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Counselor Education Doctoral Students' Research Self-Efficacy: A Systemic Perspective

Zahide Sunal, Gülsah Kemer

Abstract: Research self-efficacy (RSE) has been mainly considered as an intrapersonal aspect of researcher identity development. Utilizing a systemic lens, we examined factors informing counselor education doctoral students' RSE in CACREP-accredited doctoral programs. Concept mapping, a mixed-method design, yielded 17 clusters representing six regions describing the factors informing counselor education doctoral students' RSE. We discuss the results with training and research implications, and limitations of the study.

What is the public significance of this article? The present study suggests that there are environmental and relational factors affecting doctoral student's research self-efficacy (RSE) as well as the previously considered individual factors. Acknowledgement and intentional incorporation of all of these factors may be critical in the counselor education research training process.

Keywords: research self-efficacy, counselor education doctoral students, concept mapping

Based on Bandura's (1986) self-efficacy definition, Research Self-Efficacy (RSE) can be described as an individual's perception and beliefs regarding their knowledge, skill, and the capacity of successfully conducting research. Thus far, researchers conceptualized RSE as an isolated factor that each individual perceives and experiences based on *their* research knowledge and skills (Holden et al., 1999; Mullikin et al., 2007). However, while putting the individual at the heart of its definition, Bandura's (1997) self-efficacy theory also emphasized the importance of structuring situations and environments to make sure the individuals (a) have all they need to succeed, (b) are not prematurely placed in situations where they are likely to fail, and (c) are also provided with modeling, verbal encouragement, and affirmation. Since RSE is not a stand-alone concept, understanding it cannot solely depend on studying intrapersonal factors. However, to date, researchers have not adequately addressed the relational and contextual elements informing RSE, particularly within the counselor education field.

A Systemic Perspective on RSE

Scholars of RSE have focused on more manageable components of a bigger picture (e.g., demographic information, research experience, research mentorship, research training environment), most probably due to the challenging and complex nature of the concept and all of its relevant factors. By examining each part separately, researchers have provided us with the opportunity to understand the detailed nature of the studied factors in relation to RSE (e.g., Lamar & Helm, 2017; Morrison & Lent, 2014). However, our current knowledge from these studies is limited when it comes to offer an explanation to the relational and dynamic nature of the concept. Therefore, it is critical to expand on the individualistic lens of existing studies through examination of the multiple layers of RSE concept (i.e., intrapersonal, interpersonal, and systemic) to help enhancing our knowledge on various parts of the larger picture.

Despite being commonly used for the individual factors, Bandura's theory lays a solid ground for

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RSE research and requires further clarifications and exploration of interpersonal and systemic factors (Lent & Lopez, 2002). Hence, in conceptualizing this study, we built upon Bandura's (1986) Social Cognitive Theory and approached RSE concept from systemic and relational lenses (e.g., Ecological Model: McLeroy et al., 1988; Tripartite Model of Efficacy Belief: Lent & Lopez, 2002). The Ecological Model emphasizes the reciprocal causation between the individual and their environment, suggesting that an individual can be understood through intrapersonal, interpersonal, institutional, community factor, and public policy levels. Similarly, the Tripartite Model draws attention to the transactional relationship of an individual's efficacy beliefs by including two more factors to the self-efficacy concept: other efficacy and relation-inferred self-efficacy (RISE). In a dyadic relationship, Lent and Lopez defines other efficacy as each party's perception of the other's efficacy, and they define RISE as each party's perception of how their efficacy is perceived by the other party. For example, in a doctoral student–faculty advisory relationship, the student's perception of their research efficacy would be self-efficacy, whereas the student's perception of their advisor's research efficacy would be other efficacy, and the student's perception of their advisor's views of the student's research efficacy would be the RISE. Thus far, the complex relationships among these informants of RSE have not received much attention from counselor education researchers.

RSE and Counselor Education

Holding an essential place in the CACREP doctoral program standards (2016), development of research knowledge and skills, and researcher identity are two critical goals of counselor education programs (Borders et al., 2014; Wester et al., 2019). To achieve these goals, counselor education faculty and scholars defined RSE as a crucial part of researcher identity development (e.g., Kuo et al., 2017). Not receiving scholars' attention in a detailed manner in our field (e.g., Borders et al., 2014; Lamar & Helm, 2017), a majority of our knowledge on RSE is based on studies with doctoral students from other disciplines (e.g., psychology, social work).

