

Individualized Clinical Coaching in the TLE TeachLivE™ Lab: Enhancing Fidelity of Implementation for System of Least Prompts among Novice Teachers of Students with Autism

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Abstract

In this study, the authors examined the efficacy of individualized clinical coaching of least-to-most prompting (also referred to as system-of-least prompts, SLP) in the TLE TeachLivE™ mixed-reality teaching environment (TLE). Participants included six novice educators enrolled in a graduate special education course. Results suggest that ICC in TLE was effective in increasing the fidelity of implementation of the participants' use of SLP. Teachers maintained fidelity after termination of intervention phase. Total training time in the simulation lab did not exceed one hour per participant.

Background

It is acknowledged that today's teachers face the challenge of providing instruction in an increasingly complicated curriculum to a widely diverse population of learners, including those identified with disabilities (Belfiore, Fritts, & Herman, 2008; Browder & Cooper-Duffy, 2003; National Research Council [NRC], 2001). Considering teacher quality is the strongest indicator of student success (Darling-Hammond, 2010), teacher preparation programs are tantamount to providing educators with research-based pedagogies that will ensure an effective learning environment for students (Lane & Carter, 2006; Regan & Michaud, 2011; Simonsen, 2008; Simpson, 2011).

The TeachLivE™ virtual classroom simulator is technology that provides a virtual learning environment that provides a realistic space to practice teaching with avatars. Interactions are real-time and can be scripted or spontaneous, depending upon the nature of the learning activity. Interactions can be replicated in a rapid, systematic nature, so that several teachers can instruct in the virtual classroom over the course of an hour.

By utilizing the TeachLivE™ lab, students' exposure to under-prepared, ineffective teachers is reduced, improving teacher practice that may lead to increased student learning outcomes (Dieker et al., 2007; Dieker et al., 2008; Vince Garland, Vasquez, & Pearl, 2012; Vince Garland, Holden, & Garland, in press).



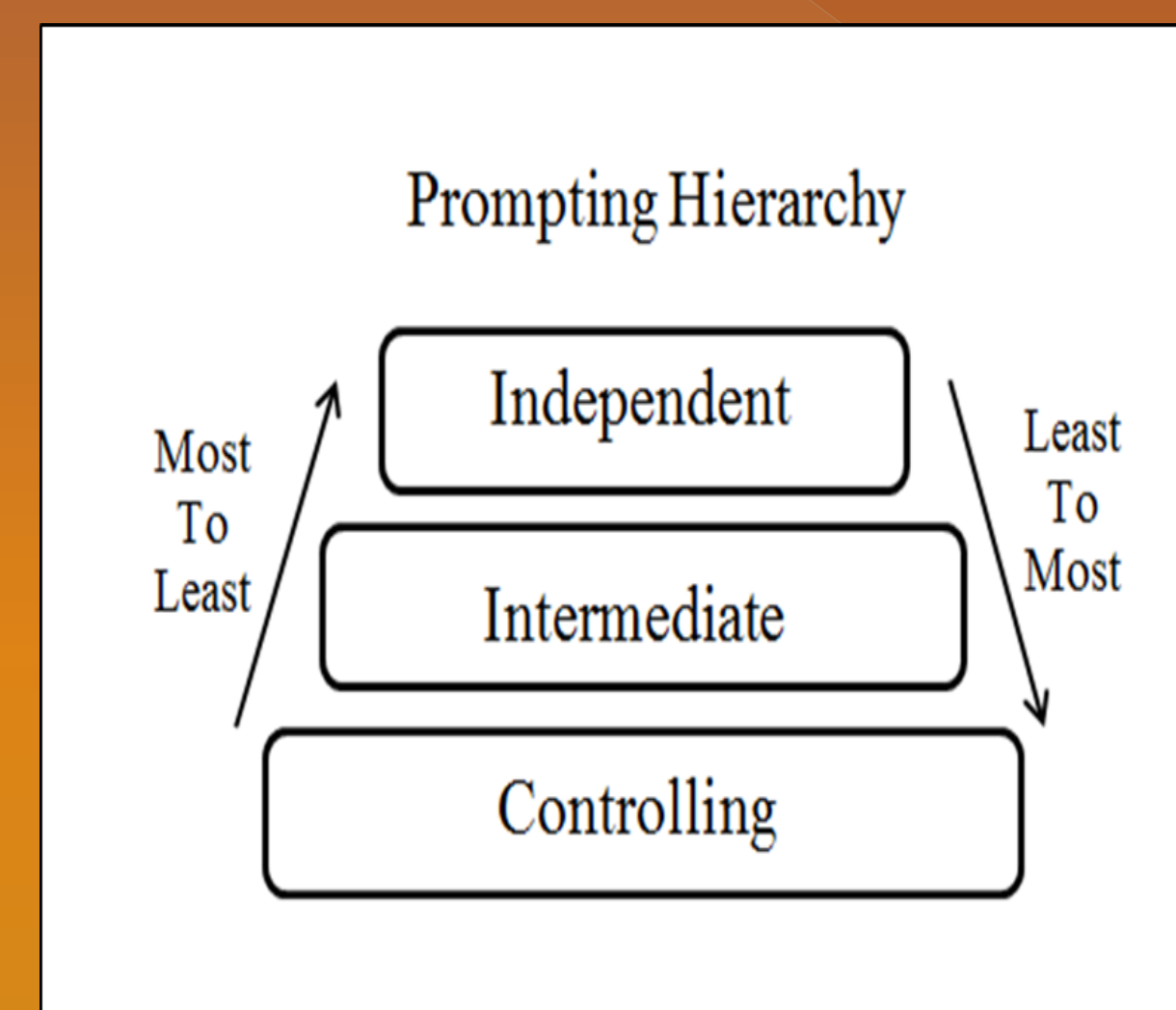
The TLE classroom and participant utilizing the lab.



