List of Publications

Cord Hockemeyer

Journal Papers

Augustin, T., Hockemeyer, C., Suck, R., Podbregar, P., Kickmeier–Rust, M. D., & Albert, D. (2015). Individualized skill assessment in educational games: The mathematical foundations of partitioning. *Journal of Mathematical Psychology*, *67*, 1–7.

Breen, D., Aboulafia, A., Zhang, D., Hockemeyer, C., Albert, D., & Shorten, G. (2014). Defining a competence map for a practical skill. *The Clinical Teacher*, *11*(7), 531–536.

Augustin, T., Hockemeyer, C., Kickmeier–Rust, M. D., Podbregar, P., Suck, R., & Albert, D. (2013). The simplified updating rule in the formalization of digital educational games. *Journal of Computational Sciences*, *4*, 293–303.

Augustin, T., Hockemeyer, C., Kickmeier–Rust, M., & Albert, D. (2011). Individualized skill assessment in digital learning games: Basic definitions and mathematical formalism. *IEEE Transactions on Learning Technologies*, *4*, 138–148.

Heller, J., Steiner, C., Hockemeyer, C., & Albert, D. (2006). Competence–based knowledge structures for personalised learning. *International Journal on E–Learning*, *5*(1), 75–88.

Brandt, S., Albert, D., & Hockemeyer, C. (2003). Surmise relations between tests - mathematical considerations. *Discrete Applied Mathematics*, *127*(2), 221–239.

Hockemeyer, C., Conlan, O., Wade, V., & Albert, D. (2003). Applying competence prerequisite structures for eLearning and skill management. *Journal of Universal Computer Science*, *9*, 1428–1436.

Albert, D., Hockemeyer, C., & Wesiak, G. (2002). Current trends in elearning based on knowledge space theory and cognitive psychology. *Psychologische Beiträge*, *44*, 478–494.

Conlan, O., Hockemeyer, C., Wade, V., & Albert, D. (2002). Metadata driven approaches to facilitate adaptivity in personalized eLearning systems. *The Journal of Information and Systems in Education*, *1*, 38–44.

Hockemeyer, C. (2002). A comparison of non–deterministic procedures for the adaptive assessment of knowledge. *Psychologische Beiträge*, *44*, 495–503.

Dowling, C. E., & Hockemeyer, C. (2001). Automata for the assessment of knowledge. *IEEE Transactions on Knowledge and Data Engineering*, *13*(3), 451–461.

Brandt, S., Albert, D., & Hockemeyer, C. (1999). Surmise relations between tests - preliminary results of the mathematical modelling. *Electronic Notes in Discrete Mathematics*, *2*. Retrieved from http://www.sciencedirect.com/science/article/pii/S1571065304000125

Dowling, C. E., & Hockemeyer, C. (1999). Integrating knowledge spaces obtained by querying different experts. *Electronic Notes in Discrete Mathematics*, *2*. Abstract of a Talk presented at the OSDA98, Amherst, MA, September 1998. Retrieved from http://www.sciencedirect.com/science/article/pii/S1571065304000320

Hockemeyer, C., Albert, D., & Brandt, S. (1998). Surmise relations between courses. *Journal of Mathematical Psychology*, *42*, 508. Abstract of a talk presented at the 29th EMPG meeting, Keele, UK, September 1998.

Hockemeyer, C. (1997b). Using the basis of a knowledge space for determining the fringe of a knowledge state. *Journal of Mathematical Psychology*, *41*, 275–279.

Other Publications

Hockemeyer, C. (2019a). *KstIO: Knowledge space theory input/output*. R package version 0.3-0. Retrieved from https://CRAN.R-project.org/package=kstIO

Hockemeyer, C. (2019b). *KstMatrix: Basic functions in knowledge space theory using matrix representations*. R package version 0.1-2. Retrieved from https://CRAN.R-project.org/package=kstMatrix

Stahl, C., Meyer, D., & Hockemeyer, C. (2019). *Kst: Knowledge space theory*. R package version 0.5-2. Retrieved from https://CRAN.R-project.org/package=kst

Heller, J., Augustin, T., Hockemeyer, C., Stefanutti, L., & Albert, D. (2013). Recent developments in competence–based knowledge space theory. In J.-C. Falmagne, D. Albert, C. Doble, D. Eppstein, & X. Hu (Eds.), *Knowledge spaces: Applications in education* (pp. 243–286). Heidelberg: Springer.

Ünlü, A., Schrepp, M., Heller, J., Hockemeyer, C., Wesiak, G., & Albert, D. (2013). Recent developments in performance–based knowledge space theory. In J.-C. Falmagne, D. Albert, C. Doble, D. Eppstein, & X. Hu (Eds.), *Knowledge spaces: Applications in education* (pp. 147–192). Heidelberg: Springer.

