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# A Qualitative Case Study of All-but-Dissertation Students at Risk for Dissertation Noncompletion: A New Model for Supporting Candidates to Doctoral Completion

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**Abstract**

This study identified emergent themes from the interview data of at-risk-for-completion doctoral candidates ($N = 13$; 59%), from a diverse demographic, who participated in a successful dissertation completion intervention program. The findings revealed four major themes including extrinsic factors, socioemotional, formal structures of the program, and personal development. The findings highlight the need for conscious processes used by vital leaders to develop program design in four key areas of leadership within a framework of open vital systems. Vital leadership acts as proxy agents to influence development of formal structures in the university leading to equity in educational opportunity for all students. Conclusions and parsimonious explicit implications are provided for doctoral program redesign focused on improving graduate student retention and completion rates for diverse student populations.

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This qualitative descriptive case study proposes that much can be learned from interviews of at-risk-for-completion doctoral students who successfully completed an intervention program designed to promote dissertation completion. Student completion rates across the nation in university doctoral programs range as low as 40% (Wao et al., 2011; Xu, 2014, p. 392; Zhou & Okahana, 2016). A variety of factors have been suggested in the literature for low completion rates in graduate programs including design of the doctoral programs, influences of program phases on student integration (Tinto, 1988), demographics of the doctoral student population (Ali & Kohun, 2006), behavior of faculty members/advisors, and institutional attitudes toward student retention (Simpson, 2013). Program administrators seek parsimonious frameworks as guides to implement supports for graduate students to completion. In addition, Pruitt-Logan (2003) recommended performing future research to determine the influencing of minority status on time to degree (TTD).

## *Purpose and Significance*

The purpose of this study was to develop a deep understanding of the features of a successful Dissertation Completion Grant Program (DCGP) intervention at the researchers' university. The qualifying students included in the DCGP had standing designations as all but dissertation (ABD) for a period between five and seven years since completing their coursework. The Dean of the School of Education sited the university's responsibility to noncompleters. The university provost approved the use of $150,000 of School of Education funds for a grant to assist 22 identified doctoral candidates. Students, who persisted and completed the requirements, received a tuition scholarship for up to the three semesters of the program.

The researchers sought to provide a rich thick description of the site, program design, context, participants, and doctoral candidates' perceptions of the influences supporting candidates' progress toward completion. Confidential student exit interviews, collected during a program review, provided data for this current study's analysis. Codes and themes provided constructs from which the researchers developed conclusions and assessed the overall success of the program. The case university Educational Leadership Doctoral Department

program leadership used the results to inform decisions related to the curriculum for future coursework and guidance for a doctoral program redesign. This study is significant because the data collected explores at-risk-for-completion student perceptions that identify values, elements of school cultures guiding doctoral programs, and factors that influence both positively and negatively toward graduate school completion rates.

## Overarching Question

The overarching question of this study was "How do the at-risk-for-completion dissertation candidates perceive and experience influences on their progress before and after participating in the DCGP for three semesters during the 2015/2016 school year?" The following section of this article provides a review of relevant literature on the topic of graduate student completion. Subsequent will be a description of the methods, results, analyses, conclusions, implications, and recommendations.

## Literature Review

The lead author performed a purposeful selection and review of 41 articles representing a broad range of study designs until saturation of the topic was evident across a range of theories, such as extended TTD, factors contributing to dropout, doctoral noncompletion, and factors contributing to graduate student retention. The literature called for external mandates to promote systematic improvement in graduate programs because of the implications they have on the national welfare including "economic and social progress, cultural and intellectual life, and political and moral leadership" (Bowen & Rudenstine, 1992, p. 15). Leaders' conscious choice to develop equitable processes in doctoral program design becomes an ethical mandate. Diverse subgroups of students may need additional supports to ensure successful completion. For example, racial minority and female students were less likely to complete their graduate programs than their male counterparts were (Xu, 2014). One factor influencing women noncompletion included fewer discussions with advisors than male students had. Minority students were reported as spending less time with their professors than majority students (Lovitts, 1996). Underrepresented minority students, from low socioeconomic backgrounds, older students, students from small rural communities, and those who lived off campus, showed greater difficulty integrating into the formal and informal structures (Tinto, 1982). The literature on the topic of graduate student retention, completion, and TTD is vast and varied. This study provides a parsimonious model useful to organize the concepts and theories identified into a comprehensible framework. Theoretical frameworks help to provide clarity to complex topics and are useful to develop interpretations, inferences from the data, and future

interventions. Following is a discussion of the leadership within open vital systems (LOVS) model (Hanson, 2017) used as the theoretical lens in this study.

## LOVS Model

The LOVS model (Hanson, 2017) provides a framework to understand the relationship and application of the many and varied factors found in the literature on the topic of graduate retention and TTD and for suggesting interventions for successful candidate degree completion. The LOVS model organizes the variety of factors for equity in educational outcomes into four categories: vital leadership, informal open systems, formal flexible structures, and individual integration leading to personal development, autonomy, and self-authorship. Hanson (2017) developed the LOVS model over several years consolidating research on leaders' influence within their systems leading to healthy structures. Healthy structures were shown to promote positive communication, knowledge transfer, and well-being for the individual and the group. When a leader acts as proxy agent for all individuals in the group, he or she designs formal systems that ensure positive social norms promoting trust, individual agency, and personal growth.

## Vital Leadership Promoting Open Social Networks

The context of the university, and of the graduate school/departments, is a central contributor to candidate attrition or retention. Individuals in positons of leadership, both administrators and faculty, can act as proxy agents for all students and can use their influence to design systems and processes that recognize diverse learners' goals and cultural capital (Hanson, 2017; Simpson & Johnston, 2006). Following is a discussion of elements of the LOVS model that vital leaders can promote to increase candidates' likelihood of completing their degrees. First, the features of *Vital Leadership* are presented including ways a vital leader acts as a proxy agent for all students. Subsequently, discussions, under the headings of *Informal Structures* and *Formal Structures*, provide elements that work through the systems to promote students' integration, understanding of the expectations, and successful personal development to self-authorship and completion. Finally, the section titled *Integration* provides a discussion of elements supporting student completion from the perspective of the student. Although each section includes unique elements contributing to student success, all features of the model work together and overlap. The features have the common goal of developing the candidate's well-being as an autonomous individual, who is self-motivated and capable of self-authorship to dissertation project and degree completion. Overlap of the features compares favorably with Campbell and Tierney's (2015) description of a "*distribution of*

*structures* [that] refers to a model of contexts that work together to integrate doctoral students into the graduate school experience" (p. 1).

