What Do We Know About How to Effectively Prepare Teachers to Engage With Families?

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Abstract

One way to improve the quality of family engagement in K–12 U.S. public schools is by ensuring beginning teachers are well prepared to engage with their students' families. To ensure this, teacher educators and policymakers first need to know what works in preparing preservice teachers for effective family engagement. This systematic review quantitatively and qualitatively describes the existing evidence base. We collated and analyzed the quality of peer-reviewed empirical studies that evaluated interventions designed to improve preservice teachers' capacity to work with parents/guardians. We found a total of 25 studies (8 qualitative, 6 quantitative, 11 mixed methods). Although together these studies provide correlational evidence of improvements in preservice teachers' *beliefs* and *self-efficacy*, only one study was designed to provide rigorous causal evidence of improvement in preservice teachers' *skills* for engaging with families. These findings suggest that future research should employ more rigorous evaluative research designs and more practice-based outcome measures to strengthen the evidence base on preservice family engagement interventions.

Key Words: teacher education/preparation, family–school engagement, research design, systematic literature review

Introduction

Improving the quality of family engagement in education improves student outcomes (Bryk et al., 2010; Desforges & Abouchaar, 2003; Henderson

& Mapp, 2002; Kraft & Dougherty, 2013; Kraft & Rogers, 2015; Weiss et al., 2013). Given this, over the past several decades school systems and teacher preparation programs have increasingly focused on developing preservice teachers' knowledge, skills, and dispositions for working with students' parents (Epstein, 2001, 2018; Weiss et al., 2013). Efforts have been wide-ranging, including changes to teacher licensure requirements and the incorporation of more course activities aimed at better preparing preservice teachers for family engagement (Alanko, 2018; Gomila et al., 2018; Mutton et al., 2018; Saltmarsh et al., 2015).

Despite these promising developments, some researchers have raised concerns that a disconnect remains between the preparation we hope preservice teachers receive for family engagement and what is actually delivered and learned during teacher preparation (Barnyak & McNelly, 2009; Brown et al., 2014; Evans, 2013). These concerns stem from general acknowledgement that family engagement is rarely afforded its own course in preparation programs, but rather simply embedded in other courses for special education or multicultural education (Hiatt-Michael, 2001); these concerns also stem from teacher educators' concerns that what is taught may not actually be developing skills for authentic and meaningful engagement with families.

For example, in reflecting on their own teacher preparation program, Baumgartner and Buchanan (2010) wrote:

> Similar to preservice teachers in teacher educator programs across the country, ours had engaged in academic activities, including coursework, readings, and projects targeted toward the development of knowledge and skills for working with families. However…in the final student teaching semester…the only evidence most students provided to demonstrate "knowledge of families, support and empowerment of families and family involvement" were superficial involvement activities such as sending home newsletters, asking for materials for unit studies, and sometimes inviting family members to speak to their class. (p. 175)

Comments like these from practicing teacher educators acknowledge that while there has been progress in the *intended curriculum* for preparing teachers for family engagement, there remains a gap in both the *delivered curriculum* and our understanding of *whether and what parts of this delivered curriculum are effective*. The purpose of this review is to better understand the nature of this gap in the literature and what we can do about it.

Our aims are two-fold:

1. *To understand* what we know about preparing teachers for family engagement and what we still need to know (i.e., *What do we know from evaluations of interventions preparing preservice teachers for family engagement?*)

2. *To evaluate* how we know what we know and how we can know more (i.e., *How rigorous are the designs of these evaluations, and what can we do to strengthen these designs for future evaluations?*)

To achieve these aims, we reviewed the state of the evidence base on how to best prepare beginning teachers to effectively engage with their students' families. We systematically reviewed *empirical studies published in peer-reviewed academic journals that evaluate the impact of an intervention designed to improve U.S. K–12 preservice teachers' capacity to engage with families*. We defined *empirical study* as one that undertakes original data collection and analysis, whether quantitative or qualitative. There was no minimum sample size required for inclusion. We defined *intervention* broadly to include: a practice undertaken by teacher educators (e.g., class role playing activity simulating parent–teacher conference); something offered to preservice teachers (e.g., a course on family engagement, or planning an activity for a school family science night); and/or a way of structuring the preparation program (e.g., assignment of a community leader as mentor). Studies were excluded if they did not collect teacher-level data (i.e., they described an intervention but did not collect and present data on its impact on preservice teachers) or if they described a way of assessing preservice teachers on their capacity to engage with families but did not use this to test the effectiveness of an intervention (e.g., Dotger and colleagues demonstrate that medical-style simulations can identify how preservice teachers navigate difficult issues when dealing with parents; however, their studies do not present evidence of simulations' *impact on the preservice teachers themselves;* Cil & Dotger, 2017; Dotger et al., 2009). Finally, we define *family engagement* broadly to encompass both family engagement in schools (e.g., volunteering, instructional support, parent–teacher conferences) and in children's learning (e.g., homework support, enrichment). We did this because we wanted to investigate the state of the evidence base regarding preparing teachers for the full range of engaging with families to improve student outcomes.

Our motivation for undertaking this literature review was to consolidate the teacher education and family engagement fields' collective understanding of *what we know from evaluations and what we need to know* as well as *how we know and how we can know more*. In this way, this review differs from the two other systematic literature reviews on preparing teachers for family engagement (Evans, 2013; Smith & Sheridan, 2018), in that (1) we limited the studies reviewed just to those that look at the impact of interventions or practices on K–12 preservice teachers (most studies included by Evans [2013] and Smith and Sheridan [2018] analyzed interventions aimed exclusively for early childhood education and/or special education teachers); and (2) we analyzed the research designs and measurement tools used across the studies to comment

broadly on the state of research in the field (while Smith and Sheridan controlled for research designs in their meta-analysis, they did not discuss how various designs could threaten the internal validity of the findings, nor do they suggest what designs future researchers might use to mitigate these threats).

We believe our findings will be useful for teacher educators, policymakers, and researchers, particularly in light of increasing attention to the need to improve how schools engage with families and communities (Weiss et al., 2013). Our findings can assist teacher educators seeking to identify and develop evidence-based experiences to prepare their preservice teachers for family engagement. Understanding the extent of the evidence base can help guide policymakers' decision-making about how to improve teacher preparation for family engagement at scale. In addition, our findings are useful for researchers in the field of teacher preparation and family engagement to strengthen the evidence base to ensure we can continue to build our collective understanding of how to better prepare beginning teachers for family engagement.

Before describing our review methodology and findings, it is important to note that in doing this work, we reject the argument that evaluative research seeking to make causal claims is the only way that we can improve our understanding of how to better prepare preservice teachers for family engagement. Indeed, we believe that detailed interpretive research on family engagement (e.g., Hong, 2011, 2019; Lawrence-Lightfoot, 2003) has provided the family engagement field with a strong conceptual foundation from which interventions aimed at preparing preservice teachers have been developed. That said, given our aims to speak both to policymakers and researchers, we limit ourselves to reviewing only evaluative studies through the lens of contemporary, policy-relevant standards for research evidence (Institute of Education Sciences, 2020).

