Symbiotic Partnership: Using a Virtual Coaching Modell to Develop Principal and Teacher Candidates

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This article reports on a unique collaboration between principal and teacher preparation programs within one college of education at a rural university in southeastern United States. The collaborative project worked to meet both the need of teacher candidates to receive instructional feedback and coaching on their teaching and the need of principal candidates to gain experience giving instructional coaching to novice teachers. Feedback and coaching were provided through video capture and annotation technology (VCAT) allowing the principal candidate to provide specific feedback using evidence from the teaching candidate's teaching video to support their instructional coaching. Researchers explored quantitative and qualitative data of principal candidates' coaching experience to determine the change in their self-efficacy in providing instructional coaching over the course of a semester and their perceptions of their experience using VCAT to facilitate the coaching.

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Clinical experiences are a critical component of learning to teach (Grossman, Compton, Igra, Ronfeldt, Shahan, & Williamson, 2009; Wilson, 2006). These experiences offer opportunities for teacher candidates to learn by doing and construct their knowledge of and skills in teaching, critical thinking, reflection, and analysis of their practice (Alsup, 2006; Danielewicz, 2014). Recent movement towards a more practice-based model of teacher preparation emphasizes participation, engagement, feedback, and reflection (Grossman & McDonald, 2008; Hoffman, Wetzel, Maloch, Greeter, Taylor, DeJulio, & Vlach, 2015; Zeichner 2010) what Linda Darling-Hammond calls "practice in practice, with expert guidance" (2010, p. 40).

Instructional coaching offers teacher candidates opportunities to engage in this type of practice. Such coaching can provide teacher candidates with purposeful, specific, and constructive feedback that is needed to move them toward deeper reflection on their practice. When they enter the schools, they will receive instructional feedback from administration within their building; thus principal candidates in educator preparation programs must develop knowledge of and skills in providing such instructional coaching. Principal candidates typically get more managerial instruction (i.e., budget, hiring, scheduling, laws) in their programs; but there is a documented need for more instruction and practice with their very important roles in instructional leadership and coaching (Darling-Hammond, Meyerson, LaPointe, & Orr, 2010; Murphy, 2006; Reames, 2010).

This article reports on a unique collaboration between principal and teacher preparation programs within one college of education at a rural university in southeastern United States. The collaborative project worked to meet both the need of teacher candidates to receive instructional feedback and coaching on their teaching and the need of principal candidates to gain experience giving instructional coaching to novice teachers. Feedback and coaching were provided through video capture and annotation technology (VCAT) allowing the principal candidate to provide specific feedback using evidence from the teaching candidate's teaching video to support their instructional coaching. Researchers explored quantitative and qualitative data of principal candidates' coaching experience to determine the change in their self-efficacy in providing instructional coaching over the course of a semester and their perceptions of their experience using VCAT to facilitate the coaching.

Literature Review

The literature supporting this research spans general teacher and principal education as well as specific research on instructional coaching and technology tools that support it.

Principal Preparation Programs

A modern school principal is an instructional leader, assigned to improve the instructional practices of teachers. Previously, principals were seen as managers who maintained discipline and followed bureaucratic procedures (Darling-Hammond et al., 2010; Davies, 2005; DuFour & Marzano, 2011). The shift from management to instructional leader asks principals to facilitate what teachers know and how they teach in the school (Grogan & Andrews, 2002). This occurs as principals coach and mentor teachers on their instructional practices through observation and feedback (Blasé & Blasé, 1999; Darling-Hammond et al., 2010; Zepeda, 2005).

