

## Appendix

### *Technology-Infused Teacher Preparation Program Design Implications*

	<b>Design Implication</b>	<b>Implementation Examples</b>	<b>Supporting References</b>
<b>Design Program Components</b> that develop teacher candidates' TSEinTI	<b>Adopt frameworks and models for technology integration</b> that guide teacher candidates' pedagogical decisions	Teacher educators model technology implementation in their content areas.	Mishra, 2019; Puentedura, 2006; Sprague et al., 2023; Tondeur et al., 2012; Wang & Zhao, 2021; Warr et al., 2023; Zipke et al., 2019
		Teacher candidates work with mentor teachers who model technology integration in PK-12 contexts.	
		Create a collection of examples of technology integration into specific subject areas to provide ideas and support for the creation and design of future lessons.	
		Provide best-practice examples of technology infused lessons and lesson plans that are easily accessed.	
		Use integration frameworks as guides for curriculum design.	
	<b>Build authentic experiences using technology</b> collaboratively with field-based <b>mentor teachers</b>	Build partnerships between colleges and schools of education and school districts.	Jin et al., 2023; Moore-Hayes, 2011; Sprague, et al., 2023; Ünal, 2017; Warr et al., 2023
		Pair teacher candidates with mentor teachers who have high TSEinTI.	
		Design lessons using integration frameworks, e.g., SAMR, TPACK, Triple E.	
		Include technology-integrated lesson design requirements within method courses.	
		Require technology-integrated lesson design opportunities within field experiences and/or student teaching.	
<b>Design technology integrated lessons</b> throughout program courses and field experiences	Position stand-alone technology course in the program sequence to facilitate lesson design opportunities.	Birisci & Kul, 2019; Buss, 2022; Foulger et al., 2021; Kolb, 2018; Kolb, 2020; Mishra, 2019; Sprague et al., 2023; Warr et al., 2023; Yeh et al., 2021	
	Align instructional design opportunities to the ISTE Standards for Students.		
	Develop awareness of classroom contexts for technology infusion in PK-12 and Higher Education (Develop XK, ConteXtual Knowledge).		
<b>Provide reflective opportunities</b> for teacher educators,	Use PIC-RAT framework.	Bull et al., 2017; Christensen et al., 2011; Imasiku &	
	Integrate simulated experiences.		

	teacher candidates, and mentor teachers	<p>Teach in-class reflective practice.</p> <p>Employ models of reflective practice.</p>	Bacchiocchi, 2022; Kimmons et al., 2020; Kolb et al., 2018; Sprague, et al., 2023; Uluay, 2021; Webb et al., 2021; Yun et al., 2019
	<b>Assess teacher self-efficacy in technology integration</b> throughout teacher preparation program	<p>Measure self-efficacy of teacher candidates throughout the program using proven instruments and scales that include specific technology items.</p> <p>Conduct interviews or conferences with teacher candidates.</p> <p>Build learning portfolios that showcase abilities with technology integration.</p>	Buss, 2020; Christensen, 2021; Foulger et al., 2017; Schmidt et al., 2009
	<b>Establish expectations for teacher educators'</b> integration of technology in their courses	<p>Make expectations for faculty explicit in hiring and promotion processes.</p> <p>Adopt ISTE Standards for Educators and Teacher Educator Technology Competencies (TETCs).</p>	Anderson et al., 2011; Kolb et al., 2018; Ogodo et al., 2021
<b>Grow a Program Culture</b> that values TSEinTI	<b>Provide infrastructure for equitable access to technology tools</b> (computers, apps, network connection, etc.)	<p>Provide necessary tools and networks (computers, tablets, applications, software, AR/VR/AI, wi-fi, etc.) to teacher educators and teacher candidates.</p> <p>Provide access to technology-infused opportunities within the teacher preparation program.</p> <p>Provide access to technology-infused opportunities within field experiences.</p>	Knezek & Christensen, 2016; Schechter, 2013; Schmidt-Crawford et al., 2020; Zilka, 2021
	<b>Develop technology competency</b>	<p>Create a culture of program-wide competence in technology skills.</p> <p>Include stand-alone educational technology course in teacher preparation programs.</p> <p>Provide or request prerequisite experience with technology.</p> <p>Adopt ISTE Standards for Educators and Teacher Educator Technology Competencies.</p>	Anderson et al., 2011; Elstad & Christopherson, 2017; Foulger, et al. 2017; Ogodo et al., 2021; Warr et al., 2023