A collective look at the findings of these RSE studies reveals inconsistencies, limiting our understanding of doctoral students' RSE. For example, Lambie and Vaccaro (2011) found no significant relationship between RSE and research productivity among counselor education doctoral students. On the other hand, Morrison and Lent (2014) found a direct significant effect from RSE to research productivity with doctoral students. Similarly, Kuo et al. (2017) reported that counselor education doctoral students' RSE had a significant relationship with their research productivity. Petko et al. (2020) reported significant associations between research interest and RSE for counselor education doctoral students, while Kahn and Scott (1997) found that RSE did not predict research interest among counseling psychology students. Such discrepancies across the study findings may also be speaking for the influence of contextual factors on RSE.

Furthermore, in these studies, researchers also mainly relied on survey method and quantitative research designs and did not involve and/or examine an exhaustive list of RSE factors and their potential relationships within a systemic picture. Thus, none of these studies offered a qualitative understanding of the complex phenomenon of RSE. Lack of a comprehensive understanding and influential factors may also be another reason for the equivocal results from the previous studies. There is a dire need for studies conceptualizing RSE beyond the intrapersonal factors with the dynamic relationships among those factors.

At the practical end of this scholarly need, doctoral students in counselor education programs frequently report feeling unprepared, uninterested, unproductive, and/or apprehensive about research (Lambie & Vaccaro, 2011), which may be influencing their research involvement (Morrison & Lent, 2014) and preparedness for the academic world (Balkin, 2020). Some reasons Balkin identified include student anxiety related to statistics courses, disconnect between the research and counseling practice due to research courses generally being taught outside of counseling context, and limited early and structured research experience. A more comprehensive understanding of RSE from counselor education doctoral students' perspectives could

offer new directions to different stakeholders of the researcher training and development process. Doctoral students may develop an awareness on how to pursue research experiences and mentors, while faculty mentors may reflect on their practices on how to intentionally support doctoral students in those endeavors. Counselor education programs could review how to design training processes to facilitate construction and continuance of those mentoring relationships in deliberate and easier-to-follow ways (Balkin, 2020; Jorgensen & Umstead, 2020; Lamar et al., 2019). Furthermore, such efforts could provide insight into the potential structural barriers in our research training environments that may cause low levels of RSE, as well as low levels of motivation, involvement, and productivity, which may ultimately lead to drop-out of the doctoral program at the dissertation stage, or turnovers in tenure-track faculty positions requiring research activity.

The Current Study

In this study, therefore, we aimed to explore counselor education doctoral students' conceptualization of their RSE. To achieve a comprehensive understanding about what informs doctoral students' RSE, we included both literature-based perspectives and counselor education doctoral students' unique experiences and perspectives utilizing a mixed method design. Our research question was: What is counselor education doctoral students' perspectives on the factors informing their RSE in CACREP-accredited doctoral programs?

Method

Concept Mapping

Concept Mapping (CM; Kane & Trochim, 2007), a sequential mixed-methods design, allows researchers to explore complex and nuanced phenomena, such as RSE, through utilization of both qualitative and quantitative procedures. CM was a good fit for the purposes of this study because it allowed us to involve participants in multiple rounds of data collection to manage the inherent complexity of the RSE phenomenon, while letting us merely observe participants' shared realities without losing the uniqueness of each individual's contributions (Kane & Trochim, 2007). CM also enabled us to detect how each component defining the RSE was related to one another and depicted a holistic picture of the complex RSE concept.

CM consists of six steps: (1) preparing for CM, (2) generating the statements, (3) structuring the statements, (4) CM analysis, (5) interpreting the maps, and (6) utilization (Kane & Trochim, 2007). Since the primary focus of the current study was understanding RSE concept Step 6 – utilization – developing an instrument was out of the scope of current study.

Step 1: Preparing for Concept Mapping

Focus of the study. The focus of the current study was to explore counselor education doctoral student's conceptualization of their RSE. We generated a statement (item) pool from the existing literature as well as the brainstorming and idea analysis process in Step 2. To identify the existing RSE literature, we used the search words "research self-efficacy," and "counselor education" in academic databases (e.g., PsycINFO). We completed a recursive search, first reviewing the emergent articles and dissertation studies, and then using the reference lists of these resources to locate additional articles. Reviewing the existing literature, we identified 11 factors that have been studied in the RSE studies: RSE, research interest, research motivation, research training, research experience, research productivity, demographics, research mentorship, other-efficacy, relation-inferred self-efficacy, and research training environment.