The quality of principal preparation matters as it is a strong predictor of future principal self-efficacy (Tschannen-Moran & Gareis, 2007). Principal preparation programs (PPP) have

traditionally focused on the development of management skills (Murphy, 2006). As the role of principal shifted to that of instructional leader, principal preparation programs also had to redesign to meet the needs of their candidates (Reames, 2010). Researchers have found that many PPPs are not meeting the needs of candidates to become strong instructional leaders for their schools (Darling-Hammond et al., 2010; Grogan & Andrews, 2002; Levine, 2005). This often results from a lack of opportunities within the program for candidates to practice the theories and skills they have learned (Darling-Hammond et al., 2010; Lashway, 2006; Reames, 2010). Modern PPPs need structures and activities that allow candidates to engage in the practice of instructional leadership through mentoring and coaching (Franey, 2013; Jones & Ringler, 2018). Instructional coaching is a partnership where teachers and coaches (principals) work together to improve teaching and learning (Knight, 2007). This is a skill that should be developed through practice in principal candidates.

Teacher Preparation Programs

The charge of teacher preparation programs (TPP) has evolved in both similar and different ways than that of principal preparation programs. There has been a long entrenched debate in the field of teacher education between the importance of content knowledge and pedagogical skills in the training. Ultimately a framework of pedagogical content knowledge was established, which values subject matter knowledge specifically for teaching (Shulman, 1986). Now, that paradigm has shifted to the importance of inquiry stances towards the profession of teaching whereas teacher preparation is no longer seen as a one-shot pre-classroom experience but a career-long focus on growth, learning, and development through deliberate inquiry (Darling Hammond, 2006; Cochran-Smith & Lytle, 1999). TPPs can play an important role in cultivating teacher candidates with an inquiry-stance towards their profession (Schulz & Mandzuk, 2005). One way to foster inquiry stances is through developing teacher candidates who learn for teaching and from teaching (Darling-Hammond, 2010). "An authentic space for candidates to learn in this way is through field experiences. But the mere experience in classrooms is not enough to cultivate strong TPPs," (Darling-Hammond, 2006). Teacher candidates need scaffolded field experiences with meaningful feedback and opportunities to reflect in order to improve their pedagogical skills (Darling-Hammond, 2010; Grossman & McDonald, 2008; Hoffman et al., 2015, Zeichner 2010).

Providing meaningful feedback to teacher candidates in the field, although important, can logistically be burdensome for faculty in teacher education programs that are already stretched thin (Tschida et al, 2019). Teacher candidates within one program might be placed in a number of different geographic and temporal contexts to complete their practicum with only one instructor to provide feedback; their time being divided between the sites. One way to overcome this logical obstacle is to engage other stakeholders and coaching experts to provide additional feedback to teacher candidates such as instructional supervisors and other potential coaches (Tschida et al, 2019).

Instructional Supervision and Coaching

Several researchers have provided models for instructional supervision (Beach & Reinhartz, 2000; Glickman, Gordon & Ross-Gordon, 2013; Knight, 2009; Sergiovanni & Starrat, 2007). This project chose to follow Glickman and colleagues' (2013) definition of instructional supervision, which includes having the knowledge, interpersonal skills, and technical skills to develop a school

where teachers engage in the study of teaching and learning. One task of instructional supervision outlined by Glickman et al. (2013) is direct assistance. This process includes working individually with a teacher through pre-conferencing, observing and post-conferencing to improve teaching. PPPs must not only teach the theory of this process, but must allow principal candidates to actively engage in this process to develop and improve their skills (Jones & Ringler, 2018). This process of direct assistance through instructional supervision is part of the work of modern principals.

Another aspect to their work is that of instructional coaching. Instructional coaching is different from instructional supervision in that supervision is evaluative and coaching is a formative process. Though evaluation of teaching is a part of the work of many principals, the focus of this paper is instructional coaching. Knight (2011) defines instructional coaching as a partnership between teachers and coaches who work together to improve teaching and learning. Coaches engage teachers in identifying their goals, listen, ask questions, explain, and provide feedback (Knight, 2011). The goal of the process is to help teachers reflect on their own practice and make informed, thoughtful decisions to improve their teaching (Jones & Ringler, 2018). Both the skills of instructional supervision and instructional coaching are important for modern principals as instructional leaders. Both are skills that principal candidates must develop to effectively move into an administrative role in schools. Research has found that opportunities to practice coaching and instructional supervision can improve principal candidates' self-efficacy in these areas (Author 1, 2019).

