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Creating Laboratories of Practice for Scholarly-Practitioners: How Leaders Learn through Action Research of Clinical Supervision

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Abstract

The purpose of our work the past three years has been to understand how clinically rich laboratories of practice can be created that allow aspiring administrators hands-on experiences in order to learn how to provide effective supervision to teachers. Through our cross-university collaboration, class members in our Educational Supervision courses have been provided an action learning structure and experiential learning opportunities to develop their own concepts of educational supervision. The two primary goals of our work were to understand a) how aspiring administrators identify when to apply directive versus nondirective supervisory behaviors (Glickman, Gordon, & Ross-Gordon, 2014), and b) analyze the perspectives of aspiring administrators regarding the use of technology in simulated laboratories of practice. Secondarily, we also were interested in using feedback from class members to adapt our experiential coursework to provide more authentic supervision experiences that would allow for deeper development of supervision skill practice, acquisition, and refinement.

Our work in this paper represents efforts over the last three years (2015-2017) to create clinically rich laboratories of practice in our *Educational Supervision* courses, in which aspiring administrators could learn from hands-on experiences how to provide effective supervision to teachers. Our goal, as we collaborated across two separate universities, was to create laboratory settings where our aspiring administration class members could be provided with an evolving learning opportunity that empowered them to find value in their own knowledge development, through their own experiences, using an action research approach. We define action research based on Huang's work (2010), namely that we "do not readily separate understanding and action, rather we argue that only through action is legitimate understanding possible; theory without practice is not theory but speculation" (p. 93). In providing an action research structure, our class members learned to not simply follow a lock-step process of supervision, but rather applied experiential learning to develop their own concepts of supervision by providing formative feedback on how to improve teacher instruction based on individual needs. Additionally, as instructors, we realized the importance of how we reflected on the creation of these laboratory experiences from the feedback we elicited from our class members and how our course structure evolved throughout the last three years to provide breakthrough supervision training that would meet the needs of teachers continuing to instruct in an era of accountability (Gall & Acheson, 2011; Glanz, 2016; Glickman, Gordon, Ross-Gordon, 2014; Zepeda, 2017). As such, our article focuses on how aspiring administrators in our class learned to apply nondirective, collaborative, and directive supervision skills based on the Supervisory Behavior Continuum

(Glickman et al., 2014) in practice, the importance of using action research to support adult learning in a laboratory setting, and how we adapted our courses as we learned and reflected from feedback on our own instruction.

Context of the Research

This study originated through our professional connections at the University Council of Educational Administration (UCEA), the Supervision and Instructional Leadership Special Interest Group (SIG) of the American Educational Research Association (AERA), and our involvement with the Council of Professors of Instructional Supervision (COPIS). As scholars who study instructional supervision, and as educators who collectively have over 15 years of building level and central office experience, we find it particularly important to provide high quality learning experiences that allow aspiring administrators to learn through experiential opportunities to facilitate their ability to provide formative feedback to teachers and encourage reflection about pedagogical practices. Our struggle, we have discovered, is the ability to simulate real-world situations that are authentic and provide aspiring administrators the much needed practice to provide feedback to teachers in a way that values interpersonal relationships. Specifically, we have noticed a lack of learning situations where aspiring administrators could practice when it is appropriate to apply nondirective, collaborative, or directive supervisory feedback (Glickman et al., 2014) *in situ*. This leaves courses like *Educational Supervision* asking class members to talk theoretically about how various approaches to feedback might look in practice, or to apply the concepts taught in courses but by practicing or role-playing with a colleague who does not pose any professional struggle an aspiring administrator might have to address in practice. This resulted in our aspiring administrators lacking clinically rich supervision experiences and does not adequately prepare them for their future professional careers.

Recently, however, technology and innovative thinking about the instruction of educators has allowed scholars to rethink the value of laboratory-based experiences that might better prepare practitioners for real-world application. This is particularly true in the social sciences, where computer-based laboratories provide simulations to professional contexts that allow professionals to use virtual reality to gain much needed experiences that challenge them cognitively and interpersonally. Within the last five years, both of our universities, The University of Maine , and Texas Woman's University, each invested in a mixed reality technology called TeachLivE, which simulates both classroom settings with children, as well as one-on-one conferences with adults (Dawson, 2016). TeachLivE creates virtual classrooms and avatars, of which the

personalities of the avatars can be influenced and controlled by TeachLivE employees. Once the software has been installed on a computer with a large screen in a laboratory setting, a video conference session can be initiated between TeachLivE employees and educators. The TeachLivE employees control the avatars, including their physical responses as well behavioral responses.