Albert, D., Hockemeyer, C., Kickmeier–Rust, M. D., Nussbaumer, A., & Steiner, C. M. (2012). E–learning based on metadata, ontologies and competence-based knowledge space theory. In D. Lukose, A. R. Ah-

mad, & A. Suliman (Eds.), *Knowledge technology. third knowledge technology week, ktw 2011* (Vol. 295, pp. 24–36). Communications in Computer and Information Science. Berlin: Springer.

Cao, Y., Hannemann, A., Manjón, B. F., Göbel, S., Hockemeyer, C., & Stefanakis, E. (Eds.). (2009). Proceedings of the 2nd international workshop on story-telling and educational games (STEG'09), RWTH Aachen university, Aachen, Germany, august 21, 2009, *498*. Retrieved from http://ceur-ws.org/Vol-498/

Hockemeyer, C. (2009). Multi–modal competence assessment based on users' performance on complex tasks. In *The challenge of demographic change— sustainable life–long learning and digital media*, Japanisch–Deutsches Zentrum Berlin (JDZB).

Hockemeyer, C., Nussbaumer, A., Lövquist, E., Aboulafia, A., Breen, D., Shorten, G., & Albert, D. (2009). Applying a web and simulation–based system for adaptive competence assessment of spinal anaesthesia. In M. Spaniol, Q. Li, R. Klamma, & R. Lau (Eds.), *Advances in web–based learning — icwl 2009* (pp. 182–191). Berlin: Springer Verlag.

Kickmeier–Rust, M. D., Hockemeyer, C., Albert, D., & Augustin, T. (2008). Micro adaptive, non–invasive assessment in educational games. In M. Eisenberg, Kinshuk, M. Chang, & R. McGreal (Eds.), *Proceedings of the second ieee international conference on digital games and intelligent toy enhanced learning (digitel)* (pp. 135–137).

Zhang, D., Albert, D., Hockemeyer, C., Breen, D., Kulcsar, Z., Shorten, G., ... Lövquist, E. (2008). Developing competence assessment procedure for spinal anaesthesia. In S. Puuronen, M. Pechenizkiy, A. Tsymbal, & D.-J. Lee (Eds.), *Proceedings of the* 21^{st} *ieee international symposium on computer–based medical systems* (pp. 397–402). Los Alamitos, CA: IEEE Computer Society.

Albert, D., Hockemeyer, C., Kickmeier–Rust, M. D., Peirce, N., & Conlan, O. (2007). Microadaptivity within complex learning situations — a personalized approach based on competence structures and problem spaces. In B. Chang, A. Kashihara, J. Kay, J. Lee, T. Matsui, R. Okamoto, ... F. Y. Yu (Eds.), *Proceedings of the international conference on computers in education (ICCE 2007)*, IOS Press.

Albert, D., Hockemeyer, C., Kulcsar, Z., & Shorten, G. (2007). Competence assessment for spinal anaesthesia. In A. Holzinger (Ed.), *Hci and usability for medicine and health care. proceedings of the third symposium of the workgroup human-computer interaction and usability engineering of the austrian computer society, usab 2007 graz, austria, november, 22, 2007* (Vol. 4799, pp. 165–170). Lecture Notes in Computer Science. Berlin: Springer.

Albert, D., Hockemeyer, C., Mayer, B., & Steiner, C. (2007). Cognitive structural modelling of skills for technology enhanced learning. In J. Spec-

tor, D. Sampson, T. Okamoto, Kinshuk, S. Cerri, M. Ueono, & A. Kashihara (Eds.), *Proceedings of the 7th ieee international conference on advanced learning technologies (icalt)* (pp. 322–324).

Heller, J., Levene, M., Keenoy, K., Albert, D., & Hockemeyer, C. (2007). Cognitive aspects of trails: A stochastic model linking navigation behaviour to the learner's cognitive state. In J. Schoonenboom, J. Heller, K. Keenoy, M. Levene, & M. Turcsanyi-Szabo (Eds.), *Trails in education: Technologies that support navigational learning* (pp. 119–146). Rotterdam: Sense Publisher.

Kickmeier–Rust, M. D., Albert, D., Hockemeyer, C., & Augustin, T. (2007). Not breaking the narrative: Individualized competence assessment in educational games. In D. Remenyi (Ed.), *Proceedings of the european conference on games based learning* (pp. 161–168). Reading, UK: Academic Conferences Ltd.

