



Preparing Personnel SIMULATION

Description

Simulation allows candidates to have repeated trials in high-stakes situations without being placed in an actual setting. This gives them an opportunity to make mistakes that they can learn from without risking the loss of valuable resources such as money, time, and people (Dieker, Rodriguez, Lignugaris/Kraft, Hynes, & Hughes, 2014).

Overview

As technology evolves, educator preparation programs must adapt to emerging technologies to improve teacher candidates' **opportunities for practice**. Simulation can be used to provide **low-risk** experiences for teacher candidates to **practice critical teaching skills** throughout their preparation without the risks associated with in-person field placements (OSEP Summit Prepare Panel, 2020).

When incorporating simulation into a special education preparation program, stakeholders must consider the following components: the **platform** (e.g., Mursion, TeachLivE), the simulation **scenarios**, the **participants** (e.g., preservice candidates, paraprofessionals), and the **population** of students served (e.g., students with disabilities) (Dieker, Hynes, Hughes, Hardin, & Becht, 2017; Ely, Alves, Dolenc, Debolt, & Walton, 2018). Preparation programs should strategically plan for the **recurrence** of simulation throughout preparation along with the accessibility of the digital platform to candidates.

Simulation is particularly impactful in addressing **inequitable barriers** that **rural areas** and **high-poverty communities** face related to teacher preparation (Dieker et al., 2017). A larger proportion of personnel in rural districts are prepared through **alternative preparation** and **grow your own** programs than their suburban peers. Participants in alternative preparation programs **often complete coursework while working full time** in school settings. Simulation allows candidates to **gain experience** practicing skills with **different student populations** than those they work with during the school day (Dieker et al., 2014; Bove, Braam, Lawrenz, & Kirchhoff, 2011; Woods, 2016). Since simulation experiences can be conducted at any time of day, preparation programs can easily design their programs to allow candidates to participate in simulated experiences **in the evening** or **during free periods** during the daytime **without leaving their work settings**.

Research Findings

Research has highlighted the benefits of using **simulation** to--

- help preparation programs pursue specific educational objectives (Dieker et al., 2014);
- prepare candidates to deal with a variety of high-stakes situations that are **specific to students with disabilities**;
- allow personnel preparation programs to **lower costs** associated with extending candidate practice time in the field and labor costs (Badiee & Kaufman, 2015; Dieker et al., 2014);
- help candidates refine **their classroom management skills and ability to deliver systematic instruction** to diverse learners (Hudson, Voytecki, Owens, & Zhang, 2019); and
- allow administrators to prepare new teachers during the summer to ensure their readiness to **address challenges and scenarios that are common or specific** to their school (Dieker et al., 2014, 2017).

A 2011 quasi-experimental study at a midwestern university on the simulation platform **simSchool** found that candidates who received preparation through simulation rated their problem-solving skills and confidence to work with students with different needs as improved as a result of their use of simulation (McPherson et al., 2011).

It is important to note that the use of simulation in educator preparation is most effective when **paired with strong evidence-based instruction** and **comprehensive practice-based clinical experiences** (Benedict et al., 2016; OSEP Symposium, 2019).

Research Findings (Continued)

As research on simulation is still emerging, most current research on simulation focuses on the use of specific platforms in teacher preparation, such as TeachLivE and Mursion. To better understand the impact of simulation on the effective preparation of a diverse workforce to serve students with disabilities, more research needs to be conducted on the impact of simulation on other school-based personnel, early interventionists, and related service providers. Additionally, research disaggregating findings by race or gender has not been conducted on a large scale.

Exemplars

- [Western Oregon University](#). This university uses the simulation program Mursion to prepare special education and general education preservice teachers to use high-leverage practices and collect and use data to make instructional decisions.
- [TeachLivE™](#). This mixed-reality classroom has simulated students, which allows teachers to develop their preservice skills within a safe environment that does not place real students at risk. A wide range of literature exists on the effectiveness of TeachLivE, including how it benefits the instruction of students with disabilities.

(Additional exemplars can be found on the [Attract, Prepare, Retain resource page](#).)

KEY IMPLEMENTATION CONSIDERATIONS

Critical Components for Success

(Lists are not sequential)

Setting the Stage

- Select a simulation platform to incorporate into educator and related service provider preparation that is accessible to all preservice candidates.
- Identify funding sources for the platform cost and fees (e.g., ESSA, Title II).
- Determine essential learning objectives for all students across the course of preparation.
- Build partnerships between local education agencies (LEAs) and preparation programs.
- Have LEAs inform partner preparation programs of challenges that novice educators or service providers are facing in their schools.
- Establish a State education agency (SEA) system that allows preparation programs to communicate data related to preparation through simulation back to the State.
- Identify a framework for observing candidate practice within simulation and for providing feedback.
- Plan for the reoccurrence of simulation.