Next, we reviewed the literature on each of these factors. To identify the instruments, we have used each factor as a search term and reviewed published articles, dissertation studies, and their reference lists. There were no instruments available for demographic information, research training, and research experience; however, for the remaining eight factors, we have identified 35 instruments. Out of these instruments we used the following criteria to select the instruments to be included in this study: (a) conceptually addressing one of the factors, (b) all items being available online or through the author(s), (c) including reliability and validity reports, and (d) receiving author(s) permission. Based on the selection criteria, we reduced our list to 16 instruments (see

Table 1). We edited the 578 items obtained from these 16 instruments through several rounds of statement synthesis. In this process, we reviewed and synthesized the items by following CM guidelines to (a) eliminate redundancy and repetition, (b) edit for clarity, and (c) ensure that each statement contained only one concept (Kane & Trochim, 2007). A final number of 247 literature-based statements offered us the literature-based components of the study as we moved forward to explore the doctoral students' perspectives on them.

Participants and sampling. The inclusion criteria for our participants were (a) being a doctoral student in a CACREP-accredited counselor education and supervision program, and (b) being at least 18 years of age. We recruited participants through convenience and snowball sampling. After obtaining institutional review board approval, we announced the study to all the CACREP-accredited doctoral program directors and to the professional email listserv, CESNET through email. We also asked participants to forward the study to other potential participants.

Kane and Trochim (2007) suggests recruiting eight to 15 participants to ensure data saturation. Out of 41 initially interested participants, 24 participants completed the informed consent and the demographic questionnaire and participated in at least one of the three data collection steps (Steps 2, 3, and 5). The participants were 15 female (62.5%) and 9 male (37.5%) with an average age of 32.17

Table 1

Final Instruments

Research Self-Efficacy (RSE)
Research Self-Efficacy Scale (RSES; Greeley et al., 1989)
Self-Efficacy in Research Measure (SERM; Phillips & Russel, 1994)
Research Attitudes Measure (RAM; O'Brien et al., 1998)
Research Self-Efficacy (RSE; Holden et al., 1999)
Clinical Research Appraisal Inventory (CRAI; Mullikin et al., 2007)
Research Interest
The Attitudes Towards Research Scale (ATR; Royalty et al., 1986)
Interest in Scientist-Practitioner Activities (SPI; Leong & Zachar, 1991)
Interest in Research Questionnaire (IRQ; Bishop & Bieschke, 1994)
Research Motivation
Research Motivation Scale (RMS; Deemer et al., 2010)
Research Productivity
Scholarly Productivity Survey (SPS; Royalty & Magoon, 1985)
The Scholarly Activity Scale (SAS; Kahn & Scott, 1997)
Research Mentorship
Advisory Working Alliance Inventory Student Form (AWAI-S; Schlosser & Gelso, 2001)
Research Mentoring Experiences Scale (RMES; Hollingsworth & Fassinger, 2002)
Other-Efficacy
Research Other-Efficacy Scale (Morrison & Lent, 2014)
Relation- Inferred Self-Efficacy (RISE)
Relation-Inferred Research Self-Efficacy Scale (Morrison & Lent, 2014)
Research Training Environment
Research Training Environment Scale-Revised (RTES-R; Gelso et al., 1996)

(*SD* = 8.21; range = 23–59). Sixteen participants identified as White (66.7%), three identified as Black (12.5%), one Asian (4.2%), one Middle Eastern (4.2%), one Latinx and White (4.2%), one Black and White (4.2%), and one participant did not specify a race category (4.2%). Offering us a wide developmental variance, participants were 10 first-, 3 second-, and 8 third-year doctoral students, and 3 were in the doctoral program for over 3 years. Twenty-four participants also represented four out of five ACES regions (i.e., North Central, North Atlantic, Southern, Rocky Mountain), composing a good national sample. As part of the demographic information form, participants responded to a Likert-scale question (1: not familiar at all, to 5: extremely familiar) reporting their familiarity with the concept of RSE to assess potential confounding effect of participants' RSE literature knowledge. The mean score of 1.92 (*SD* = .84; range = 1–4) indicated a low average, suggesting adequate but not specialized knowledge of RSE across participants.

Step 2: Generation of the Statements

Step 2 included one of the qualitative aspects of the CM. As part of this step, we completed the brainstorming and idea analysis tasks. For the brainstorming task, we conducted a 90-minute focus group with 14 counselor education doctoral students, who indicated interest and were available at the time of meeting. During the focus group, we provided a focus statement (i.e., had/have been affecting my RSE in the process of my doctoral studies) asking participants to generate as many statements as possible based on their experiences. Then, we presented the statements from Step 1 to the participants for their review. By first asking participants to generate statements based on their experiences and then presenting the literature-based statements, we aimed at capturing our participants' unique and uninfluenced experiences.