Method

Guided by general principles for undertaking systematic literature reviews as set forth by the field (Kennedy, 2007; Polanin et al., 2017; Slavin, 1986), we undertook a three-stage review process for identifying and evaluating relevant literature. In the first stage, we undertook an electronic database search of peer-reviewed journal articles using EBSCOhost[1]. This returned 84 studies, of which 9 were included. We then searched through the citations of the studies identified in the first stage, as well as from other reviews on preparing teachers for family engagement (Epstein, 2018; Evans, 2013; Smith & Sheridan, 2018). This returned a further 16 studies for a total of 25 that were included in this review. We acknowledge the limitations of this search procedure: using only

one online database and not conducting a hand search of relevant journals may have meant some potentially eligible studies were missed.

In the second stage, we read each article and quantitatively coded the type of research design used. Each coauthor coded independently, and then codes were reconciled by consensus. For codes, we used a simplified version of the *elements of research design* (assignment, comparison, treatment, measure) described by Shadish, Cook, and Campbell (2001). We also coded for particular *study characteristics* (sample size, preparation program characteristics, type of intervention, certification level, type and form of data collection). These codes and summary statistics are presented in Table 1. After this coding process, we then reread each article to qualitatively summarize the intervention, study design, sample and setting, outcome measure(s), and findings. We present these qualitative summaries by intervention type in Table 2.

Table 1. Summary of Reviewed Studies' Research Designs, Study Characteristics, and Measurement Strategy

Code		% of all studies (*n*=25)
Research Design Characteristics	**Comparison**	
	- Within-Person (Pretest-Posttest)	40% (*n* =10)
	- Between Groups (Posttest-Only & Control Group)	4% (*n* =4)
	- Within-Person and Between-Groups (Pretest-Posttest & Control Group)	12% (*n* =3)
	- No Comparison (Posttest Only, No Control Group)	32% (*n* =8)
	Assignment (to treatment)	
	- Convenience Sample	92% (*n* =23)
	- Random Assignment	8% (*n* =2)
	- Cohort-Based	0% (*n* =0)
	Analysis	
	- Qualitative	32% (*n* =8)
	- Quantitative	24% (*n* =6)
	- Qualitative and Quantitative	44% (*n* =11)

Table 1, continued next page

Table 1, continued

Study Characteristics	**Sample size**	
	- Median	87
	- Did not report	(*n* =1)
	Participant/Preparation Program Characteristics	
	Program Level	
	- Undergraduate	68% (*n* =17)
	- Postgraduate	8% (*n* =2)
	- Undergraduate and Postgraduate	8% (*n* =2)
	- Not reported	16% (*n* =4)
	Certification Level	
	- Elementary	64% (*n* =16)
	- Secondary	12% (*n* =3)
	- Elementary and Secondary	20% (*n* =5)
	- Not Reported	4% (*n* =1)
	Program Type	
	- Traditional	76% (*n* =19)
	- Alternative	0% (*n* =0)
	- Not Reported	24% (*n* =6)
Measurement Strategy	**Development of Outcome Measure(s)**	
	- Measures used were developed exclusively for the study	68% (*n* =17)
	- Measures used were developed by other researchers	8% (*n* =2)
	- Both	24% (*n* =6)
	Focus of Outcome Measure(s)	
	- Beliefs	92% (*n* =23)
	- Self-Efficacy	32% (*n* =8)
	- Knowledge	36% (*n* =9)
	- Skills	16% (*n* =4)
	- Practices	4% (*n* =1)
	Medium of Outcome Measure(s)	
	- Survey	88% (*n* =19)
	- Course Assessment	60% (*n* =15)
	- Preservice teacher interview	12% (*n* =3)
	- Observation	8% (*n* =2)
	- Parent/Guardian Interview	8% (*n* =2)
	- Course Evaluation	4% (*n* =1)

In the third stage, we reviewed the quantitative and qualitative database in light of our stated research aims: (1) *understanding* what we know about preparing teachers for family engagement and what we still need to know; as well as (2) *evaluating* how we know what we know and how we can know more. To analyze these databases towards aim (1), we began by grouping studies based on the types of interventions (a course or set of courses within a teacher preparation program, a learning experience within a course, or a learning experience organized outside a course). We then grouped similar studies within each of these types by characteristics of their study participants (elementary/secondary; undergraduate/postgraduate; USA/other) and by the types of outcome measures used (beliefs, self-efficacy, or skills). Grouping studies most similar enabled us to clearly identify what interventions have been found as effective (or not), for whom, and in what way.

To analyze these databases towards aim (2), we began by reviewing the quantitative codes related to *research design* and *outcome measures* in order to identify key themes. We then selected studies that were typical in order to understand the general design challenges that they documented. We also reread studies that used distinctly different designs or measures in order to understand how they might have done so (e.g., those that used comparison group designs; those that measured preservice teachers' skills for family engagement). We then considered these findings in light of the established literature on research design for causal inference (Institute of Education Sciences, 2020; King et al., 1994; Murnane & Willett, 2011; Shadish et al., 2001).

It is important to note that in analyzing research designs and measurement tools, we rejected a prevalent assumption that research must be quantitative and/or a large-scale randomized trial to be high quality. Rather, our focus throughout the review, as per recommendations by the Institute of Education Sciences and others (King et al., 1994; Murnane & Willett, 2011; Shadish et al., 2001), was on identifying the extent to which each study's findings were threatened by key limitations to internal validity. These limitations included: selection bias (*how do we know that the intervention is actually effective and not just because preservice teachers chose to participate?*), history effects (*how do we know that something else did not happen at the same time as the intervention to cause the effects?*), and maturation effects *(how do we know that the effects are not just due to natural growth and learning that is separate to the intervention?*). We discuss these further in the relevant results sections below.

Table 2. Summary of Studies Reviewed, Ordered by Intervention Type

Study	Intervention Type	Study Design[a]	Sample and Setting[b]	Outcome Measures[c]	Key Quote Summarizing Findings
Amatea, Cholewa, & Mixon (2012)	Family Engagement Course	Quantitative, Pretest-Posttest, Five Treatment Groups, No Control Group, Convenience Sample	*n*=138, Undergraduate, Elementary Certification, Traditional University-Based Program, Southeastern USA	Beliefs, Self-Efficacy, and Skills; Survey; Researcher-Developed (Self-Efficacy and Skills) and Externally Developed (Beliefs)	"…at posttesting many [preservice teachers] leaned toward more collaborative role expectations [with parents/guardians, and]…appeared to become somewhat more accepting in their judgments about the involvement of economically and culturally diverse caregivers in their children's schooling." (p. 827)
Brown et al. (2014)	Family Engagement Course	Quantitative, Pretest-Posttest, Four Treatment Groups, No Control Group, Convenience Sample	*n*=1,658, Undergraduate and Postgraduate, Elementary and Secondary Certification, Four Traditional University-Based Programs, Southern USA (one Rural & one Urban), Northern USA, and Southwestern USA	Beliefs and Knowledge; Survey; Researcher-Developed	"Results of knowledge and attitude assessments administered before and after use of the modules showed significant improvement in knowledge and attitudes across all settings." (p. 146)
Deslandes, Fournier, & Morin (2008)	Family Engagement Course	Qualitative and Quantitative, Pretest-Posttest, Two Treatment Groups, No Control Group, Convenience Sample	*n*=78, Undergraduate, Secondary Certification, Traditional University-Based Program, Quebec, Canada	Beliefs, Knowledge, and Self-Efficacy; Survey; Externally Developed	"…participation was effective in significantly improving [preservice teachers'] knowledge and comfort levels about planning and implementing parent involvement programs…" (p. 45)