Video Recording and Feedback of Teaching

Video has been used in educator preparation since the 1960s to engage teacher candidates in peer reflection and feedback (Rich & Hannafin, 2009). Reflection centered on identifying teaching skills had been correlated to effective teaching. In the 1990s, teacher self-reflection encouraged with the use of video (Lambdin, Duffy & Moore, 1997). Teachers were encouraged to examine teacher thinking and decision making and in TPPs, teacher candidates were provided cases through video to examine other teachers' practice. The use of video technology expanded in the early 2000s to a tool for teacher preparation. Teacher candidates would video record themselves teaching during field experiences and then reflect on their own skills and practices.

The incorporation of video into educator preparation programs gave teacher educators and candidates a way to reflect on teaching in deeper and more concrete ways rather than relying on memory (Marsh & Mitchell, 2014; Rosaen, Lundeberg, Cooper, Fritzen, & Terpstra, 2008). Through video, teacher candidates can review a captured lesson, analyze it for predetermined elements, and scrutinize instructional decisions using evidence directly from the video (Brunvand, 2010; Marsh & Mitchell, 2014; Zhang, Lundeberg, Koehler, & Eberhardt, 2011). The advancement of technology allowed for not only the capture of teaching episodes through video but the ability to annotate one's reflection connected directly to that particular place in the video. This video capture annotation technology (VCAT) gave both teacher educators and candidates an even more powerful tool for self-reflection and feedback.

While there is increasing research on the use of virtual coaching in TPPs to help teacher candidates develop reflective practices and teacher educators to provide effective quality feedback (Kleinknecht & Gröschner, 2016; Rock et al., 2013; Rock et al., 2014; Stapleton, Tschida, & Cuthrell, 2017; Tschida et al., 2019); there is little research exploring the use of VCAT tools to provide principal candidates authentic experiences giving instructional coaching feedback (Jones

& Ringler, 2018; Stapleton et al., 2017; Tschida et al., 2019), which makes this collaboration and research unique.

Methodology

This case study reports on an ongoing collaborative project between faculty in the PPP and TPP in a large rural university in the southeastern United States. This paper reports on the effects of the intervention on the principal candidates' self-efficacy in coaching. Using a case study for this exploratory research generates new ideas around instructional coaching with preservice teachers and principals.

Theoretical Framework

Bandura's (1986) cognitive theory describes self-reflection by individuals to evaluate their own experiences. According to Parjares (1996) an individual's ability to predict the outcomes of his/her future performance is based on his/her self-beliefs. Self-efficacy is, "beliefs in one's capabilities to organize and execute the course of action required to manage prospective situations" (Bandura, 1995, p. 2). One's self-efficacy also determines the amount of effort they will apply to an activity and persist in the face of barriers (James, 1885/1975). It is measured by asking individuals to describe their self-confidence to accomplish a task (Pajares, 1996).

Social cognitive theory describes one's beliefs in his/her ability to complete a task as a predictor of motivation and future task performance (Bandura, 1999; Iroegbu, 2015; Lunenberg, 2011; Wyer & Carlston, 2018). Individuals tend to avoid situations in which they have little confidence of success. The higher an individual's self-efficacy, the more likely they are to engage in a task and be successful (Bandura, 1977). People will persevere when they have strong self-efficacy and confidence. Our goal was to understand the impact of the virtual coaching experience on principal candidates' instructional coaching in the future. This study examined the change in self-efficacy and confidence of principal candidates in their ability to provide instructional coaching to teacher candidates before and after the VCAT coaching experience.

