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Inclusive mindedness: evolving knowledge and beliefs of preservice educators in California

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Early childhood special educators in the United States must familiarize themselves with the importance of inclusive practices and how to successfully implement these practices to support young students with disabilities in the least restrictive environment. Depending on the credentialing program special educators in the United States complete, their understanding and training in inclusive education can vary greatly. The purpose of this study was to address the need for training in inclusion by creating an Office of Special Education Program (OSEP) grant-funded inclusive education course for preservice early childhood special educators at one university in California and then to examine how the inclusion course changed early childhood special education teacher candidates' knowledge and beliefs of inclusion. Over 4years, 97 early childhood special education preservice teachers participated in pre- and postcourse surveys, which determined their perceptions, understanding, and practical skills of inclusive education increased, demonstrating course effectiveness.

KEYWORDS

early childhood education, special education, inclusion, higher education, preservice educators

1. Introduction

In the United States, teachers play a critical role in the success of inclusion. Yet, historically, when inclusive classrooms required professionals to work collaboratively, early childhood education (ECE) and early childhood special education (ECSE) teachers appeared to operate independently of one another. Thus, early childhood special educators often align their lack of knowledge to nominal experience working with children who are typical (Gomez and Diken, 2003). On the one hand, in the field of teacher education, though ECSE teachers are prepared to work directly with children with disabilities, these teacher candidates receive minimal preparation to serve as consultants or "coaches" to other teachers and service providers (Dinnebeil et al., 2009). In other words, lack of knowledge and experience of the ECSE teachers in the area of inclusion makes it difficult to collaborate with their general education colleagues.

On the other hand, general education ECE teachers face the same challenge, with even less education to bring to the table. In California, ECE teachers may have education ranging from 12 child development units (private preschool requirements) to a child development teacher permit from the state (which is approximately equivalent to an associate's degree in child development) to teach in a state-funded program. These requirements will change slightly with the new rollout of universal prekindergarten (UPK); however, ECE teachers will still bring less education than ECSE teachers into the classroom. Bringing together these two positions, each with their strengths and lack of knowledge and experience in inclusive education, makes it challenging to collaborate and work together.

These gaps have been addressed by the Division of Early Childhood's Recommended Practices (Council for Exceptional Children, 2014), which are often a focal point of ECSE teacher preparation programs (Grisham-Brown and Hemmeter, 2017). The U.S. Department of Education and Health and Human Services, Policy Statement on Inclusion of Children with Disabilities in Early Childhood, have devised statements addressing this need, with the 2016 Head Start Performance Standards continuing to highlight the importance of children with disabilities being the responsibility of all professionals working with children. Grisham-Brown and Hemmeter (2017) argued the new Head Start Performance Standards included:

> a new requirement for programs to provide individual services and supports to the maximum extent possible to children awaiting a determination of [Individuals with Disabilities in Education Act] IDEA eligibility. This essentially reinforces the notion that providing support to each and every child, including those with suspected disabilities under IDEA, is a shared responsibility and priority across all early childhood sectors. It is no longer possible for anyone to say or think that inclusion is a special education issue that will be solved by special educators. The spillover is apparent from the strong messages on inclusion from federal agencies to national, regional, and state professional organizations, technical assistance networks, and local agencies. (p. xii).

This ever-growing need to understand and provide inclusive education in early childhood cannot be overlooked. By reflecting these needs, inclusive education has become the center of attention for many books used in early childhood teacher preparation programs (e.g., Gruenberg and Miller, 2011; Richardson-Gibbs and Klein, 2014; Grisham-Brown and Hemmeter, 2017). Insight and proficiency in how to support young children with disabilities in the least restrictive environment (LRE) are crucial because successful inclusion opportunities for young children are often attributed to practitioners' beliefs about inclusion (Stoiber et al., 1998; Beacham and Rouse, 2012; Rakap et al., 2017; Yu and Park, 2020). In this 4 year study at a university in California, pre- and postcourse surveys of 97 ECSE preservice teachers were analyzed to determine whether the preservice educators' perceptions, understanding, and practical skills of inclusive education increased, thus demonstrating effectiveness of the course derived from an Office of Special Education Programs (OSEP) grant. The grant is discussed in detail next.