Table 2, continued

Dotger (2010)	Family Engagement Course	Qualitative and Quantitative, Pretest-Posttest, One Treatment Group, No Control Group, Convenience Sample	*n*=13, Undergraduate and Postgraduate, Elementary and Secondary, Traditional University-Based Program, Northeastern USA	Beliefs and Knowledge; Survey and Course Assessment; Externally Developed (Beliefs) and Researcher-Developed (Course Assessment)	"[Preservice teachers] showed advances in multicultural awareness and ethical sensitivity as they engaged in multiple simulated parent–teacher conferences." (p. 805)
Morris & Taylor (1998)	Family Engagement Course	Qualitative and Quantitative, Pretest-Posttest, Four Treatment Groups, No Control Group, Convenience Sample	*n*=105, Undergraduate, Elementary Certification, Traditional University-Based Program. Program Location not reported	Beliefs and Knowledge; Survey and Course Assessment; Researcher-Developed	"[Preservice teachers] reported that they had more positive attitudes about involving parents in school activities and were confident that they had acquired the knowledge, skills, and strategies that would enable them to plan effective programs for parents." (p. 228)
Morris, Taylor, Knight, & Wasson (1996)	Family Engagement Course	Qualitative and Quantitative, Pretest-Posttest, One Treatment Group, No Control Group, Convenience Sample	*n*=31, Undergraduate, Elementary Certification, Traditional University-Based Program. Program Location not reported	Beliefs and Knowledge; Survey and Course Assessment; Researcher-Developed	"[Preservice teachers] enhanced their comfort and confidence levels in working with parents… [and] enhanced their attitudes regarding collaborating with parents to involve them in the school activities of their children." (p. 16)
Waddell (2011)	Family Engagement Course	Qualitative, Posttest Only, One Treatment Group, No Control Group, Convenience Sample	*n*=33, Undergraduate, Elementary Certification, Traditional University-Based Program, Midwestern USA	Beliefs; Course Assessment; Researcher-Developed	"[Preservice teachers] gained insight of themselves and others as they engaged with urban communities and families and reflected on their roles as teachers in urban schools." (p. 33)
Warren, Noftle, Ganley, & Quintanar (2011)	Family Engagement Course	Qualitative and Quantitative, Pretest-Posttest, Two Treatment Groups, No Control Group, Convenience Sample	*n*=157, Postgraduate, Elementary and Secondary Certification, University-Based Program, Western USA. Program Type not reported	Beliefs and Knowledge; Survey, Preservice Teacher Interview, Course Assessment, and Course Evaluations; Researcher-Developed	"…a significant change in [preservice teachers in]: (a) their professional knowledge and skills, (b) their professional dispositions, and (c) their authentic relationships with students, their families, and the community." (p. 95)

Table 2, continued

Zygmunt-Fillwalk (2006)	Family Engagement Course	Quantitative, Posttest Only, One Treatment Group, One Control Group, Convenience Sample	*n*=132, Undergraduate, Elementary Certification, Traditional University-Based Program, Midwestern USA	Beliefs and Self-Efficacy; Survey; Externally Developed	"…significant growth overall in the treatment groups' attitudes toward involving families, perceived feasibility in accomplishing these practices, and their perception of their preparation for such work." (p. 327)
Zygmunt-Fillwalk (2011)	Family Engagement Course	Qualitative and Quantitative, Posttest Only, One Treatment Group, One Control Group, Convenience Sample	*n*=60, Undergraduate, Elementary Certification, Traditional University-Based Program, Midwestern USA	Beliefs, Self-Efficacy, and Practices; Survey; Externally Developed (Beliefs and Self-Efficacy Survey) and Researcher-Developed (Practices Survey)	"Quantitative measures indicated minimal differences between groups. Qualitatively, however, treatment group members reported engaging families in creative, less standardized levels of involvement than members of the control group." (p. 84)
Bergman (2013)	Practicum	Qualitative and Quantitative, Pretest-Posttest, One Treatment Group, One Control Group, Convenience Sample	*n*=100, Undergraduate, Secondary Certification, Traditional University-Based Program, Midwestern USA	Beliefs; Survey; Researcher-Developed	"…urban-placed participants had significantly more ideas about communicating and welcoming families." (p. 87)
Lazar (1998)	Practicum	Qualitative, Posttest Only, One Treatment Group, No Control Group, Convenience Sample	*n*=15, Undergraduate, Elementary Certification, Traditional University-Based Program, Mid-Atlantic USA	Beliefs; Survey and Course Assessment; Externally Developed (Survey) and Researcher-Developed (Course Assessment)	The practicum changed preservice teachers' "beliefs about caregiver involvement in home literacy activity…[and] further assisted [them] to see parent communications as a critical means to understanding children and family literacy." (p. 14)
Rohr & He (2010)	Practicum	Quantitative, Pretest-Posttest, Four Treatment Groups, No Control Group, Convenience Sample	*n*=25, Undergraduate, Elementary Certification, Traditional University-Based Program, Southeastern USA	Beliefs and Self-Efficacy; Survey; Researcher-Developed	Preservice teachers "not only shifted their perspectives about parents of students who struggled with reading, but they also shifted their perspectives about their own preparedness to involve such parents in their teaching practices." (p. 42)

