

Title

A Design-Based Study of a VIA-Integrated AI-Simulated Client System for Helping Skills Novices: Counseling Self-Efficacy and Cognitive Learning Processes in Counselor Education

Research Overview

This study employs Design-Based Research and an explanatory sequential mixed-methods design to develop a VIA-integrated AI-simulated client system for helping skills training. It examines whether the system can provide a psychologically safe practice environment that reduces beginners' performance anxiety while enhancing counseling self-efficacy, embodied empathic skills, and overall learning processes.

Purpose of Study

Helping skills are foundational to professional counselor education, particularly during the "exploration stage" identified in Clara Hill's helping skills model. However, conventional micro-skills training, especially peer role-playing, often evokes performance anxiety, evaluative pressure, and a pronounced advice-giving impulse among beginners. These tensions can impede the development of a strong working alliance and limit empathic engagement in low-risk practice contexts. Recent advances in generative AI offer a low-risk and interactive environment for deliberate practice, creating new possibilities for early skills training. The purpose of this study is to develop a VIA Character Strengths–Integrated AI-Simulated Client System and examine its application in counselor education. Integrating positive psychology frameworks such as the VIA classification into the initial stages of counseling remains practically challenging for novices. Accordingly, this study investigates how the system may influence beginners' counseling self-efficacy, their embodied empathic skills, and their micro-level cognitive learning processes during practice. It also seeks

to derive educational technology design principles concerning how system interventions may support movement from anxiety-driven problem solving toward empathic listening and strength-based empowerment dialogue.

Research Methods

This study adopted Design-Based Research to support iterative system optimization in an authentic educational context. More specifically, an explanatory sequential design was used to collect and analyze data from eight trainees in a counseling psychology program across two testing cycles, while allowing continuous system refinement during the DBR process. The system was developed with Python, Streamlit, and the Gemini 2.5 Flash model. To enhance interactional fidelity, it incorporated specific features, including required bracketed input for nonverbal behavior and embedded “hidden strength” scripts derived from the VIA classification. Data collection included both quantitative and qualitative measures. Quantitative data were collected using pre- and post-tests on the Counselor Self-Efficacy Scale. Given the small sample size ($N = 8$), the Wilcoxon signed-rank test and effect size (r) were used to assess practical significance. Qualitative data consisted of dialogue logs from four practice sessions and structured reflection journals. Braun and Clarke’s thematic analysis, combined with triangulation across subjective reflections and behavioral markers, was used to strengthen trustworthiness. The quantitative and qualitative strands were then interpreted together to explain how measured changes in self-efficacy related to specific interaction patterns and reflective processes observed during practice.

Results and Discussion

The findings indicate preliminary evidence of practical effectiveness and identifiable learning processes associated with the AI-simulated client system. Quantitatively,

participants showed an overall upward trend in counseling self-efficacy after using the system. Helping Skill Self-Efficacy demonstrated a medium-to-large effect size ($r = 0.46, p = .068$), whereas Session Management Self-Efficacy and the total scale each showed practically meaningful improvement ($r = 0.42$). These patterns suggest that the system may have reduced evaluative anxiety and enabled frequent, low-risk deliberate practice that strengthened practical confidence. Qualitatively, thematic analysis of dialogue logs and reflection journals clarified the mechanisms underlying these gains and revealed three core cognitive and behavioral shifts. First, the system's stage-locking rules activated an internal braking process, helping trainees suspend anxiety-driven advice-giving impulses and tolerate client ambiguity through more active, empathic listening. Second, mandatory bracketed entries for nonverbal behavior functioned as embodied cognitive scaffolds, prompting trainees to visualize clients' states and their own postures and translating abstract empathy into more concrete behavioral sequences. Third, embedded VIA character-strength prompts fostered a "strength radar" that helped trainees identify resilience within negative narratives and move toward strength-based empowerment dialogue. Overall, the study yielded three DBR-informed design principles: cognitive braking for anxiety suspension, embodied markers for emotional scaffolding, and hidden-strength scripting for perspective transformation. Taken together, the findings suggest that the system offers a low-pressure practice space and an empirical foundation for the continued digital development of counselor training, with future iterations extending this framework to more advanced stages of practice.

Keywords

Design-Based Research, AI-Simulated Client System, Helping Skills, Counselor Self-Efficacy, VIA Character Strengths