

Final list of primary studies selected to data extraction

December 6, 2018

Table 1: My caption

ID	Title	Reference
s1	“Is it just me?”: evaluating attribution of negative feedback as a function of virtual instructor’s gender and proxemics	[26]
s2	“Who is this” quiz dialogue system and users’ evaluation	[73]
s3	A configurable conversational agent to trigger students’ productive dialogue: a pilot study in the call domain	[85]
s4	A conversational agent to shift students’ affect state	[65]
s5	A crowdsourcing method to develop virtual human conversational agents	[71]
s6	A digital coach that provides affective and social learning support to low-literate learners	[74]
s7	A highly elaborative reminiscing virtual agent to enhance student memory of virtual world events	[64]
s8	A kst-based system for student tutoring	[68]
s9	A question-answering agent using speech driven non-linear machinima	[89]
s10	A time for emoting: when affect-sensitivity is and isn’t effective at promoting deep learning	[21]
s11	A tool for introducing computer science with automatic formative assessment	[9]
s12	A tutorial dialogue system for real-time evaluation of unsupervised dialogue act classifiers: exploring system outcomes	[24]
s13	Abdullah: an intelligent arabic conversational tutoring system for modern islamic education	[5]
s14	Adaptation of interaction with chatterbots for use in the education of children	[12]
s15	Adapting the design and the use methodology of a pedagogical conversational agent of secondary education to childhood education	[80]
s16	Adapting to learner’s emotions through animated pedagogical agent	[40]

s17	Adapting to personality over time: examining the effectiveness of dialogue policy progressions in task-oriented interaction	[93]
s18	Adaptive tutoring in an intelligent conversational agent system	[53]
s19	Affect sensing in an affective interactive e-theatre for autistic children	[101]
s20	An adaptation algorithm for an intelligent natural language tutoring system	[50]
s21	An adaptive learning with gamification & conversational uis: the rise of cibopolibot	[25]
s22	An agent proposal for reading understanding: applied to the resolution of maths problems	[79]
s23	An approach to develop intelligent learning environments by means of immersive virtual worlds	[30]
s24	An empirically-based, tutorial dialogue system: design, implementation and evaluation in a first year health sciences course	[60]
s25	An exploratory study on how children interact with pedagogic conversational agents	[69]
s26	An intelligent natural language conversational system for academic advising	[54]
s27	An investigation of conversational agent interventions supporting historical reasoning in primary education	[86]
s28	An ubiquitous teaching assistant using knowledge retrieval and adaptive learning techniques	[37]
s29	Animated agents and learning: does the type of verbal feedback they provide matter?	[58]
s30	Application of educational emotion inference via speech and agent interaction	[92]
s31	Architecture for building conversational agents that support collaborative learning	[49]
s32	Attitudes to subtitle duration and the effect on user responses in speech interactive foreign language learning	[62]
s33	Bringing chatbots into education: towards natural language negotiation of open learner models	[44]
s34	Building an interactive caring agent for students in computer-based learning environments	[55]
s35	Calmsystem: a conversational agent for learner modelling	[43]
s36	Cognitive support embedded in self-regulated e-learning systems for students with special learning needs	[15]
s37	Contextually relevant pedagogical agents: visual appearance, stereotypes, and first impressions and their impact on learning	[94]
s38	Courseware development with animated pedagogical agents in learning system to improve learning motivation	[17]
s39	CSIEC: a computer assisted english learning chatbot based on textual knowledge and reasoning	[41]