Nussbaumer, A., Gütl, C., & Hockemeyer, C. (2007). A generic solution approach for integrating adaptivity into web-based e-learning platforms. In *Proceedings of the international conference on interactive mobile and computer aided learning (imcl 2007)*, Amman, Jordan.

Albert, D., Hockemeyer, C., & Mori, T. (2006). Memory, knowledge, and e-learning. In L.-.-.-G. Nilsson & N. Ohta (Eds.), *Memory and society* (pp. 87–108). Hove, UK: Psychology Press.

Heller, J., Mayer, B., Hockemeyer, C., & Albert, D. (2005). Competence–based knowledge structures for personalised learning. In G. Albano, P. Ritrovato, & S. Salerno (Eds.), *1st international ELeGI–conference on advanced technology for enhanced learning*, The British Computer Society (BCS).

Stefanutti, L., Albert, D., & Hockemeyer, C. (2005). Structuring and merging distributed content. In P. Ritrovato, C. Allison, S. A. Cerri, T. D. M. Gaeta, & S. Salerno (Eds.), *Towards the learning grid: Advances in human learning services* (Vol. 127, pp. 113–118). Frontiers in Artificial Intelligence and Applications. Amsterdam: IOS Press.

Stefanutti, L., Hockemeyer, C., & Albert, D. (2005). Derivation of knowledge structures for distributed learning objects. In P. Ritrovato, C. Allison, S. A. Cerri, T. D. M. Gaeta, & S. Salerno (Eds.), *Towards the learning grid: Advances in human learning services* (Vol. 127, pp. 105–112). Frontiers in Artificial Intelligence and Applications. Amsterdam: IOS Press.

Heller, J., Hockemeyer, C., & Albert, D. (2004). Applying competence structures for peer tutor recommendations in CSCL environments. In Kinshuk, C. Looi, E. Sutinen, D. Sampson, I. Aedo, L. Uden, & E. Kähk'onen (Eds.), *The 4th ieee international conference on advanced learning technologies* (pp. 1050–1051). Los Alamitos, CA: IEEE Computer Society.

Heller, J., Levene, M., Keenoy, K., Hockemeyer, C., & Albert, D. (2004). *An e–learning perspective of cognitive and pedagogical aspects of trails.* Birkbeck, University of London. Public Report of the JEIRP Trails within the NoE Kaleidoscope.

Hockemeyer, C., Albert, D., Stefanuti, L., Lewis, D., & Conlan, O. (2004). Adaptive knowledge services based on grid architecture. In L. Aroyo & C. Tasso (Eds.), *Ah2004: Workshop proceedings, part ii* (pp. 491–498). Eindhoven, The Netherlands: Technische Universiteit Eindhoven, Department of Mathematics and Computer Science.

Stefanutti, L., Albert, D., & Hockemeyer, C. (2004). Structuring and merging distributed content. In T. Dimitrakos & P. Ritrovato (Eds.), *4th international lege-wg workshop - towards a european learning grid infrastructure: Progressing with a european learning grid.* Electronic Workshops in Computing (eWIC), Wiltshire, UK: British Computer Society (BCS).

Hockemeyer, C. (2003). Competence based adaptive e-learning in dynamic domains. In F. W. Hesse & Y. Tamura (Eds.), *The joint workshop of cognition and learning through media–communication for advanced e-learning (jwcl)* (pp. 79–82). Japanisch–Deutsches Zentrum Berlin (JDZB).

Hockemeyer, C., & Albert, D. (2003). Adaptive eLearning and the learning GRID. In P. Ritrovato, S. Salerno, & M. Gaeta (Eds.), *1st LEGE–WG international workshop on educational models for GRID based services, lausanne, switzerland, 16 september 2002.* Electronic Workshops in Computing (eWIC), Wiltshire, UK: British Computer Society (BCS).

Stefanutti, L., Hockemeyer, C., & Albert, D. (2003). Derivation of knowledge structures for distributed learning objects. In T. Dimitrakos, P. Ritrovato, & S. Salerno (Eds.), *3rd LEGE–WG international workshop on e–Learning and grid technologies, berlin, 3 december 2003.* Electronic Workshops in Computing (eWIC), Wiltshire, UK: British Computer Society (BCS).

Albert, D., & Hockemeyer, C. (2002). Applying demand analysis of a set of test problems for developing an adaptive course. In *Proceedings of the international conference on computers in education ICCE 2002* (pp. 69–70). Los Alamitos, CA: IEEE Computer Society.

Conlan, O., Hockemeyer, C., Wade, V., Albert, D., & Gargan, M. (2002). An architecture for integrating adaptive hypermedia service with open learning environments. In *Proceedings of ed–media 2002* (Vol. 1, pp. 344–350). World Conference on Educational Multimedia, Hypermedia, & Telecommunications.