*Vital Leadership.* The LOVS model (Hanson, 2017) describes the proxy influence of a vital leader to embed healthy social norms into the informal and formal systems of the organization. Acting in proxy means to use the power inherent in one's leadership position/role to leverage changes in the system that provide resources needed for candidate success. Student satisfaction develops from vital leaders, including university, school, and department level administrators, dissertation chairs, committee members, and mentors, who understand students' unique and common needs. A proxy agent clearly and explicitly communicates the rules, regulations, structures, and processes of the department, school, and doctoral program. The quality of the communication, perceived sense of fairness, caring of the leaders, and the level of consistency and guidance provided to students directly influences students' completion rates (Bair & Haworth, 1999). Another resource proxies provide is supporting students' participation in the social and intellectual life of the program and university, which Tinto (1988) explained is the same as effective retention.

*Influence of the Social Context.* The relationship between dissertation completion and cognitive, psychosocial, and socioemotional factors provides a framework of social context versus social constructs (Brickman et al., 1982; Lovitts, 1996). Baker and Lattuca (2010) emphasized the important influence of relationships on the learning process, suggesting the social processes of an institution and program can "either facilitate or hamper learning and identity development in graduate studies" (p. 220). Increased integration into the cultural and social elements of a program results in increased understanding of the tasks required.

*Task integration*. Tinto (1975) explained task integration (TI) means a candidate understands the formal and informal expectations of the doctoral program. As the level of formal interactions between peers and faculty increase, the student's ability to perform the complex tasks required for the degree completion improves. Graduate students showed greater social adjustment when they had both TI and socioemotional integration (SI).

*Socioemotional factors* include the level of connection, participation, and identification the candidate feels with those at the university (Fox, 2007; Novak, 1990; Sillitoe & Webb, 2007). SI is the result of casual interactions outside the formal school setting. SI results from the need for identification with others with common interests. TI and SI have an interaction effect. A mutual relationship exists between one's cognitive map of program expectation and a student's successful integration into the program (Lovitts, 1996). Candidates with both TI and SI were shown in the research to persist to degree completion unless they were required to leave due to external factors, such as financial need, ill-health, or family matters (Ali & Kohun, 2006).

In contrast, graduate students with low levels of TI and SI had a higher likelihood of negative affect, feelings of detachment and isolation, and an increased probability of leaving the program early (Simpson, 2013).

*Consequences of Student Failure to Integrate.* Isolation was a principal factor in the high probability of college student dropout (Ali & Kohun, 2007). Time together reduces a sense of isolation as well as the actual distance from others. Time together can be face-to-face, communicating through email or phone, and especially in online programs, includes synchronous video meetings, online chat rooms, messaging services, and learning management systems that support high levels of participant interaction. The formal system should require students spend time together in structured settings. Formal requirements take away the embarrassment of intervention-type gatherings for students at risk (social outliers) because students know all are required to attend. Doctoral candidates' time in the school context is necessary for the process of building social constructs, relationship development, and bonding that promotes the transfer of information and builds student cognitive maps of the expectations of the program. To be successful, doctoral students need a clear understanding of their role and the university's role in completing each task of the dissertation process (Kluever & Green, 1998). When students understand the expectations, they are more empowered to perform them.

*Transactional distance* (TD) theory can be used to understand influences on student dropout by considering the inherent distance between students and institutional representatives. Moore (1997) first used the term to describe distance education. As a pedagogical concept, TD refers to "... the universe of teacher-learner relationships that exist when learners and instructors are separated by space and/or time" (para. 1). Student self-direction is profoundly affected by "psychological and communications space" (para. 2), that is, separation because it affects the teaching and learning process. TD occurs in face-to-face as well as online programs and varies in its degree by teacher and student. In an effort to minimize negative effects from separation (time/space) between teacher and student, vital leaders can act as proxy agents creating department processes leading to opportunities for student participation. Simpson (2013) described this as "institutionalized proactive motivational support" that increased communication (p. 112). For example, Ruud et al. (2016) wrote the most prevalent reason for a candidate staying in the program was a supportive advisor. Specifically, Litalien and Guay (2015) reported completers received greater support for their psychological needs from their advisor than noncompleters did. They proposed the support worked through increasing students' perceived sense of competence. Faculty can reduce the TD by being proactive in meeting with students and providing explicit information of timelines and requirements. Evidence of the effect of reduced TD comes from the higher rates of attrition for students in the humanities and non-laboratory-based

social sciences than for sciences and laboratory-based social sciences where students work closely, sometimes daily, with their advisors and cohort members (Lovitts, 1996). Effective programs develop formal processes that support and communicate student understanding of the expectations of the doctoral degree and dissertation process, thereby increasing student-perceived competence and reduced dropout intentions (Litalien & Guay, 2015). This occurs through vital leadership influencing the design of the informal and formal systems leading to student development, autonomy, well-being, and ultimately the skills of self-authorship to complete their dissertation. Next, a discussion of the explicit processes useful in the formal and informal structures of the system is provided.

## Formal Structures

Programs that embed flexible systems, processes, and hierarchy more easily respond to the unique characteristics, backgrounds, and interests of students and work to align student goals with the goals of the program, a key feature of formal systems that support student retention and completion. Following is a discussion of concepts on the topic of dissertation completion, graduate student retention, and TTD situated in the model of LOVS formal structures (Hanson, 2017).

*Aligning Student Goals With System Goals.* During the process of a doctoral journey, students enter the university, perform coursework, demonstrate progress through assessments, and ultimately self-author a dissertation. Each change of circumstance is a transition. Schlossberg (1981) described a transition as an event or nonevent that "results in a change in assumptions about oneself and the world and thus requires a corresponding change in one's behavior and relationships" (p. 5). The individual's adaptation and development through a transition depends upon balancing the individual's pre and posttransition environments (e.g., perceptions, supports, and individual characteristics). The transition theory model highlights the importance of aligning the individual's goals and values with the program's goals. Therefore, candidates can be encouraged to select topics of value to them. Candidates would also select dissertation committee members whose research expertise align with that topic rather than selecting a topic simply because it supports a dissertation chair's research agenda (Kelley & Salisbury-Glennon, 2015). Thus, aligning the goals of the individual with the institution, department, and advisor promotes identification, integration, and acceptance of the expectations of the institution, ultimately leading to successful transitions. Schlossberg (1981) attempted to develop a framework "in which transitions . . . can be analyzed and possible interventions formulated" (p. 5). For example, during the process of selecting a graduate school and program, the student seeks some alignment. However, many variables of a university, department, and faculty remain unknown to students until they engage the

program. Early identification of students at risk for completion is a critical component of the LOVS model. In the current atmosphere of data science, student demographic information, data from exit interviews of prior candidates, and other relevant data records can be used to predict success rates of incoming cohorts and identify target areas for early intervention. Vital leaders can provide proactive supports to increase student retention, skills, and sense of control leading to self-authorship. Vital leaders seek to align students' unique qualities with the program goals. Proactive identification of student needs is an example of the university taking responsibility for aspects of student success that lie within the domain of the university and programs. This is discussed further in the next section.