Initially generating 209 statements, focus group participants also consensually decided to keep all 247 literature-based statements. Following the focus group, we again reviewed the statements per CM guidelines (i.e., eliminate redundancy and repetition, edit for clarity, ensure that each statement contained only one concept; Kane & Trochim, 2007). Most critically, we eliminated duplications among the statements created by the participants and retrieved from the literature-based. This process resulted in 15 additional unique statements that were not represented in the literature-based pool of 247 statements, resulting in a total number of 262 statements. Following Kane and Trochim's (2007) maximum statement guidelines (i.e., 100), we randomly split the literature-based pool of 247 into two and included the randomly selected 124 statements in this study. During this split to ensure all the factors were represented in the final list we split each factor group of items randomly in two among themselves. For example, out of 27 research mentorship items, 14 were randomly selected; out of 30 research interest items, 15 were randomly selected to be included in the final list. We also kept the 15 items obtained from the focus group participants to ensure complete representation of our participants' experiences. As a result, the final list of statements in this study included 139 statements.

Step 3: Structuring the Statements

We mailed data packets to the participants and asked them to complete a sorting task (Kane & Trochim, 2007). For the sorting task, we printed statements onto small cards and provided them with a stack of empty envelopes. We asked participants to review and put the statements into conceptually meaningful groups based on their own experiences and perspectives, and to label each group representing the conceptual content. The data collected in this step was the primary data for the quantitative analyses; this data were used to develop the conceptual domains of counselor education doctoral students' RSE.

Step 4: Concept Mapping Analyses

In this step, we utilized R editor (R Studio Team, 2015) to conduct the quantitative portion of the CM. We first used the data from the sorting task to create a group similarity matrix (GSM) to determine the relational structure of participants' sorting. Next, we generated a point map by inputting GSM into a two-dimensional nonmetric Multidimensional Scaling (MDS) analysis. The stress value, the fit of the two-dimensional MDS solution, for the current study was 0.283, indicating a good fit (<.285; Kane &

Trochim, 2007). In other words, based on the stress value, the map represented the data well. Lastly, we input the two-dimensional (X-Y) MDS coordinate values into a hierarchical cluster analysis to obtain a dendrogram.

Next, through utilization of both quantitative data (the analysis results) and qualitative data (statement list), we examined the point map along with the dendrogram obtained from the cluster analysis to see if any particular number of clusters were evident, and determined the number of clusters, and if the statements in each of these clusters represented a conceptually meaningful list of preliminary clusters and the cluster map. To control and eliminate researcher bias, we consulted with an external auditor and pursued their input on the preliminary clusters. The auditor was a full professor in a counselor education program with extensive background in teaching research methodology to counselor education doctoral students and a scholarly interest and publication record on research training. The auditor provided seven specific comments regarding statement wording, placement, and cluster names. Some of these comments were referring to the same point. Based on the auditor's feedback, we have changed two statement placements and one cluster name. In order not to interfere with the data that already have been reviewed and sorted by the participants, we decided not to make any changes to the statement wordings.

Step 5: Interpreting the Maps

We finalized the data analysis through a 2-hour online focus group (Kane & Trochim, 2007). Prior to the focus group, we emailed the preliminary clusters and maps to the participants. At the beginning of the focus group, we presented the focus group agenda and asked participants to discuss the statements and clusters, and their representation on the maps based on their own experiences. Participants went through each statement and the relevant clusters as they reviewed the placements on the map. After the participants agreed on all statement placements, the participants discussed and determined the most conceptually suitable labels for each cluster (a conceptually meaningful grouping of original set of statements) and region ("clusters of clusters"; Kane & Trochim, 2007, p. 103). If the participants disagreed on a cluster label, the researcher asked them to work on a consensus for the label for that cluster.

Testimonial Validity

In this study, we followed several steps to ensure *testimonial validity*, where researchers' interpretation of the data was in check (Bedi, 2006). In the generation of statements step, participants reviewed, revised, and added to the literature-based statements. In the structuring of statements step, participants sorted the statements individually in their own space and time. In the analysis of concept maps step, we worked in a research team as well as with an external auditor to ensure the underlying structure obtained from the quantitative analyses was as free as possible from our interpretation. Finally, in the interpretation of maps step, a sample of participants reviewed, discussed, and finalized the clusters and assigned statements, where we, as researchers, only presented the results and facilitated the group process, reminding solely statistical considerations (i.e., statement location and assignment to clusters on the map).

Results

The factors of counselor education doctoral students' RSE were conceptualized through 17 clusters representing six regions on the concept map. See Table 2 for the regions and assigned clusters with their descriptions, and Figure 1 for the cluster map with regions.