Using TeachLivE avatars, we began to restructure our *Educational Supervision* courses to increase the number of laboratory sessions we used in our classes. Thus, the goal of our course restructuring was to provide more authentic supervisory experiences through the use of technology, which allowed aspiring administrators to gain real-world supervision experiences through a "no harm" environment. In this learning laboratory, aspiring administrators are able to apply clinical practices of educational supervision in a risk-free environment with immediate feedback and are provided with opportunities to be reflective and self-correct (Dieker et al., 2014). As such, class members are able to experiment with supervisory feedback and develop their own understanding of the formative feedback process in a safe learning environment that promotes knowledge development and skill acquisition.

Scholarly-Practitioner Action Research

To empower our class members in this process, we employed an action research approach as a means to engage practitioners in their own knowledge development and reflection (Huang, 2010; Sagor, 2000). Specifically, we grounded our study in the ability to provide practitioners with immediate feedback from multiple sources that allowed them to theorize and develop their own understanding of their learning in action (Fisher & Phelps, 2006). Thus, the primary focus of the study was to a) discover how class members translated the theory of supervision into practice through a process that empowered them to find value in their own knowledge development using an action research approach, and b) understand how technology could be used in laboratory experiences to develop supervision skills through class member's own action research. By laboratory experience, we mean a simulated opportunity for aspiring administrators to practice, develop, and refine observation and feedback skills that directly translate into practice of successful PK-12 school leaders (Gall & Acheson, 2011; Glickman et al., 2014; Zepeda, 2017). Additionally, a secondary focus of the study for us, as instructors, was to receive feedback from class members to improve the quality of the experience offered in our *Educational Supervision* courses.

Through laboratory settings, class members conducted several one-on-one pre-observations with pre-service teachers, observed the instruction of these preservice teachers using the TeachLive simulation software in fishbowl settings in the laboratories, and conducted one-on-one post-observations with pre-service teachers. Additionally, class members also had the opportunity to observe practicing teachers where they can apply the theory and skills offered in our *Educational Supervision* courses and video record the process. Then, as a collective group, the aspiring administrators conducted debriefs with one another about the hands-on learning process, specifically discussing the various application of directive versus nondirective supervisory behaviors as defined by Glickman et al. (2014) (see Figure 1).

Approach	Outcome
Nondirective	Teacher self-plan
Collaborative	Mutual plan
Directive informational	Supervisor-suggested plan
Directive control	Supervisor-assigned plan

Figure 1. The Supervisory Behavior Continuum comes from Glickman et al. (p. 102).

Additionally, class members conducted a one-on-one pre-observation with an avatar veteran teacher in the TeachLivE laboratory. Then, class members conducted a one-on-one post-observation with an avatar veteran teacher who was resistant to change. In these laboratories, class members were provided support by the instructor when requested, and recorded their pre- and post-observations to share with a fellow class member in order to receive feedback. Lastly, class members provided feedback about the quality of the simulated experiences, specifically detailing insights into what they learned and applied as practitioners, but also to help drive the improvement of the courses moving forward.

Study Design

Given the focus of our work, we decided to use a multiple case study approach to describe how research is applied and experienced through action (Yazan, 2015). Specifically, our study analyzes how the theory of supervision is translated into practice through our *Educational Supervision* courses, as a form of intervention (Yin, 2002), and how this led to applying supervision skills in a simulated real-world context (Author, 2016). As instructors of our class members, our roles as participatory action researchers were to intertwine theory with engaging experiences and to allow our class members the space and opportunity to develop their own understanding of supervision in as natural of a setting as possible

(Chevalier & Buckles, 2013). As such, we used this approach to compare variations of our courses as it relates to the inclusion of technology to produce clinically rich laboratory experiences and the development of supervision skills in a real-world setting.

In applying the process of action research, our study has gone through three cycles where class members have planned, acted, observed, and reflected (Mertler & Charles, 2005) on how they have learned to apply the theory of supervision in action. In doing so, we have framed our coursework to focus on the opportunity for class members to plan for their own pre- and post-conferences, video record how they act in the moment in providing supervision and formative feedback, think deeply about how they are able to develop skills to observe others (both teachers and supervision colleagues) as well as themselves, and how this leads to reflection with regards to their own supervision skills and practices (see Figure 2). Additionally, we, as instructors, follow the same cycle with regards to understanding how to best develop and improve experiential learning opportunities using mixed reality software.