Table 2, continued

Sutterby, Rubin, & Abrego (2007)	Practicum	Qualitative, Posttest Only, Four Treatment Groups, No Control Group, Convenience Sample	*n*=160, Undergraduate, Elementary Certification, Traditional University-Based Program, Southern USA	Beliefs and Skills; Survey, Course Assessment, and Parent Interview; Researcher-Developed	The program "helped preservice teachers understand how the families viewed their roles and the roles of teachers…[and] the preservice teachers also were less likely to view the families from a deficit perspective…" (p. 89)
Bofferding, Kastberg & Hoffman (2016)	School-based family night	Qualitative, Posttest Only, Two Treatment Groups, No Control Group, Convenience Sample	*n*=43, Undergraduate, Elementary Certification, Traditional University-Based Program, Midwestern USA	Beliefs and Knowledge; Course Assessment; Researcher-Developed	"…survey results and subsequent discussions with preservice teachers suggest the FMNs [Family Math Nights] (a) modified preservice teachers' attitudes about parent interactions, (b) enhanced PSTs' thinking about how to help parents understand mathematics homework, and (c) increased preservice teachers' awareness of the importance of parental involvement and communication." (p. 24)
Jacobbe, Ross, & Hensberry (2012)	School-based family night	Quantitative, Pretest-Posttest, One Treatment Group, Two Control Groups, Convenience Sample	*n*=67, Undergraduate, Elementary Certification, Traditional University-Based Program, Southeastern USA	Beliefs; Survey; Researcher-Developed	"…the treatment group had more positive perceptions of parental involvement overall. These results were not sustained 1 year later…" (p. 1160)
McCollough & Ramirez (2012)	School-based family night	Qualitative and Quantitative, Pretest-Posttest, Six Treatment Groups, No Control Group, Convenience Sample	*n*=502, Undergraduate, Elementary Certification, Traditional University-Based Program. Program Location not reported	Self-Efficacy, Knowledge, and Skills; Survey, Course Assessment, and Observation; Externally Developed (Survey) and Researcher-Developed (Course Assessment and Observation)	"Preservice teachers became significantly more confident in engaging…parents in their children's science education [and] become more comfortable when talking to parents." (pp. 447–448)

Table 2, continued

Pohan & Adams (2007)	School-based family night	Qualitative, Posttest Only, Two Treatment Groups, No Control Group, Convenience Sample	*n*=27, Elementary Certification, University-Based Program, Southern USA. Program Type and Program Level not reported	Beliefs and Knowledge; Course Assessment; Researcher-Developed	"…carefully structured and frequent opportunities to work closely with diverse individuals at schools can help preservice teachers identify and analyze their own biases or misconceptions and ultimately develop a better understanding of the students and families whom they serve." (p. 49)
Ramirez, McCollough, & Diaz (2016)	School-based family night	Qualitative and Quantitative, Pretest-Posttest, Two Treatment Groups, No Control Group, Convenience Sample	*n*=95, Elementary Certification, University-Based Program, Southern USA. Program Type and Program Level not reported	Beliefs; Survey, Course Assessment and Parent Interviews; Externally Developed (Survey) and Researcher-Developed (Course Assessment and Interview)	"…only two of the 28 questions in the Parental Involvement Questionnaire revealed significant differences during and after the event…[however] the open-ended questions at the end of the questionnaire as well as preservice teachers' written reflections revealed qualitative data that supports the authors' claim that this event changed preservice teachers' parental perceptions." (p. 53)
Gartmeier et al. (2015)	Standalone learning experiences	Quantitative, Posttest Only, Three Treatment Groups (each a separate condition), One Control Group, Random Assignment	*n*=96, Undergraduate, Traditional University-Based Program, Germany. Certification Level not reported	Skills; Observation; Researcher-Developed	"…e-learning proved more effective than role-play…[and] the combined condition was more effective than e-learning and role-play alone when controlling for prior knowledge and cognitive ability." (p. 443)
Zeichner et al. (2016)	Standalone learning experiences	Qualitative, Posttest Only, Two Treatment Groups, No Control Group, Convenience Sample	*n*=129, Postgraduate, Elementary and Secondary Certification, University-Based Program, Northwestern USA. Program Type not reported	Beliefs and Self-Efficacy; Survey, Preservice Teacher Interview, and Course Assessment; Researcher-Developed	"the planned and purposeful mentoring of [preservice teachers] by local community members…contributed to helping some [preservice teachers] begin to see that developing relationships with their students' families and learning about their communities can serve as resources to help teachers succeed in educating their students." (p. 288)

Table 2, continued

Accardo & Xin (2017)	Within-course learning experience	Qualitative and Quantitative, Posttest Only, Two Treatment Groups, One Control Group, Convenience Sample	*n*=62, Elementary and Secondary Certification, University-Based Program. Program Level, Program Type, and Program Location not reported	Beliefs and Self-Efficacy; Survey; Researcher-Developed	"simulations significantly improved teacher candidates' reflection in the three areas of facilitating an effective conference, presenting professional communication, and making appropriate instructional decisions." (p. 489)
Baumgartner & Buchanan (2010)	Within-course learning experience	Qualitative, Posttest Only, One Treatment Group, No Control Group, Convenience Sample	Elementary Certification, University-Based Program, Southern USA. Sample Size, Program Type, and Program Level not reported	Beliefs and Knowledge; Course Assessment; Researcher-Developed	"[Preservice teachers] recognized the importance of creating respectful and reciprocal relationships and involving families in children's learning…[and] they expressed greater comfort talking with and about families" (p. 180)
de Bruïne et al. (2018)	Within-course learning experience	Qualitative, Posttest Only, Two Treatment Groups, No Control Group, Convenience Sample	*n*=172, Undergraduate, Secondary Certification, Traditional University-Based Program, Belgium and the Netherlands	Beliefs and Knowledge; Course Assessment; Researcher-Developed	"majority of the students mentioned in their written reflections that they had become aware of the importance of FSP and the importance of relationships with parents based on equity.... [and that] they wanted to improve their communication skills" (p. 392)
Mehlig & Shumow (2013)	Within-course learning experience	Qualitative and Quantitative, Pretest-Posttest, One Treatment Group, One Control Group, Random Assignment	*n*=34, Undergraduate, Elementary Certification, Traditional University-Based Program, Midwestern USA	Beliefs and Knowledge; Survey and Course Assessment; Researcher-Developed	"[Preservice teachers] participating in these role-playing activities increased their knowledge and skill in parent engagement significantly more than peers who did not participate in the activities." (p. 191)

[a]*Study Design* was coded along the following dimensions: Quantitative/Qualitative, Pretest-Posttest/Posttest Only, # of Treatment Groups, Control Group/No Control Group, Convenience Sample/Random Assignment.

[b]*Sample and Setting* was coded along the following dimensions: Sample Size, Undergraduate/Postgraduate, Elementary/Secondary, Traditional/Alternative, Level of Certification, Program(s) Location.

[c]*Outcome Measures* was coded along the following dimensions: Beliefs/Knowledge/Self-Efficacy/Skills/Practices, Survey/Preservice Teacher Interview/Course Assessment/Observation/Parent Interview, Externally Developed/Researcher-Developed.

Results

In general, studies reviewed used nonexperimental designs to describe correlations between particular courses or course learning experiences and improvements in preservice teachers' knowledge, beliefs, and self-efficacy for family engagement. Nearly all studies did not account for selection bias (92% used convenience samples) or history and maturation effects (72% did not use a control group). Further, most studies used outcome measures that were gameable (76% measured preservice teachers' self-reported beliefs) or incentivized artificial inflation (60% used outcome measures submitted for course grades).