The first region, Individual, started from the lower left corner of the map and continued toward the upper middle section. The Individual region included eight clusters: *conceptualization of research, application of research, management/administrative/logistical aspects of research* neighbored *individual's intentionality in developing research competence, research activity and outcome, interest and motivation for conducting (own) research, interest and motivation for research leadership and collaboration,* and *developmental level (single-item cluster).* The second region, Peers, included the *research culture and collaboration among peers*

Table 2

Description of Counselor Education Doctoral Students' RSE: Final Region and Cluster List

Clusters	Description
Region 1. Individual	
1. Conceptualization of research (skills)	Cognitive skills doctoral students perform during the process of forming research ideas
2. Application of research (skills)	Skills doctoral students utilize during different stages of conducting research, such as designing the research, collecting and analyzing data, and writing the findings
3. Management/administrative/ logistical aspects of research (skills)	Doctoral students' skills on managing administrative tasks of a research project
4. Individual's intentionality in developing research competence	Planning and purposefulness in developing doctoral students' own research competence
5. Research activity and outcome	Outcomes of research activities doctoral students may experience
6. Interest and motivation for conducting (own) research	Interest and motivation on developing a research agenda that doctoral students can conduct independently
7. Interest and motivation for research leadership and collaboration	Doctoral students' interest and motivation to collaborate on research projects with others, lead research teams, or serve in research leadership activities
17. Developmental level (by-itself cluster)	Doctoral students' year in the doctoral program
Region 2. Peers	
8. Research culture and collaboration among peers	Doctoral students' perception of the research culture among peers and cohort members
Region 3. Mentor	
12. Connection with and separation from the mentor	Doctoral students' feelings of connection or separation from mentor's research and how comfortable doctoral students are in the mentoring relationship
13. Mentor's active encouragement and support	Doctoral students' perceptions of mentors' active encouragement, support, and involvement with them in the mentoring relationship
14. Mentor's perspectives about mentee's research knowledge and skillset	Doctoral students' perceptions of mentor's perspectives about doctoral students' research knowledge and skillset
15. Mentor's research knowledge and skillset	Doctoral students' perceptions of mentors' research knowledge and skillset
Region 4. Faculty	
11. Faculty perspectives, activity, and support on research	Doctoral students' perception of the program faculty's research perspectives, involvement, and demonstration of research activity and training
Region 5. Doctoral Program	
9. Program's intentionality in developing research competence	Doctoral students' perceptions of their doctoral program's intentionality in creating procedures to train future researchers
10. Program's research culture	Doctoral students' perception of research behaviors, values, expectations, attitudes, and norms in their doctoral program
Region 6. Support Outside of the Program	
16. External social support (by-itself cluster)	The support doctoral students receive from outside of their doctoral program

cluster located in the middle of the map. The third region, Mentor, located on the lowest right corner of the map, housed four clusters: *connection with and separation from the mentor*, *mentor's active encouragement and support*, *mentor's perspectives about mentee's research knowledge and skillset*, and *mentor's research knowledge and skillset*. From the Mentor region, moving toward the center of the map, the Faculty region was represented by the *faculty perspectives, activity, and support on research* cluster. Toward the middle of the map, the Doctoral Program region included *program's intentionality in developing research competence* and *program's research culture* clusters. Lastly, a single-item-cluster, *external social support*, appeared in the center of the map and was its own region, Support Outside of the Program.