*Responsibility for Problems and Solutions.* The literature reports significant differences between the university personnel and students' attributions of responsibility for student completion of the doctoral dissertation (Kluever & Green, 1998). For example, Wao et al. (2011) reported students expected faculty to prepare them with the academic foundation to conduct independent research, while faculty reported they expected students to be responsible to develop these skills themselves or to come prepared from prior institutional education. Vital leaders, according to the LOVS model, take responsibility for problems and solutions that fall within the university and department domains and use proxy agency to develop formal systems that provide explicit training to students that develops their understandings of roles and responsibilities in completing their degree.

Brickman et al. (1982) proposed four worldview orientations based upon the responsibility attributed for causing and solving one's problems. Organizations, such as universities, can also hold these orientations. Brickman et al. suggested that one's orientation toward taking responsibility for solving an identified problem was more effective and helpful than assigning blame for the problem, which had little influence on the outcome and was associated with a sense of helplessness. The four orientations include moral, compensatory, medical, and enlightenment. The moral model suggests individuals hold responsibility for both creating and solving their problems. Under the compensatory orientation, though individuals feel they do not hold responsibility for their problems, the individual does feel he or she holds the power to solve the problems he faces. An interesting model, the medical model, holds that the individual is neither responsible for causing his or her problems nor for solving them. Brickman et al. (1982) suggested the medical model orientation is "strikingly . . . embodied" in the medical profession (p. 372). The final model, the enlightenment model, holds that people are to blame for their problems, though not responsible for solving them.

Brickman et al. (1982) hypothesized that the compensatory and moral orientations promote individual competence more than the medical and enlightenment models, where one does not hold responsibility for solutions. Brickman

et al. further suggested the enlightenment model could be applied to understand students who failed to complete their dissertations and is useful to suggest interventions. For example, though students stated they were responsible for their problem of progressing on their degree, they felt they lacked the ability to solve the problem themselves. Necessary interventions suggested to resolve the ABD status included developing processes that increased advisor, financial, and family supports. Following are recommendations for designing formal structures that support student retention and completion of degree.

## *Structure Recommendations for Doctoral Program Formal Systems*

Meeting together in formal and informal settings. Universities can provide a regular series of department gatherings throughout the program to connect and build relationships and bonding with students. For example, Campbell and Tierney (2015) suggested holding seminars where faculty share their research and departmental gatherings, such as "brown bag lunches, colloquia, and happy hours" (p. 2). Early orientations are critical for developing the intervention process. Mandatory student orientations throughout the year, and mentorship programs with peer students, will encourage matches between students and advisors who can provide emotional and social supports.

*Faculty development* is a key intervention and formal system tool. Programs can provide faculty members with training in ways they can collaborate with students. Teach the LOVS model elements of vital leadership, which highlights the leaders' roles in going beyond the formal rules and regulations of the job to promote relationship building and proxy agency to support student well-being (Hanson, 2017). Faculty and advisors can receive training in how to identify and support students' psychological needs, as well as academic needs, in ways that stay within the boundaries of reasonable expectations and propriety. For example, students of minority status such as students of non-male gender, students of color, students from low socioeconomic backgrounds, and international students were shown to be at a disadvantage and to need "additional supports and closer follow-up" (Litalien & Guay, 2015, p. 229). Support faculty in developing overviews of courses they will teach in the first cohort year and provide to students in advance. Develop faculty skills in supporting students to purposefully and actively search for a dissertation topic and chair that match their goals and unique capacities and background (Campbell & Tierney, 2015).

*Accountability* for administrator behaviors that promote student development include ensuring dissertation chairs and mentors hold regular meetings with their students to develop clear expectations, advise students on setting a work schedule and timetable for completion of drafts. Faculty can keep a log and journal of key strategies and activities used to support student success and share these at regular meetings. Students must be assured there is no penalty for changing dissertation advisors/chairs if they find they are not progressing

and not receiving timely feedback or if there is any misalignment in the research topics.

*Mentorship programs* create complementary relationships between entering students and advanced graduate students. These programs can also provide faculty advisor/mentors to help students with questions and processes until candidates have identified and secured a dissertation chair. Require students to complete a preacceptance campus tour and visit with faculty and current cohorts. Provide office space for candidates who travel large distances to campus in face-to-face programs, financial aid for students with limited resources, regular mentor meetings on a timely basis, with student accountability for developing a plan of action, timelines and keeping them, and peer-to-peer collaborations where students learn from successful senior cohorts (Lovitts, 2001 in Campbell & Tierney, 2015).

*Exit interviews* of completers and noncompleters provide key information to the program for improvement. Vital leaders are responsive to student input. University processes for continuous improvement should ensure the student voice is included in assessing doctoral program effectiveness. Include quantitative items on a survey as well as interviews with open-ended questions that seek qualitative information on program quality of the structures as well as faculty advisers (Bowen & Rudenstine, 1992; Campbell & Tierney, 2015). Data from exit interviews should be included in the university database to support early identification of at-risk candidates and key interventions.

