Papoutsi, F., Rangoussi, M. (2020). "Pedagogical Agents in E-learning: a review of recent (2009-2019) research results." 24th Pan-Hellenic Conference on Informatics PCI-2020, Athens, Greece, 20-22 Nov. 2020 (submitted)

List of the N_1 = 115 Journal Papers retained for further analysis

- [1]. Ahmadi, A., Sahragard, R., Babaie Shalmani, H., 2017. "Anthropomorphism—matters or not? On agent modality and its implications for teaching English idioms and design decisions." Computer Assisted Language Learning, 30 (1-2), pp. 149-172.
- [2]. Arroyo, I., Burleson, W., Tai, M., Muldner, K., Woolf, B.P., 2013. "Gender differences in the use and benefit of advanced learning technologies for mathematics." Journal of Educational Psychology, 105 (4), pp. 957-969.
- [3]. Ashoori, M.Y., Shen, Z., Miao, C., Peyton, L., 2009. "Pedagogical agents for personalized multi-user virtual environments." International Journal of Engineering Education, 25 (4), pp. 772-776.
- [4]. Azevedo, R., Moos, D.C., Johnson, A.M., Chauncey, A.D., 2010. "Measuring cognitive and metacognitive regulatory processes during hypermedia learning: Issues and challenges." Educational Psychologist, 45 (4), pp. 210-223.
- [5]. Baylor, A.L., Kim, S., 2009. "Designing nonverbal communication for pedagogical agents: When less is more." Computers in Human Behavior, 25 (2), pp. 450-457.
- [6]. Beege, M., Schneider, S., Nebel, S., Mittangk, J., Rey, G.D., 2017. "Ageism Age coherence within learning material fosters learning." Computers in Human Behavior, 75, pp. 510-519.
- [7]. Bernardini, S., Porayska-Pomsta, K., Smith, T.J., 2014. "ECHOES: An intelligent serious game for fostering social communication in children with autism." Information Sciences, 264, pp. 41-60.
- [8]. Bernstein, B.L., Bekki, J.M., Wilkins, K.G., Harrison, C.J., 2016. "Analysis of instructional support elements for an online, educational simulation on active listening for women graduate students in science and engineering." Journal of Computing in Higher Education, 28 (2), pp. 136-171.
- [9]. Bickmore, T.W., Vardoulakis, L.M.P., Schulman, D., 2013. "Tinker: A relational agent museum guide." Autonomous Agents and Multi-Agent Systems, 27 (2), pp. 254-276.
- [10]. Bodenheimer, B., Williams, B., Kramer, M.R., Viswanath, K., Balachandran, R., Belynne, K., Biswas, G., 2009. "Construction and evaluation of animated teachable agents." Educational Technology and Society, 12 (3), pp. 191-205.
- [11]. Bowman, C.D.D., 2012. "Student use of animated pedagogical agents in a middle school science inquiry program." British Journal of Educational Technology, 43 (3), pp. 359-375.
- [12]. Bringula, R.P., Fosgate, I.C.O., Jr., Garcia, N.P.R., Yorobe, J.L.M., 2018. "Effects of Pedagogical Agents on Students' Mathematics Performance: A Comparison Between Two Versions." Journal of Educational Computing Research, 56 (5), pp. 701-722.
- [13]. Carlotto, T., Jaques, P.A., 2016. "The effects of animated pedagogical agents in an English-as-a-foreign-language learning environment." International Journal of Human Computer Studies, 95, pp. 15-26.
- [14]. Chatzara, K., Karagiannidis, C., Stamatis, D., 2016. "Cognitive support embedded in self-regulated e-learning systems for students with special learning needs." Education and Information Technologies, 21 (2), pp. 283-299.

- [15]. Chen, C.-H., Chou, M.-H., 2015. "Enhancing middle school students' scientific learning and motivation through agent-based learning." Journal of Computer Assisted Learning, 31 (5), pp. 481-492.
