Enhance and Extend Preservice Special Educators' Learning with Curricular Content Knowledge

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Developing preservice special educators' understandings of curricular content knowledge in inclusive and self-contained settings is essential. The purpose of the present study was to better understand specific preparation practices teacher educators use to equip preservice special educators with curricular content knowledge. Using a survey research design, qualitative data were collected among 36 experienced teacher educators in Texas and analyzed through three levels of coding. Three themes emerged and provided a snapshot of current preparation practices. Implications for teacher educators were described, along with descriptions of innovative, evidence-based preparation practices presented in current literature that may improve preservice special educator learning.

Teacher quality is one of the most critical school-related factors for influencing student achievement (Darling-Hammond, 2000; Goldhaber, 2016; Hightower et al., 2011; Rice, 2003). Considering this, preservice teachers must experience high-quality teacher training that implements instructional strategies rooted in practice-based approaches (Darling-Hammond, Hammerness, Grossman, Rust, & Shulman, 2005; Feiman-Nemser, 2001; Hollins, 2011; Zeichner, 2006, 2012). Hollins (2011) described practice-based teacher preparation as the integration of "academic knowledge of theory, pedagogy, and curriculum" with "experiences in authentic contexts that are embedded in focused inquiry, directed observation, and guided practice" (p. 396). Through coherent coursework, instructional integration, supervised field experiences, and proactive PK-12 school relationships that engage diverse learners, preservice teachers develop proficiency with evidence-based, effective teaching practices that meet the complexities of 21st-century classrooms (Darling-Hammond, 2006).

Exemplary teacher preparation programs provide conceptual, coherent curriculum content for program teacher certification areas informed by professional standards (Feiman-Nemser, 2001; Hollins, 2011). In special education, the Council for Exceptional Children (CEC, 2015) defined initial teacher preparation standards that describe the behaviors, knowledge, and skills required of novice special educators. One of these standards, Standard 3: Curricular Content Knowledge, focuses on the central concepts, structures, and tools of inquiry for different curricular content areas. Specifically, this standard has recognized the need for teacher preparation programs to train preservice special educators in how to apply understandings of the general and

specialized curriculum to individualize learning for students with exceptionalities.

Within this standard, the CEC (2015) further defined three key elements that illustrate evidence-based expertise needed by novice special educators. First, novice special educators understand and know how to organize an increasingly complex curricular content knowledge, implement cross-disciplinary learning, and foster consequential learning progressions among students who have exceptionalities (Brownell, Sindelar, Kiely, & Danielson, 2010). Second, novice special educators know how to individualize learning for students and modify curricula to promote accessibility and extend learning across traditional boundaries for the purposes of engaging a diverse audience. Third, novice special educators are adept at collaborating with other professionals, such as general education teachers in the elementary grades and content area teachers in the secondary grades.

The primary goal of teacher preparation is to prepare confident (Richards, 2010) and competent (Scheeler, Budin, & Markelz, 2016) novice special educators. Yet, researchers have acknowledged that many special educators receive insufficient preparation with aspects of curricular content knowledge for literacy (Copeland, Keefe, Calhoon, Tanner, & Park, 2011), mathematics (Gagnon & Maccini, 2007), science (van Garderen, Hanuscin, Thomas, Stormont, & Lee, 2017), social studies (Sánchez, 2010), and other disciplines (Kennedy & Ihle, 2012). This shortcoming raises the question, how do teacher educators promote understandings with curricular content knowledge among preservice special educators? Exploring preparation practices currently in use provides useful information to guide needed improvements with teacher preparation practices used to train special educators (Dukes, Darling, & Doan, 2014).

We are teacher educators who prepare special education, literacy, and school administrator professionals in Texas. The field of special education continually evolves and reform is always on the horizon (Brownell et al., 2010). Therefore, it is of great importance for teacher educators to ensure current preparation approaches are relevant and adequately prepare future special educators for day-to-day classroom experiences. With this in mind, we recently conducted a multi-faceted, state-level study to better understand specific preparation practices teacher educators use to prepare preservice special educators with each of the CEC's (2015) initial teacher preparation standards. As solution-oriented teacher education professionals, the purpose of our paper is twofold: (1) to provide information about the present study, and (2) to offer evidence-based preparation practices that enhance and extend preservice special educators' learning with curricular content knowledge.

Methodology

Research Sample

We used purposive sampling techniques to create a research sample of teacher educators in Texas. Using the state education agency's website, we identified 55 state-accredited, university-based teacher preparation programs that prepare special educators (Texas Education Agency, n.d.). We then consulted publically accessible information (i.e., class schedules, departmental faculty listings) on each university's website to create a participant pool of teacher educators who specialize in special education. Our search efforts resulted in a participant pool of 283 members.

Data Collection and Analysis

We created an electronic survey instrument using Google Forms to collect

data for our multi-tiered study. In the present study, data were collected via the following open-ended question: Specifically, how do you promote professional understandings with curricular content knowledge among preservice special educators? We emailed a survey link to participant pool members and kept the survey period open for three months. We also sent monthly reminder emails to encourage participation. When the survey period closed, 46 respondents submitted a survey.