2. Challenges of providing inclusive education in ECE

Early childhood inclusionary practices, such as (a) focusing on children's strengths, (b) positive attitudes from educators, (c) increasing understanding of the importance of communication among the child's team, (d) providers and parent(s) collaborating, and (e) embedding skills within the child's existing routine as opposed to using of a pull-out model, promote positive outcomes for children with disabilities (Cross et al., 2004). Although empirical evidence for such positive outcomes is abundant (Cross et al., 2004; U.S. Department of Health and Human Services, 2009; Odom et al., 2011; Council for Exceptional Children, 2014; Richardson-Gibbs and Klein, 2014; Barton and Smith, 2015; U.S. Department of Education, 2015), the success of inclusion is generally dependent upon an understanding of inclusion by the adults working with the children. In other words, the education of ECSE teachers, their ECE counterparts, and the administrators of early education programs are the key to successful inclusion for young children with disabilities (Richardson-Gibbs and Klein, 2014).

Barriers to providing LRE in early education in the state of California include (a) licensing of early childhood programs, which may limit placement opportunities; (b) teacher preparation programming (for ECE and ECSE); (c) administrative support, and (d) school and community attitudes about disability and inclusion. For example, early inclusive education placements are limited in California. One reason for this limit is general education preschool models in California must adhere to Title 22, Community Care Licensing, a formal, publicly derived record from the California Department of Education, focusing primarily on the safety and care of humans across the lifespan.[1] Title 22 consists of regulations for organizations that care for human beings, from daycare for infants to assisted living facilities for senior citizens. Further, programming such as Head Start mandates they must reserve only 10% of their enrollment (at minimum) to include children with disabilities (U.S. Department of Health and Human Services, 2022). UPK will change this, mandating 10% of enrollment for 4-year-olds be held for children with disabilities. However, while early education needs more inclusive spaces for young children, this will cause a struggle across programs due to the minimum education required for early education teachers.

Early childhood special educators are charged with working alongside early childhood general educators to support young children with disabilities in the LRE. Understanding what inclusion is and how to provide inclusive education collaboratively with general educators may be addressed within ECSE credentialing programs. Learning how to provide programming in a collaborative manner will ensure a better chance of success for all students and staff in an inclusive environment.

Historically, teacher preparation programs have struggled to provide the knowledge base for credentialing candidates to develop an in-depth understanding of inclusive education (Gabel, 2005; Ware, 2005; Ferri, 2006; Causton and Theoharis, 2014; Danforth, 2014; Rakap et al., 2017; D'Amico et al., 2019). However, for those who have provided this training, Swanson Gerhke and Cocchiarella (2013) found that when preservice teachers received course content in inclusion, they could define and identify inclusion, with a noted appreciation of learning from instructors who could share "real life" experiences of inclusion. Rakap et al. (2017) shared that special education courses in teacher preparation programs "positively influenced teacher candidates' attitudes, willingness and comfort level" (p. 107), and comfort level can help or hinder the success of inclusion (Barton and Smith, 2015). Additionally, to best understand inclusion, preservice early special educators must learn and practice instructional strategies to support children with disabilities in the general education environment (Rakap et al., 2017).

1 California Code of Regulations, Title 22, Social Security, Division 5. Licensing and Certification of Health Facilities, Home Health Agencies, Clinics, and Referral Agencies. https://regulations.justia.com/states/california/title-22/division-5/.

New educators move into positions where professional development may not provide sufficient training to support inclusive practices and programming (Kosko and Wilkins, 2009; Causton-Theoharis et al., 2011; D'Amico et al., 2019). If so, these new early special educators achieve nominal knowledge of inclusion and little hope for change. Thus, embedding inclusion-based content into credentialing coursework and providing hands-on opportunities to apply learned skills may be the only training and experience teachers receive.

2.1. Addressing a need for inclusive education coursework in credentialing programs: [grant title] in ECSE

To meet the need for an inclusive education course in the ECSE credential program, faculty at a university in California applied for an OSEP personnel preparation grant. The OSEP grant was designed to provide instruction and experience with different types of consultation approaches, phases and stages of consultation, processes involved in providing consultation, and interpersonal skills that promote effective consultation (Klein and Kontos, 1993). Titled, Inclusion: Developmentally Responsive to Educational Experiences that are Accessible and Meaningful (I:DREEAM), this OSEP-funded grant addressed the demonstrated state and national need for highly qualified early intervention and ECSE service providers. I:DREEAM was designed to improve the quality of teacher preparation for early intervention and early childhood special educators to provide high-quality instruction and services to young children who were at risk and who had disabilities in inclusive settings through the credential preparation program.