- [16]. Chen, G.-D., Lee, J.-H., Wang, C.-Y., Chao, P.-Y., Li, L.-Y., Lee, T.-Y., 2012. "An empathic avatar in a computer-aided learning program to encourage and persuade learners." Educational Technology and Society, 15 (2), pp. 62-72.
- [17]. Cheng, Y.-M., Chen, L.-S., Huang, H.-C., Weng, S.-F., Chen, Y.-G., Lin, C.-H., 2009. "Building a general purpose pedagogical agent in a web-based multimedia clinical simulation system for medical education." IEEE Transactions on Learning Technologies, 2 (3), pp. 216-225.
- [18]. Cheng, Y.-M., Chen, P.-F., 2012. "Autonomous pedagogical agents to E-learning in elementary school." Journal of Information Hiding and Multimedia Signal Processing, 3 (4), pp. 370-380.
- [19]. Chin, K.-Y., Hong, Z.-W., Huang, Y.-M., Shen, W.-W., Lin, J.-M., 2016. "Courseware development with animated pedagogical agents in learning system to improve learning motivation." Interactive Learning Environments, 24 (3), pp. 360-381.
- [20]. Cook, S.W., Friedman, H.S., Duggan, K.A., Cui, J., Popescu, V., 2017. "Hand Gesture and Mathematics Learning: Lessons from an Avatar." Cognitive Science, 41 (2), pp. 518-535.
- [21]. Craig, S.D., Schroeder, N.L., 2017. *"Reconsidering the voice effect when learning from a virtual human."* Computers and Education, 114, pp. 193-205.
- [22]. Craig, S.D., Twyford, J., Irigoyen, N., Zipp, S.A., 2015. "A test of spatial contiguity for virtual human's gestures in multimedia learning environments." Journal of Educational Computing Research, 53 (1), pp. 3-14.
- [23]. Davis, R.O., Vincent, J., Park, T.J. 2019. "Reconsidering the Voice Principle with Non-native Language Speakers" Computers and Education, 140, art. no. 103605.
- [24]. Davis, R.O., Vincent, J., Park, T.J., 2019. "Reconsidering the Voice Prinicple with Non-native Language Speakers." Computers & Education, 140, paper nr. 103605.
- [25]. De Oliveira Fontes, L.M., Neto, F.M.M., Diniz, F.A., Carlos, D.G., Júnior, L.J., Da Silva, L.C.N., 2013. "An animated pedagogical agent to support problem-based learning." IEEE Journal of Latin-American Learning Technologies, 8(2), pp. 56-63.
- [26]. Dinçer, S., Doğanay, A., 2017. "The effects of multiple-pedagogical agents on learners' academic success, motivation, and cognitive load." Computers and Education, 111, pp. 74-100.
- [27]. D'Mello, S., Olney, A., Williams, C., Hays, P., 2012. "Gaze tutor: A gaze-reactive intelligent tutoring system." International Journal of Human Computer Studies, 70 (5), pp. 377-398.
- [28]. Domagk, S., 2010. "Do pedagogical agents facilitate learner motivation and learning outcomes?: The role of the appeal of agent's appearance and voice." Journal of Media Psychology, 22 (2), pp. 84-97.
- [29]. Duffy, M.C., Azevedo, R., 2015. "Motivation matters: Interactions between achievement goals and agent scaffolding for self-regulated learning within an intelligent tutoring system." Computers in Human Behavior, 52, pp. 338-348.
- [30]. Fountoukidou, S., Ham, J., Matzat, U., Midden, C., 2019. "Effects of an artificial agent as a behavioral model on motivational and learning outcomes." Computers in Human Behavior, 97, pp. 84-93.
- [31]. Goldberg, B., Cannon-Bowers, J., 2015. "Feedback source modality effects on training outcomes in a serious game: Pedagogical agents make a difference." Computers in Human Behavior, 52, art. no. 3449, pp. 1-11.

- [32]. Graesser, A., McNamara, D., 2010. "Self-regulated learning in learning environments with pedagogical agents that interact in natural language." Educational Psychologist, 45 (4), pp. 234-244.