Laurie (i.e., the first author) analyzed data manually by conducting three levels of coding (Corbin & Strauss, 2008). In the first level, open coding was used to label initial concepts present in the data. In the second level, axial coding was used to confirm the accuracy of codes and group similar codes into themes. In the third level, codes were reviewed within each theme to identify the presence of subthemes. While coding, Laurie made analytic memos, maintained a codebook, and communicated with Michelle, Frank, and Lawrence (i.e., the second, third, and fourth author, respectively) to discuss internal thoughts, explore emerging ideas, and develop innovative insights about the data (Saldaña, 2009).

Findings

Of the 46 respondents, 36 respondents provided data relevant to the present study. As shown in Table 1, the majority of respondents were female, over 40 years of age, and had multiple years of experience with preparing special educators. Data consisted of 734 words and were categorized into three themes: Coursework, Field Experiences, and Coursework-Field Experience Combinations. We have provided an account of each theme below, along with excerpts from respondents.

Table 1
Demographic Information for Respondents

Characteristic	*n*
Gender	
Female	28
Male	8
Age	
30-39 years	4
40-49 years	10
50-59 years	8
60-69 years	12
70-79 years	2
Teaching Experience	
Less than 1 year	1
2-4 years	3
5-7 years	6
8-10 years	9
More than 10 years	17

Coursework

Within this theme, respondents made 30 references to various learning experiences that occur within the context of university-based teacher education courses. Respondents indicated that they provide "direct instruction" for specific aspects of curricular content knowledge, such as "identifying research-based interventions in the content areas, IEP [individualized education plan] accommodations/modifications, and using assessment data to guide instruction." Respondents also noted a variety of opportunities for preservice teachers to engage with hands-on learning tasks. Hands-on learning tasks included "authentic assessments," "case studies," "lesson planning with a requirement of differentiating instruction," "reviews of research," and "task analysis." One respondent delineated a learning design sequence they use to facilitate preservice teachers' understandings during coursework:

> First, [preservice teachers] learn what the curricular content is via learning the state curriculum standards. Then,

> they need to see what the students' needs are or if there are any necessary curricular modifications by checking each student's IEP. Next, [preservice teachers] create content area lessons that take into account specific students' needs.

Field Experiences

Within this theme, respondents made 10 references to field experiences that occur in school environments and community settings. Within school environments, one respondent shared that preservice teachers complete "field experiences in general education, special education, and as a co-teacher with general education teachers." One respondent described the timing of field experience in the continuum of respective teacher preparation program:

> [Preservice teachers] complete on-site blocks in both elementary and high school levels, working in a variety of settings, such as general education, co-teaching, resource, or self-contained. This immersion occurs before [preservice teachers] take their final strategies class for teaching students with mild to moderate disabilities. This allows preservice teachers to not only explore and learn strategies, but to reflect on what they saw in field and consider how strategies were, or could have been used, in different classroom settings.

Within community settings, two respondents referenced "service-based learning activities" and "blindfold work in the natural environment (e.g., cross streets with blindfold and cane)" as field experiences that preservice teachers complete.

Coursework-Field Experience Combinations

Within this theme, respondents made five references depicting arrangements that clearly linked coursework with field experiences. One respondent specified that preservice teachers complete "methods courses in reading and language arts, math, science, social studies, and early childhood." Another respondent explained that they first provided preservice teachers with information for curricular content knowledge in the university class setting. Then, preservice teachers were given opportunities to "practice developing lesson materials, utilizing existing curriculum, and adapting lessons/curriculum to meet the needs of various learners" in authentic PK-12 classroom settings.

Discussion

Our findings offered insights into the current preparation practices teacher educators use to prepare preservice special educators. Although much literature has advocated for practice-based approaches (Darling-Hammond et al., 2005; Feiman-Nemser, 2001; Hollins, 2011; Zeichner, 2006, 2012), our findings suggested that teacher educators rely heavily on university-based coursework to promote preservice teachers' understandings of various aspects of curricular content knowledge. Moreover, our findings showed that coursework and field experiences may be addressed as separate preparation program requirements, rather than in tandem with one another. Closer inspection of our findings have also raised concerns with the alignment of teacher education content and requisite behaviors, knowledge, and skills articulated in the CEC's (2015) initial teacher preparation standards. Respondents did not explicitly reference aspects of the CEC's curricular content knowledge standard, and in some

cases, their references were not at all well-aligned.

Our findings have implications for teacher education program stakeholders (i.e., university administrators, teacher educators, preparation program staff, field supervisors). In order to blend the PK-20 boundary and increase collaborative learning across environments, we consulted recent literature to identify evidence-based preparation practices that may improve upon current practices reported in the present study and mirror sustainability and generalizability of effective teaching practices in authentic PK-12 grade settings (Markelz, Riden, & Scheeler, 2017). The preparation practices we highlight below reinforce a practice-based and coherent special educator teacher preparation curriculum, while also enhancing and extending learning experiences for curricular content knowledge.