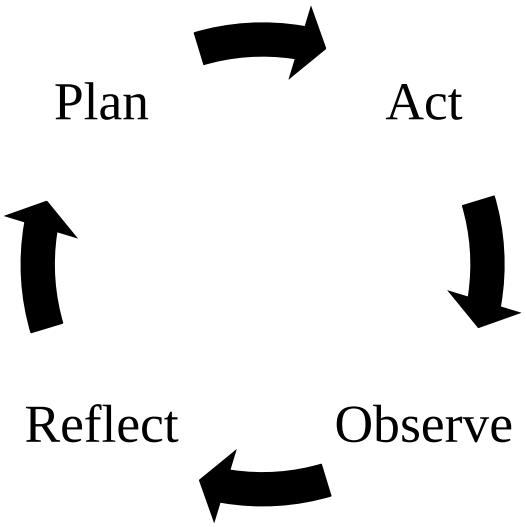

Figure 2. This figure is an adaptation from the work of Merlter and Charles (2005).

Given the different needs of our class members and the time constraints of our laboratory experiences, we asked class members to take part in either semi-structured interviews or focus groups, depending on availability and preference, which allowed for a conversational approach to data collection. Class members were not required to take part in either, and regardless of participation, participants were encouraged to give feedback about their supervisory laboratory

experiences. These laboratory experiences were offered in the second half of the semester, once supervision theories had been reviewed and could be attempted to be applied in action. In total we had over 50 aspiring administrators take part in this action research structure (14 individually interviewed and the rest interviewed through focus groups), where class members developed their own understanding of the supervision process. In addition, we asked for feedback from class members to influence the continual reconstruction of our courses to offer a better hands-on and real-world experience.

In all cases, and with permission of the participating class members, a voice or video recorder was used to preserve the context of the conversations. Each recording was then transcribed verbatim and checked for accuracy. As researchers, we used an initial coding process to categorize our codes, and then using the supervisory behavior continuum (see Figure 1) we conducted a second cycle analysis (Creswell, 2013) to build our understanding about the learning process of how and when aspiring administrators learn to apply specific supervisory behaviors. Additionally, we applied a values coding process to determine the beliefs and attitudes about the use of the TeachLivE technology to develop supervisory skills, which is particularly useful in analyzing codes to determine motivation and agency (Saldaña, 2013).

To provide additional validity to our study, we gathered observational information by generating jottings and memos throughout the semester (Miles, Huberman, & Saldaña, 2014), which allowed us to document the supervision skill development process of our class members as well as drive the improvement of our respective courses. Additionally, we drew on the assignments given in our courses to inform our understanding of action research process. Doing so provided us the opportunity to analyze multiple data sources, which in turn informed our study.

Research Questions

The following questions informed our study, specifically:

1. How did aspiring administrators identify when to apply directive, collaborative, or nondirective supervisory behaviors?
2. How did aspiring administrators respond to the use of technology and how did this inform how they related and responded to those whom they were providing feedback?
3. How did feedback from aspiring administrators translate into adaptation of our *Educational Supervision* courses to provide authentic supervision experiences?

This article will answer these questions as it relates to the action research conducted in our *Educational Supervision* courses to reflect on the supervisory skill development of aspiring administrators. Our intent was also to provide discussion for future possibilities to support the creation of laboratories of practice for scholarly-practitioners, specifically as it relates to the development of supervision skill practice, acquisition, and refinement.