- [33]. Graesser, A.C., Forsyth, C.M., Lehman, B.A., 2017. "Two heads may be better than one: Learning from computer agents in conversational trialogues." Teachers College Record, 119 (3), art. no. 030302.
- [34]. Haake, M., Gulz, A., 2009. "A look at the roles of look & roles in embodied pedagogical agents A user preference perspective." International Journal of Artificial Intelligence in Education, 19 (1), pp. 39-71.
- [35]. Harley, J.M., Carter, C.K., Papaionnou, N., Bouchet, F., Landis, R.S., Azevedo, R., Karabachian, L., 2016. "Examining the predictive relationship between personality and emotion traits and students' agent-directed emotions: towards emotionally-adaptive agent-based learning environments." User Modeling and User-Adapted Interaction, 26 (2-3), pp. 177-219.
- [36]. Harley, J.M., Taub, M., Azevedo, R., Bouchet, F., 2018. "'Let's Set Up Some Subgoals': Understanding Human-Pedagogical Agent Collaborations and Their Implications for Learning and Prompt and Feedback Compliance." IEEE Transactions on Learning Technologies, 11 (1), pp. 54-66.
- [37]. Hassani, K., Nahvi, A., Ahmadi, A., 2016. "Design and implementation of an intelligent virtual environment for improving speaking and listening skills." Interactive Learning Environments, 24 (1), pp. 252-271.
- [38]. Hayashi, Y., 2016. "Lexical network analysis on an online explanation task: Effects of affect and embodiment of a pedagogical agent." IEICE Transactions on Information and Systems, E99D (6), pp. 1455-1461.
- [39]. Hernández, Y., Pérez-Ramírez, M., Zatarain-Cabada, R., Barrón-Estrada, L., Alor-Hernández, G., 2016. "Designing empathetic animated agents for a B-learning training environment within the electrical domain." Educational Technology and Society, 19 (2), pp. 116-131.
- [40]. Hodhod, R., Kudenko, D., Cairns, P., 2010. "Adaptive interactive narrative model to teach ethics." International Journal of Gaming and Computer-Mediated Simulations, 2 (4), pp. 1-15
- [41]. Hong, Z.-W., Chen, Y.-L., Lan, C.-H., 2014. "A courseware to script animated pedagogical agents in instructional material for elementary students in English education." Computer Assisted Language Learning, 27 (5), pp. 379-394.
- [42]. Huang, X., Mayer, R.E., 2016. "Benefits of adding anxiety-reducing features to a computer-based multimedia lesson on statistics." Computers in Human Behavior, 63, pp. 293-303.
- [43]. Ivanovic, M., Mitrovic, D., Budimac, Z., Jerinic, L., Badica, C., 2015. "HAPA: Harvester and pedagogical agents in e-learning environments." International Journal of Computers, Communications and Control, 10 (2), pp. 200-210.
- [44]. Johnson, A.M., Didonato, M.D., Reisslein, M., 2013. "Animated agents in K-12 engineering outreach: Preferred agent characteristics across age levels." Computers in Human Behavior, 29 (4), pp. 1807-1815.
- [45]. Johnson, A.M., Ozogul, G., Moreno, R., Reisslein, M., 2013. "Pedagogical agent signaling of multiple visual engineering representations: The case of the young female agent." Journal of Engineering Education, 102 (2), pp. 319-337.
- [46]. Johnson, A.M., Ozogul, G., Reisslein, M., 2015. "Supporting multimedia learning with visual signalling and animated pedagogical agent: Moderating effects of prior knowledge." Journal of Computer Assisted Learning, 31 (2), pp. 97-115.

- [47]. Kappagantula, S.R.K., Adamo-Villani, N., Wu, M., Popescu, V., 2019. "Automatic Deictic Gestures for Animated Pedagogical Agents." IEEE Transactions on Learning Technologies, pp.(99):1-1.
- [48]. Karaoğlan Yılmaz, F.G., Olpak, Y.Z., Yılmaz, R., 2018. "The Effect of the Metacognitive Support via Pedagogical Agent on Self-Regulation Skills." Journal of Educational Computing Research, 56 (2), pp. 159-180.