I:DREEAM focused on (a) improving the quality of field experiences to include natural environments and inclusive settings; (b) providing training and coursework to ECSE students that incorporated effective instruction and collaboration in inclusive settings; (c) integrating recommended and evidence-based practices and knowledge in ECE with those in ECSE practices; and (d) increasing the number of highly qualified culturally, linguistically, and socially competent and responsive early childhood special educators. These goals addressed the preparation of ECSE teachers to work in inclusive settings and collaborate with early childhood educators, fulfilling Individuals with Disabilities in Education Act (IDEA) mandates.

The OSEP I:DREEAM grant aimed to provide teaching and learning opportunities in high-quality early childhood practices, close the gap in differences in core knowledge and philosophy between ECE and ECSE (Odom and Wolery, 2003; Bruder and Dunst, 2005; Dinnebeil et al., 2009; Richardson-Gibbs and Klein, 2014), and provide training in effective consultation and collaboration (Klein and Harris, 2004; Wesley and Buysee, 2004; Frankel, 2006; Dinnebeil et al., 2009; Richardson-Gibbs and Klein, 2014) to ECSE credential candidates. This semester long course was designed from grant seminars and activities. Over the 5 years of the grant, data were taken from grant scholars and faculty after each seminar and activity was conducted. The feedback was used to determine the most effective content and teaching activities to incorporate into the course. Additionally, course curriculum was developed from the adopted textbook and OSEP supported resources/websites such as the Early Childhood Technical Assistance Center. Thus, the purpose of this research was to address the effectiveness of the inclusive education course by examining how ECSE preservice teachers' knowledge and belief of inclusion changed from taking the course, if at all. More specifically, the following research questions were addressed:

1. What pre-existing knowledge and beliefs do ECSE preservice teachers have of inclusion?
2. How effective is the inclusion course in changing and/or affirming knowledge and belief of inclusion for ECSE preservice teachers?

3. Research design

Using a one-group, pre/postdesign, we developed a pre/postsurvey to assess the knowledge, beliefs, and practical understanding of ECSE credential candidates prior to accessing course content and after the course had concluded. While the survey questions may bleed between these three categories (knowledge, beliefs, and practical understanding), a decision needed to be made about where each survey question fell, therefore, a category was chosen that best aligned with the objective of the question. Pre/postsurveys included 17 questions or statements. Preintervention surveys were distributed during the first week of class, and students took the brief survey online before accessing any class information or readings. After presurveys were complete, students participated in a 16-week course on ECSE inclusive education. At the end of 16 weeks, ECSE students participated in the postintervention survey, which assessed students' understanding in the same areas, providing insight into whether direct course instruction changed their (a) beliefs about inclusion, (b) knowledge of inclusion and inclusive practices, and (c) understanding of inclusive practices and practical application of inclusive practices.

The inclusive education course was offered each fall, and survey results were collected for 4 years: 2015, 2016, 2017, and 2018. After the conclusion of the Fall 2018 course, secondary data analysis was implemented. In this study, secondary data analysis used existing data to examine whether direct course instruction met the student learning objectives of the course and impacted students' beliefs and understanding of inclusive education. The survey was designed to identify where students started their inclusive journey at the beginning of the class versus their beliefs and understanding at the end of 16 weeks; the survey measured any progress in students' inclusive education journeys.

3.1. Participants

Participants were ECSE teacher candidates attending a state university special education program. A total of 97 participants completed pre- and postsurveys over four semesters (Fall, 2015, 2016, 2017, 2018). All credential candidates participated in multiple practicum experiences during the course. In addition, all participants were over 18 years old.

3.2. Course design

The inclusive education course in the present study introduces the concepts, strategies, and legislation for including young children with disabilities alongside their typically developing peers in natural

environments. Emphasis includes best practices, such as universal design for learning (UDL), environmental assessment, and collaboration with families and school personnel. The course design includes (a) course content, (b) course assignments, and (c) course fieldwork practicum requirements; all focused on the student learning goals and objectives for the course. Further, in 2014, when the course was originally developed, student learning goals and objectives were devised to align with DEC Recommended Practices (Council for Exceptional Children, 2014) and the California Teaching Commission ECSE standards (Commission on Teacher Credentialing, 2012). More recently, student learning objectives were realigned with the updated DEC Recommended Practices and the newly adopted California Teaching Performance Expectations.

