Agent-Based Social Skills Training Systems: A Comprehensive Analysis of Commercial Solutions

CSE 3000 - Research Project
Author: Nuno Antunes (N.A.CatarinoAntunes@student.tudelft.nl)
Supervisors: Willem-Paul Brinkman, Mohammed Al Owayyed

1. Introduction

Social skills play a crucial role in human interaction and communication.

Traditional methods of social skills training, have limitations and cannot simulate real-world scenarios.

Limitations lead to the emergence of agent-based training systems.

Agent based systems are capable of providing immersive learning and adapt to the pace of the learner.

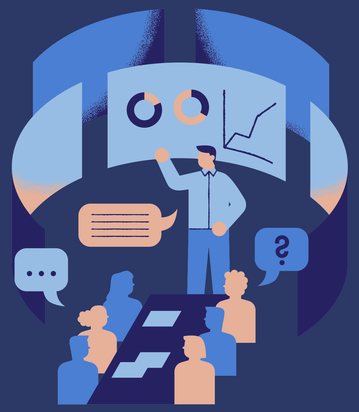
2. Research Question

What commercially available training systems are out there and how do they model their agents and feedback?

3. Aim

The aim of this research is to examine the agent model and feedback systems of commercially available training systems.

Examining these systems will contribute to the development of more effective training systems.



4. Methodology

Design: A rapid review, guided by the PRISMA [1] guidelines, of commercially available agent-based social skills training systems.

Sources: Google and ChatGPT used as the main sources of information.

Eligibility: Inclusion and exclusion criteria were applied to systems originally retrieved.

Collection: Examine company websites, product descriptions and relevant documentation to gather data.

Categorization: Systems were then categorized into two tables.

Term 1	Term 2	Term 3
Virtual Agent	Social	Training
Virtual Reality	Interview	Practice
Agent-based	Leadership	Train
Artificial Intelligence	Customer	Development
Conversational Agent	Interpersonal	Educational
Chatbot		Instruction
Simulation		Coaching

Table 1: Search terms table

5. Results

System	Type Training	Input Type	Agent Model Structure	Decision Making	Changeable Emotions/Cognition	Learner Model	Use of Learner Model
Elite [10]	Leadership	Choice based	Changes of states are fixed	Direct input to output	No/No	No	-
Elite Lite [9,10]	Leadership	Choice based	Changes of states are fixed	Direct input to output	No/No	No	-
Dialogue Trainer [6]	General Social Skills	Choice based	Limited States	Scenario is defined	Yes/No	No	-
Simmersion [25]	Job Interview & Coaching	Choice based	Representation of changes in state	Scenario is defined	Yes/Yes	Yes	Feedback
Kognito [15]	Clinical	Choice based	Representation of changes in state	Scenario is defined	Yes/No	Yes	Feedback
Mursion [13]	Customer Service	Open-ended	No Change of states	The teacher actor	-	No	-
Virtual Speech [20]	Performance Reviews	Open-ended	Representation of changes in state	Scenario is defined	-	Yes	Feedback
Cognii [5]	Communication skills	Open-ended	Representation of changes in state	Scenario is defined	No/No	No	-

Table 2: Agent classification table

System	Type Training	When	Content	Covers	Teaching Strategies	Pedagogical Agent	Pedagogical Agent Role(s)
Elite [10]	Leadership	After	Reflection of performance	Single session	Cognitivism	-	-
Elite Lite [9,10]	Leadership	During & After	Reflection of performance	Single session	Cognitivism	Textual Agent	Learning & Feedback
Dialogue Trainer [6]	General Social Skills	During	Reflection of performance	Single session	Cognitivism	-	-
Simmersion [25]	Job Interview & Coaching	During & After	Reflection of performance	Single session	Cognitivism	Embodiment	Learning & Feedback
Kognito [15]	Clinical	During & After	Reflection of performance	Single Session	Cognitivism	Embodiment	Learning
Mursion [13]	Customer Service	After	Reflection of performance	Single Session	Cognitivism	-	-
Virtual Speech [20]	Performance Reviews	After	Reflection of performance	Single session	Cognitivism	-	-
Cognii [5]	Communication skills	During & After	Reflection of performance	Single Session	Cognitivism & Behaviourism	-	-

Table 3: Feedback classification table

6. Limitations

Commercial landscape is everchanging, systems analyzed are based on the available information at the time of data collection, and some systems may not have been included or may have undergone changes.

Research is constrained by the availability of publicly accessible information, leading to potential information gaps.

Limited sample size of 8 systems analyzed required caution when generalizing the findings.

7. Conclusion and Future work

Study presents two categorization tables that provide insights into, the agent model structures and feedback mechanisms.

These findings were compared to research oriented systems in order to highlight the differences between agent model and feedback choices.

Potential future work could research the effectiveness of different input types and the potential for diversifying feedback mechanisms.

8. References

[1] - Matthew J. Page et al. “The PRISMA 2020 statement: an updated guideline for reporting systema tic reviews”. In: BMJ 372 (Mar. 2021), n71. ISSN: 1756- 1833. DOI: 10.1136/bmj.n71.[5] - Cognii - Artificial Intelligence for Education and Training. [Online; accessed 23. Jun. 2023]. June 2023. URL: https://cognii.com.

[6] - Coordination - DialogueTrainer. [Online; accessed 23. Jun. 2023]. Apr. 2023. URL: https : / / www . dialoguetrainer.com/en/coordination.

[9] - ELITE Lite - Institute for Creative Technologies. [Online; accessed 23. Jun. 2023]. Mar. 2022. URL: https://ict.usc.edu/research/projects/elite-lite.

[10] - Elite Training - USAASC. [Online; accessed 23. Jun. 2023]. June 2023. URL: https : / / asc . army. mil / web / access-st-elite-training.

[13] - Immersive Learning Simulations With HumanPowered AI. [Online; accessed 23. Jun. 2023]. June 2023. URL: https://www.mursion.com.

[15] - Kognito - Practice-based digital learning experiences. [Online; accessed 23. Jun. 2023]. June 2023. URL: https://kognito.com.

[20] - Practice with ChatGPT - Professional Development & Workplace Skills. [Online; accessed 23. Jun. 2023]. June 2023. URL: https://virtualspeech.com/ai-practice.

[25] - Virtual Human Role-Player Conversation Training. [Online; accessed 23. Jun. 2023]. June 2023. URL: https://www.simmersion.com.