- [49]. Kautzmann, T.R., Jaques, P.A., 2019. "Effects of adaptive training on metacognitive knowledge monitoring ability in computer-based learning." Computers and Education, 129, pp. 92-105.
- [50]. Kim, J.M., Hill Jr., R.W., Durlach, P.J., Lane, H.C., Forbell, E., Core, M., Marsella, S., Pynadath, D., Hart, J., 2009. "BiLAT: A game-based environment for practicing negotiation in a cultural context." International Journal of Artificial Intelligence in Education, 19 (3), pp. 289-308.
- [51]. Kim, Y., 2013. "Digital peers to help children's text comprehension and perceptions." Educational Technology and Society, 16 (4), pp. 59-70.
- [52]. Kim, Y., 2016. "The Role of Agent Age and Gender for Middle-Grade Girls." Computers in the Schools, 33(2), pp. 59-70.
- [53]. Kim, Y., Thayne, J., Wei, Q., 2017. "An embodied agent helps anxious students in mathematics learning." Educational Technology Research and Development, 65 (1), pp. 219-235.
- [54]. Kim, Y., Wei, Q., 2011. "The impact of learner attributes and learner choice in an agent-based environment." Computers and Education, 56 (2), pp. 505-514.
- [55]. Krämer, N.C., Karacora, B., Lucas, G., Dehghani, M., Rüther, G., Gratch, J., 2016. "Closing the gender gap in STEM with friendly male instructors? on the effects of rapport behavior and gender of a virtual agent in an instructional interaction." Computers and Education, 99, pp. 1-13.
- [56]. Kuk, K., Milentijević, I., Rančić, D., Spalević, P., 2012. "Pedagogical agent in Multimedia Interactive Modules for Learning MIMLE." Expert Systems with Applications, 39 (9), pp. 8051-8058.
- [57]. Le, N.-T., Wartschinski, L., 2018. "A Cognitive Assistant for improving human reasoning skills." International Journal of Human Computer Studies, 117, pp. 45-54.
- [58]. Lee, H., Kanakogi, Y., Hiraki, K., 2015. "Building a responsive teacher: How temporal contingency of gaze interaction influences word learning with virtual tutors." Royal Society Open Science, 2 (1), art. no. 140361, 9 p.
- [59]. Lee, T.T, Osman, K., 2012. "Interactive multimedia module with pedagogical agents: Formative evaluation." International Education Studies, 5 (6), pp. 50-64.
- [60]. Lee, T.T., Osman, K., 2011. "Effectiveness of interactive multimedia module with pedagogical agent (IMMPA) in the learning of electrochemistry: A preliminary investigation." Asia-Pacific Forum on Science Learning and Teaching, 12 (2), art. no. 9.
- [61]. Leung, S., Virwaney, S., Lin, F., Armstrong, A.J., Dubbelboer, A., 2013. "TSI-enhanced pedagogical agents to engage learners in virtual worlds." International Journal of Distance Education Technologies, 11 (1), pp. 1-13.
- [62]. Li, J., Kizilcec, R., Bailenson, J., Ju, W., 2016. "Social robots and virtual agents as lecturers for video instruction." Computers in Human Behavior, 55, pp. 1222-1230.
- [63]. Liew, T.W., Mat Zin, N.A., Sahari, N., 2017. "Exploring the affective, motivational and cognitive effects of pedagogical agent enthusiasm in a multimedia learning environment." Human-centric Computing and Information Sciences, 7 (1), art. no. 9.

- [64]. Liew, T.W., Mat Zin, N.A., Sahari, N., Tan, S.-M., 2016, "The effects of a pedagogical agent's smiling expression on the learner's emotions and motivation in a virtual learning environment." International Review of Research in Open and Distance Learning, 17 (5), pp. 248-266.
- [65]. Liew, T.W., Tan, S.-M., Jayothisa, C., 2013. "The effects of peer-like and expert-like pedagogical agents on learners' agent perceptions, task-related attitudes, and learning achievement." Educational Technology and Society, 16 (4), pp. 275-286.