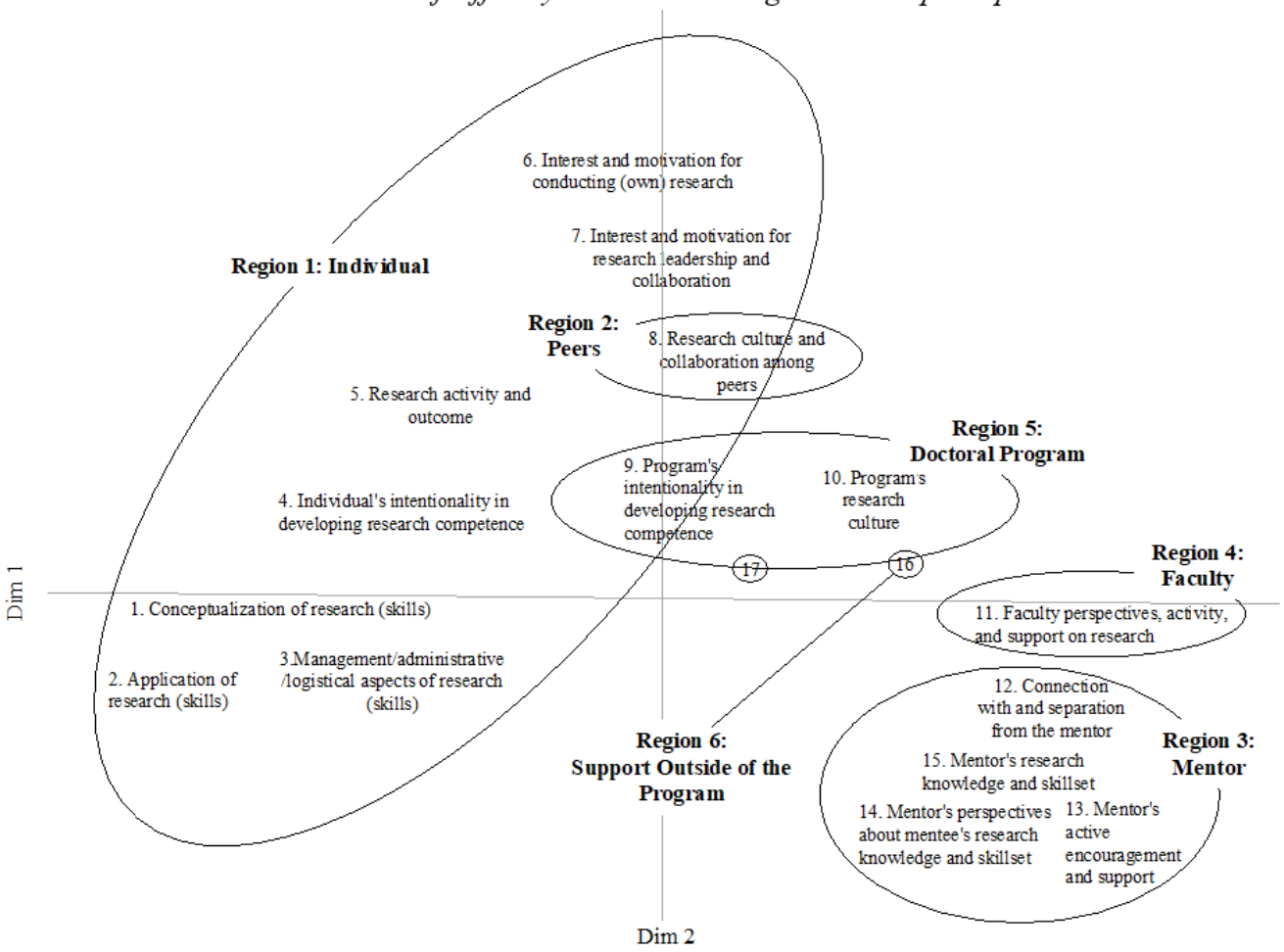
Discussion

The current study yielded 17 clusters representing six regions (i.e., Individual, Peer, Mentor, Faculty, Doctoral Program, and Support Outside of the Program) of counselor education doctoral students' conceptualization of their RSE. Parallel to the theoretical frameworks that informed the current study (Social Cognitive Theory: Bandura, 1986; Ecological Model: McLeroy et al., 1988; Tripartite Model of Efficacy Belief: Lent & Lopez, 2002), six regions and their clusters included the intrapersonal as well as systemic focus areas of counselor education students' RSE and training necessities as researchers in CACREP-accredited doctoral programs.

The Individual region represented doctoral students' self-qualities as a factor impacting their RSE and was the most crowded region of the map with

Figure 1

Research Self-Efficacy Clusters and Regions Concept Map



eight clusters. Resonating with the intrapersonal aspects of the previous studies (e.g., Deemer et al., 2010), three out of eight clusters in this region represented the traditional definition of RSE, one's belief in their research skills (Greeley et al., 1989; O'Brien et al., 1998; Phillips & Russel, 1994). In this region, the three different yet complementary clusters that focused on doctoral students' belief in their research skills were, *conceptualization of research, application of research,* and *management/administrative/logistical aspects of research*. These three specific clusters focusing on doctoral students' belief in their research skills were parallel to previous findings on emphasizing the importance of perception of research skills (e.g., Petko et al., 2020). At the same time, the Individual region expanded on the intrapersonal factors of RSE by including clusters beyond research skills. For example, the *individual's intentionality in developing research competence* cluster suggested that doctoral students considered themselves as active agents in their own research training through being purposeful to improve their research competence. Contradicting Love et al.'s (2007) findings, another cluster in the region, doctoral students' *research activity and outcome,* was critical in informing their RSE. Similar to the previous studies (e.g., Lambie & Vaccaro, 2011), the *developmental level* cluster emphasized the progress in the program as influential on an individual's RSE. Hence, our findings underlined that intrapersonal factors of RSE cannot be minimized to research skills, and other individual factors, such as students' intentional research involvement and productivity paced with their developmental level, are critical to counselor education doctoral students' RSE.