*For online programs*, formal structures may differ somewhat though the goal remains the same—to reduce TD and promote student engagement, retention, development, and success. Key areas for consideration in online environments include the formal elements of the instructional design, styles of communication used, and the instructor's skills in promoting immediacy, or timely engagement of the students (Fahara & Castro, 2015). Hanshaw and Hanson (2019) concurred and provided an explicit online scenario-based learning approach including elements of microlearning. The scenario-based learning approach included five steps for using online strategies that promoted learners engagement and learning outcomes. First, preplanning to develop, and explicitly communicate, clear objectives. This aligns with face-to-face strategies that promote TI. Second, delivering instructional content embedded in the culture where the learner works and lives, using short learning scenarios and links to open educational resources. Third, providing challenging assessment tasks at three levels: creative opportunities for the individual as well as collaborative online synchronous and asynchronous group discussions. Fourth, sharing artifacts using modalities that record student video responses to relevant topic prompts and allowing feedback from other students. This process facilitates students hearing contrary perspectives, seeing examples of real-time solutions to day-to-day situations, and opportunities for students to co-construct meaning. Fifth, writing a self-reflection to develop metacognitive skills and self-regulation. The online learning context can

provide structures to accomplish student reflection of the online learning experience as well as promote student goal development for future personal improvement (p. 154).

## Integration

Personal growth and well-being leading to self-authorship is the result of successful integration into a system. The elements of the LOVS model can be integrated into the formal and informal systems of the University for supporting doctoral students to successful completion of their degree. This section discusses key elements found in the literature that promote student development during the doctoral program from the perspective of the individual as opposed to the system perspective.

*Self-Authorship.* A student's personal growth occurs through individual agency. Self-authorship is the "ability to author one's thinking, feeling, and social relating" to function successfully as an adult (Baxter-Magolda & King, 1951, p. 503). However, research on college students revealed they often have been socialized to extrinsic motivators and develop their beliefs, personal identity, and ideas about healthy relationships from others, thus evidencing a lack of cognitive and reflective judgment that is necessary for self-authorship. Similarly, using a lens of self-determination theory, Litalien et al. (2015) recommended doctoral program designs that increased student autonomy, reduced extrinsic control elements, and developed student well-being and choice to engage learning.

*Sense of Control (Autonomy).* The processes and procedures of universities and their graduate departments have an effect on students' sense of control. A reduced sense of control reduces students' motivation. "The higher the degree of integration of the individual into the college systems, the greater will be his commitment to the specific institution and to the goal of college completion" (Tinto, 1975, p. 96). Shaver (1985 in Kluever & Green, 1998) explained individuals give reasons for the outcomes of their behavior, such as for success or failure. One's social environment can be seen as a system of "cause and effect" and can be used as a lens to explain doctoral students' needs for a balanced program (p. 521). Students need perceptions of personal agency over the dominant external obstacle of task difficulty, for them to persist. This particular situation requires proxy agency on the part of vital leaders to ensure the university and departments provide sufficient access to resources and transfer of knowledge for students to maintain perceptions of competency and motivation to move forward.

*Self-determination theory.* Deci and Ryan (1985, 2012) proposed a theory of motivation called self-determination theory that purports a variety of motivations direct individual behavior. Intrinsic motivation comes from enjoyment of an activity "for its own sake." Individuals experience extrinsic motivators as a "means to an end," not from the activity itself (Litalien et al., 2015, p. 2). Extrinsic motivation was further divided into four types ranging from low to high including external, introjected, identified, and integrated. Integrated regulation demonstrates the highest form of autonomous behavior by an individual. External regulation is the least autonomous. The motivators/regulators were then further categorized into two broad groups, autonomous (intrinsic, integrated, and identified) and controlled (external and introjected). The literature reported research studies associated the autonomous category of motivators with positive outcomes such as persistence, high performance, and individual perceptions of wellbeing. Doctoral programs designed to enhance the three autonomous types of motivation and individual regulation were shown to produce the best outcomes (Litalien et al., 2015).

*Attribution theory* is another lens that can be used to explore student noncompletion. For example, researchers reported students attributed their noncompletion to a fear of failure, resulting from the belief that academic ability is innate. If learning requires effort, then the student may feel he or she lacks ability, resulting in feelings of helplessness, lack of control, and a fixed mindset (Clary & Thiemann, 2002; Dweck, 2008; Hanson, 2017; King & Kitchener, 2010; Simpson & Johnston, 2006). When a student reports a fixed mindset, this may not indicate that the student believes that she or he cannot learn through effort but that the context prevents it (Ariely, 2009; Hanson, 2017). Chao et al. (2017) reported that though the "growth mindset intervention did facilitate performance through persistence, [it only did so] when the incentive system imparted individuals with a sense of autonomy" (p. 1402).

*Stages of Development.* Students' individual characteristics influenced elements of their success in doctoral programs, significantly their ability to successfully transition through various phases of the doctoral program. Tinto (1988) explained that the doctoral journey marked the "intellectual and moral development of the individual" and compared the process with the rites of passage described in ethnographic studies (p. 453). The purpose of the doctoral program has been described as to create a "major transition in how you think and what you do" (Hawlery's, 2003, as cited in Ali & Kohun, 2006, p. 21) and to be ready to "fulfill the role and status" (Lovitts, 1996, p. 6) to "transmit, create, and criticize, [society's] culture and social organization" (Lovitts, 1996, p. 3). During the last stage of a doctoral program, most candidates must conduct independent research that will set them apart from their peers. Many students are not sufficiently prepared and lack the skills and knowledge of the requirements of writing a dissertation. In addition, if unprepared, their transition to

independence may result in feelings of isolation. The following paragraphs discuss experiences of doctoral candidates as they progress through their doctoral program and recommendations for interventions to support students to successful completion.

*Transition stages of doctoral programs.* Van Gennep (1960 in Tinto, 1988) described three transition periods of an individual from infancy to adulthood—"the stages of separation, transition, and incorporation. Each stage served to move individuals from youthful participation to full membership in adult society" (p. 440). Each stage represents a change in behaviors and relationships with others in the group. Rituals and ceremonies indicate the individual's achievements and mark each transition. Tinto (1988) believed students in doctoral programs experience similar transitions and require similar training and supports that mark changes in perceptions and behaviors of the candidate. Therefore, Tinto identified three main stages of passage for a candidate's successful integration into the university program community—separation, transition, and incorporation. Students' success at the three stages require distinctly different behaviors.

In Stage 1—separation—students must part from the past, dissociating to some degree from familiar friends and communities. Students living at home encounter additional stressors if the family members, work community, or associates do not support their growth and development to independence. Stage 2—transition to college—requires the student to take on a new identity with cohort peers, program, and their university. This requires establishing personal bonds and identifying those characteristics that are part of the community membership. This is a unique area where proxy agency can support students by promoting an awareness of school norms and cultural identities. Stage 3—incorporation—is the integration stage. Students complete the final stage when they successfully transition into the college community. Tinto (1988) explained, " . . . social interactions are the primary vehicle through which such integrative associations arise, individuals have to establish contact with other members of the institution, student and faculty" (p. 446).

