

Appendix A
Overview of the Included Articles

Author(s)	Year	Country	Methods	Sample Size	Research Purposes
Admiraal et al.	2017	Netherlands	Mixed	49 preservice teachers	To examine how technology infusion is implemented and evaluated and how preservice teachers enact technology infusion in class and how this enactment is evaluated by their students
Aydin	2017	Turkey	Report	/	/
Baert & Steward	2014	USA	Quan	220 preservice teachers	To examine the perceptions of physical education teacher candidates on the integration of technology within a large PETE program that does not require preservice teachers to take an undergraduate technology course; rather, technology is embedded within the program.
Baran et al.	2019	Turkey, Belgium	Quan	215 Turkish preservice teachers	To examine preservice teachers' perceptions of the support their teacher education programs provide for developing their TPACK
Bell et al.	2013	USA	Qual	26 preservice teachers	To explore the effectiveness of a teacher preparation program aligned with situated learning theory on preservice science teachers' use of technology during their student teaching experiences
Brenner & Brill	2016	USA	Mixed	24 early career teachers for surveys 6 for interviews	To identify instructional technology integration strategies and practices in preservice teacher education that contributes to the transfer of technology integration knowledge and skills to the instructional practices of early career teachers
Chai et al.	2019	Hong Kong & Singapore	Quan	564 Singapore preservice teachers	To test a new questionnaire, investigate whether the revised STLDM enhance Singapore preservice teachers' TPACK 21CQK efficacies and their design beliefs significantly, and examine can teachers' design beliefs predict their TPACK-21CQL efficacies

Change et al.	2012	Taiwan	Mixed	16 preservice teachers	To investigate whether preservice teachers' TPACK improved with the MAGDAIRE model
Charbonneau-Gowdy	2015	Chile	Qual	23 preservice teachers	1) To determine whether innovative technology-infused (TI) courses would serve to enable the beginning teacher participants to shed their traditional, passive, rather narrow cultural mindset as individuals and learners that are contrary to the identities of effective, 21st-century teachers; and 2) to see whether opportunities to use a variety of innovative technologies for learning would have an influence on the pedagogies these individuals employed in their teaching practices
Cheng et al.	2022	Taiwan	Mixed	60 preservice teachers	To investigate the effectiveness of the "CloudClassRoom" (CCR) and the DEMO-CO-design/teacher-feedback-DEbriefing (DECODE) model on improving preservice teachers' online TPACK
Chien et al.	2012	Taiwan	Mixed	16 preservice teachers	To investigate whether preservice teachers' TPACK improved with the MAGDAIRE model
Clausen	2022	USA	Qual	/	To describe how a teacher education program is addressing the need to engage candidates and faculty on technology integration and adoption through participation in a Breakout EDU game
Cuhadar	2018	Turkey	Quan	832 preservice teachers	To expose the training and experience that preservice teachers acquire in the course of their study at schools of education in regard to the use of information and communication technology (ICT)
Cydis	2015	USA	Mixed	43 preservice teachers	To examine whether preservice teachers integrate technology into their lesson plans after seeing the modeling of pedagogical practices that integrate authentic, performance-based opportunities for technology integration
Dorner & Kumar	2016	Hungary & USA	Quan	116 preservice teachers	To describe the Mentored Innovation Model's implementation with preservice teachers to support them with technology integration in their teaching

Eutsler	2022	USA	Qual	38 preservice teachers	To examine how does an emphasis on the instructor's pedagogy and implementation of the gradual release of responsibility model influence preservice teachers' use of the iPad to design early literacy instruction
Foulger et al.	2017	USA	Qual	43 articles 17 Delphi participants	To create Teacher Educator Technology Competencies (TETCs)
Gawrisch et al.	2020	USA	Report	/	To propose a conceptual framework for helping preservice physical educators develop TPACK that is grounded in occupational socialization theory
Gill et al.	2015	Australia	Qual	11 preservice teachers	To report on a study in which a group of 11 preservice primary school teachers were interviewed at stages through their program with a focus on their preparedness to use ICTs in their teaching
Goldstein & Tesler	2017	Israel	Quan	1402 preservice teachers	To examine the impact of the Israeli National Program on pre-service teachers' skills in the integration of ICT in teaching and discusses the influential factors of successful implementation of practices in the field.
Han et al.	2017	USA & South Korea	Quan	55 preservice teachers	To examine how technology-centered student teaching experiences differently affect pre-service teachers with different teaching beliefs with regard to self-efficacy and intention to use technology
Henderson et al.	2013	Australia	Report	/	To select stories that reveal the most significant change according to the project goals; To analyze the selected stories using the lens of organizational learning to identify methods which most effectively assist students to build capacity to pedagogically integrate ICTs into their teaching practice;
Hsu & Lin	2020	Hong Kong	Quan	63 preservice teachers	To examine how the SQD strategies of a 4-week training module affect preservice teachers' perceived technology knowledge and attitudes toward technology adoption
Hughes et al.	2016	USA	Mixed	932 preservice teachers	To examine the nature and change in faculty technological modeling over 7 years