Mentor was the second most crowded region with four clusters on our concept map, highlighting the critical role of mentors in doctoral students' research training and experiences. Despite focusing on advisory working alliance or mentee characteristics (Hollingsworth & Fassinger, 2002; Kahn, 2001; Schlosser & Gelso, 2001), previous studies on mentoring did not explore or offer much regarding the role of a mentor in the mentee's RSE. In this region, *connection with and separation from the mentor* and *mentor's active encouragement and support* clusters were supportive of previous findings on the importance of positive relationship between advisory working alliance and RSE (Hollingsworth & Fassinger, 2002; Morrison & Lent, 2014). Contrary to Kahn's (2001) findings with counseling psychology doctoral students, counselor education doctoral students in this study reported the quality of the relationship with their mentor as critical for their RSE. Specifically, the mentor's communication of reasonable expectations, availability, and research collaboration invitations with verbally and nonverbally consistent behaviors as much as the mentor's demonstrated skillset for conducting research (e.g., formulating hypothesis, analyzing data) were behaviors fostering counselor education doctoral students' RSE. Our findings further emphasized the importance of a multifaceted approach to mentoring by taking into account both mentors' and mentees' characteristics and practices to inform the mentorship process in relation to RSE.

Aligning with previous study emphasis on faculty impact on positive research training experiences (e.g., Jorgensen & Duncan, 2015; Jorgensen & Umstead, 2020; Lamar et al., 2019), our findings also revealed program faculty's role in creating a research positive community as influential for doctoral students' RSE. The Faculty region suggested that program faculty's research perception and activity as well as their general support for the doctoral students' research were important. Faculty–student interactions, through providing an equal chance of research involvement to all students and valuing and respecting student research ideas, were examples of this region. Similarly, doctoral students also specified the unique environment among peer groups, where research behaviors, values, attitudes, norms, and activities become influential on students' RSE. Supporting the previous literature on contributions of positive peer interactions to individual's research experiences (Jorgensen & Duncan, 2015; Lamar et al., 2019; Love et al., 2007), the Peer region in our findings was a unique one. Researchers have not directly explored peer influence in relation to RSE, so peer influence as an informant of RSE appears to warrant further explanation on the interpersonal level.

Finally, supporting earlier research efforts on the importance of doctoral program related factors' influence on research training (Balkin, 2020; Lambie & Vaccaro, 2011; Morrison & Lent, 2014), the Doctoral Program region presented critical programmatic informants of doctoral students' RSE. Findings in this region emphasized the doctoral programs' effect through the general attitude toward acceptance of different research styles (e.g., field, laboratory), emphasis on the limited nature of all research, and research as both a social and independent experience, while attempting to generate non–anxiety provoking research experiences before dissertation and encouraging early research involvement. Supporting Balkin's (2020) results on the research training environments, counselor education doctoral students specified the importance of acknowledging student success, setting up reasonable research expectations, and providing necessary support (i.e., research teams, assigning students to a mentor from the first semester based on their interest, ensuring that their assistantship assignments benefit student development as well as supporting faculty work), exemplifying the program's intentional attention to students' personal and developmental needs to create an ideal environment for effective research training. Highlighting the systemic lens, including student, faculty, mentor, peers, and the program, every component of a doctoral training environment appeared to make an impact on doctoral students' RSE.

Lastly, the Support Outside the Program region was another unique finding in this study. Researchers have not reported on the potential impact of support outside of the doctoral program on students' RSE in the past. Perhaps as a reflection of our sample's professional identity, counselor education doctoral students may be more sensitive to recognize outside factors impacting their RSE beyond their doctoral program, particularly since the study procedures allowed participants to generate factors based on their phenomenological experiences. Yet, we also considered the Support Outside the Program region as part of the systemic approach to RSE phenomenon.

Limitations

There were multiple limitations to the current study. Generalizability of our findings is limited for the following reasons: Despite involving both qualitative and quantitative methods, due to its nonexperimental nature, causality cannot be inferred in CM. Thus, influential or contributing factors of RSE that appeared in this study may be specific to this sample. Similarly, considering the limitations related to convenience and snowball sampling used in the current study, another group of doctoral students, particularly a more diverse one, may have created different clusters and regions. Typical to CM studies, the demanding nature of procedures kept all participants from taking part in all steps of the study. Finally, specific focus of the current study was counselor education doctoral students; thus, the conceptualization of RSE obtained in this study must be considered carefully when used with doctoral students from other disciplines.