Research Design and Research Questions

Data for this study were taken from a larger ongoing study examining the partnership between principal candidates as they learn to provide instructional feedback and elementary teacher candidates in a field experience during their junior year. This article reports on one aspect of a larger case study data set, exploring the experiences of one cohort of principal candidates during the fall 2018 semester. Case studies are helpful when describing a project or event in detail, set in real-world contexts (Bromley, 1986; Merriam, 1988; Yin, 1984). This study made use of survey data and interviews with principal candidates to explore the usefulness of VCAT in practicing instructional coaching in an authentic virtual setting. Specifically, this data was designed to further understand the following questions: (a) What effect does virtual coaching have on the self-efficacy of principal candidates in a principal preparation program? (b) What were the principal candidates' perceptions of their virtual coaching experiences?

Context

This case study describes an ongoing project that meets the needs of both a principal preparation program (PPP) and teacher preparation program (TPP) within the university. The college of education is one of the largest producers of educators in the state and graduates work in every district across the state. Both the PPP and TPP programs needed to improve their instructional coaching--to help both principal candidates and elementary teacher candidates. Second-semester juniors in the TPP, who were enrolled in an elementary social studies methods and practicum course, were each paired with a principal candidate from the PPP for one semester. The pairing was random. The partners engaged in an initial meeting for introductions and to set goals for the semester-long project. The teacher candidates taught and video recorded three lessons over the course of the semester in their practicum elementary school and received instructional feedback and coaching from a principal candidate, taking an educational leadership course on instructional coaching. The project utilizes video capture and annotation technology (VCAT) to make the coaching logistically possible across distances and various stakeholder schedules.

In the PPP course, candidates moved theory into action. The course involved studying theories of instructional coaching and applying them with preservice teachers. Course instructors reviewed the feedback provided to the preservice teachers and coached the principal candidates on the feedback. This allowed the course instructors to ensure preservice teachers were presented with quality feedback. Since the teacher candidates taught and recorded three lessons, the principal candidates were able to receive feedback on each round of coaching. The coaching of the principal candidates also provided an additional model for them of how to deliver appropriate, quality coaching feedback to the preservice teachers.

Participants

Students in the TPP are often full-time students earning their undergraduate degree and elementary teaching license. They attend the majority of classes during the day, which include practicums to teach lessons at nearby public K-5 schools. The PPP candidates are often part-time students working full time in K-12 public schools. They generally attend classes in the evenings to earn a master's degree in school administration and a principal license. In order to meet the needs of both groups, VCAT technology is used to record the lessons taught by the teacher candidates and then watched by principal candidates to provide feedback.

A convenience sample of PCs (n= 36) served as the subjects of this study and were students in 4 sections of an instructional leadership course in a Master of School Administration degree program. The PCs have teaching experience at varying grade levels and content areas (Table 1). As the lesson conducted by the TCs and upon which the PCs provide coaching is in the area of elementary social studies, it is noteworthy that 25 of 36, or 69.4 %, of PCs have experience in teaching at the elementary level, while 19 of 36, or 52.7 %, of PCs have experience teaching in the social studies content area.

Table 1
Content Area Experience

Grade Level	# of Principal Candidates	ELA/ English	math	science	social studies	Other
Elementary	25	16	16	12	13	6
Middle	12	6	3	1	3	1
High	19	5	4	2	3	6

Procedure of Data Collection

The principal candidates received instruction in their class on how to coach and provide effective feedback. This included strategies from the models of Knight (2009) and Glickman, Gordon, and Ross-Gordon (2013). The VCAT project allowed them to then practice these skills.In order to effectively use the coaching cycles described earlier in this article, principal candidates completed a pre-conference, observation, and post-conference. Pairs conducted the pre-conference using real-time video technology, such as Skype or FaceTime. The teacher candidates recorded their lessons using VCAT and uploaded to a shared server. The principal candidates were then able to provide time-coded, specific feedback within the VCAT system. Finally, the principal candidates lead a post-conference with the teacher candidates to discuss the lesson and make plans for future improvements. The coaching cycle was completed two times during the semester as part of this project.