Address Collaboration Skills

Special educators collaborate with a variety of stakeholders to ensure education services meet the individual needs of students with exceptionalities (McLeskey et al., 2017). With respect to curricular content knowledge, special educators collaborate with content area secondary teachers and general education elementary teachers for planning, co-teaching, and teaching situations (CEC, 2015). In order to engage in successful professional collaborations, preservice special educators must learn how to be "a partner in communication" (Da Fonte & Barton-Arwood, 2017, p. 102). Thus, teacher educators must inform preservice special educators of effective discourse practices that promote "thoughtful, practice-focused discourse" amidst professional collaborations (Leko et al., 2014, p. 154).

Once preservice special educators develop a foundation of understanding effective discourse practices, we encourage teacher educators to design, implement, and evaluate rehearsal opportunities within the university classroom. To do so, teacher educators create hypothetical instructional situations for preservice special educators to engage in collaborative simulations and practice critical elements of teaching (McDonald, Kazemi, & Schneider Kavanagh, 2013). While preservice special educators engage with rehearsals, teacher educators provide them with instantaneous feedback using a coaching approach. Teacher educators and preservice special educators also work together to examine completed rehearsals and discuss ways to revise and improve teaching performance. Once preservice special educators demonstrate confidence and proficiency during rehearsals, teacher educators provide them with opportunities to enact rehearsed teaching practices in authentic PK-12 contexts with real students.

Incorporate Multimedia Tools

In an age of digital technology, there is a wide range of multimedia tools that teacher educators may use to support special educator teacher preparation. By doing so, teacher educators enhance the acquisition and retention of knowledge among preservice special educators (Kennedy, Alves, & Rodgers, 2015; Kennedy, Kellums, Thomas, & Newton, 2015; Sayeski, Budin, & Bennett, 2015). The creation of learning modules is an effective way to develop preservice special educators' understandings of coherent curricular content knowledge through the use of multimedia tools. For example, Sayeski et al. (2015) noted that preservice special educators themselves lack adequate content knowledge with reading concepts, such as comprehension, decoding, fluency, and phonemic awareness. These deficits impact preservice special educators' ability to grasp reading pedagogical concepts, such as the interconnectivity of reading concepts and how to design and

implement explicit and systematic instruction. As described by Kennedy, Kellums, Thomas, and Newton (2015), teacher educators can easily create content acquisition podcasts (CAPs) to present information for a single topic in short videos that are less than 10 minutes in length. The use of CAPs also reduces the amount of time teacher educators spend during scheduled class meetings on foundational topics, thereby providing more time for "case studies, modeling exercises, guest speakers, discussions, and rehearsing evidence-based practices for teaching" (p. 168).

Video-based analyses and reflections are another way for teacher educators to reinforce the development of problem-solving skills among preservice special educators (Kennedy, Alves, & Rodgers, 2015). While engaged in field experiences, preservice special educators videotape themselves. At a later time, they view the video and complete a reflection "separate from the act of teaching, which results in deeper reflection that can lead to improved practice" (p. 78). After preservice special educators complete their reflection, teacher educators may conduct individual conferences or lead small group gatherings to view videos, discuss observations, and provide feedback that helps improve future teaching practices.

Limitations and Areas for Future Research

There were several limitations with the present study that we must recognize. First, we collected data from 36 respondents concerning their preparation practices for addressing curricular content knowledge, thereby reflecting a low response rate. We also recognize that data were self-reported by respondents and restricted to their interpretations of the posed survey question. Although caution with generalizing findings from the present study is warranted, our findings do provide a preliminary snapshot of current preparation practices. Future studies should conduct follow-up analyses of preparation practices among larger populations of teacher educators and employ more rigorous research designs that examine preparation practices in a more comprehensive manner. Second, we limited our analysis to include teacher educators affiliated with university-based teacher preparation programs in Texas. Future studies should elicit participation from teacher educators in multiple states and regions, particularly since the preparation of special educators is a federally-guided enterprise. By doing so, researchers may identify significant patterns, relationships, and trends in data that lead to improved preparation practices. Third, we obtained members for our participant pool using information that was publically available on university websites. Therefore, accessible information may have been incomplete or outdated. Future studies should use different research sampling techniques to ascertain more accurate and complete information. Lastly, we did not include school administrators in our analysis. School administrators have a responsibility for facilitating the continued professional growth of novice and experienced educators. Future studies should examine ways in which school administrators remain current with topics in special education, such as curricular content knowledge, as well as how they support the ongoing professional learning of special educators.

Conclusion

Special education is a challenging area of teaching that requires high-quality, well-trained professionals who possess expertise with curricular content knowledge. Novice special educators must be familiar with the fundamentals of the content areas they teach and know how to implement cross-

disciplinary teaching practices to promote consequential learning progressions among students with exceptionalities. More importantly, novice special educators must be skilled with individualizing instruction and modifying curricula to make learning accessible for all students. With these performance expectations in mind, teacher educators must ensure they implement evidence-based preparation practices that enhance and extend preservice special educators' learning with curricular content knowledge. In the present study, we provided a preliminary snapshot of current preparation practices and offered a few ways in which teacher educators may improve upon current practices. We encourage researchers to continue exploration in this area so that teacher educators become aware of innovative and impactful preparation practices.

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