In this results section, we expand on these key findings. We first summarize the evidence base, describing key themes from the literature about what improves preservice teachers' knowledge, beliefs, and self-efficacy. We then discuss two key problems of (a) research design and (b) measurement across these studies. In our discussions of these problems, we characterize the typical study, we explain how this research design or measurement strategy suffers from certain threats to internal validity, and then we identify outlier studies that manage to mitigate these threats. Finally, in the conclusion section we suggest what needs to be done in future research to strengthen the evidence base regarding preparing preservice teachers for effective family engagement.

What We Know

A summary of the interventions, research designs, and findings of all 25 studies reviewed can be found in Table 2. In this section, we present a narrative review of the studies broken down by the type of intervention evaluated. Interventions can be categorized into five different types. The first and most popular type of intervention was a full course focused on family engagement as part of preservice teachers' teacher preparation program. These courses were generally 15–16 weeks long (i.e., the typical length of a university semester) and included a variety of activities, readings, and/or assignments as part of the intervention. One course studied was a required course for preservice elementary teachers focused on supporting special education students and low-income and/or ethnic minority students; however, the majority of the course activities related to family engagement (Amatea et al., 2012). All other courses studied were focused exclusively on preparing preservice teachers for family engagement.

Activities in courses varied. For instance, Deslandes et al. (2008) evaluated a course involving activities like preservice teachers constructing an autobiography of their own family's engagement during their schooling and analyzing case studies of parent–teacher engagement. Similarly, Morris and Taylor (1998) and Morris, Taylor, Knight, and Wasson (1996) studied the impact of a course that

included parent interviews, journaling, and the planning and implementation of a parent workshop in a practicum school. In contrast to these more conventional in-person courses, Dotger (2010) measured the impact of a course focused around preparing for, engaging in, and debriefing six simulated parent–teacher conferences on key issues like curriculum and teaching, student engagement challenges, and student accommodations. Brown et al. (2014) evaluated a web-based course "focused on instructing teachers about best practices in family involvement" (p. 133) implemented across four different teacher preparation programs. Waddell (2011) studied the impact of two consecutive courses as part of a broader sequence on preparing preservice teachers for family and community engagement.

Regardless of the particular activities involved, evaluations of courses generally assessed impact by measuring self-reported improvements in preservice teachers' beliefs and self-efficacy regarding working with families. In general, findings were positive. For example, Warren et al. (2011) identified a significant change in: "(a) [preservice teachers'] professional knowledge and skills; (b) their professional dispositions; and (c) their authentic relationships with students, their families, and the community" (p. 95). Similarly, Zygmunt-Fillwalk (2006) identified "significant growth overall in the treatment groups' attitudes toward involving families, perceived feasibility in accomplishing these practices, and their perception of their preparation for such work" (p. 327).

Two studies diverged from this norm in how they measured effects on preservice teachers. One study narrowed its aims to measure the impact on preservice teachers' attitudes about low-income and/or ethnic minority families and found preservice teachers became "more accepting in their judgments about the involvement of economically and culturally diverse caregivers in their children's schooling" (Amatea et al., 2012, p. 827). Another study measured the impact of a family engagement course taken during a teacher preparation program on teachers' practice one to three years after graduation (Zygmunt-Fillwalk, 2011). The researcher found minimal differences in beliefs and self-efficacy between those who did and did not take the course, noting that "treatment group members reported engaging families in creative, less standardized levels of involvement than members of the control group" (p. 84).

The second type of intervention evaluated was an extended practicum involving experiences working with parents. These studies were interested in determining whether practical experiences with families influence preservice teachers' perceptions of and self-efficacy in engaging with them. Practica were either embedded as part of a specific course, such as a literacy course (Lazar, 1998; Rohr & He, 2010), or they were more general practica during which developing capacities for family engagement was only one of many intended

learning outcomes (Bergman, 2013; Sutterby et al., 2007). Bergman (2013) compared the difference between the effects of a suburban and urban practicum school placement and found that urban-placed preservice teachers had significantly more ideas about communicating and welcoming families. In contrast, other studies examined how preservice teachers' perceptions of what families bring to students' educational experiences change after working closely with students and families in 1:1 or small group tutoring programs (Lazar, 1998; Rohr & He, 2010; Sutterby et al., 2007). In general, these studies found that the practical experience of working with parents led to preservice teachers self-reporting "more sophisticated understandings about: caregivers' roles and perspectives…and their own responsibility to collaborate with caregivers to serve the needs of diverse students" (Lazar, 1998, p. 16).

The third type of intervention was preparation and/or participation in a school-based family night (e.g., Bofferding et al., 2016; Jacobbe et al., 2012; Pohan & Adams, 2007). These family night experiences generally required preservice teachers to plan for and deliver activities at a practicum school to engage parents in curriculum-aligned math and/or science content. For instance, two different studies measured the impact of designing and running a culturally responsive science activity for a family learning event in a practicum school. Ramirez, McCollough, and Diaz (2016) found statistically significant improvements in preservice teachers' confidence in engaging with parents and that preservice teachers self-report the experience as being "authentic." Similarly, McCollough and Ramirez (2012) found participation in a family learning event led to statistically significant improvements in preservice teachers' confidence engaging with elementary and middle school students' parents; they also found—through observations of preservice teachers' behaviors during the event—that "preservice teachers became more comfortable when talking to parents" (p. 448).

The fourth type of intervention studied were short learning experiences conducted as part of a teacher preparation course, such as in-class activities and course assignments. Of articles reviewed, two experiences studied were course assignments (Baumgartner & Buchanan, 2010; de Bruïne et al., 2018). For example, Baumgartner and Buchanan (2010) studied a course assignment in which preservice teachers interviewed a student's teacher and parent/guardian and then developed an "eco-map" to visually describe supports for the student's development. They found that following the assignment, preservice teachers self-reported a deeper understanding of the many influences on a child's development. The other two studies in this category examined simulated role plays (Accardo & Xin, 2017; Mehlig & Shumow, 2013). For example, Mehlig and Shumow (2013) examined the impact of four role-playing

activities on preservice teachers' development of basic knowledge and skill for partnering with families on assessment-related issues. The researchers compared a treatment group that received role-playing activities (where some had to play parents/guardians and others had to play teachers) to a control group that received no training on communicating with parents/guardians about assessment. They found that the treatment group gained more knowledge about communication with parents than the control group.

The fifth and final type of intervention studied were standalone learning experiences separate from a teacher education course or practicum. Gartmeier et al. (2015) ran a randomized controlled trial to test the differential effects of participating in (1) a five-hour e-learning course with video cases of effective family engagement; (2) a five-hour group role play of simulated cases, with feedback from peers and trainer; (3) both e-learning and role play; or (4) no learning experiences (control). They found preservice teachers who participated in e-learning had better practical skills at engaging with parents in a simulated environment than preservice teachers who participated in role play; they also found that preservice teachers who participated in both e-learning and role play had better practical skills than preservice teachers who only participated in one or the other. Another study of standalone learning experience examined the effects of assigning local community members as mentors to preservice teachers (Zeichner et al., 2016); after analyzing ethnographic data of preservice teachers across multiple mentoring years, the researchers found that "planned and purposeful mentoring…contributed to helping some preservice teachers begin to see that developing relationships with their students' families and learning about their communities can serve as resources to help teachers succeed in educating their students" (p. 288).