Findings

The findings we present here we believe are less important as an outcome and more impactful when considering the process of supervision skill acquisition. Through our action research design, our goal was to empower our class members to find value in their own knowledge development through a reflective process (Huang, 2010; Sagor, 2000), all of which was grounded in feedback through multiple simulated learning experiences. From this study, we offer three important findings. Our first finding highlights the importance of providing aspiring administrators with novel situations to identify when and how to apply supervisory behaviors is crucial in developing supervision skills. Using the Supervisory Behavior Continuum as a framework (Glickman et al., 2014), our class members spoke highly of the ability to practice when to be nondirective, collaborative, or directive in a supervision setting *with someone they didn't know but needed to learn how to build rapport with in order to provide feedback*. This is unique and different from traditional methods of learning how to provide supervision, which is often done with a trusted peer whom the aspiring administrator has years of experience working with and with whom the class member has an established relationship. Our second finding underscores the andragogical considerations needed to consider how adults best learn how to apply supervision skills and the benefits/drawbacks from doing so in a laboratory setting using technology. Our class members commented on the power of a learning situation that allowed adult learners to literally *pause the supervision cycle, receive feedback and support from peers, and continue* with the process. However, many class members also commented that the realness of the technology (or lack thereof), created cognitive dissonance when considering the application of technology in a simulated setting. As a result of this outcome, our third finding is a reflection of our own learning in this action research project, which used feedback from our class members to provide more authentic supervision experiences. From this feedback, we have *updated our courses to provide a more realistic simulation of supervision experiences, including the use of actors in a simulation setting to better mimic the experience of providing*

supervision, a learning situation that moves beyond a role-play or an observation with a trusted colleague and capitalizes on interpersonal skill development.

Providing Novel Situations to Learn How to Apply Supervisory Behaviors

An important and interesting theme from our work has been the reflection of aspiring administrators regarding the importance of moving beyond role play activities with trusted peers and creating a laboratory of practice in which class members could conduct action research on their own application of supervisory experiences. As stated by one aspiring administrator, the TeachLivE lab, "Provides the opportunity to show a skill in action." Echoed by many class members, these experiential learning opportunities were highly valued as they provided a safe space to experiment and apply theory to practice. As one aspiring administrator mentioned, the clinically rich experience was "more meaningful because this is real," meaning that class members had to apply their theoretical learning into action and not necessarily with a safe or trusted colleague in their school, but have an experience where they could potentially receive substantial resistance to the supervisory feedback offered. Thus, as practitioners applying theory to practice, our class members had to reflect on the rapport established with the TeachLivE avatar in the pre-conference, consider what they witnessed in the observation, and determine what kind of supervisory behaviors they would use in the observation. One class member commented, "There is the ability to demonstrate, in action, what has been learned and how that can be applied in practice," referring to the ability to provide differentiated feedback based on using the Supervisory Behavior Continuum as a framework (Glickman et al., 2014).

As such, each class member had to consider if a teacher needed nondirective, collaborative, directive informational, or directive control supervisory feedback, all based on interpersonal needs. Regardless of expertise in a subject area, or lack thereof, it can be difficult for supervisors to remain reflective and encourage collaborative or non-directive behaviors rather than defaulting to directive feedback (Glickman et al., 2014). Given these predispositions, it is important to provide laboratories for practitioners to allow them to reflect upon and understand their own learning in action. One aspiring administrator in our *Educational Supervision* course commented on her process of learning how to provide collaborative supervision over the course of the semester, and how she applied this knowledge in a novel situation:

> I like to approach supervision as a coach, because coaching helps a teacher reflect more on their teaching, which I think is very important. So, when I go in and talk to a teacher, it's not me being directive, it's more a

> collaborative approach. And in that approach, too, I can sit back and listen and let the teacher make their discoveries. And if they can do that, then they are more likely to take ownership and want to make that change as opposed to me sitting there and saying, 'This is what you need to do.'

This type of reflection on learning how and when to apply supervision theory into action highlights crucial lessons that both class members and we, as instructors, have learned about the structures needed for educational supervision courses to better bridge the theory-practice gap.

While our class members were able to develop their own beliefs and actions as it relates to collaboration, they were also able to express when they needed to be more directive. Through these laboratory experiences, class members were able to reflect upon and judge the willingness or ability of a teacher to take part in a formative improvement process. Again, we believe the power in this type of learning results from staging a supervisory experience with someone an aspiring administrator doesn't know but with whom rapport must be built and interpersonal skills must be applied. Often, providing authentic and supportive supervision is a subjective process, one that requires intrapersonal reflection on what it means to provide formative feedback intended to help improve instruction. Based on the willingness of the TeachLivE avatar to engage in formative reflection to drive their own improvement, our aspiring administrators were then able to conceptualize and apply a theory in context. One class member commented,

> I think if someone is a natural, is really good at reflecting on their practice and can reflect and make really good choices about what they are doing, I think in those situations it would be more collaborative, but you'd be part of that [process]…. With someone who doesn't possess that natural ability to reflect and then make sound decisions based on that reflection, you'd want to guide them and provide more feedback through that process.