s40	Defining a child’s conceptualization of a virtual learning companion	[70]
s41	Designing intelligent agent in multilevel game-based modules for e-learning computer science course	[47]
s42	Detecting carelessness through contextual estimation of slip probabilities among students using an intelligent tutor for mathematics	[72]
s43	Developing a conversational virtual standardized patient to enable students to practice history-taking skills	[59]
s44	Development of an affect-sensitive agent for aplusix	[6]
s45	Dialogue system for fostering way of thinking based on physical theory in dynamics	[96]
s46	Do you think you can? The influence of student self-efficacy on the effectiveness of tutorial dialogue for computer science	[98]
s47	Effects of cueing by a pedagogical agent in an instructional animation: a cognitive load approach	[100]
s48	Empirically evaluating the application of reinforcement learning to the induction of effective and adaptive pedagogical strategies	[16]
s49	Engaging high school students using chatbots	[8]
s50	Engaging learning groups using social interaction strategies	[48]
s51	Enhancing scientific reasoning and discussion with conversational agents	[22]
s52	Evaluating adaptive feedback in an educational computer game	[18]
s53	Evaluating the effectiveness of an affective tutoring agent in specialized education	[61]
s54	Exploring contingent step decomposition in a tutorial dialogue system	[42]
s55	Exploring the effectiveness of social capabilities and goal alignment in computer supported collaborative learning	[4]
s56	Exploring the effects of healthcare students creating virtual patients for empathy training	[32]
s57	Extending an educational math game with a pedagogical conversational agent: facing design challenges	[76]
s58	Game@school. Teaching through gaming and mobile-based tutoring systems	[88]
s59	Impact of agent role on confusion induction and learning	[56]
s60	Influence of social communication skills on collaborative learning with a pedagogical agent: investigation based on the autism-spectrum quotient	[35]
s61	Inspiring blind high school students to pursue computer science with instant messaging chatbots	[10]
s62	Intelligent tutoring with natural language support in the BEETLE II system	[23]
s63	Intensification of group knowledge exchange with academically productive talk agents	[2]

s64	Interacting with a conversational agent system for educational purposes in online courses	[77]
s65	Interactive multimedia module with pedagogical agent in science and technology learning: application in electrochemistry	[66]
s66	Interlanguage pragmatics with a pedagogical agent: the request game	[99]
s67	Learning spanish with Laura: the effects of a pedagogical agent	[91]
s68	Leveraging chatbots to improve self-guided learning through conversational quizzes	[67]
s69	Leveraging conversational agents and concept maps to scaffold students' productive talk	[83]
s70	Lexical network analysis on an online explanation task: effects of affect and embodiment of a pedagogical agent	[36]
s71	Making Autotutor agents smarter: Autotutor answer clustering and iterative script authoring	[14]
s72	Mathgirls: toward developing girls' positive attitude and self-efficacy through pedagogical agents	[45]
s73	Mentorchat: introducing a configurable conversational agent as a tool for adaptive online collaboration support	[82]
s74	On pedagogical effects of learner-support agents in collaborative interaction	[33]
s75	Oscar: an intelligent adaptive conversational agent tutoring system	[52]
s76	Pedagogical agents as team members: impact of proactive and pedagogical behavior on the user	[7]
s77	Pedagogical conversational agents for supporting collaborative learning: effects of communication channels	[34]
s78	Predicting learning styles in a conversational intelligent tutoring system	[51]
s79	Promoting academically productive talk with conversational agent interventions in collaborative learning settings	[84]
s80	Promoting self-regulated learning skills in agent-based learning environments	[11]
s81	Stimulating and sustaining interest in a language course: an experimental comparison of chatbot and human task partners	[27]
s82	Supporting problem-solving in mathematics with a conversational agent capable of representing gifted students' knowledge	[3]
s83	Teaching stem through a role-playing serious game and intelligent pedagogical agents	[87]
s84	Teaching student interviewing competencies through second life	[81]
s85	The city of uruk: teaching ancient history in a virtual world	[13]
s86	The development and evaluation of english dialogue companion system	[38]
s87	The educagent platform: intelligent conversational agents for e-learning applications	[29]

s88	The effect of contextualized conversational feedback in a complex open-ended learning environment	[75]
s89	The effects of multiple-pedagogical agents on learners' academic success, motivation, and cognitive load	[20]
s90	The enhanced Arabchat: an arabic conversational agent	[1]
s91	The geranium system: multimodal conversational agents for e-learning	[31]
s92	The use of text mining to build a pedagogical agent capable of mediating synchronous online discussions in the context of foreign language learning	[19]
s93	Toward the implementation of a topic specific dialogue based natural language chatbot as an undergraduate advisor	[28]
s94	Towards the development of a reading comprehension conversational agent for children applying user-centered design techniques for teachers and students	[78]
s95	Using virtual online simulations in second life® to engage undergraduate psychology students with employability issues	[97]
s96	Virtual agents and multi-modality of interaction in multimedia applications for cultural heritage	[63]
s97	Virtual agents with personality: adaptation of learner-agent personality in a virtual learning environment	[57]
s98	Virtual human personality masks: a human computation approach to modeling verbal personalities in virtual humans	[46]
s99	Virtual training and coaching of health behavior: example from mindfulness meditation training	[39]
s100	What did spot hide? A question-answering game for preschool children	[90]
s101	What do learners and pedagogical agents discuss when given opportunities for open-ended dialogue?	[95]

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