Operation KTHMA: reign of the demiurge. In Khine, M. S. (ed.) *Learning To Play* (pp. 153–165). New York: Peter Lang.
- The Central Advisory Council for Education. (1967). *The Plowden Report (1967) Children and Their Primary Schools A*. Retrieved from <http://www.educationengland.org.uk/documents/plowden/>
- The Open University. (2013). *Virtual Microscopes at The Open University*. Retrieved from [http://www.open.ac.uk/earth-research/tindle/AGT/AGT\\_Home\\_2010/Virtual\\_Microscope.html](http://www.open.ac.uk/earth-research/tindle/AGT/AGT_Home_2010/Virtual_Microscope.html)
- Thornton, T., Ernst, J., & Clark, A. (2012). Augmented reality as a visual and spatial learning tool in technology education. *Technology and Engineering Teacher*, (June), 18–22. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=EJ983328>
- Tough, A. (1979). *The Adult's Learning Projects*. Ontario: Ontario Institute for Studies in Education.

- @tpercy1560. Tweet, 7 Nov. 2012, 8.18pm. <https://twitter.com/tpercy1560/status/266273370776150016>
- Tracey, E. (2013). “Cold, getting warmer, hot”: new app helps blind people find each other. *Ouch! It’s a Disability thing*. Retrieved from [http://www.bbc.co.uk/blogs/ouch/2013/03/people\\_finder\\_helps\\_blind\\_frie.html](http://www.bbc.co.uk/blogs/ouch/2013/03/people_finder_helps_blind_frie.html) (14 Aug. 2013).
- Travis, R. (2010a). How much fun is virtual edutainment? (6 Apr. 2010). <http://livingepic.blogspot.co.uk/2010/04/how-much-fun-is-virtual-edutainment.html>
- Travis, R. (2010b). Life in Rome: examples of excellent practomime (30 Mar. 2010). <http://livingepic.blogspot.co.uk/2010/03/life-in-rome-examples-of-excellent.html>
- Travis, R. (2010c). A note on the word “practomime” (14 Jan. 2010). <http://livingepic.blogspot.co.uk/2010/01/note-on-word-practomime.html>
- Travis, R. (2011). Operation ΜΗΝΙΣ: after-action report (28 July 2011). <http://livingepic.blogspot.co.uk/2011/07/operation-after-action-report.html>
- Tseng, C. (2011). Recognizing the emotion of learners by physiological sensors to improve english learning performance. *Biomedical Engineering and Informatics (BMEI), 2011 4th International Conference*, 15–17 Oct. 2011 (Vol. 163.14.136, pp. 2152–2156). Retrieved from [http://163.14.136.79/ETD-db/ETD-search/view\\_etd?URN=etd-0208112-173458](http://163.14.136.79/ETD-db/ETD-search/view_etd?URN=etd-0208112-173458)
- Tuque, F. (2008). For Veterans’ Day—report from Draxtor Despres. *Fleep’s Deep Thoughts* [Online]. Available from <http://www.fleptuque.com/blog/tag/vietnam-war-memorial/>
- Twining, P. (2002). The computer practice framework: a tool to enhance curriculum development relating to ICT. *Twining Intellect Final version 02–03–22*. Retrieved from [kn.open.ac.uk/public/getfile.cfm?documentfileid=2416](http://kn.open.ac.uk/public/getfile.cfm?documentfileid=2416)
- UNESCO. (2003). Charter on the preservation of the digital heritage. *General Conference 32nd Session*, Paris (32C/28). <http://unesdoc.unesco.org/images/0013/001311/131178e.pdf>
- Universal Design Institute. (2003). Retrieved from <http://www.arch.umanitoba.ca/cibfd/about.htm> (5 Dec. 2003)
- University of Oxford. (2009). *The First World War Poetry Digital Archive website* [Online]. Retrieved from <http://www.oucs.ox.ac.uk/ww1lit/secondlife>
- Van der Linden, J., Rogers, Y., Oshodi, M., Spiers, A., McGoran, D., Cronin, R., & O’Dowd, P. (2011). Haptic reassurance in the pitch black for an immersive theatre experience. *Proceedings of the 13th international conference on Ubiquitous computing—UbiComp ’11* (p. 143). Beijing, China: ACM Press. doi:10.1145/2030112.2030133
- Van Hilvoorde, I., & Landeweerd, L. (2010). Enhancing disabilities: transhumanism under the veil of inclusion? *Disability and rehabilitation*, 32(26), 2222–2227. doi:10.3109/09638288.2010.491578
- Van Niekerk, A. A. (2004). Principles of global distributive justice: moving beyond Rawls and Buchanan. *South African Journal of Philosophy*, 23(2), 171–194. Retrieved from <http://cat.inist.fr/?aModele=afficheN&cpsid=16115052>
- Vavoula, G. (2004). KLeOS: a knowledge and learning organisation system in support of lifelong learning. Unpublished PhD, University of Birmingham, Birmingham.