3.3. Course content

The 16-week class was divided into 10 topics, and each topic was 1–2 weeks in length, depending on the topic. Content was delivered synchronously (five face-to-face meetings) and asynchronously, making this a hybrid-designed course. Content delivered synchronously was divided into the following topics during each face-to-face meeting: (a) ethical aspects of inclusion, involving a brief overview of disability history, including the American Eugenics Movement; (b) legal aspects of inclusion, including historical and more current cases, which resulted in case law related to inclusion and different models of inclusion support; (c) assistive technology and augmentative and alternative communication in early childhood; (d) UDL in early childhood; and (e) inclusion strategies for young children and ECSE itinerant teaching. Asynchronous content included: (a) administrative roles and leadership strategies; (b) collaborating with families, problem solving, and conflict resolution; (c) environment and engagement; (d) disability-specific strategies; and (e) facilitating relationships. Each topic had various assignments to reinforce concepts, with larger projects due every 3–4 weeks. The topics aligned with DEC Recommended Practices, specifically in the environment, interaction, and teaming domains.

3.4. Course assignments

Weekly or biweekly course assignments included reflection papers on assigned readings, group work to design UDL activity plans for infants and toddlers or preschool-age children, and discussion board activities. There were also three larger projects in the course. These projects were more time consuming and were due 3–4 weeks apart. After learning about various definitions of inclusion in the research and that everyone's perspective and understanding of inclusive education are different, students implemented their first project—a stakeholder interview. For this project, students interviewed three individual family service plan (IFSP) or IEP team members from an ECSE student to obtain their perspectives on inclusion. Students were asked to find a focus student (an infant/toddler or preschool-age child with a disability). All three members interviewed were from the same focus student. Students were provided a list of questions and implemented a semi-structured interview with each of the three team members. The responses were transcribed, and students looked for a theme. Students then wrote a paper, reflecting and expanding on their found themes.

The second project was an environmental assessment where students chose from a selection of environmental assessments focused on inclusion in the early childhood setting. After learning about the importance of the accessibility of the environment and supports and strategies young children need to be included successfully, students were asked to find an early childhood setting to assess the environment using their chosen tool. After their assessment, they wrote a paper on the findings.

Lastly, students implemented a social facilitation project. This project involved observing children by using the provided course videos. ECSE candidates learned about different social facilitation strategies and then tried to recognize these strategies in provided videos. ECSE students then discussed where the facilitation fell short and how to address this in a classroom. The final for the course was a paper on inclusion, which was required to include major components of the class. Each project and final paper had a rubric for students to use.

3.4.1. Fieldwork

A 15-h fieldwork component for the class allowed candidates to develop and practice collaboration, consultation, and strategies for implementing successful inclusive early childhood programs (Greenwald and Hand, 1997; Dunst and Bruder, 2014; Richardson-Gibbs and Klein, 2014) they were learning concurrently. These hours could also be used to complete the three larger assignments. The 15 h took place in community-based programs that included young children with disabilities, such as childcare centers, private preschools, and Head Start or state-funded preschool classrooms.

4. Results

4.1. Preintervention survey

The presurvey questions encompassed credential candidates' beliefs regarding inclusion, their knowledge of inclusion and inclusive practices, and their understanding of practices related to inclusion. Some questions or statements overlapped between areas. This survey was developed by adapting the National Professional Development Center on Inclusion (2011) focus areas of access, participation, and supports, in combination with survey items directly linked to the course's curriculum and content. Of the 17 self-report items, 12 items on the same 5-point Likert scale were used for further statistical analysis. An example item is "I am confident in my knowledge of inclusive education practices," and responses ranged from 1 = *completely disagree*, 2 = *disagree*, 3 = *somewhat/unsure*, 4 = *agree*, and 5 = *completely agree*.

Using Cronbach alpha, we calculated the reliability estimates, or internal consistency, of the survey items: Cronbach alpha was used because it is one of the most commonly used measures of reliability that shows how closely a set of survey items are related as a group (Robertson and Evans, 2020). The reliability coefficient of the survey comprising the 12 Likert-scale items was 0.80, indicating a reasonable level of reliability.

