

Strengthening Teacher Preparation Using Virtual Simulation Insights in Low-Resource Settings

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Summary: This reflective article demonstrates how key findings from virtual-simulation research can strengthen teacher preparation programs, even in institutions without access to technology such as TeachLivE. Drawing on research about virtual-simulation applications, the article highlights communication strategies, adaptive questioning, scaffolding, and nonverbal responsiveness that teacher candidates can transfer to classrooms with English learners. By integrating structured rehearsal, real-time coaching, and reflective practice, programs can replicate many benefits of simulation and prepare confident, culturally responsive educators in resource-limited contexts.

Keywords: virtual simulation, teacher candidates, English learners, communication strategies, teacher preparation, scaffolding, zone of proximal development

Introduction

Virtual-simulation platforms such as TeachLivE™ have transformed how teacher candidates (TCs) rehearse communication strategies with English learners (ELs). Through realistic avatars, immediate coaching, and a risk-free environment, TCs learn to adapt language, differentiate questioning techniques, and respond to nonverbal cues—skills essential for successful EL instruction. My doctoral research explored how these virtual-simulation experiences shaped TCs' communication strategies with real-life ELs, revealing significant growth in their preparedness, adaptability, confidence, and ability to scaffold language effectively. However, a common and important question remains:

What about institutions or teacher preparation programs that do not have the financial or technical capacity to implement virtual simulation?

For the past three years, I have served as a TeachLivE virtual-simulation coach, preparing teacher candidates to work with ELs at varying proficiency levels. While TeachLivE offers valuable opportunities, I have repeatedly met teacher educators and program directors who express frustration: They recognize the value of simulation but lack the budget, staff, or technological support to implement it. This reflection speaks directly to them.

Drawing on major findings from my simulation-based research and my coaching experiences, this article outlines practical, low-cost strategies that teacher candidates and educators can adopt without access to TeachLivE to strengthen EL instruction. These strategies translate the essence of what TCs learn in virtual simulations into feasible classroom practices, helping teacher preparation programs remain equitable, effective, and grounded in evidence-based practice.

Translating Virtual-Simulation Learning Into Accessible Practice

Virtual-simulation training aligns with Grossman et al.'s (2009) approximations of practice and Vygotsky's (1978) zone of proximal development (ZPD). Both frameworks emphasize opportunities for TCs to rehearse teaching, receive feedback, and refine their approaches in authentic yet supported settings, working just beyond their current competence with expert support. The iterative feedback loop—practice, immediate guidance, and adjustment—creates a powerful learning cycle that accelerates skill development. Even without technology, teacher candidates can benefit from the same instructional cycle by replicating three core elements:



Figure 1. TLE TeachLivE Avatars, Kindergarten Through Grade 5.

Image by Eric Imperiale.

1. **Structured rehearsal.** TCs role-play with peers who simulate beginning, intermediate, and advanced ELs by responding with limited language, gestures, silence, or culturally influenced behaviors, much like the avatars in TeachLivE.
2. **Real-time coaching.** During these role-plays, educators pause the interaction to model clearer questioning, simplified language, or visual scaffolds—for example, reminding a TC to use shorter sentences because, for beginning ELs, “less is more.”
3. **Immediate reflection and correction.** After each rehearsal, TCs discuss what worked, where misunderstandings occurred, and how nonverbal cues shaped communication.

This cycle of practice, coaching, and reflection mirrors the ZPD-based learning process found in virtual simulation and can be fully implemented in any resource-limited teacher preparation program.

Key Communication Strategies That Transfer From Simulation to Classrooms

Noor’s (2024) findings show that teacher candidates transferred communication strategies practiced in virtual simulations to their classroom interactions with ELs. These strategies—which address questioning techniques, language adaptation, multimodal support, wait time, and nonverbal communication—can be taught effectively even in institutions without access to simulation. By intentionally embedding these practices into coursework and field experiences, programs can ensure that teacher candidates develop the same skills simulations help cultivate.

Level-Appropriate Questioning

One of the most significant strategies TCs developed was level-appropriate questioning. TCs learned to tailor questions to EL proficiency levels: Beginning ELs responded best to *yes/no* or *either/or* questions, intermediate ELs benefited from *why* and *how* follow-up questions, and advanced ELs could engage in analytical and open-ended responses. This became particularly clear when beginning EL avatars responded with silence or lowered heads, signaling confusion when they were asked a complex question. Without simulation technology, teacher educators can replicate

this learning through role-play by assigning peers EL profiles that imitate beginning, intermediate, and advanced language levels. Beginning-level peers use gestures or one-word answers, intermediate-level peers respond in short phrases, and advanced-level peers provide full responses, requiring TCs to adapt their questioning strategies accordingly.