- Vavoula, G., Meek, J., Sharples, M., Lonsdale, P., & Rudman, P. (2006) A Lifecycle approach to evaluating MyArtSpace. *Proceedings of the Fourth IEEE International Workshop on Wireless, Mobile and Ubiquitous Technology in Education*. Washington, DC: IEEE Computer Society.
- Vertesi, J. (2010). Tweeting spacecraft: communicating space science in the age of Web 2.0. *CAP Journal*, 10(Dec.), 30–33.
- Vilkonienė, M. (2009). Influence of augmented reality technology upon pupils' knowledge about human digestive system: the results of the experiment. *Education*, 6(1), 36–43.
- Vincenzi, B., Valimont, N., Macchiarella, C., Opalenik, S. N., Gangadharan, D., & Majoros, A. E. (2003). The effectiveness of cognitive elaboration using augmented reality as a training and learning paradigm. *Annual Meeting of the Human Factors and Ergonomics Society* (pp. 2054–2058), Denver.
- Vinken, P. (2008). Pepys diary traffic statistics (comment). Retrieved from <http://www.pepysdiary.com/news/2003/02/09/268/>
- Vygotsky, L. S. (1997). The instrumental method in psychology (R. van der Veer, Trans.). In Rieber, R. W., & Wollock, J. (eds.) *The Collected Works of L S Vygotsky* (Vol. 3, pp. 85–89). New York: Plenum Press. (Original work written 1924–1934.)
- Wagner, D., & Barakonyi, I. (2003). Augmented reality kanji learning. *Mixed and Augmented Reality 2003 Proceedings The Second IEEE and ACM International Symposium* (pp. 335–336). doi:10.1109/ISMAR.2003.1240747
- Waldrop, M. M. (2013). Education online: the virtual lab. *Nature* 499(18 July), 268–270.
- Walker, K. (2006). A method for creating collaborative mobile learning trails. *Convergence Workshop, Intersecting and Integrating Collaborative-mobile-inquiry Learning*, Amsterdam.
- Warner, H., Smith, C., & Rees, A. (2013). LGfL eSafety survey: interim result. Social capital. What London's young people do online. London. Retrieved from <http://www.lgfl.net/News/Pages/Article.aspx?id=371>
- Wasko, C. (2013). What teachers need to know about augmented reality enhanced learning environments. *TechTrends*, 57(4), 17–21. doi:10.1007/s11528-013-0672-y
- Waycott, J. (2004). *The Appropriation of PDAs as Learning and Workplace Tools: An Activity Theory Perspective*. Institute of Educational Technology. Milton Keynes: The Open University.
- Weinreich, F. (1997). Establishing a point of view toward virtual communities. Retrieved from <http://www.december.com/cm/mag/1997/feb/wein.html> (accessed 22 Mar. 2009)
- Wenger, E. (1998). *Communities of Practice*. Cambridge: Cambridge University Press.
- Wenger, E. (2001). Supporting communities of practice: a survey of community-oriented technologies. Retrieved from <http://www.ewenger.com/tech/> (accessed 11 Apr. 2008)
- Whalley, P., Kelley, S., & Tindle, A. (2011). The role of the virtual microscope in distance learning. *The Journal of Open and Distance Learning*, 26(2), 127–134.

- Whitelock, D., Romano, D., & Jelfs, A. (2000). Perfect presence: what does this mean for the design of virtual learning environments? *Education and Information Technologies*, 5(4), 277–289.
- Widdershins, S. (ed.). 2013. Prim perfect (July 2013). Retrieved from <http://en.calameo.com/read/000004234610f002a5334>
- Wojciechowski, R., & Cellary, W. (2013). Evaluation of learners' attitude toward learning in ARIES augmented reality environments. *Computers & Education*, 68, 1–16. doi:10.1016/j.compedu.2013.02.014
- Wolbring, G. (2009). "Therapeutic," enhancement enabling, assistive devices and the UN convention on the rights of persons with disabilities: a missing lens in the enhancement regulation discourse. *Community Health*, 6(5), 193–206.
- Wolfram, C. (2011). Learning without frontiers. *Learning Without Frontiers*, London, Jan. 2011. Retrieved from <http://www.learningwithoutfrontiers.com/lwf12/speakers/conrad-wolfram/>
- Wood, C., Meachem, S., Bowyer, S., Jackson, E., Tarczynski-Bowles, M. L., & Plester, B. (2011). A longitudinal study of children's text messaging and literacy development. *British journal of psychology*, 102(3), 431–442. doi:10.1111/j.2044–8295.2010.02002.x
- Writer, C. (2013). Ten places, ten years, still standing! (July 2013). *Prim Perfect*. Retrieved from <http://en.calameo.com/read/000004234610f002a5334>
- Wu, H.-K., Lee, S. W.-Y., Chang, H.-Y., & Liang, J.-C. (2013). Current status, opportunities and challenges of augmented reality in education. *Computers & Education*, 62, 41–49. doi:10.1016/j.compedu.2012.10.024
- Wyse, D., & Torrance, H. (2009). The development and consequences of national curriculum assessment for primary education in England. *Educational Research*, 51(2), 213–228. doi:10.1080/00131880902891479
- Xu, Y., Gandy, M., Deen, S., Schrank, B., Spreen, K., Gorbsky, M., White, T., Barba, E., Radu, I., Bolter, J., & MacIntyre, B. (2008). BragFish: exploring physical and social interaction in collocated handheld augmented reality games. *The Proceedings of ACE, 2008: International Conference on Advances in Computer Entertainment Technology*, 3–5 Dec., Yokohama, Japan.
- Yoon, S. A., Elinich, K., Wang, J., Steinmeier, C., & Tucker, S. (2012). Using augmented reality and knowledge-building scaffolds to improve learning in a science museum. *Computer-Supported Collaborative Learning*, 7, 519–541.

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