Then, 12 Likert-scale items from the presurvey were factors analyzed using principal component analysis with varimax

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TABLE 1 Factor analysis.

Pre/post question or statement	Loading		Communality
	Factor 1: Knowledge	Factor 2: Belief	
I have a good grasp on the benefits of and barriers to inclusion.	**0.716**	−0.073	0.518
I could define inclusive education if asked by my administrator today.	**0.566**	0.183	0.354
I am confident in my knowledge of inclusive practices.	**0.685**	0.180	0.501
I am confident in my understanding of the legal aspects of inclusion.	**0.690**	−0.052	0.479
I am confident in my understanding of the educational aspects of inclusion.	**0.751**	−0.149	0.586
I am confident in my understanding of the ethical aspects of inclusion.	**0.690**	−0.145	0.497
I have a good grasp on the controversy surrounding inclusion.	**0.580**	−0.147	0.358
I have a good grasp on the criteria used in determining inclusive placements.	**0.664**	−0.217	0.487
I am confident in my current ability to implement inclusive practices.	**0.685**	0.180	0.501
I am interested in a teaching position that involves inclusive practices.	0.087	**0.834**	0.703
I currently have a strong, formulated opinion about inclusion.	0.404	**0.550**	0.466
I have the desire and confidence to improve inclusive practices within my current/future teaching position.	−0.100	**0.742**	0.560
Eigenvalue	4.173	1.752	
% of Total variance	34.463	14.913	
Total variance	**49.376%**		

Factor loading over 0.50 appear in bold.

(orthogonal) rotation to identify how these items in the survey are condensed into a few variables. Before running factor analysis, the preliminary tests of the factorability of data were conducted. First, Bartlett's test of sphericity, which tests the overall significance of all correlations within the correlation matrix, was significant [$\chi^2(66) = 366.69$, $p < 0.001$]. Second, the Kaiser–Meyer–Olkin value was 0.80, indicating the sampling of the items was adequate. In short, results from the two preliminary tests show it was acceptable to proceed with the factor analysis. When we ran factor analysis, three factors with eigenvalues greater than 1 were extracted. A series of factor analyses were conducted, indicating two factors gave the most interpretable solution (see Table 1). The exploratory factor analysis results showed the knowledge factor explains 34.46% of the variance, and the belief factor explains 14.91% of the variance. Then, composite scores were created for each of the two factors (i.e., knowledge and belief) based on the mean of the items that had their primary loadings on each factor in the pre- and postsurvey.

When the pre- to postsurvey composite scores were compared, paired-sample *t*-test results showed a significant difference in the knowledge [$t(96) = -21.767$, $p < 0.001$], and a significant difference in the belief factor [$t(96) = -5.42$, $p < 0.001$]. In other words, preservice teachers felt a higher level of confidence in knowledge of inclusion from presurvey ($M = 3.11$, $SD = 0.49$) to postsurvey ($M = 4.31$, $SD = 0.39$). Similarly, these students expressed a stronger belief in inclusion from presurvey ($M = 4.24$, $SD = 0.47$) to postsurvey ($M = 4.51$, $SD = 0.47$).

4.2. Non-Likert-scale items

Five items out of the 17 self-reported items did not use the same 5-point Likert-scale items. The descriptive statistics of these five survey items were reported in Table 2. In general, preservice teachers felt more hopeful and optimistic in the postcourse survey than in the precourse survey. At the beginning of the course, 96% of preservice teachers acknowledged inclusion is for both academic and nonacademic areas. Additionally, 64% of preservice teachers rated inclusion as interesting, and 33% rated inclusion as optimistic. Concerning the pre-existing experiences, 30% of preservice teachers reported they had experiences with inclusion, as a paraprofessional (27%) or as a volunteer/observer (22%). Further, 52% of preservice teachers believed inclusion is for all students. When the same survey items were rated at the end of the course, approximately the same number (94%) of preservice teachers reported inclusion is for both academic and nonacademic areas as on the precourse survey. Additionally, 18% more preservice teachers rated inclusion as optimistic, and 11% more chose inclusion is for all the students. Approximately 25% more teacher candidates reported having experiences with inclusion than on the precourse survey: 12% more preservice teachers reported having experiences as a paraprofessional and 7% more as an observer/volunteer.