Surveys were administered to the PCs measuring their self-efficacy in providing coaching feedback. Researchers administered the survey at the beginning and at the end of the project. The survey asked PCs to report their opinion of their effectiveness and confidence in providing coaching feedback to TCs using a likert scale (Mertler, 2019).

Researchers conducted focus group interview of 12 PCs at the end of the coaching project. The interview data was transcribed and coded. Interview data was analyzed using a grounded theory approach to qualitative analysis(Creswell & Poth, 2018). This theory refers to a systematic method for creating common themes. Themes emerged from the coded interview data and are explored in detail below.

Data Analysis

Researchers analyzed the quantitative data collected from the likert scale survey using descriptive statistics. Then, researchers analyzed the data by response to each question of the whole group. In addition to the quantitative data from the survey, qualitative data was collected through interviews. Researchers transcribed interview data and coded to find emerging themes. Grounded theory approach lead to qualitative analysis. Researchers used emergent coding to analyze the open-ended responses (Creswell & Poth, 2018). Themes were then developed based on the relationships

found amongst the codes. This theory refers to a systematic method for creating common themes. Themes emerged from the coded interview data and are explored in detail below. The qualitative findings also further substantiate and deepen the quantitative findings from the survey.

Findings

Findings to answer the first research question were produced by analyzing data from the likert scale questions to produce findings. Findings to answer the second research question were produced by analyzing data from the open-ended interview responses.

More principals reported being confident or very confident giving feedback at the elementary level in the post survey than they reported in the pre-survey. Figure 1 shows that in the pre-survey, 19 PCs (53%) felt very confident or confident in delivering feedback to pre-service teachers at the elementary level. In the post-survey, 30 PCs (83%) described themselves as very confident or confident in providing elementary level feedback. None of PCs described themselves as not at all confident in providing elementary level feedback at the end of the project.