As previously discussed, students require assistance to develop integration. Without such supports, they may experience stress from the transition process and may lack the ability to cope. Doctoral programs rarely provide the assistance and ceremonial recognition afforded by societies for successful transitions. Tinto (1988) reported that transition to the independent stage of the dissertation strongly influenced a student's potential for successful completion. University doctoral programs can learn from the evidence provided in the literature and develop processes and faculty skills that recognize and support integration of new cohort students into the norms and behavioral patterns of the program. The norms and behaviors may first need to be made explicit to the faculty and staff before effective interventions can be developed.

In sum, this study hoped to organize a review of the literature according to the framework of the LOVS model (Hanson, 2017) that might provide increased understanding of the many and varied concepts related to graduate student retention, completion, and TTD. When leaders in universities act as proxy agents to design and implement formal structures that promote relationships between faculty and students, the result is increased communication and student support to meet students' psychosocial needs. Students then are more likely to integrate into the university and graduate program community. When students integrate, their abilities to understand the tasks required for completion and their sense of competence increases. Increased competence provides students with autonomous motivation to persist through challenges (Bandura, 2001), resulting in gaining skills needed for self-authorship and completion of the dissertation. The LOVS model overlays well with the literature on the topic and provides structure for developing interventions in doctoral programs to support students at risk for completion. Following is a discussion of the methods used to perform this current study.

## Methods

### *Study Design*

This current study was performed as a deductive analysis of the findings of preexisting data drawn from a program review of the DCGP described in the introduction of this article. The boundaries of the case under study included the Educational Leadership Dissertation Intervention Program review at a single university during the year 2015/2016. A review of relevant literature, on related topics of graduate student retention and completion, guided the development of the interview protocol, the primary data collection instrument. The design of the study was a qualitative descriptive case study research design informed by Yin (2018). The University's institutional review board reviewed and approved the design of the study to ensure protection of the participants' confidentiality and rights. Researchers redacted interview data where any identifying information was present to ensure confidentiality of the participants. To protect against negative consequences from researcher bias, the study divided the research into two parts. First, the second and third authors of this study, both professors in the Educational Leadership department at the university where the DCGP took place, performed the data analysis of the preexisting interviews from the program review. The two researchers did not work in the doctoral program or with any of the students in the study. The researchers made conscious effort to seek the true meaning of the participants' responses, though they hoped for a positive outcome from the data. Before the data analyses began, the two researchers met together to review the processes they would use. They then performed separate test analysis of the data using one interview each.

The researchers compared their individual results to test the interrater reliability of their qualitative data analysis processes. The two researchers then divided the interview transcripts, from the DCGP review, between them and performed the analyses, including coding the participants' comments from the interviews and identifying emergent themes. After the separate analyses were completed, the second and third authors met again and combined their results, creating a combined report with tables and theme names, which they provided to the lead author of this current study.

The lead author did not participate in the inductive analysis with the second and third authors to avoid undue influence on the deductive analysis. The lead author triangulated the findings provided from the inductive analysis with the literature and performed the deductive analysis seeking common themes that organized, where applicable, within the LOVS framework (Hanson, 2017). The concepts found in the review of the literature on the topic of graduate school retention and TTD fit well within the LOVS framework provided in this study. Therefore, the LOVS framework can be considered a reliable lens to triangulate the findings of the study, interpret the data, ensure valid conclusions, develop inferences and conclusions for informing future program designs, develop interventions for at-risk populations, and to add to the literature on the topic. The following sections provide a description of the methods used in the study, results of the analysis, discussion of the results, conclusions drawn, implications, limitations, and suggestions for future research.

*Researcher Positionality and Bias.* Before conducting the study, the researchers developed personal positionality statements to identify potential biases that might negatively influence the data collection and analysis. Protocols were included in the study design to protect against negative influences from confirmation bias, question-order bias, leading questions, and wording bias (Shah, 2019, para. 8). Confirmation bias occurs when a researcher seeks to confirm a preexisting perception using the participant data. To avoid negative influences from the natural human tendency to seek information that confirms one's beliefs, the researchers included rigorous research design, extensive literature review for triangulation of the data, and expert review. Two of the researchers developed the codes and themes independently of the third, and the third deductively compared the themes to the LOVS framework. Question-order bias occurs from the influence one question may have on subsequent questions in the interview protocol. Participants may reflect on an answer to a previous question and influence their response to a subsequent question. The researchers sought to ensure each question was independent of the others. The more general questions were ordered first and more sensitive, or specific, followed.

Leading questions and wording bias occurs when the interview question wording effectively prompts, or directs, a particular response that is biased.

To avoid leading questions, the researcher designed a semi-structured open-ended protocol that allowed the direction of participants' responses to vary based upon their actual perspectives and experiences. Triangulation with the literature and expert review provided safeguards to ensure validity of the conclusions drawn from the study.

The data collection occurred during the DCGP review, over the period of the summer 2016, on-site during alternating Saturday classes from 9:00 a.m. to 12:00 noon, through telephone interview, or during hours arranged by mutual consent between participants and interviewee. The program reviewers provided instructions to the participants using the informed consent document, encouraged the participants to ask questions, provided the participants with a signed copy, obtained the participants' signature before data collection began, and notified the participants of the voluntary nature of the study and the confidentiality of their responses. Reviewers collected signed consent forms and kept them in a separate envelope. Due to the small cell size of the study, the reviewers collected no identifying participant information during the interview process. Rev.com transcription service transcribed the interviews, word-for-word, from the digital recordings. One interviewer hand transcribed a participant's responses. Researchers, current authors of this study, redacted any personal identifying information from the interviews to ensure participant confidentiality. Data were secured on a password-protected computer.

## *Participants*

Thirty potential at-risk-for-completion candidates were identified in the Educational Leadership Doctoral Program at the case school. Of the 30 potential candidates, 22 individuals qualified and agreed to the conditions of the DCGP. At the end of the program, all participants were invited to participate in a program review, which included interviews with faculty regarding their perceptions of the program and personal experiences related to their journey. Thirteen of the 22 possible participants (59%) in the DCGP agreed to be interviewed. In an effort to ensure confidentiality, and due to the small cell size of the population used in this study, no key was kept to connect the participants' ($N = 13$) responses with any identifying information or personal characteristics/demographics.