5. Discussion

Findings in this study demonstrated when inclusion instruction is targeted in a preservice ECSE course, preservice teachers' confidence in their own knowledge of inclusive education and their beliefs in inclusion increased. The data from the pre- and postsurvey suggest that knowledge and belief play a role in the perceptions of inclusion in ECSE credential candidates. The five non-Likert-scale items addressed in Table 2 highlight (a) how preservice educators feel about the topic of inclusion, (b) what they think the goal of inclusion is, (c) whom they think inclusion is for, and (d) what type of experience they have with inclusion.

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TABLE 2 Descriptive statistics of the five non-Likert-scale items.

Items	Response options	Pretest % (*n*)	Posttest % (*n*)
When the topic of inclusion comes up, I mostly feel:	1. Anxious/nervous/uneasy	2% (2)	2% (2)
	2. Excited/interested	64% (62)	41% (40)
	3. Angry/frustrated	1% (1)	0% (0)
	4. Hopeful/optimistic	33% (32)	51% (49)
	5. Other	0% (0)	6% (6)
The goal of inclusion is	1. Social/play	3% (3)	3% (3)
	2. Behavioral	0% (0)	0% (0)
	3. Linguistic	0% (0)	0% (0)
	4. Preacademic/academic	0% (0)	1% (1)
	5. All of the above	96% (93)	94% (91)
	6. Other	1% (1)	2% (2)
Inclusion is for	1. None	0% (0)	0% (0)
	2. Few	0% (0)	0% (0)
	3. Some	20% (19)	5% (5)
	4. Most	28% (27)	32% (31)
	5. All	52% (51)	63% (61)
I have experience with inclusion.	1. Completely disagree (no experience)	6% (6)	3% (3)
	2. Disagree	12% (12)	4% (4)
	3. Some	52% (50)	38% (37)
	4. Agree	26% (25)	50% (48)
	5. Completely agree (extensive experience)	4% (4)	5% (5)
I have experience with inclusion as	1. A student/family member	5% (5)	10% (10)
	2. A typical peer	2% (2)	1% (1)
	3. A paraprofessional	27% (46)	39% (38)
	4. Teacher	13% (12)	17% (16)
	5. An observer/volunteer	22% (21)	29% (28)
	6. N/A	8% (8)	2% (2)
	7. Other	3% (3)	2% (2)

When commenting on how the candidates felt about inclusion, fewer preservice teachers felt interested and excited postsurvey, but more felt hopeful and optimistic. This finding may suggest once the preservice educators learned about inclusion, their interest may have been satisfied, and they may have felt more hopeful and optimistic about the ability to provide inclusion for their students with disabilities. In addition, when asked whom inclusion was for, those who chose "some" or "most" decreased, with the answer of "all" increasing. This finding may be attributed to their learning that all students can be included in different ways and what that looks like is unique to each student. Additionally, preservice educators may have felt more comfortable with students with disabilities (Barton and Smith, 2015) and more competent to collaborate and provide consultation to their general education counterparts with the training and experience (Richardson-Gibbs and Klein, 2014) provided through the class.

Further, in the precourse survey, 96% of preservice teachers acknowledged inclusion is for both academic and nonacademic areas. In the postcourse survey, approximately 94% of preservice teachers noted that inclusion is for academic and nonacademic areas. Some may question why this number stayed close to the same percentage across pre- and postsurvey, with a nominal decrease. To better understand this slight change, a modification in the survey may be considered. The question could ask the participants "why" they acknowledge inclusion is for academic and nonacademic areas to find out their thoughts behind their choice.

Another non-Likert item worth mentioning is that preservice teachers started the course with varying degrees of experience with inclusion. This involvement with inclusion ranged from experience as a student/family member, typical peer, paraprofessional, teacher, volunteer, or observer. The course had assignments embedded within the content that required students to engage with educators, families, and young children with disabilities. One example was a stakeholder interview, which required students to interview three team members of a young child with a disability (e.g., a child with either an IEP or an IFSP)

about their understanding and experiences with inclusion. In another example, an inclusive environmental assessment required students to find a general education classroom that serviced young students with disabilities and to assess the environment. The students were provided a choice of inclusive environmental tools (e.g., preschool or infant/toddler), and they could choose which one they wished to use. These assignments required students to spend 15 h in classrooms or with families. These required hours increased the students' degree of experience upon completion of the class. This finding also aligns with Rakap et al. (2017), who argued the ability to practice learned instructional strategies to support inclusive practices made a difference in students' understanding.