Across the studies reviewed, we have consistent evidence that learning experiences focused on preparing preservice teachers for family engagement are correlated with positive effects on preservice teachers' knowledge, beliefs, and self-efficacy for family engagement. While it is difficult to compare the effects of various learning experiences because every study used different outcome variables, some trends are encouraging to observe and useful to note. The majority of interventions evaluated included: guided reading in best practices on family engagement, space and time for preservice teachers to reflect upon their own experiences, and/or a practical experience interacting with actual or simulated parents/guardians. These trends align with what we know from the research on how teachers develop expertise—through guided scaffolding and practical experience that enables teachers to rework existing skills, knowledge, and beliefs (Darling-Hammond & Bransford, 2007). With the caveat that publication bias may be limiting the inclusion of studies with negative or null impacts, it is

also encouraging to observe that improvements in preservice teachers' capacities are found regardless of the duration and nature of the learning experience. This is an important finding for teacher preparation programs who are concerned about how to "fit" family engagement within their broader curriculum.

What We Don't Yet Know

Reviewing these studies as a whole, however, also offers insights into certain gaps in the literature. First, as with all program evaluations, studies evaluated interventions as full packages, effectively limiting our ability to develop theory about what exactly leads to better or worse preparation for family engagement. This is a particular area of growth for future evaluations of courses focused on family engagement. While this body of research has done well to suggest that these courses are generally improving preservice teachers' capacities, they shed little light into which exact activities, pedagogies, and/or assessments are more and less useful in preparing preservice teachers. Second, although a number of studies examined interventions implemented across a number of treatment groups and across different program settings, there was little attention to how variations in implementation may have led to differences in outcomes. This is an area of growth for the field, with the potential for multisite studies that can help build our collective understanding of how certain interventions (e.g., family school nights, web-based family engagement curricula, role play simulations) can remain effective while being variously tailored to local contexts and preservice teachers' needs.

Third, only three studies focused on interventions exclusively designed for preservice teachers seeking secondary certification, and no studies were conducted in alternative teacher preparation settings. This suggests future researchers should seek to evaluate interventions focused on these particular contexts. This is important given that there are distinct challenges of family engagement for teachers working with adolescents (Ferguson & Rodriguez, 2005) and given the increasing proportion of teachers being trained in alternative settings (National Academies of Sciences, Engineering, and Medicine, 2020). Teachers trained in these settings are often concurrently completing program coursework while working as teachers-of-record with their own classrooms. Future research should investigate interventions that can help prepare teachers undertaking these alternative pathways given they are already in their own classrooms and need to be engaging with families from their first day on the job. These three areas of growth are promising avenues of future research for the field. In the following two sections, we dive deeper into two further areas of specific consequence to the validity of findings in the studies reviewed: research design and measurement.

How Studies Were Designed

In the modal study (40%, *n* = 10), researchers recruited a convenience sample of preservice teachers who were given a pretest, then an intervention, and then a posttest. In the next most common design (32%, *n* = 8), researchers recruited a convenience sample of preservice teachers and gave them an intervention and a posttest (i.e., same as the modal design but without the pretest). While these designs are common in the field of teacher preparation research (Cochran-Smith & Villegas, 2016), they suffer from two major threats to internal validity: history and maturation effects. History effects are influences on the outcome that concurrently happen at the same time as the intervention but are not part of the intervention. Maturation effects are influences on the outcome that are due to natural development or learning (i.e., development that would have ordinarily happened over time without the intervention).

These two threats to validity are reasons why having a control group (an equivalent group of preservice teachers that do not receive the treatment) is important. By comparing the outcomes of a treatment group and a control group, we can rule out impacts of anything but the intervention. After all, given that the outcomes of only one group of preservice teachers (those who receive the intervention) is assessed, we cannot be sure that the outcomes are because of the intervention or because of any number of things that could have happened while the intervention was taking place (such as other courses or experiences). Amatea, Cholewa, and Mixon (2012) do not use a control group in their study and identify this threat to validity in their study: "Because students were enrolled concurrently in three other courses (Teachers and Learners in Inclusive Classrooms, Child Development in Inclusive Education, and Children's Literature), we cannot attribute this change in attitudes to participation in the family involvement course and field experience alone" (p. 828).

Seven studies in this review (28%) used a control group (Accardo & Xin, 2017; Bergman, 2013; Gartmeier et al., 2015; Jacobbe et al., 2012; Mehlig & Shumow, 2013; Zygmunt-Fillwalk 2006, 2011). Of these studies, five used a convenience sample (preservice teachers who chose not to participate in the intervention) as a control (Accardo & Xin, 2017; Bergman, 2013; Jacobbe et al., 2012; Zygmunt-Fillwalk 2006, 2011). One major threat to internal validity from using a convenience sample is selection bias. Given that preservice teachers chose to participate (or not) in the intervention, we cannot be sure that improvements in outcomes are because of the intervention or because of preexisting observed (like certain preknowledge) or unobserved (like proclivity) characteristics. For example, participants may select into courses or treatments that are better for them, which makes these interventions seem more effective

than they are for the general population. This is why randomization to treatment (assigning preservice teachers to a treatment or control group rather than letting them choose) or some other form of assignment to treatment that is related to the outcome is important; a random or quasirandom assignment to treatment means that if the intervention did not exist, we would expect the outcomes of the treatment and control group to be equivalent.

Only two studies used both a control group and random assignment to treatment (Gartmeier et al., 2015; Mehlig & Shumow, 2013). In Gartmeier et al. (2015), preservice teachers were randomly assigned to one of four experimental conditions: 5 hours of e-learning on family engagement; 5 hours of role play on family engagement; 5 hours of combined e-learning and role play; or a control condition. Following the learning experience, all preservice teachers were given an assessment where they had to run a parent–teacher conference with a trained actor acting as a parent. In Mehlig and Shumow (2013), all preservice teachers were given a pretest and then randomly assigned to a treatment or control group. The treatment group then underwent the intervention (four role-playing activities where they audio recorded messages and wrote letters to parents and then debriefed as a group). Following this, both groups then undertook a posttest that was identical to the pretest; the treatment group was also surveyed on the perceived value of the intervention.

Gartmeier et al. (2015) and Mehlig and Shumow (2013) demonstrate how having a control group and randomization to treatment are two useful first steps for strengthening future research designs to guard against history effects, maturation effects, and selection bias. Admittedly, there may be equity issues (it may seem unfair to withhold treatment from preservice teachers when preparation programs have such limited time already) and/or logistical issues (it is difficult to randomly assign students when preparation programs are hamstrung by university administrative processes or external licensure requirements) to implementing these suggestions. That said, there are innovative ways to overcome these issues. After all, while the core principle of having a control group is that they do not receive the intervention at the same time as the treatment group is receiving it, this does not mean they cannot receive the intervention eventually. For instance, a family engagement workshop can be run twice, and preservice teachers can be randomly assigned to attend the first or the second. If all preservice teachers are tested in between the first and the second session, as well as after the second session, then we can identify both the short- and medium-term impact of the intervention, as well as the relative impact of the intervention on two different groups of preservice teachers.