- [66]. Makransky, G., Wismer, P., Mayer, R.E. 2019. "A gender matching effect in learning with pedagogical agents in an immersive virtual reality science simulation." Journal of Computer Assisted Learning, 35 (3), pp. 349-358.
- [67]. Martins, I., De Morais, F., Schaab, B., Jaques, P., 2016. "Pedagogical agent gestures to improve learner comprehension of abstract concepts in hints." International Journal of Information and Communication Technology Education, 12 (3), pp. 65-75.
- [68]. McQuiggan, S.W., Robison, J.L., Lester, J.C., 2010. "Affective transitions in narrative-centered learning environments." Educational Technology and Society, 13 (1), pp. 40-53.
- [69]. Mohammadhasani, N., Fardanesh, H., Hatami, J., Mozayani, N., Fabio, R.A., 2018. "The pedagogical agent enhances mathematics learning in ADHD students." Education and Information Technologies, 23 (6), pp. 2299-2308.
- [70]. Moreno, R., Reislein, M., Ozogul, G., 2010. "Using virtual peers to guide visual attention during learning: A test of the persona hypothesis." Journal of Media Psychology, 22 (2), pp. 52-60.
- [71]. Morton, H., Jack, M., 2010. "Speech interactive computer-assisted language learning: A cross-cultural evaluation." Computer Assisted Language Learning, 23 (4), pp. 295-319.
- [72]. Munawar, S., Toor, S.K., Aslam, M., Hamid, M., 2018. "Move to smart learning environment: Exploratory research of challenges in computer laboratory and design intelligent virtual laboratory for eLearning technology." Eurasia Journal of Mathematics, Science and Technology Education, 14 (5), pp. 1645-1662.
- [73]. Murray, M., Tenenbaum, G., 2010. "Computerized pedagogical agents as an educational means for developing physical self-efficacy and encouraging activity in youth." Journal of Educational Computing Research, 42 (3), pp. 267-283.
- [74]. Nielen, T.M.J., Smith, G.G., Sikkema-de Jong, M.T., Drobisz, J., van Horne, B., Bus, A.G., 2018. "Digital Guidance for Susceptible Readers: Effects on Fifth Graders' Reading Motivation and Incidental Vocabulary Learning." Journal of Educational Computing Research, 56 (1), pp. 48-73.
- [75]. Noh, K.-B.O., Song, K.I.-S., Nam, S.C., Park, S.E.Y., 2014. "The effects of multimedia elements on learning achievements in digital content." WSEAS Transactions on Computers, 13, pp. 361-367.
- [76]. Osman, K., Lee, T.T., 2014. "Impact of interactive multimedia module with pedagogical agents on students' understanding and motivation in the learning of electrochemistry." International Journal of Science and Mathematics Education, 12 (2), pp. 395-421.
- [77]. Ozogul, G., Johnson, A.M., Atkinson, R.K., Reisslein, M., 2013. "Investigating the impact of pedagogical agent gender matching and learner choice on learning outcomes and perceptions." Computers and Education, 67, pp. 36-50.
- [78]. Park, S., 2015. "The effects of social cue principles on cognitive load, situational interest, motivation, and achievement in pedagogical agent multimedia learning." Educational Technology and Society, 18 (4), pp. 211-229.

- [79]. Poitras, E.G., Lajoie, S.P., 2014. "Developing an agent-based adaptive system for scaffolding self-regulated inquiry learning in history education." Educational Technology Research and Development, 62 (3), pp. 335-366.
- [80]. Ramachandiran, C.R., Jomhari, N., 2015. "A case study on e-learners' perception and kansei experience towards pedagogical virtual agents." Indian Journal of Science and Technology, 8 (11), art. no. 70631.
- [81]. Rodrigo, M.M.T., Baker, R.S.J.D., Agapito, J., Nabos, J., Repalam, Ma. C., Reyes Jr., S.S., San Pedro, M.O.C.Z., 2012. "The effects of an interactive software agent on student affective dynamics while using an intelligent tutoring system." IEEE Transactions on Affective Computing, 3 (2), art. no. 6122013, pp. 224-236.