Criteria for inclusion were enrollment in the DCGP, having entered the university from the years 2005–2010, and identification as being at risk for completion. Demographics of the 22 students enrolled in the DCGP included 4 male (18%) and 18 female (82%), African Americans ($N = 6$), Latinos ($N = 4$), Asians ($N = 4$), and Caucasians ($N = 8$). Thirty-two percent of participants were Caucasian, while 67% were of the other ethnic groups as indicated. The candidates in the program held a variety of employment positons within education.

Nine were principals, nine were teachers, and four worked within education in other roles.

### Instruments

A self-developed, open-ended, semistructured interview protocol was developed from a review of the literature, the researchers' professional and personal experiences, and students' comments during the program. The interview protocol asked questions about students' perceptions and experiences related to barriers that had delayed their completion of their dissertation prior to entering the program, experiences they viewed as helpful in overcoming those barriers during the DCGP, and meaningful experiences contributing to their personal growth. For example, "Please share any barriers you had to completing or progressing on your dissertation prior to the dissertation research project grant," and "Please share any variables from your experience with the dissertation completion grant project that contributed to overcoming these barriers and contributed to your moving forward on your dissertation completion." A pilot study provided evidence of the reliability of the interview protocol to collect reliable data to answer the research question and to ensure the questions were understood similarly by each participant.

### Data Analyses

The transcriptions of the interviews were distributed to two members of the research team, who had not been dissertation mentors. Researchers performed qualitative manifest content analysis on the text, classifying the large amounts of data into a comprehensible number of categories representing similar meanings from the participants' responses.Content analysis explores the central phenomenon under study and is a method that can be used in an inductive or deductive manner. A participant's response provides the data coded as words (Bengtsson, 2016). First, the researchers coded the data into categories in light of the overarching research question. A thematic analysis of the data followed that included descriptive coding to find emerging topics in the interview responses that gave students a voice in the assessment and review process of the DCGP processes. Verbatim coding included actual words and phrases of the participants as labels for portions of text. Categories were then determined from the codes, generated in the first cycle, and emergent themes identified for the essential experiences, processes, or relationships described by the participants (Saldaña, 2015). A directed content analysis approach provided themes from the inductive approach that were triangulated with the literature. A deductive approach was then used to rename themes to be consistent with existing theory, where applicable. This deductive approach extended and validated the findings and assisted in answering the research question (Hsieh & Shannon, 2005;

MacNamara, 2003). The deductive approach compared themes emerging from the analyses with the four categories of the LOVS model. The results organized the literature and findings to provide valid conclusions and contribute new and useful implications for the literature.

## *Findings of the Study*

The researchers coded a total number of 156 comments into the identified themes. Four major themes emerged from the analysis of the participants' interviews. The researchers named the themes personal, psychosocial, formal structures, and personal growth experiences.

*Theme 1: Extrinsic Factors, Personal Barriers, and Facilitators.* Of the 156 coded participant comments, 26 (16%) related to personal barriers before entering the DCGP. Personal barriers to dissertation completion identified in the data included work obligations, life interruptions, and financial issues. Several of the interviewees shared that the demands of their "day job" and work obligations were a primary impediment to completing the process. Some interviewees shared that their personal life experiences such as relationship with spouse, starting and raising a family, and requirements of family life presented a barrier for them. Examples of life interruptions included having children, juggling work and family, inability to find a margin of time to work on the dissertation, dealing with an autistic child, and childcare issues. The ability to keep paying tuition throughout the dissertation writing process was a financial burden to some candidates, especially combined with family issues and maintaining a family household budget. One candidate shared about losing his or her job while in the program. The supervisor, who had "fired" the participant, was in the same doctoral program. This created a psychological aversion to continue in the program and complete the dissertation. No participant commented on personal facilitators prior to entering the DCGP. (The University provided scholarships for funding tuition, and this alleviated a personal financial barrier for some. The tuition scholarship was part of the formal structure of the DCGP and is included under the formal structures section.)

*Theme 2: Psychosocial Barriers and Facilitators.* Eighty-nine (57%) of the participants' comments coded for this study were related to affective, psychological, and social elements and were labeled as psychosocial barriers and facilitators. Barriers before DCGP included a sense of being "overwhelmed" and "isolated." Some candidates shared that upon completion of the coursework, their lack of understanding and not knowing what to do or where to go to get help contributed to a feeling of being "on their own." Participants also struggled with the relationship with their dissertation chair regarding differences between the topic of interest to the candidate that did not have relevance for the chair, failure on

the part of the chair to provide assistance when requested, poor attitude on the part of the chair, nonaccepting, turnover of faculty, and changes in the chair. Participants reported that the DCGP facilitated student development of coping strategies that provided the feeling of a renewed sense of belonging, a sense of support from the cohort members, and elimination of isolation. Interviewees shared that once they had reentered the program under the DCGP, they no longer felt like they were on their own. Some candidates described the DCGP as a three-level system of personal support including the chair of their dissertation, a personal dissertation coach providing direct 1:1 support, and their cohort team working alongside of them on a step-by-step basis through the dissertation process. Candidate self-reports included statements of a strong emotional connection with their cohort and positive feelings from working together to complete their individual dissertations. The emotional component of working together with their colleagues helped them to believe the dissertation was "doable." The combination of peer and faculty coaches provided a broad support network that encouraged the participants to persevere through their initial concerns related to the challenges of doctoral-level work. The opportunity for feedback, referred to as "think and check" and "bouncing things off" the group, encouraged the participants to keep moving forward on the dissertation. Some of the participants shared how much they valued the University for caring about them as individuals and seeking them out despite their disconnection from the program. Participants listed a variety of perceptions saying the University was interested to listen and willing to provide financial support through scholarships. Participants reported these behaviors as "caring and supportive," which motivated their return to the program. One student shared how this changed his thinking. He no longer had the sense that he was just a "cash cow" for the University paying for units in a "typical" open-ended period toward completing the dissertation. Finally, participants described the "new" faculty in the DCGP as "more personable," "supportive," and "connecting on a personal level."

*Theme 3: Formal Structures.* Of the 156 coded comments for this study, 25 (16%) related to department or university structures, procedures, and processes as barriers and/or facilitators to their progress toward completion, and the theme was named Formal Structures. Only one barrier was noted in the Formal Structures category, which referred to the lack of program guidance. An amorphous atmosphere contributed to their desire to discontinue work on the dissertation.