Initial Start-Up

- Identify a “champion” who will oversee the virtual platform’s use in the institution and will serve as the primary communication liaison with the platform manager.
- Train faculty on how to use the platform and the framework for observing candidate practice.
- Convene preparation program faculty to establish collaboratively where simulation can be used to pursue certain learning outcomes and which outcomes require in-person clinical experiences.
- Select scenarios and populations of students served to integrate into the platform.

Continuous Improvement

- Identify new data sources to evaluate the effectiveness of the program.
- Locate funding opportunities to expand the use of simulation.

Related Services

Researchers and practitioners from across related service fields indicate how the emergence of telepractice in professions such as speech-language pathology, occupational therapy, orientation and mobility services, and physical therapy reflects the growing capacity for preparation programs to implement simulation into personnel preparation. While simulation is not widely practiced, in contrast to the simulation in teacher preparation that often occurs in school settings, related service preparation must embed simulation in a variety of settings, including simulated home settings.

Although it has not become common practice in school-based contexts, professions such as physical and occupational therapy have long incorporated practice through simulation into personnel preparation (Imms et al., 2017; Moyer et al., 2017). Institutions of higher education (IHEs) that already embed simulation into non-school-based preparation can leverage these existing simulation experiences and partner with other programs to expand simulation into school-based preparation. As these physical and occupational therapy programs already have personnel within their institution with knowledge of these platforms, school-based preparation providers can collaborate to pilot simulation experiences for school-based preparation as well.

Critical Components for Success (Continued)

- Convene preparation program faculty to address changes that need to be made during implementation.
- Collect program completion data to analyze the impact of simulation on novice teachers' perceptions of their ability to address challenges and scenarios that are common or specific to their school.
- Engage former candidates and their administrators to find gaps in preparation that can be addressed through increased use of simulation.
- Collaborate with other institutions that incorporate simulation into their preparation programs to share lessons learned and areas for improvement.

Leveraging Lessons Learned

- Convene preparation program, SEA, and LEA personnel to determine the feasibility of sustaining and/or scaling up the use of simulation in educator preparation.
- Identify new partnerships between preparation programs and LEAs.
- Share success stories.
- Develop guidance, resources, and tools.

Early Childhood

Through their field experiences, early childhood and early intervention (EI) candidates often work with extremely vulnerable populations (Gardner et al., 2019; OSEP Symposium, 2019). While not a common practice, embedding virtual simulation experiences into the preparation of personnel who will serve infants, toddlers, and young children with disabilities is one way to reduce the risk to these highly vulnerable populations. Simulation techniques have long been used as training and feedback tools in fields, such as aviation, where real-world practice is dangerous, costly, or difficult to organize (Badiee & Kaufman, 2015). Much like aviation training, early childhood and EI preparation programs can use simulation to allow candidates to translate course content into practice in extremely high-risk scenarios without actual risk being placed upon any real infants, toddlers, and young children, allowing the candidates the flexibility to make and learn from mistakes.

Stakeholder Spotlight

- **IHE Leadership (e.g., Deans, Associate Deans, and Department Chairs).** IHE leaders are in a unique position to support faculty from across colleges and departments by investing in technologies with broad applicability, like simulation. Some IHEs have found success in partnering with OSEP-funded technical assistance centers, such as Western Oregon's collaboration with the CEEDAR Center to embed simulation into their preparation programs. Professional associations can also serve as a source of fiscal support for IHE leaders who intend to embed simulation into their programs. Members of the [American Association of Colleges for Teacher Education](#) (AACTE) can partner with an organization to embed the Mursion virtual platform into their program at a discounted rate.
- **Historically Black Colleges and Universities (HBCUs) and Minority Serving Institutions (MSIs).** Inequity in preparation program funding across IHEs continues to be an issue. This is especially true among HBCUs and MSIs, which are traditionally more underfunded than their non-HBCU/MSI contemporaries (Williams & Davis, 2019). Addressing funding inequity is particularly important when considering simulation, given the associated upfront costs. To address financial barriers, HBCU and MSI leaders may consider partnering with other institutions or LEAs to offset costs, increase collaboration, and promote ongoing professional learning through preservice and in-service settings.

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