Alternatively, it may be possible to leverage a quasirandom assignment that already exists within teacher preparation programs as preservice teachers may

already be effectively randomly assigned to certain sections of a family engagement course due to class size limits or to take their family engagement course in a particular semester due to enrollment limitations. If section assignment is random, then it may be possible to select one of the sections to receive an additional treatment (e.g., a family engagement practical experience) and then to compare the outcomes of those in the treatment section with those in the control sections. This is a research design that has been used in other evaluations of teacher preparation interventions (e.g., Mahalingappa et al., 2018; Yeh & Santagata, 2015). Similarly, it may be possible to compare cohorts of preservice teachers across years, provided all else but the intervention remains effectively the same. For example, researchers could compare beliefs and self-efficacy survey results, end-of-year reflections, and preservice teacher performance assessment (e.g., EdTPA) scores of two cohorts of preservice teachers undertaking a one-year program, where one cohort receives an additional family engagement-focused course and one cohort does not. This cross-cohort comparison research design has been used in other evaluations of teacher preparation interventions (e.g., Hirshberg et al., 2020; Santagata & Yeh, 2014).

How Studies Measured Preservice Teacher Learning

The modal study reviewed (80%, n = 20) evaluated the impact of interventions by assessing preservice teachers' self-reported beliefs, knowledge, and/or self-efficacy regarding family engagement. Only five studies assessed the impact of interventions on preservice teachers' skills and/or practices. In most studies, measures used were exclusively developed by researchers for the purposes of the study (68%; n = 17). Of those that used externally developed surveys, measures used included the *Teacher Multicultural Attitude Survey* (Ponterotto et al., 1998), the *Attitude Towards Parent Involvement Survey* (Epstein et al., 1993), and the *Peabody Family Involvement Survey* (Katz & Bauch, 1999). These surveys generally consisted of a series of Likert scale items ranging from how preservice teachers feel about parental engagement broadly (e.g., "I feel positive about engaging with the families of my students") to how preservice teachers define family engagement (e.g., "It is important to request parents to ask their child about his/her day in school") to preservice teachers' sense of self-efficacy in undertaking particular forms of engagement (e.g., "I feel prepared to involve family members as volunteers in my classroom").

Three points are important to make regarding the general approach to measurement across studies reviewed. First, it is striking how the majority of studies chose quite narrow outcome measures given the broader aims of their intervention and evaluation. Jacobbe, Ross, and Hensberry (2012) stated their aim was to evaluate the impact of preservice teacher participation in a family

math night on preservice teachers' capacity for family engagement, but as an outcome measure, they used only a survey of preservice teachers' perceptions of low-income parents' willingness to be involved in their child's education. Similarly, Dotger (2010) framed the evaluation of simulated parent–teacher conferences with a discussion of family engagement literature; however, he used only surveys of multicultural awareness and racial ethical sensitivity as outcome measures. While these narrowly chosen measures are clearly dimensions of good family engagement practice, the fact that they are so limited in scope raises flags about whether they adequately capture the broader construct of interest: preservice teachers' capacities to engage with families.

Second, it is striking how the majority of studies relied on self-report survey measures rather than observed preservice teacher skill or actual preservice teacher practice. This is a concern given that it is the *quality* of family engagement that matters when it comes to improving student outcomes (Bryk et al., 2010; Mapp et al., 2017). As such, while we may be able to document changes in preservice teachers' knowledge, beliefs, and self-efficacy, we cannot be sure that these improvements readily translate into their actual skills and future practices. This is a particular concern given that one study that assessed both self-efficacy and skills (Zygmunt-Fillwalk, 2011) found no differences between the treatment and control groups in their self-efficacy but that "treatment group members reported engaging families in creative, less standardized levels of involvement than members of the control group" (p. 84).

Another limitation of self-report measures is that they are easily manipulatable. This is because preservice teachers can easily identify the "ideal" belief sought by the measure (particularly when it is both the pretest and posttest) and then, for social desirability or to respond to the expectancy of those delivering the intervention, rate themselves closer towards it. Amatea, Cholewa, and Mixon (2012) use the same teacher self-efficacy for family engagement survey as a pretest and posttest. The survey asked teachers to rate themselves on a four-point scale (strongly agree–strongly disagree) on questions like "I really cannot influence how much parents/caregivers involve themselves in their children's education" and "I will need to adapt my methods of reaching out to families to meet the needs of culturally diverse families." Measures like these, which clearly signal to preservice teachers the expected outcome, are easily gamed (particularly when preservice teachers know they are part of an intervention that is being evaluated). Manipulation is also more likely when the outcome measure has stakes attached (Koretz, 2008), as was the case in a number of studies that used course assessments (60%, n = 15) as outcome measures. As preservice teachers were graded on what they produced, they may have submitted assignments based on what they believed was expected given the intervention and/or they may have overreported in their reflections the impact of the intervention.

The five studies that collected data on preservice teachers' skills and practices offer some promising ways forward for future researchers seeking to strengthen their measurement strategies. First, researchers can use simulated tasks to measure preservice teachers' skills in family engagement. For example, Amatea et al. (2012) asked preservice teachers to respond to a written case about a young female African American teacher who is hesitant to talk to a student's grandmother about his challenging classroom behaviors. The researchers rated preservice teachers' skills in family engagement based on the extent to which they identify blame ("exclusively attributing the cause of the problem to deficits located in the child or family," p. 819) vs contextualize cause ("recognizing the larger contextual factors that were influencing the child's and family's dynamics and recognizing the impact of a teacher's interactions with the family in influencing the child and family dynamics," p. 819). They also rated preservice teachers' action plans based on whether it was avoidant ("denying the problem or the need for problem solving," p. 819), directive ("reporting the problem to the family and implicitly expecting them to resolve it," p. 819), or collaborative ("teacher working with the caregiver and the student to come up with a solution that the teacher, the caregiver, and the student would be engaged in implementing," p. 819).

Simulated tasks can also be practical. Gartmeier et al. (2015) assessed preservice teachers' "communication competence" in a simulated parent–teacher conference with a trained actor playing the role of parent. Trained raters assessed preservice teachers on a five-point scale against a range of items measuring various dimensions of engagement. Example items included: "'shows interest in the perspective of the conversational partner' (relationship), 'makes concrete agreements for the further course of action' (problem solving) and 'structures the communication through meta-communication' (structuring)" (p. 452; see also Dotger et al., 2009; Walker & Dotger, 2012 for descriptions of other assessments with simulated parents/guardians). Similarly, McCollough and Ramirez (2012) collected observational data of preservice teachers interacting with parents during the family science learning event that they were evaluating. They collected audio, video, and photos of preservice teachers implementing their planned activities, and then evaluated preservice teachers' performance "via a quantitative rubric that include[d] elements of creativity, appropriateness for students, academic purpose, overall presentation, and educational value" (p. 447). These sorts of simulated tasks that require preservice teachers to demonstrate their judgment and skills enable researchers to go beyond the self-reported beliefs and self-efficacy measures towards more standardized ways of assessing preservice teachers' capacities for family engagement.