Jones & McLean	2012	Australia	Qual	52 students	To describe one approach to creating a technology-infused learning environment that has been trialed in the tertiary section
Kale	2018	USA	Mixed	82 preservice teachers	To examine the influence of observation of technology demonstrations and review of relevant text resources on the utility value of mobile and social networking tools that preservice teachers recognize in their reflections
Karaoglan Yilmaz & Durak	2018	Turkey	Qual	49 preservice teachers	To investigate pre-service teachers' opinions about how they utilized the steps of Gagne's model while designing digital stories for math lessons
Krause & Lynch	2018	USA	Qual	13 faculty 32 students	To investigate TPACK-related experiences of 13 faculty and 32 students among three PETE programs through a multiple case study design
Lindfors et al.	2021	Sweden	Qual	13 teacher educators	To explore how Swedish teacher educators view individual, collegial, and organizational conditions framing the fulfillment of their dual didactical task, which is to use digital technology in a way that ensures student teachers graduate from teacher education (TE) with the professional digital competence (PDC) needed for their future working lives in a digitalized school
Lu & Lei	2012	USA	Qual	39 preservice teachers	To investigate whether Live Dual Modeling was effective in helping preservice teachers develop TPACK in a technology integration course.
Martinovic & Zhang	2012	Canada	Mixed	64 preservice teachers for the online survey 12 for focus group interviews	To examine preservice teachers' expectations of and attitudes toward the learning and integrating of ICT into their teaching, and their perceptions of the availability and use of ICT in the Teacher Education Programs and their placement school
Menon et al.	2018	USA	Mixed	34 preservice	To investigate changes in preservice elementary teachers' technology self-efficacy during their participation in a specialized

				elementary teachers	science content course that utilized a mobile technology-based physics curriculum, Exploring Physics
Montgomery et al.	2015	Canada	Mixed	3 teacher educators	To explore the digital challenges of student engagement in higher education within the experimental platform of blended learning
Moore & Bell	2019	USA	LR	26 manuscripts	To investigate to what extent does existing literature support instructor modeling as an effective, research-based strategy
Nelson & Hawk	2020	USA	Quan	146 preservice teachers	To investigate how field experiences impact the technology integration beliefs and intentions of prospective preservice teachers
Neumann et al.	2021	USA	Mixed	33 preservice teachers	To investigate using the pedagogies of practice to design a course that prepares preservice teachers to teach with technology in technology-rich and blended environments
Novak & Wisdom	2018	USA	Mixed	42 preservice elementary teachers	To explore how collaborative 3D printing inquiry-based learning experiences affected preservice teachers' science teaching self-efficacy beliefs, anxiety toward teaching science, interest in science, perceived competence in K-3 technology and engineering science standards, and science content knowledge
Ozudogru & Cakir	2020	Turkey	Quan	1040 senior preservice teachers	To investigate preservice teachers' taking teacher educators as role models in the application of technologies in education
Park & Gentry	2017	USA	Mixed	16 preservice teachers	To report on the development of the Collaborative Multimedia Service-Learning (CMSL) model and present the findings of the implementation of CMSL in a partnership between a preservice teacher training program in a 4-year university and area elementary and middle schools
Peng	2020	USA	Mixed	12 teacher educators	To analyze the Technology Teaching Assistantship (TTA) Program's features and impacts on teacher educators' development of TPACK
Polly et al.	2020	USA	Qual	89 preservice teachers	To examine how modeling from both teacher education faculty and clinical educators influenced elementary education teacher

					candidates' development of technology integration knowledge and use of technology while teaching
Rokenes & Krumsvik	2014	Norway	LR	42 empirical studies from 2000 to 2013	To showcase and establish knowledge about empirical research on ICT-training in teacher education and contribute with an overview of approaches for researchers, teacher educators, and policy makers on how teacher education develop student teachers' digital competence for the secondary school grade level
Roulston et al.	2019	UK & Ireland	Mixed	37 teacher educators 8 teacher education providers	To report on teacher educators' use of digital technologies across the island of Ireland
Rownston et al.	2021	Australia	Qual	17 post-graduate preservice teachers	To understand how career-changers technology pedagogy cognizance developed throughout a post-graduate teacher education program and the determinants that supported or constrained their level of progression
Ryu et al.	2019	USA	Qual	4 preservice teachers, 2 doctoral students	To examine strategies students in the methods course employed in developing integrated STEM lessons, the funds of knowledge they brought to the STEM lesson development, and the challenges experienced
Sardone	2019	USA	Qual	75 preservice teachers	To investigate the level of complexity of the learning experience based on the SAMR model of the technology integrated tasks created by study participants; For participants to consider one way to integrate technology that can result in student engagement
Scrabis-Fletcher et al.	2016	USA	Mixed	91 preservice PETE candidates	To examine preservice PETE candidates' technological and pedagogy skills and their beliefs about and implementation of technology in their classes in an effort to assess which methods of instruction about technology might provide for the greatest learning
Semiz & Ince	2012	Turkey	Quan	760 preservice physical	To identify the TPACK, Technology Integration Self Efficacy, and Instructional Technology Outcome Expectations of preservice physical education teachers; To examine the relationships among