- [82]. Romero-Hall, E., Watson, G., Papelis, Y., 2014. "Using physiological measures to assess the effects of animated pedagogical agents in multimedia instruction." Journal of Educational Multimedia and Hypermedia, 23 (4), pp. 359-384.
- [83]. Rosenberg-Kima, R.B., Plant, E.A., Doerr, C.E., Baylor, A.L., 2010. "The influence of Computer-based model's race and gender on female students' attitudes and beliefs towards engineering." Journal of Engineering Education, 99 (1), pp. 35-44.
- [84]. Saadatzi, M.N., Pennington, R.C., Welch, K.C., Graham, J.H., 2018. "Small-Group Technology-Assisted Instruction: Virtual Teacher and Robot Peer for Individuals with Autism Spectrum Disorder." Journal of Autism and Developmental Disorders, 48 (11), pp. 3816-3830.
- [85]. Savin-Baden, M., Tombs, G., Burden, D., Wood, C., 2013. "It's almost like talking to a person: Student disclosure to pedagogical agents in sensitive settings." International Journal of Mobile and Blended Learning, 5 (2), pp. 78-93.
- [86]. Scholten, M.R., Kelders, S.M., Van Gemert-Pijnen, J.E.W.C., 2019. "An empirical study of a pedagogical agent as an adjunct to an eHealth self-management intervention: What modalities does it need to successfully support and motivate users." Frontiers in Psychology, 10 (MAY), art. no. 1063.
- [87]. Schroeder, N.L., 2017. "The influence of a pedagogical agent on learners' cognitive load." Educational Technology and Society, 20 (4), pp. 138-147.
- [88]. Schroeder, N.L., Adesope, O.O., 2015. "Impacts of pedagogical agent gender in an accessible learning environment." Educational Technology and Society, 18 (4), pp. 401-411.
- [89]. Schroeder, N.L., Chin, J., Craig, S.D., 2019. "Learner Control Aids Learning from Instructional Videos with a Virtual Human." Technology, Knowledge and Learning, (open access) https://doi.org/10.1007/s10758-019-09417-6.
- [90]. Schroeder, N.L., Craig, S.D., 2017. "The Effect of Pacing on Learners' Perceptions of Pedagogical Agents." Journal of Educational Computing Research, 55 (7), pp. 937-950.
- [91]. Schroeder, N.L., Romine, W.L., Craig, S.D., 2017. "Measuring pedagogical agent persona and the influence of agent persona on learning." Computers and Education, 109, pp. 176-186.
- [92]. Schroeder, N.L., Traxler, A.L., 2017. "Humanizing Instructional Videos in Physics: When Less Is More." Journal of Science Education and Technology, 26 (3), pp. 269-278.
- [93]. Schroeder, N.L., Yang, F., Banerjee, T., Romine, W.L., Craig, S.D., 2018. "The influence of learners' perceptions of virtual humans on learning transfer." Computers and Education, 126, pp. 170-182.
- [94]. Shiban, Y., Schelhorn, I., Jobst, V., Hörnlein, A., Puppe, F., Pauli, P., Mühlberger, A., 2015. "The appearance effect: Influences of virtual agent features on performance and motivation." Computers in Human Behavior, 49, art. no. 3251, pp. 5-11.

- [95]. Subri, S., Abbas, M., Shah, M.F.B.M., 2012. "Perception towards pedagogical agents and their effects on self-regulated learning and performance in physics among form-4 students." International Journal of Science, Mathematics and Technology Learning, 19 (4), pp. 13-37.
- [96]. Sullins, J., Acuff, S., Neely, D., Hu, X., 2018. "When knowledge isn't power: The influence of prior knowledge on question generation training." Journal of Educational Multimedia and Hypermedia, 27 (2), pp. 245-265.
- [97]. Tärning, B., Silvervarg, A., 2019. "I didn't understand, I' m really not very smart'—How design of a digital tutee's self-efficacy affects conversation and student behavior in a digital math game." Education Sciences, 9 (3), art. no. 197.