Research Questions

To what extent is the fidelity of implementation of System of Least Prompts (SLP) affected when participants are prepared using individualized clinical coaching in the TLE TeachLivE™ virtual classroom laboratory?

To what extent did participants value their preparation of System of Least Prompts (SLP) with individualized clinical coaching while in the TLE TeachLivE™ virtual classroom laboratory?



Prompting Hierarchy

Participant	Age	Gender	Undergraduate Degree	Occupation
Russell	26	Male	History	Behavior Management Aide
Charlotte	30	Female	Elementary Education	Substitute teacher, Army Reserves
Garth	23	Male	Adolescent Social studies/Special Education	Substitute teacher
Brian	28	Male	Early Childhood/Childhood Education	Substitute Teacher
Katie	26	Female	Special Education/Elementary Education	Computer Lab teacher
Kortney	26	Female	Adolescent Mathematics Education	Math and Technology Teacher

Participant Demographic Information

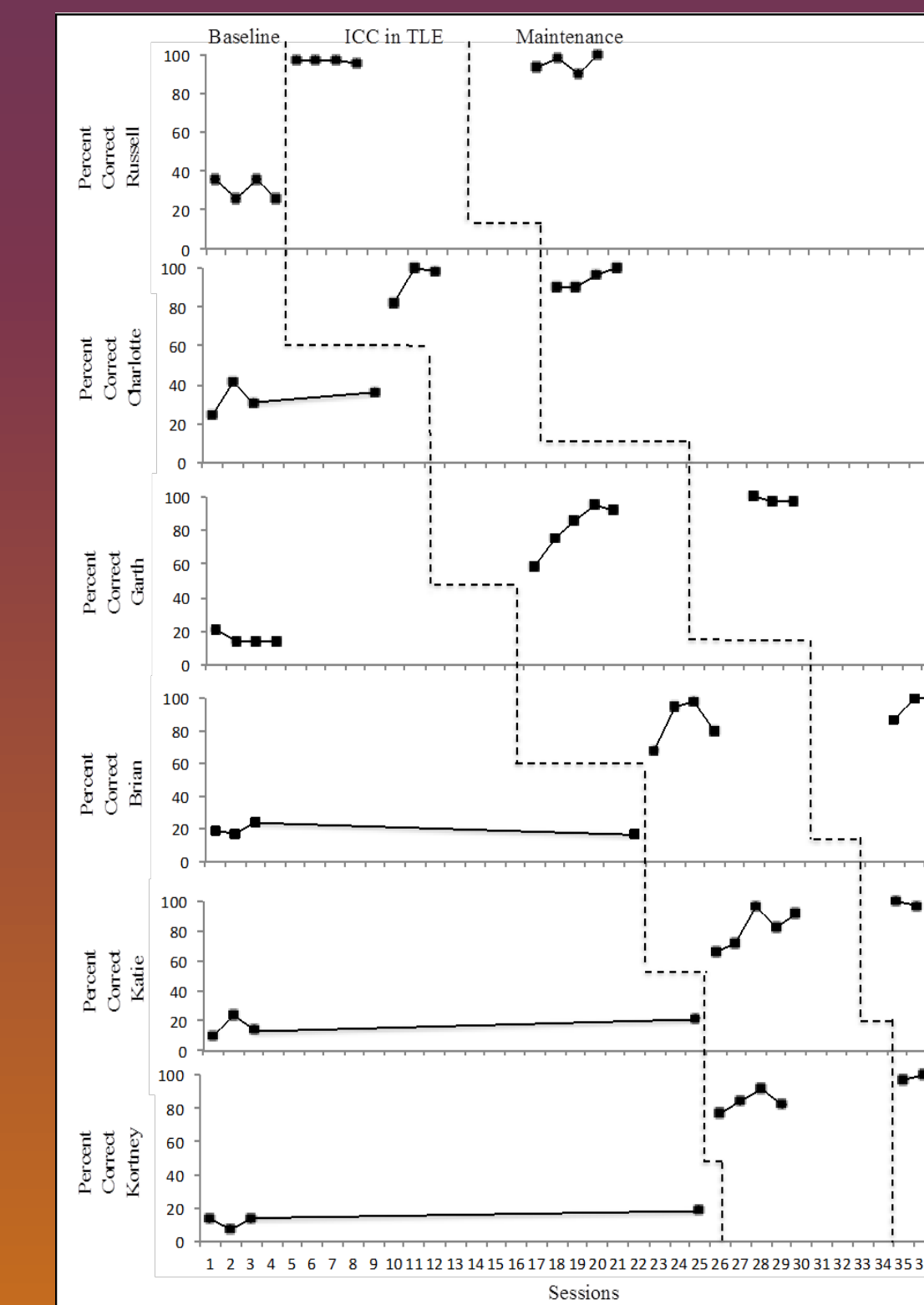
Methods

A multiple probe across participants single case design (Gast, 2010) was used. Participants underwent concurrent baseline sessions. After three baseline sessions a visual analysis was conducted and the first participant began the intervention phase. When the variable showed a clearly accelerating trend, the second participant began intervention. This process was repeated for each participant. Once a participant met the mastery criteria of 80% for fidelity of the SLP for three consecutive sessions, maintenance data were collected for the remainder of the study.

Results and Discussion

Results from visual analysis suggest ICC in TLE was successful in increasing fidelity across all participants while implementing SLP. All met criteria (80% over three consecutive sessions) in a brief period of intervention and maintained performance well above criterion mastery during post-treatment sessions.

Results demonstrate that across all six participants, mean participant performance improved from 22% during baseline to 88% after receiving coaching in the TLE TeachLivE™ simulation classroom. Mean participant accuracy in the maintenance phase was 97%, an overall improvement in class learning of 75%. Five of the six participants actually continued to increase their fidelity, attaining near perfect scores on the SLPPER.