When direct instruction on inclusive education was integrated into a preservice ECSE program, preservice teachers' confidence in their knowledge of inclusive education (Gruenberg and Miller, 2011; Richardson-Gibbs and Klein, 2014; Grisham-Brown and Hemmeter, 2017) and their belief in inclusion (Beacham and Rouse, 2012; Yu and Park, 2020) increased. The course was designed to provide several means for assessing teacher candidates' increased knowledge of inclusive education. Course objectives and student learning outcomes were measured by assignments, projects, participants, and course finals. In addition, teacher candidates' understanding and perceptions were measured by pre- and postassessments. Ultimately, the desired course outcome was to increase teacher candidates' confidence and ability to provide instructional implementation of inclusive opportunities for our youngest students. The present findings are noteworthy because an inclusive education course suggests a model to address the current lack of preparation of ECSE teachers to work in an inclusive setting. The intention of the course was met, and ECSE teachers can better collaborate with early childhood educators and work together to fulfill the IDEA mandate of LRE. Lastly, there are data from course assignments that may be used for another study in the future.

5.1. Implications for teaching and future research

There are several implications for teaching inclusive education to ECSE credential students. Data demonstrate direct instruction in inclusion and inclusive education is an effective way to train ECSE teacher candidates. Developing a course that provides this explicit instruction and embedding the course into a credentialing program ensures ECSE candidates have access to the knowledge and practice the skills needed to partner with their ECE counterparts upon graduation. Additionally, having this understanding of inclusive education enables ECSE teachers to provide LRE to young children with disabilities, guaranteeing the accomplishment of the federal mandate.

ECE is working toward implementing UPK in California. Early education will soon address the implementation of UPK, mandating 10% of spots in early children's education be held by young students with disabilities. Preparing all ECE/ECSE teachers in inclusive education knowledge, practice, and implementation will break down the barriers that persist in programs for young children. Therefore, it is imperative that teacher educators assess if course content developed to address inclusion is effective. A future study examining if inclusive education in early childhood has increased with a flux of inclusive-minded and well-trained early childhood special educators would provide a broader perspective on programming effectiveness and its impact on young children with disabilities. Interviewing ECSE candidates who participated in this coursework regarding the programming they currently work in, and their ability to implement the knowledge and skills they obtained in the credential course, would provide deeper insight into where current barriers lie. We realize current placement options for young children with disabilities may limit inclusive-minded educators' ability to provide general education placements for the young children with whom they work. This may beg the question: If faculty train inclusive-minded ECSE teachers, is there a platform for them to implement what they have learned, without Universal Preschool?

5.2. Limitations

There are limitations to this research: (a) preservice educators may be unaware of what they do not know; (b) the ages and ethnicities of participants are unknown; (c) preservice teachers' perceptions about inclusion may not be entirely accurate and would be strengthened by observational data to verify consistency between the survey data and their actual knowledge on inclusion; (d) although exploratory factor analysis was used for the data reduction, further analysis, such as confirmatory factor analysis, was beyond the scope of what the present study intended to address; (e) only one-group pre- and postcourse surveys were employed to measure the training effectiveness; (f) social desirability bias was not controlled in the survey measure of the present study, although such bias has not always been reported in the self-reported student surveys in higher education (Miller et al., 2012); and (g) there is a relatively small number of participants, although the Kaiser–Meyer–Olkin value near 1 indicates factors can be extracted from the present dataset. Thus, future research should be replicated with a larger sample of participants with additional observation data. The survey items should be also controlled for social desirability bias. It may also be useful to include longitudinal data to be sure the effect is maintained over the time.

6. Conclusion

Results from this study emphasize the importance of addressing inclusive education in a teacher preparation course to prepare future ECSE teachers as agents to implement inclusive education for young children with disabilities. In particular, the present study adds educational implications that a well-designed inclusion course can build content knowledge and understanding and can change preservice teachers' perspectives and willingness to provide inclusion. In conclusion, teacher educators should purposefully design their ECSE courses to cover essential knowledge and skills related to inclusion to provide high-quality instruction and services to young children with disabilities in inclusive settings through well-trained future ECSE teachers. The use of pre- and postassessments for preservice teacher candidates' perceptions related to inclusion can be a helpful tool for teacher educators to assess the learning outcomes of their courses.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by California State University, Fullerton IRB. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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