Visual and Nonverbal Supports

The integration of visual aids and nonverbal cues also emerged as a powerful communication strategy, especially for beginning ELs who relied heavily on pictures, gestures, pointing, and modeling. In lieu of virtual simulation, TCs can practice this strategy by delivering micro-lessons that include an anchor visual, one gesture per keyword, and a quick sketch or graphic organizer. Peers respond only when they can genuinely comprehend the message, mirroring the avatar responses in TeachLivE and reinforcing the importance of multimodal instruction.

Wait Time

Wait time also proved essential, as TCs often underestimated how much processing time ELs need. In the simulation, delayed avatar responses made TCs aware of their tendency to rush or prematurely rephrase questions. Teacher educators can replicate this learning by implementing a five-second silent-wait rule, training TCs to pause after each question and allowing peers to delay their responses. This practice helps TCs internalize the importance of giving ELs space to think and respond.

Responding to Nonverbal Cues

Noor's (2024) study also showed that TCs became more attuned to nonverbal cues, identifying confusion, anxiety, disengagement, or overwhelm through lowered heads, nervous laughter, or lack of eye contact. To simulate this learning in low-tech environments, peers acting as ELs can communicate confusion solely through body language. TCs must then interpret these cues and adjust their instruction accordingly. This approach mirrors the simulation theme of recognizing and responding to nonverbal cues and prepares TCs to be more responsive and supportive in classrooms.

Adapting Virtual-Simulation Principles to Field Placements

Even without simulation technology, teacher preparation programs can embed its core principles into field experiences by reframing how TCs observe, teach, and receive feedback. Guided observation using simulation-based lenses can replace general observation tasks. Instead of focusing on broad impressions, TCs observe teachers using specific indicators such as teacher talk, question type, wait time, language adaptation, nonverbal cues, visual supports, and repetition. These categories align directly with the com-

munication strategies identified in virtual-simulation research and help TCs notice the nuanced instructional moves that support ELs.

Targeted microteaching with feedback is another powerful strategy. By having TCs conduct short, five-minute EL-focused teaching segments with students, programs can recreate the focused practice that virtual simulations provide. Cooperating teachers can then offer feedback using the same indicators used in the simulation environment, strengthening the connection between rehearsal and classroom practice.

Finally, teacher educators can incorporate a freeze-and-coach method inspired by TeachLivE coaching. During a practicum lesson, a mentor can briefly pause the instruction to model clearer phrasing, suggest a more appropriate question type, or demonstrate a scaffolded prompt. This immediate intervention replicates one of the most impactful features of simulation coaching and supports the transfer of learning to practice. Together, these strategies allow field placements to function as dynamic rehearsal spaces where TCs practice, refine, and master the communication skills essential for teaching ELs effectively.

Research has shown that virtual simulation reduces teacher candidates' anxiety and strengthens their psychological readiness for classroom interactions, helping them feel more confident, prepared, and less overwhelmed when teaching ELs (Regalla et al., 2016; Noor, 2024). Even without simulation, programs can build this sense of readiness by incorporating repeated microteaching cycles, creating low-stakes peer role-play environments, offering constructive coaching rather than evaluative criticism, and promoting a growth mindset that frames misunderstandings as part of the learning process. Together, these practices replicate the confidence-building mechanisms found in virtual simulation and equip TCs to approach EL classrooms with greater assurance and resilience.

Why These Strategies Matter for Resource-Limited Institutions

These strategies matter greatly for resource-limited institutions because the true value of virtual simulation lies not in the technology itself but in the pedagogical transformation it enables. Research consistently shows that teacher candidates become more adaptive, develop responsive communication skills, build stronger scaffolding techniques, improve classroom management, recognize ELs' linguistic and emotional needs, and successfully transfer these skills to classrooms (Dieker et al., 2014; Regalla et al., 2016; Noor, 2024). Importantly, these outcomes do not depend on access to simulation technology; they depend on intentional instructional design.



Figure 2. TLE TeachLivE Middle- and High-School English Learner Avatars.
Image by Eric Imperiale.

By implementing the core strategies described above, teacher preparation programs can reproduce many benefits of virtual simulation and achieve many of the same learning outcomes without a virtual environment.

Conclusion

Virtual simulation offers powerful, evidence-based support for developing strong communication strategies with English learners, but its core benefits are rooted in pedagogy

rather than technology. When programs adopt structured rehearsal, real-time coaching, and reflective practice, teacher candidates can gain the same adaptive, responsive, and culturally attuned skills cultivated in virtual environments. Resource-limited institutions can therefore prepare confident and effective educators by thoughtfully applying the principles behind simulation-based learning.

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