Participant	Baseline	Intervention	Maintenance
Russell	\bar{x} = 31% R= 10 (26%-36%) 4 Sessions	\bar{x} = 97% R= 2 (95%-97%) 4 Sessions	\bar{x} = 95% R= 10 (90%-100%) 4 Sessions
Charlotte	\bar{x} = 33% R= 17 (24%-41%) 4 Sessions	\bar{x} = 93% R= 18 (82%-100%) 3 Sessions	\bar{x} = 96% R= 10 (90%-100%) 4 Sessions
Garth	\bar{x} = 16% R= 7 (14%-21%) 4 Sessions	\bar{x} = 81% R= 37 (58%-95%) 5 Sessions	\bar{x} = 98% R= 3 (97%-100%) 3 Sessions
Brian	\bar{x} = 19% R= 7 (17%-24%) 4 Sessions	\bar{x} = 85% R= 30 (68%-98%) 4 Sessions	\bar{x} = 96% R= 13 (87%-100%) 3 Sessions
Katie	\bar{x} = 17% R= 15 (9%-24%) 4 Sessions	\bar{x} = 82% R= 31 (66%-97%) 5 Sessions	\bar{x} = 99% R= 3 (97%-100%) 2 Sessions
Kortney	\bar{x} = 14% R= 12 (7%-19%) 4 Sessions	\bar{x} = 84% R= 15 (77%-92%) 4 Sessions	\bar{x} = 99% R= 3 (97%-100%) 2 Sessions
Average Across Participants	\bar{x} = 22% R= 19 (14%-33%) 24 Total sessions	\bar{x} = 88% R= 16 (81%-97%) 25 Total sessions	\bar{x} = 97% R= 4 (95%-99%) 18 Total sessions

Data analysis of participants' fidelity of implementation of the SLP in TeachLivE.

Participants reported that they benefited from modeling and 1:1 feedback. Participants said that the experience felt similar to working with a real student, that the avatar's mannerisms as a student with ASD were "pretty natural" and discussed the ease by which they were able to suspend disbelief.

In addition, several participants firmly believed learning the SLP in the TeachLivE™ lab was a more valuable and intensified experience than just using a textbook. Several participants mentioned that they would prefer to pay for time in the lab in lieu of buying a traditional textbook.

Results from this study contribute to the field of research on teacher preparation and SLPs because:

- is the only research study to train special education teachers on the use of SLP in a classroom simulation laboratory,
- this research demonstrates how delivering ICC in TLE can be used to support teachers' rapid acquisition and sustained fidelity in the use of SLP when working with a student who has ASD.

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