
DeMeCoT, The Delftse Methode Conversation Trainer

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The two factors that played the most important role in the development of the DeMeCoT bot were feedback and the acquisition of speaking and conversation skills. Feedback, crucial in developing learners' hypotheses about correctness, is central in recent approaches to language teaching/learning like the natural (Krashen & Terrell; Yalden), which recommend 'natural' feedback (i.e. feedback in a communicative context). The theory is, the more frequent the feedback, the better. The introduction of computers in language learning has significantly extended the possibility of feedback for learners, and the possibility of providing it on an individual level (e.g., Van Der Linden).

The second element, the acquisition of speaking and conversational skills, is important because conversation training supports word retention and the development of grammatical correctness and, as a result, general language proficiency. It typically takes the form of classroom activities where students either interact with other learners while being occasionally observed and/or corrected by the instructor, or interact directly with the instructor playing an important role. However, these interactions can never fully meet the need for truly extensive practice due to time constraints. Again, computers, and bots in particular (e.g., the Dave ESL bot¹), have shown promise as a potential solution.

Preliminary trials and assessments of a range of bots (Jabberwacky², ALICE³ and its various spin-offs, Pandorabots⁴) demonstrated significant limitations as (successful) language training bots, viz:

- i. interaction with them is prone to breakdown;
- ii. they lack the knowledge necessary for topic-based conversations;
- iii. they are insufficiently capable of eliciting specific language use;
- iv. grading is irregular (if present at all);
- v. changes in register are often non-standard or inconsistent.

Further consideration revealed, however, that several of the limitations, e.g., their defined (and definable) vocabularies and range of responses, were harnessable in the creation a conversation partner capable of encouraging extensive practice on selected subjects while providing feedback on the particular linguistic issues under consideration (ie being learned).

The resulting DeMeCoT Chatbot is a conversation trainer, a spin-off of ALICE (Artificial Linguistic Internet Computer Entity of the Artificial Intelligence Foundation) using AIML (Artificial Intelligence Markup Language) for use as a partner in an interactive, repeatable and graded conversation/dialogue that can be conducted at a speed appropriate to, and/or comfortable for, the individual learner. Complementary to the Delftse Methode Dutch course (co-authored by Piet Meijer), it provides students the opportunity to practice dialogue with continuous accurate responses and feedback and supplements the classroom speaking activities.

Being a teaching implementation, the DeMeCoT is deliberately and consciously limited in its function: its purpose is to enable students to practice linguistic structures and forms in a simulated, repeatable and limited (in terms of vocabulary, structure and content) conversation. Not a competitor for the Loebner Prize⁵ or a restricted Turing test⁶, its users are instructed to limit themselves to the conversation topic in order to improving their accuracy in using the defined range of vocabulary and structures. As a result of these built-in and, in its case, desirable limitations, the DeMeCoT is also unusual in the deliberate "shallowness" of the personalities being built, the aim is to enable students to encounter different personalities in different situations.

The paper will describe the reasons for choosing a bot (repetition and variation in conversation, restrainable interactivity, logging, retrainability, variety and variability in design, platform independence), and how the limitations of bot technology have proved to be the strengths of the DeMeCoT. It will also elaborate on other factors that have affected the design and presentation, including the intended limitations, the need to define and regulate error tolerance and the type and quantity of feedback. The bot will be demonstrated (in the original Dutch and in English) and its future described, including the integration of a larger corpus of knowledge (the whole Delftse Methode course), strategies for structuring and grading learning using menus, setting up a system of learner 'promotion', provision of more detailed linguistic and grammatical feedback, linking directly to the study materials, the development of a 'non-specialist-user-friendly' instructor interface and research into the effectiveness of the bot and the method using control groups.

1. Dave ESL Bot: <<http://www.alicebot.org/dave.htm>> (November 2004)
2. Jabberwacky: <<http://www.jabberwacky.com>> (November 2004)
3. ALICE: <<http://www.alicebot.org>> (November 2004)
4. Pandorabots: <<http://www.pandorabots.com>> (November 2004)
5. The Loebner Prize: <<http://www.loebner.net>> (November 2004)
6. The Turing Testpage: <<http://cogsci.ucsd.edu/~asaygin/tt/ttest.html>> (November 2004)

Bibliography

Krashen, S.D., and Tracy D. Terrell. *The natural approach: Language acquisition in the classroom*. Hemel Hempstead: Prentice Hall, 1983.

Van Der Linden, E. "Does feedback enhance computer-assisted language learning?" *Computers and Education* 21 (1993): 61-65.

Yalden, Janice. *The communicative syllabus: Evolution, design and implementation*. Englewood Cliffs, N.J.: Prentice-Hall International, 1987.