Implications for Research Training and Further Research

In the current study, our findings confirmed RSE as a complex and nuanced concept that is not solely dependent on the individual doctoral students, but also to the systems they are nested into (e.g., mentor, faculty, program). Therefore, our findings have implications for different stakeholders of the researcher training and identity development process (i.e., doctoral students, mentors, program faculty) as well as the researchers.

Counselor education doctoral students perceived themselves as the active agents of their research training process and responsible for using available resources beyond program requirements. Therefore, doctoral students may advocate for themselves through making intentional decisions and seeking out research experiences and opportunities in and out of their doctoral programs. For example, doctoral students may explore research interests by attending workshops or peer dissertation proposals and defenses, or by reviewing conceptual and empirical scholarly resources to support their RSE. Considering their own role in a mentoring relationship, doctoral students may seek out mentors in or out of their program based on the shared research

topic as well as methodological interests. Finally, doctoral students may consider seeking out collaborations with peers, which may feel less intimidating, while creating an environment for like-minded researchers to share their ideas and support each other in the process. However, not all doctoral students may come into or persist in their program knowing how to be their own active agents of RSE, or depending on program, research training environment may not be adequately set up. Therefore, our findings also pointed out the vital effects of support from the environment to facilitate doctoral students' agency in RSE.

In the very first of RSE related environmental supports, doctoral students highlighted mentor's qualities and diligent work with them as contributing to their RSE. Research mentors may pay particular attention to the presentation of their beliefs to their students' research skills and competence as much as their own research skills. While it may be easy to overlook, active acknowledgement of success (even small ones) may be critical in encouraging doctoral students to do better. Furthermore, mentors may consider creating intellectually stimulating conversations and experiences, where doctoral students feel comfortable asking questions, making mistakes, and learning from their mentors. Particularly how much respect they show to their mentees' ideas and needs, and the congruency of these messages in their verbal and nonverbal behaviors. Mentors may also communicate their expectations clearly, while supporting doctoral students by being available, inviting students to collaborate on research, and introducing students to professional activities. In other words, counselor education research mentors may consider integrating their counselor identities while working with mentees to hold safe and trusting space for confidence and growth to happen.

Doctoral students also specified the important role of both faculty and doctoral program processes on their RSE. Counselor education program faculty may reflect on their individual and collective approach to research and inform their program procedures, particularly, sequencing developmentally and pedagogically intentional research training environments. For example, counselor education faculty may stay active as scholars; share and support doctoral students' enthusiasm via talking about conferences, presentations, or published research studies; and be cognizant of the equal amount of opportunities they provide to all doctoral students. Furthermore, although challenging, counselor education faculty may consider finding a healthy balance between the standards of accrediting organizations (i.e., CACREP), limited timeframe in the doctoral programs (i.e., 3 years), and student needs and goals in designing their curriculum particularly focusing on research training. Through intentional planning, doctoral program faculty may create ways to demonstrate acceptance and practice of different research styles (e.g., field, laboratory), emphasize and normalize the limited nature of research, and highlight the social and individual aspects of research. Additionally, program faculty may pay special attention to peer influence on doctoral students' RSE. For example, doctoral programs' intentional efforts to create cohesive, supportive, and collaborative interactions among doctoral student peers may be critical for cohort interactions, experiences, and the research as well as general culture of the program.

Based on the procedures as well as findings of this study, several questions remain unanswered and require further attention in future studies. This study needs to be replicated with a more diverse group of doctoral students (e.g., race, age). Given the diverse nature of research training experiences, qualitative or mixed methods approaches may be a better fit to understand and operationalize each RSE region obtained in this study. Specifically, researchers may explore the mentorship relationship from both mentor and doctoral students' perspectives to detail our understanding of their contributions to RSE. Similarly, researchers may investigate peer interactions and outcomes of these interactions to inform counselor education doctoral programs with different components of peer dynamics and their impact on doctoral students' RSE. Finally, doctoral students' developmental level appeared as an influential factor of RSE in the current study. Thus, future studies on doctoral students' RSE conceptualization specifically focusing on the influence of their year in the program through cross-sectional and longitudinal

methodologies are warranted. Taking the developmental nature of the RSE concept into consideration, researchers may consider exploring the RSE concept, not only with counselor education doctoral students, but also with counseling master's students as well as early career faculty (e.g., assistant professors, clinical faculty), to further understand the RSE concept in the counselor education field.

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