Figure 1
PCs' Confidence in Giving Feedback at the Elementary Level

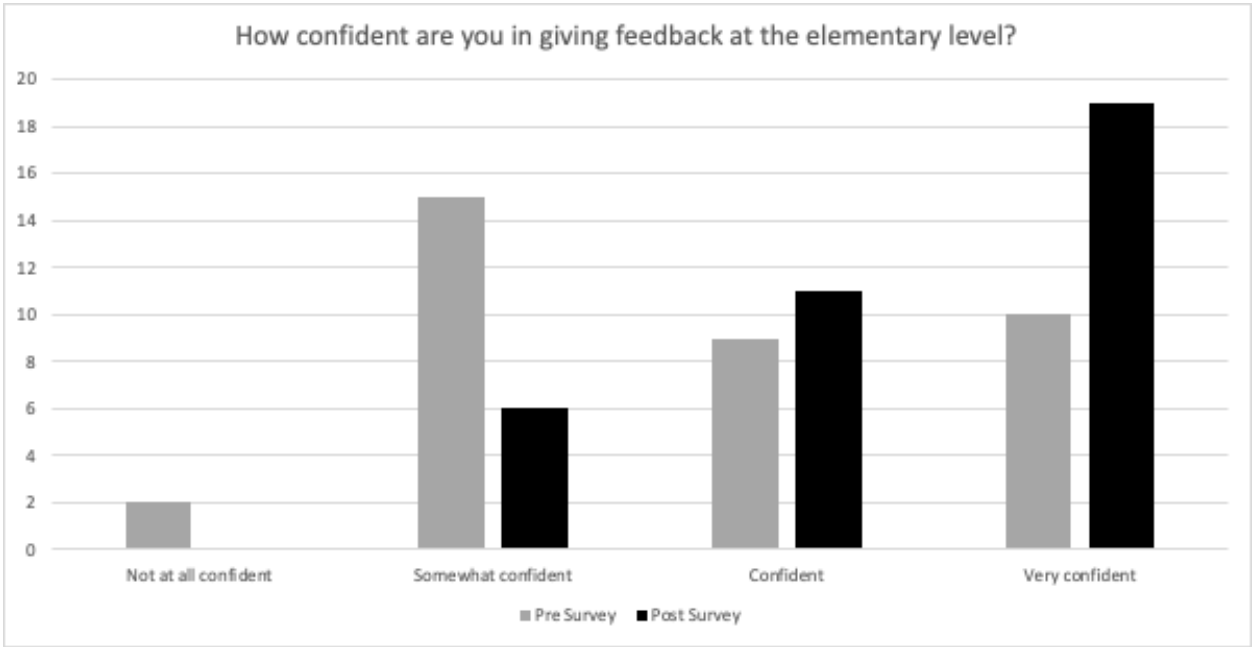

Figure 1 shows that in the pre-survey, 19 PCs (53%) felt Very confident or Confident in delivering feedback to pre-service teachers at the Elementary Level. In the post-survey, 30 PCs (83%) described themselves as Very Confident or Confident in providing elementary level feedback.

Additionally, more principal candidates reported being confident or very confident giving feedback in the social studies content and instruction in the post survey than they did in the pre-survey. Figure 2 demonstrates the PCs' confidence in providing feedback in social studies content and instruction. Before starting the virtual coaching project, 18 PCs (50%) described themselves as confident or very confident in providing social studies feedback. At the end of the project the post-survey shows that 26 PCs (72%) described themselves as confident or very confident in

providing feedback to pre-service teachers in the area of social studies. In the post-survey, none of the PCs described themselves as not at all confident in providing feedback in social studies instruction. PCs increased their self-efficacy in providing coaching feedback at the elementary level and in social studies instruction.