- [98]. Taub, M., Azevedo, R., Bouchet, F., Khosravifar, B., 2014. "Can the use of cognitive and metacognitive self-regulated learning strategies be predicted by learners' levels of prior knowledge in hypermedia-learning environments." Computers in Human Behavior, 39, pp. 356-367.
- [99]. Tegos, S., Demetriadis, S., Karakostas, A., 2015. "Promoting academically productive talk with conversational agent interventions in collaborative learning settings." Computers and Education, 87, pp. 309-325.
- [100]. Terzidou, T., Tsiatsos, T., Miliou, C., Sourvinou, A., 2016. "Agent Supported Serious Game Environment." IEEE Transactions on Learning Technologies, 9 (3), art. no. 7390265, pp. 217-230.
- [101]. Terzidou, T., Tsiatsos, T., Apostolidis, H., 2018. "Architecture and interaction protocol for pedagogical-empathic agents in 3D virtual learning environments." Multimedia Tools and Applications, 77 (20), pp. 27661-27684.
- [102]. Theodoridou, K., 2011. "Learning Spanish with Laura: The effects of a pedagogical agent." Educational Media International, 48 (4), pp. 335-351.
- [103]. Tien, L.T., Osman, K., 2014. "Development of interactive multimedia module with pedagogical agent (IMMPA) in the learning of electrochemistry: Needs assessment." Research Journal of Applied Sciences, Engineering and Technology, 7 (18), pp. 3725-3732.
- [104]. Trevors, G., Duffy, M., Azevedo, R., 2014. "Note-taking within MetaTutor: interactions between an intelligent tutoring system and prior knowledge on note-taking and learning." Educational Technology Research and Development, 62 (5), pp. 507-528.
- [105]. Unal-Colak, F., Ozan, O., 2012. "The effects of animated agents on students' achievement and attitudes." Turkish Online Journal of Distance Education, 13 (2), pp. 96-111.
- [106]. Van Der Meij, H., 2013. "Do pedagogical agents enhance software training." Human-Computer Interaction, 28 (6), pp. 518-547.
- [107]. Van Der Meij, H., 2013. "Motivating agents in software tutorials." Computers in Human Behavior, 29 (3), pp. 845-857.
- [108]. Van der Meij, H., van der Meij, J., Harmsen, R., 2015. "Animated pedagogical agents' effects on enhancing student motivation and learning in a science inquiry learning environment." Educational Technology Research and Development, 63 (3), pp. 381-403.
- [109]. Veletsianos, G., 2009. "The impact and implications of virtual character expressiveness on learning and agent-learner interactions: Original article." Journal of Computer Assisted Learning, 25 (4), pp. 345-357.
- [110]. Veletsianos, G., 2010. "Contextually relevant pedagogical agents: Visual appearance, stereotypes, and first impressions and their impact on learning." Computers and Education, 55 (2), pp. 576-585.

- [111]. Veletsianos, G., 2012. "How do learners respond to pedagogical agents that deliver socialoriented non-task messages? Impact on student learning, perceptions, and experiences." Computers in Human Behavior, 28 (1), pp. 275-283.
- [112]. Veletsianos, G., Russell, G.S., 2013. "What do learners and pedagogical agents discuss when given opportunities for open-ended dialogue." Journal of Educational Computing Research, 48 (3), pp. 381-401.
- [113]. Yan, J., Agada, R., 2010. "Life-like animated virtual pedagogical agent enhanced learning." Journal of Next Generation Information Technology, 1 (2), pp. 4-12.
- [114]. Yang, H.-C., Zapata-Rivera, D., 2010. "Interlanguage pragmatics with a pedagogical agent: The request game." Computer Assisted Language Learning, 23 (5), pp. 395-412.
- [115]. Yung, H.I., Paas, F., 2015. "Effects of cueing by a pedagogical agent in an instructional animation: A cognitive load approach." Educational Technology and Society, 18 (3), pp. 153-160.