A second way to improve measurement strategies in future evaluations is to include perspectives from those who experience preservice teachers' engagement strategies: parents. This was the approach in two studies reviewed. In their evaluation of the impact of a family math/science learning event on their preservice teachers, Ramirez, McCollough, and Diaz (2016) collected data from parents who attended the event. The researchers interviewed parents about their perspectives of being involved in their student's education during the event and one week after. Because many of the activities at the event were run by preservice teachers, they interpreted parents' perspectives about involvement as an effect of preservice teachers' efforts. Similarly, Sutterby, Rubin, and Abrego (2007) collected data from parents following their children's participation in an afterschool tutoring program staffed by preservice teachers as part of a practicum experience. While the researchers could not link specific parents' perspectives to certain preservice teachers (as they interviewed only a subsample of parents in a focus group setting), they interpreted the general perspectives of parents/guardians as broadly informative for the design of their intervention. While getting permission from students' parents to collect data may be logistically tricky (particularly given preservice teachers in traditional preparation programs do not have their own students), these two studies demonstrate that it is possible to gain access and information from parents on preservice teachers' skills and practices of family engagement.

Finally, while no study reviewed did this, future researchers could also investigate measuring preservice teachers' family engagement practices during practicum experiences. This could be similar to the survey used by Zygmunt-Fillwalk (2011) but adapted to the practicum setting. To evaluate the long-term effects of a family engagement course, Zygmunt-Fillwalk (2011) surveyed graduate teachers on their family engagement practices. Example items included reporting their number of home visits, phone calls home, recorded messages for families, and graduate teachers' self-rated level preparedness for each activity. To adapt this for the practicum setting (and given the challenges of self-reporting identified above), researchers could define a set period of time during standardized practicum placement and ask preservice teachers to report the quantity of interactions they initiated with families and the nature of those interactions (e.g., whether they included certain high-leverage practices, such as establishing a positive opening, gathering and sharing information, suggesting an action plan, maintaining a positive relationship, accepting emotions, and managing flow; Walker & Dotger, 2012).

Discussion and Conclusion

These findings suggest that there continues to be a paucity of rigorous empirical research examining the causal impact of interventions designed to improve K–12 preservice teachers' capacities to engage with families in U.S. public school settings. Through our database and citations search, we found 25 studies reporting the impacts of a teacher preparation intervention using teacher-level data. Of these 25 studies, only two (Gartmeier et al., 2015; Mehlig & Shumow, 2013) used a control group and randomization to treatment, basic features of rigorous evaluative research design. However, these studies are not without flaws: for example, by using only a single outcome measure that relied on self-reported beliefs, Mehlig and Shumow (2013) could not make clear causal claims about the impact of the intervention on preservice teachers' practices once they graduated and entered their own classrooms; they also could not rule out manipulation of the outcome (e.g., participants reporting greater gains in response to liking the treatment or the person delivering the intervention) given how easy it could be to game surveys about beliefs. Nonetheless, studies like Gartmeier et al. (2015) and Mehlig and Shumow (2013) demonstrate that researchers at the intersection of the family engagement and teacher education fields can utilize more rigorous research designs in their evaluations of interventions.

Our findings align with those from previously undertaken reviews of family engagement interventions in teacher education (Evans, 2013; Smith & Sheridan, 2018). As Smith and Sheridan (2018) noted, "Future teacher training interventions should aim to improve methodological rigor and overall study quality by including control groups, using randomization procedures, and assessing outcomes using multiple approaches" (p. 19). Similarly, Evans (2013) wrote, "the majority of the studies in this review relied on qualitative research methods applied in the researchers' own classrooms. More mixed methods studies and the use of control groups would further enhance the generalizability and validity of the findings" (p. 130). We echo the calls from these previous reviews for more methodologically rigorous research in the field. Our calls go beyond traditional ways of categorizing research as qualitative, quantitative, and mixed methods because we believe all methods can be used more or less rigorously to make causal claims. What is important is that the research designs and measurement strategies used actively deal with threats to internal validity, including selection bias, history effects, and maturation effects.

It is important to note that these arguments for more rigorous research are not confined to interventions related to family engagement; indeed, they echo calls within the broader teacher education research literature:

> There is certainly no shortage of efforts to learn what the research says, nor is there a shortage of presentations, articles, and chapters describing research on teacher education. But there *is* a different kind of shortage: a shortage of well-designed and well-executed studies that look at similar outcomes using procedures for data collection and data analysis that are clear and credible. (Grossman, 2008, p. 16)

To begin to advance research that meets these calls, in this article we offer practical suggestions for future teacher educators and researchers. While some of the suggestions will require creative efforts across the field (e.g., designing novel ways to measure preservice teachers' skills and future practices), others can be readily acted upon when designing future evaluations (e.g., using a control group and leveraging naturally occurring random assignments; analyzing interventions developed for preservice teachers seeking secondary certification and/or in alternative preparation program settings).

We hope this article provides knowledge to educators, researchers, and policymakers that will encourage deeper conversations and investigations in teacher preparation programs and schools about the kinds of interventions they conduct with pre- and in-service teachers, the types of data they collect when assessing the impact of these interventions, and the ways in which they measure outcomes to assure validity. By creating more rigorous research designs, educators and researchers will be able to study and implement practices that will ultimately result in deeper levels of relationships with families and the community-at-large. We also hope that by showing the gaps in research, policymakers will consider funding and implementing research efforts in education so that there are stronger studies determining the ways in which teachers improve their skills and practices with families and students.

Undertaking more rigorous research designs and outcome measures will not be an easy task; however, using control groups, randomization, and more practice-focused outcome measures are good first steps. They are also worth it, particularly if we seek to determine what preservice family engagement interventions can be brought to scale to ensure equitable, high quality learning environments for all students.

Endnote

[1]The boolean terms used were: *("teacher education" OR "teacher training" OR "teacher preparation") AND ("pre-service teacher*" OR "preservice teacher*" OR "teacher candidate*" OR "student teacher*") AND ("empirical" OR "study" OR "intervention" OR "research" OR "*experiment*" OR "evaluat*") AND ("family" OR "parent*") AND ("engag*" OR "involv*" OR "conference*" OR "connect*" OR "interact*") NOT ("early childhood" OR "special education").* We did not include a range of years limit in our search, although we understand there may be natural limitations based on what is indexed by EBSCOhost. The search was conducted in February 2019 and was conducted multiple times over the month to test replicability of search results.

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