Figure 2

PCs' Confidence in Giving Feedback in Social Studies Content and Instruction

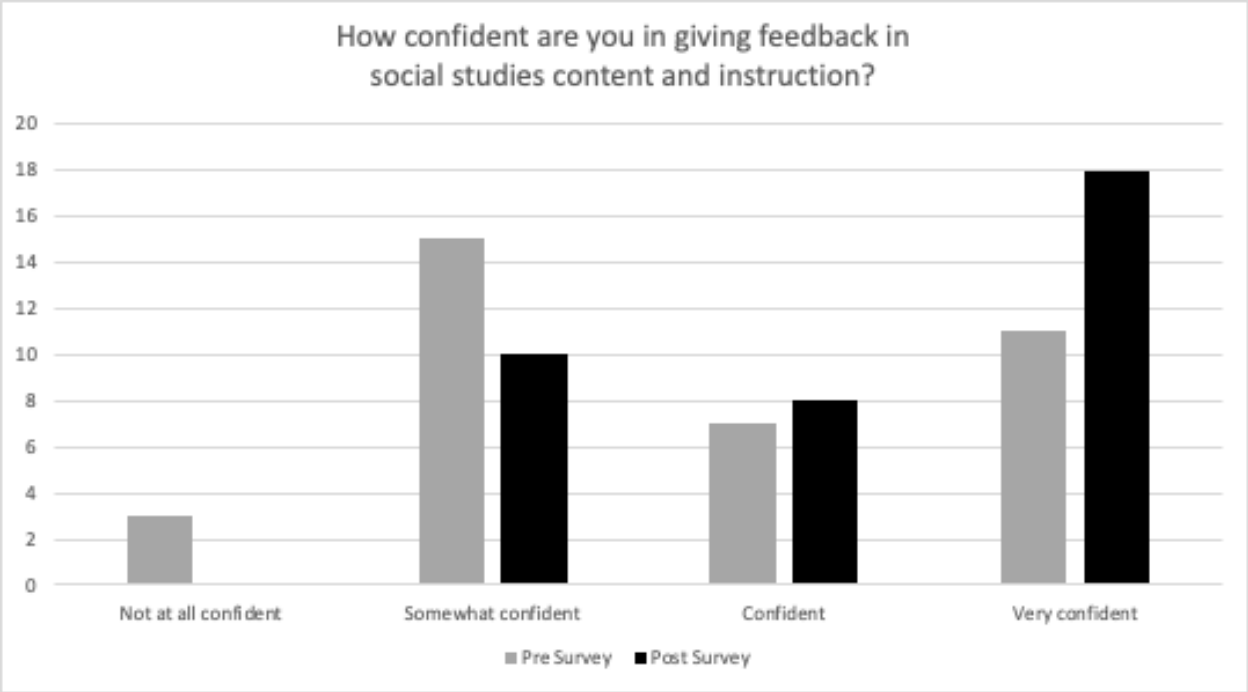

Figure 2 demonstrates the PCs' confidence in providing feedback in social studies content and instruction. Before starting the virtual coaching project, 18 PCs (50%) described themselves as Confident or Very confident in providing social studies feedback. At the end of the project the post-survey shows that 26 PCs (72%) described themselves as Confident or Very Confident in providing feedback to pre-service teachers in the area of social studies.

What were the principal candidates' perceptions of the virtual coaching experience?

The open-ended interviews provided more information from PCs on their experience of working with TCs in the coaching process. PCs described their own perceptions of the virtual coaching project, specifically what they were able to learn and how the experience was meaningful to them. Responses were analyzed and common themes were discovered using a grounded theory approach. These themes are discussed below.

Opportunity for Theory into Action

As one learns to provide instructional feedback and coaching, it can remain theoretical and abstract until one actually engages in coaching. While coursework provided valuable information on theories of coaching and the importance of providing timely and guiding feedback, the PC's experience with coaching a teacher candidate was a powerful assignment for seeing theories in

action. PCs reported that they were able to use the skills learned in class to provide the virtual coaching for TCs. One PC said of her coaching experience, "I knew more than I thought I did about providing feedback to my Junior teacher. The ideas from class were helpful in completing this project." Another PC shared a similar conclusion about the connection of her coursework to the virtual coaching experience saying, "I was able to practice the things we talked about in class. It made the coaching a real thing, not just an idea." The abstract theories of instructional coaching became concrete practices through which the PCs developed skills in providing feedback and coaching beginning teachers.

Increased Confidence

Learning to actually engage in coaching of a novice teacher can be intimidating for beginners. The PCs in this study expressed a shared belief that the project worked to increase their confidence in their abilities to provide coaching. One PC shared that "[she] was worried about the coaching at first," but as she engaged in the assignment with her junior TC she learned, "it's something I can do. I'll only get better at it from here." The PCs recognized their potential to be a good coach by participating in the project over the course of the semester, and many were able to articulate that the opportunity gave them a way of practicing and learning from their virtual coaching. "I have learned a lot through this process...moving forward, I'll be able to give coaching feedback without being so nervous." Additionally, the assignment allowed some PCs who did not have a background in elementary education the opportunity to coach elementary level teachers. One PC identified that the experience specifically increased his confidence to coach to a particular grade level and subject. "Being a high school business teacher, I didn't think I'd be any good at helping in elementary social studies. I found I was able to apply what we learned in class and really help her [the TC]." The coaching done in this assignment increased PCs confidence in their ability to provide meaningful and beneficial feedback to beginning teachers.

Preparation for being a Principal

The work of a principal is multifaceted, and the role of instructional leader is an important aspect of their duties. During the interviews, PCs identified their work with the teacher candidates as a valuable exercise in practicing the coaching skills they were learning in their course work. They recognized that they were engaged in the very work they would be doing in their future role within the schools. "Providing feedback this way allowed me to simulate what I'll actually do as a princical," explained one PC. Another shared, "this will help me as I move into administration." Thus, practicing instructional coaching and working with elementary teacher candidates allowed PCs to develop skills they found valuable for their future careers.