Albert, D., Hockemeyer, C., Conlan, O., & Wade, V. (2001). Reusing adaptive learning resources. In C.-.-.-H. L. et al. (Ed.), *Proceedings of the international conference on computers in education ICCE/SchoolNet2001* (Vol. 1, pp. 205–210).

Conlan, O., Hockemeyer, C., Lefrere, P., Wade, V., & Albert, D. (2001). Extending educational metadata schemas to describe adaptive learning resources. In H. Davies, Y. Douglas, & D. G. Durand (Eds.), *Hypertext '01: Proceedings of the twelfth acm conference on hypertext and hypermedia* (pp. 161–162). Association for Computing Machinery. New York: ACM.

Hockemeyer, C. (2001). *KST tools user manual*. 2nd. Unpublished Technical Report. https://kst.hockemeyer.at/techreports/KST-Tools_TechRep_FWF01.pdf.

Hockemeyer, C., & Pötzi, S. (2001). *Documentation of the libsrbi library*. Unpublished Technical Report.

Hockemeyer, C. (2000a). *CRATH: A collaborative adaptive tutoring hypertext system*. Institut für Psychologie, Karl–Franzens–Universität Graz, Austria. https://kst.hockemeyer.at/techreports/crath-Bericht.pdf.

Hockemeyer, C. (2000b). *Documentation of the `libsrbi` library*. Unpublished Technical Report. https://kst.hockemeyer.at/techreports/libsrbi_TechRep_FWF00.pdf.

Albert, D., & Hockemeyer, C. (1999). Developing curricula for tutoring systems based on prerequisite relationships. In G. Cumming, T. Okamoto, & L. Gomez (Eds.), *Advanced research in computers and communications in education: New human abilities for the networked society* (Vol. 2, pp. 325–328). Proceedings of the 7th International Conference on Computers in Education (ICCE), Chiba, Japan. Amsterdam: IOS Press.

Hockemeyer, C., & Albert, D. (1999). The adaptive tutoring system RATH—a prototype. In M. E. Auer & U. Ressler (Eds.), *ICL99 workshop interactive computer aided learning: Tools and applications*, Villach, Austria: Carinthia Tech Institute.

Dowling, C. E., & Hockemeyer, C. (1998). Computing the intersection of knowledge spaces using only their basis. In C. E. Dowling, F. S. Roberts, & P. Theuns (Eds.), *Recent progress in mathematical psychology* (pp. 133–141). Mahwah, NJ: Lawrence Erlbaum Associates Ltd.

Hockemeyer, C., Held, T., & Albert, D. (1998). RATH — a relational adaptive tutoring hypertext WWW–environment based on knowledge space theory. In C. Alvegård (Ed.), *CALISCE'98: Proceedings of the fourth international conference on computer aided learning in science and engineering* (pp. 417–423). Göteborg, Sweden: Chalmers University of Technology.

Albert, D., & Hockemeyer, C. (1997). Adaptive and dynamic hypertext tutoring systems based on knowledge space theory. In B. du Boulay & R. Mizoguchi (Eds.), *Artificial intelligence in education: Knowledge and media in learning systems* (Vol. 39, pp. 553–555). Frontiers in Artificial Intelligence and Applications. Amsterdam: IOS Press.

Hockemeyer, C. (1997a). *RATH — a relational adaptive tutoring hypertext WWW–environment* (Technical Report No. 1997/3). Institut für Psychologie, Universität Graz, Austria. https://kst.hockemeyer.at/techreports/RATH-TechReport.pdf.

Dowling, C. E., Hockemeyer, C., & Ludwig, A. H. (1996). Adaptive assessment and training using the neighbourhood of knowledge states. In C. Frasson, G. Gauthier, & A. Lesgold (Eds.), *Intelligent tutoring systems* (Vol. 1086, pp. 578–586). Lecture Notes in Computer Science. Berlin: Springer Verlag.

Hockemeyer, C., & Dowling, C. (1996). *KST tools user manual*. Unpublished Technical Report. https://kst.hockemeyer.at/techreports/KST-Tools_TechRep_BS-96.pdf.

Dowling, C. E., & Hockemeyer, C. (1995). *Wissensdiagnose in der beruflichen Ausbildung*. Institut für Psychologie, Technische Universität Braunschweig, Germany.

Hockemeyer, C. (1993). *Wissensdiagnose auf Wissensräumen* (Diplomarbeit, Technische Universität Carolo-Wilhelmina, Braunschweig, Germany).