				education teachers	TPACK, TISE, and ITOE; To examine the differences between preservice physical education teachers who perceived and who did not perceive technology integration by their university instructors on TPACK, TISE, and ITOE scores.
Setiawan et al.	2018	Indonesia	Qual	1 teacher educator in English Department	To explore a teacher educator's experiences in modeling his teaching and learning based on the TPACK framework using qualitative research into biographical case study narrative
Starčič, & Lebeničnik	2020	Slovenia & Russia	Quan	1,359 students	To examine student' perception of various technology-based issues: ICT integration within a Slovenian university's learning environment; teachers as role models for ICT use, and the processes of collaboration and creativity as integrative parts featured in learning technologies
Starkey	2020	New Zealand	LR	47 articles	To examine research exploring the preparation of teachers for the digital age through a systematic literature review of articles published between 2008 and 2018
Tiba & Condy	2021	South Africa	Qual	16 preservice teachers	To identify factors influencing preservice teachers' readiness to use technology during student teaching
Tondeur et al.	2012	Belgium, China, & Netherlands	LR	19 articles	To review and synthesize qualitative studies that focused on strategies to prepare preservice teachers for technology integration
Tondeur et al.	2016	Belgium & Norway	Quan	688 preservice teachers	To develop a self-report instrument to measure pre-service teachers' perceptions of the extent to which they experience the necessary support and training in order to integrate technology into classroom activities
Tondeur et al.	2019	Belgium, Norway, USA, Finland	Quan	284 teacher educators in Belgium	To investigate the profiles of teacher educators and explore their ability to prepare preservice teachers for technology integration

Tondeur et al.	2021	Belgium & Australia	Quan	931 preservice teachers in Belgium	To examine 1) the key relationships among strategies to develop preservice teachers' digital competencies and 2) how the self-organization of these strategies changes in relation to pre-service teachers' attitudes towards digital technology
Tondeur et al.	2018	Belgium & Australia	Quan	931 final-year preservice teachers in Belgium	To test a model to explain preservice teachers' perceived ICT competencies that integrates their background characteristics, ICT profile, and strategies they experience in teacher education programs.
Trainin et al.	2018	USA	Quan	891 preservice teachers	To examine how the teacher education program impacted preservice teachers' technology integration in the classroom with the redesigned teacher education program
Truesdell & Birch	2013	USA	Mixed	28 preservice teachers	To examine how a teacher education program integrate new instructional technology through the creation of a Technology Facilitator position in the department
Uerz et al.	2018	Netherlands	LR	26 research articles	To present an overview of research literature on teacher educators' competences in preparing their students to teach with technology
Vasinda et al.	2017	USA	Qual	4 teacher educators	To document 4 teacher educators' technology integration journey through collaborative autoethnography identifying the affordances and challenges of 1:1 iPad integration into their science, social studies, and literacy methods courses.
Vaughan	2014	USA	Qual	/	To explore the use of a flipped classroom model to engage preservice teachers in an Introduction to the Teaching Profession course.
Voithofer & Nelson	2021	USA	Mixed	843 teacher educators	To determine how teacher educators are working to prepare new teachers to integrate technology and how teacher educators, and by extension teacher education programs, were implementing the TPACK model.
Wetzel et al.	2014	USA	Qual	5 focus groups of preservice teachers	To examine how well and in what ways were candidates prepared to teach P-12 students to use and integrate technology to meet content standards or pedagogical standards.

Zipke et al.	2019	USA	Mixed	67 preservice teachers	To explore a modeling technique for integrating technology instruction into preservice teachers' coursework
--------------	------	-----	-------	------------------------------	---

Note: Please cite Jin, Y., Clausen, J. M., Elkordy, A., Greene, K., & McVey, M. (2023). Design principles for Modeled Experiences in technology-infused teacher preparation programs. *Contemporary Issues in Technology and Teacher Education*, 23(1).