Conclusion to Findings

The likert style surveys illuminated that the PCs in this study felt more confident giving feedback at the elementary level as well as in the subject of social studies after the virtual coaching experience. The qualitative data from their interview supports this finding as well as provides additional ways the PCs perception of the virtual coaching experience were positive.

Discussion and Significance

Bandura (1986) posits that future behavior is forecast by one's confidence in his/her abilities. Since school principals are increasingly responsible for coaching of teaching in their schools and instructional leadership practices (Derrington & Campbell, 2015; Donaldson et al, 2016), it is important for principal preparation programs to build PC's confidence in these capacities. The findings described in this paper support an innovation aimed at increasing PC's confidence in these skills by overcoming two barriers the field of principal preparation often faces, turning theory into practice and providing more opportunities to practice coaching.

Through instructional leadership, principals influence the work of teachers in the classroom through coaching (Hitt & Tucker, 2016). According to Knight (2019), a major challenge for school leaders is transforming theory into practice around instructional coaching. An important theme that emerged from interviews with the participants in the virtual coaching innovation is that they felt it allowed them to implement the theory they were learning in their program into practice. Therefore, the study described in this paper is an example of how principal preparation programs can turn theory into practice and positively influence the practice of principal candidates.

Additionally, the findings illuminate that the virtual coaching innovation provides an effective addition to in-person coaching. Previous research (Knight, 2019) describes how opportunities to practice in-person instructional coaching influences positive practice in the future. Research has shown that opportunities to practice instructional coaching in-person, with feedback from experts, is a best practice to improve a coach's abilities (Joyce & Showers, 1982; Showers & Joyce, 1996). Ongoing, in-person training has been shown to improve a coach's abilities working with teachers successfully (Gallucci & Swanson, 2008; Knight, 2006; Smith, 2009). This paper further supports this and describes how virtual coaching practices also increase a PC's self-efficacy in their coaching practice.

Conclusion

The findings of this research offer a new innovation in how principal preparation programs are supporting their principal candidates to fill their role as instructional leaders who can coach teachers within a process of observation and feedback (Blasé & Blasé, 1999; Darling-Hammond et al., 2010; Zepeda, 2005). Literature from the field has already substantiated the claim that opportunities to practice coaching influences improvement in an instructional coach's future ability. However, the problem remains that principal candidates/novice instructional coaches do not have enough opportunities to practice these skills due to various programmatic, logistical, and geographic challenges (Tschida et al, 2019). The innovation described in this paper and the research findings on it provide a technology based solution that can hurdle some of those previous barriers to providing opportunities for principal candidates to practice coaching. However, future research on this innovation is necessary. This was a single study with one situated group of principal candidates who worked with one situated group of teacher candidates. The short survey and small focus group are limitations to the study. In the future, it would be helpful to expand the content of the survey and the number of focus group participants. This study focused on the use of VCAT for feedback and did not focus on the ability of the principal to understand teacher's developmental levels. According to Marzano (2011), "Teacher evaluation should recognize different stages of development progressing towards expertise" (p. 104). Future research can

explore principal candidates' ability to identify a teacher's developmental levels and chose appropriate direct or indirect feedback formats.

Another limitation is that researchers collected feedback on the skills and content, but not on the technology itself. It could be helpful to find how the participants' abilities and knowledge of the technology used affected their abilities to complete the coaching project. It will be important to see if the findings are similar in studies completed in different settings and with more participants using VCAT technology. Another area to consider for future research is to follow-up with the principal candidates as they move into official leadership roles at schools and determine if virtual coaching in the preparation program influences their future abilities in similar ways as principals working with teachers in-person. Virtual instructional coaching is new and more research needs to be done to determine its effectiveness in a variety of settings. Future research can explore which specific skills of instructional coaching are effective in a virtual setting. However, the research reported in this paper provides evidence that the innovation of virtual coaching is worthy of implementation and further exploration in the field.

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