Participants noted several Formal Structure facilitators of the DCGP including a structure to help them conceptualize the phases of the dissertation process, biweekly structured Saturday meetings, clear goals, and time lines. The Saturday meetings provided a structure and a regulated time that some candidates found helpful because it was built into their calendars around their personal family events and work obligations. In addition, candidates shared that they knew that

they would be "missed" at the meetings (accountability) by both their coach and fellow students if they did not attend a required session, so they felt that they had to "show up" and "step up to the plate" making it more difficult and less likely that they would be tempted to "skip." The DCGP structure required goals and time lines submitted prior to the Saturday meetings, and these were checked and revised at the Saturday meetings. DCGP funded tuition in the form of scholarships for candidates who met the requirements of the program during their participation in the grant program. One participant described having financial support to help finish the dissertation as creating a feeling of "obligation" or motivation, "[T]hey're paying, I have to go . . . " The scholarship support was listed here as a formal structure facilitator because the funding was part of the formal structure of the DCGP.

*Theme 4: Personal Growth.* Of the 156 comments coded for this study, 16 (11%) related to personal growth experiences. The subtheme categories included developing confidence, modeling caring for others, and developing self-motivation. Examples included an increase in personal confidence and comfort in delivering professional presentations and being the "key person" in front of a group. Some candidates wanted to emulate the caring they had received into their leadership style treating others in challenging situations with grace and humility. It was very meaningful for some to learn within themselves that they could persist, and stay positive, overcoming the initial negativity, or "I can never complete this," type of attitude that led to their abandonment of their dissertation progress in the initial program design.

## *Deductive Analyses*

The four themes from the analyses of the interview data were compared with the features of the LOVS framework. The LOVS framework was found favorable for use as a lens to view the results when triangulating with the literature. The DCGP achieved the goal of developing relationships and collaboration between cohort members and coaches resulting in increased sense of belonging, personal supportive relationships, caring, sharing encouragement, and increased productivity. The Dean of the School of Education recognized a need for redesign of University practices that increased support for the at-risk-for-completion candidates to succeed. The DCGP was designed to meet the unique needs of these students; created new structures to increase the clarity and communication of formal task expectations; required accountability for task completion, mandatory, biweekly, structured meetings; and provided incentives (tuition scholarships) to support student participation. The program design provided accessible tasks, ensuring student success, resulting in students' increased confidence, desire to model caring to others, self-regulation, sense of self-efficacy, and personal agency to complete their dissertations.

The following sections provides a discussion of the results of the analysis of the data including a comparison with the literature, a conclusion, limitations of the study, and recommendations for future research to build on the results from this study.

## Discussion and Conclusion

This qualitative descriptive case study sought to understand the features of a successful DCGP intervention project resulting in significant increases in doctoral candidate completion rates. Themes that emerged from the participants' responses to a semistructured interview protocol at a medium sized, urban, private university in the southwestern U.S. Deductive analysis compared the study findings with the literature and with the theoretical framework of LOVS to develop conclusions and implications. Four themes compared favorably with the literature and confirmed that the design of the DCGP included the features of vital leadership and all elements of the LOVS framework. Findings revealed that the design of the DCGP contributed to the candidates' development of personal agency to progress toward completion of their dissertations, where before they had been at risk for completion. Following is a discussion of the findings.

### *Theme 1: Extrinsic Factors—Personal and Professional Life Circumstances*

Seventeen percent of the total participant responses included extrinsic factors such as life circumstances and personal matters as causes for barriers to completion. Extrinsic barriers to completion can be positive life situations, such as finding a desired positon, marrying, moving to a preferred location far from the university, or taking time to grow a family. Of the 22 participants in the DCGP, only five did not complete their dissertations. Three participants moved out of state, one left the program to marry, and one candidate's illness required an extended medical leave from the program. At-risk-for-completion candidates also reported negative extrinsic factors as barriers to completion of their dissertation including financial, personal, and social resource limitations. These findings compared favorably with the literature on the topic (Lovitts, 2008; Most, 2008; Simpson & Johnston, 2006; Tinto, 1982).

*Discrepant Case.* A review of the literature on the topic suggested the DCGP should expect to find an equity gap related to candidates' personal characteristics for noncompleters (Lovitts, 1996; Tinto, 1982; Xu, 2014). However, participants did not refer to personal characteristics, such as race, gender, or background experiences, as contributing factors to their noncompletion.

### Theme 2: Psychosocial Factors

Fifty-seven percent of participants described experiences in the DCGP that were supportive psychosocially. The factors enabled the students to feel they "belonged," "felt a sense of caring," and "increased their motivation to continue," without which they would have lost motivation. This is consistent with Bair and Haworth (1999) who reported the dominant individual factor for doctoral noncompletion was lack of motivation. Students also reported psychosocial barriers to completion prior to the DCGP including conflict with committee chair and nonalignment of the dissertation topic with their personal interests. This is also consistent with the literature reporting when students' goals did not align with the university and department goals, students' motivation decreased. In fact, the second most common reason for dropout was a mismatch between the dissertation chair and candidate (Ruud et al., 2016).

*Discrepant Case.* Review of the literature suggested the presence of outside supports for candidates was a factor in completion. However, participants in this study did not mention the presence, or absence, of outside supports in the home nor the workplace as a factor in persisting to completion. For example, candidates may have professional mentors providing social, cultural, and relational capital to the students enabling their progress toward completion. Students without outside mentor support may experience negative feedback from peers in the workplace for their progress toward obtaining a higher degree because it creates a difference between them and their peers or supervisors, possibly perceived as a threat to those in the home or workplace with less education (Dean of the School of Education, personal communication, May 19, 2018).

### Theme 3: Formal Structure Supporting TI (16%)

A review of the literature concurred with student reports in this study that the university and doctoral program processes and procedures can act as a barrier and/or facilitator to students' program TI. When the university embeds social norms into the formal structures (such as support, caring, equity, and perceived justice), the faculty explicitly shared tasks through informal and formal communication with candidates (Ali & Kohun, 2006) and enabled students to develop skills and cognitive maps leading to progress in a timely manner (Clary & Thiemann, 2002; Kluever & Green, 1998). The design of the DCGP provided mandatory meetings on site for candidates with their cohorts and coaches, resulting in multiple levels of interaction including brainstorming opportunities and collaboration with coaches and fellow students. Consistent with the literature, participants cited the importance of watching and observing their peers complete key aspects of the dissertation process (informal system) and learning

from their coaches modeling such processes for students (formal structure; Bair & Haworth, 1999; Hanson, 2017; Lovitts, 1996, 2008).

### *Theme 4: Self-Authorship/Personal Growth (11%)*

Candidates reported increased confidence, modeling caring for others, and self-motivation because of participation in the DCGP. The theory of self-authorship found in the literature compared favorably with the theme of personal development found in this study. Dissertation completers need the ability to "author [their] thinking, feeling, and social relating," self-regulate, and develop efficacy to perform the tasks, which leads to confidence and personal agency to finish the dissertation (Kegan, 1994 in Baxter-Magolda & King, 1951, p. 492). Following are implications of the results for those in positions of leadership to affect improvements in the formal and informal structures of graduate school programs leading to increased student completion rates.

## Implications

Doctoral program directors, university administrators, and faculty members can compare their program models with the findings of this study, the design of the DCGP, and the LOVS framework. Benefits can accrue from developing an understanding of the elements necessary to promote successful candidate integration into their programs. Designing formal structures that ensure all students participate in on campus explicit formal communications of program expectations will promote student mental maps of program expectations. Faculty mentors and peer candidates can model skills necessary to engage the academic rigor, study skills, and organization needed to be successful in the tasks leading to dissertation completion. Providing socioemotional supports, within an agreed upon framework, will promote students' desire to stay in the program.

When graduate programs organize their interventions around the design features of the LOVS framework, candidates progressing through the dissertation process can be expected to develop personal agency and skills leading to self-authorship. The following concrete steps, developed from this study, can be used to promote graduate student retention and reduce TTD.

### *Develop Skills of Vital Leadership in Program Directors, Administrators, and Faculty*

Vital leaders provide proactive support as proxy agents for at-risk-for-completion candidates. Professional development can promote faculty members' understanding of the LOVS framework and increase their capacity to provide socioemotional supports along with the high standards and accountability for academic work.

### Early Identification of At Risk for Completion

The literature on the topic suggests early identification of at-risk-for-completion candidates. University programs can develop data analytics using the indicators from this study and the review of the literature to identify characteristics of students who may need early interventions and direct resources accordingly. Next, develop a plan to meet the needs of students, whose experiences may differ from the mainstream academic community and that may interfere with their integration into the program. Providing early intervention can ensure at-risk students experience early successes, reducing their negative affective filters and increasing their cognitive ability to understand and perform the expectations of the degree to completion. Success in small tasks builds an increased sense of self-efficacy and intrinsic motivation leading to increases in student engagement.

*Redesign formal structures* of graduate school programs to ensure students, who live off campus and/or are at-risk candidates, spend time together with faculty and peers in their cohorts. Require regular, structured, formal and informal meeting times on the university site to promote relationship development, modeling caring, explicit modeling of program expectations, peer sharing of progress on the dissertation, clarification of program expectations, and ensuring all students understand the explicit tasks and agreed-upon time lines.

### At-Risk-for-Completion Candidates Can Also Learn From This Study

Learning the features of the LOVS model will help them understand their role in advocating and seeking out mentors and peer supporters, who can guide them through the complex processes of integration into the program. When candidates understand the importance of aligning their goals with the university/program goals, they can explore options in their own goals and be flexible in their approach to identifying topics that align with their interests and values while taking advantage of the skills and background of their program faculty. Candidates can learn to vocalize (communicate) their needs to caring individuals, who can take their part, as proxy agents, to help them overcome unique challenges they may experience that differ from the mainstream candidate.

## Limitations

This study was limited to a single department at a single university with a small number of participants sufficient for exploring perceptions of the DCGP. The findings may not generalize to other populations. The Hawthorne effect suggests students may report higher than actual benefits from the program when they are singled out for survey or interview (Yin, 2018). A triangulation with the literature attempted to ensure analysis was reliable to provide valid conclusions from the data. Discrepant cases were sought and discussed.

## Recommendations for Future Study

Future studies could examine the impact of relationships with peers, coaches, and dissertation chairs. Similar studies to this design could be conducted on a larger scale. Studies could include a variety of departments, large public universities, and longitudinal designs to determine if the findings are generalizable beyond the scope of this study. An empirical study would be indicated to test the relationships between the dimensions of the parsimonious LOVS model and to determine if factors can explain changes in student completion rates and TTD. A study could be performed to explore the influence of external factors of a candidate's workplace ecology on TTD, for example, supportive supervisors or outside mentors. A lens of "people work to what is rewarded" can be used to frame a future inquiry of the intrinsic and extrinsic motivators of faculty members' behaviors toward student completion (Dean of the School of Education, personal communication, May 19, 2018).

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## Author Biographies

**Janet Hanson**, associate professor in the Educational Leadership Department at Azusa Pacific University. Hanson teaches Masters level research courses and leadership for diverse schools to administrator candidates in the preliminary services credential program. She has worked in the fields of research, business, education, public school administration, and higher education for over 40 years. She has published on topics of systems theory, organizational theories such as intellectual capital, school level variables of culture, mindset, and collective efficacy, classroom level variables, use of technology in leader professional development, influence of female child marriage on a students' education, among others. Hanson co-developed, with Hanson, Loose, Reveles, and Hanshaw, the graphical inventory for ethical leadership (GIEL), an instrument for assessing ethical leadership behaviors for use in adminstrator preparation programs.

**William Loose**, assistant professor in Educational Leadership Department at Azusa Pacific University. Loose teaches administrator candidates in the preliminary services credential program. He has 38 years of experience working in California public schools as a teacher, district office administrator, assistant superintendent, deputy superintendent, and superintendent. He has published in the field of ethical leadership, multicultural program implementation, and

millennials, among others. Loose co-developed with Hanson, Reveles, and Hanshaw, the graphical inventory for ethical leadership (GIEL), an instrument for assessing ethical leadership behaviors for use in adminstrator preparation programs.

**Ursula Reveles**, executive director of the School of Education & Equity at Riverside County Office of Education. She has over 25 years of experience within the field of education serving as an elementary school teacher, elementary and middle school principal, district administrator for child welfare and attendance, school improvement, and professional development including overseeing district-wide programs for English Learners, lead administrator in the development of a district LCAP, and directly supporting the work of the superintedent. Reveles has co-developed with Hanson, Loose, and Hanshaw the graphical inventory for ethical leadership (GIEL), an instrument for assessing ethical leadership behaviors for use in adminstrator preparation programs.