Another class member reflected, "If you provide feedback, it's got to take into account that person's skill set. It should be tailored to that, not necessarily one theoretical ideal. So, for instance when we were doing the post-conferences, knowing that it's necessarily about getting a teacher to do exactly what you think should happen in the class, but more or less saying, 'What's this person's skill set?' and how can you get them on board with wanting to identify their own areas that they want to improve. Or helping them identify an area if they need it." These opportunities for our aspiring administrators to reflect on the connection

between theory and practice is crucial, not just to understand when to be nondirective, collaborative, or directive, but to think deeply about the interpersonal needs of each person who is part of the supervisory process is key. As a result, members of our classes have the opportunity to reflect on the clinical supervision process as a whole and how it is applied in practice, not just conceptually.

Andragogical Perspectives Applying Supervision Skills Using Technology in a Laboratory Setting

One of the challenges for educators learning about educational supervision, and specifically theory translating into action through the application of skills, is that the type of learning and knowledge application covered in a course like *Educational Supervision* requires adults to be provided the opportunity to attempt supervision *in situ*. Since all of our class members are working professionals who can only take classes outside of their working contract time, this has traditionally posed problems for aspiring administrators. With the use of the TeachLivE lab we have been able to create situational experiences that simulate reality. However, skill acquisition in this type of learning environment also requires leadership preparation programs to consider andragogical perspectives in simulated settings, specifically how class members perceive the use of technology to drive their own learning through an action research process. Part of what we learned through our research process is there are benefits and drawbacks in terms of how technology can be applied in creating learning opportunities to apply theories of supervision in action.

One important benefit of using technology, shared by our class members, is the opportunity to be provided with a laboratory of practice where knowledge development is encourage through a reflective process. In the laboratory setting, class members had the opportunity to pause the interaction with the TeachLivE avatar, ask peers for feedback on feedback exchange up to that point, receive advice from peers if wanted, consider how to incorporate the feedback, and continue with the simulation. As adult learners, our class members valued the ability to learn with their peers, but to also apply new knowledge based on the perceived value of the learning structure. One class member reflected,

> There is a less guarded approach to applying the theories in action. Because in a course structure there is always a power dynamic between a professor and class members, no matter how much this is addressed. With a laboratory setting, the reflective process was not focused on the

> instructor providing the feedback, but rather turned it into a peer process and thus the stakes are lower.

The flattening of the hierarchy in our classes helps to not only promotes reflection, broadly speaking, but more importantly it empowers class members to drive their own learning in action. Thus, the use of technology in our courses through the TeachLivE laboratories provided an opportunity where educators are able to provide peer feedback to each other in a supportive and andragogically appropriate manner, rather than simply receiving feedback from an instructor.

As instructors, found the use of technology in the creation of laboratories of practice to be useful in creating what we thought were more realistic learning opportunities. However, some of our class members shared perspectives about the use of technology that they considered disruptive to their learning. While most of our class members did not comment on the realistic aspects of the avatars, many openly questioned the creation and control of the avatars when they conducted a one-on-one pre- and post-conference with a resistant teacher avatar. One class member commented, "I have questions of how the characters were developed and the reality of the process," while another stated, "Who is controlling the avatars? As much as we want to simulate this, we never truly can…it's more like going to the movies or the theatre." While part of the TeachLivE lab experience is to suspend reality (e.g. not question who or what is controlling the avatars), this was clearly a roadblock for some of our aspiring administrators.

Additionally, some of our class members shared difficulties in the application of the TeachLivE technology, specifically feeling constricted by the types of questions they could or could not ask the resistant avatar teacher. Due to the fact that instructors must provide TeachLivE staff with a fairly scripted list of questions the avatar might be asked (as well as a list of possible responses), our aspiring administrators commented that the framing of the pre- and post-conference questions were fairly broad. In other words, the construction of the laboratory setting didn't allow for individualization and the creation of the types of questions that some aspiring administrators wanted to ask. One aspiring administrator commented,

> For me, it's more of a technical thing, but I'm not quite sure of the avatar's limitations [and it] was something that I know we all kind of were wondering about at the beginning…. For me, I think I would have liked – I enjoy getting to develop my own questions and I think that in the post-conference I would have liked to have been able to do a little bit more of

> that. You know, take what you had given us, but based on the conversation that we had in the pre-conference, considering the conversations we had with the avatar teacher, where would we go from there with questions in the post-conference. Because ultimately, when we are instructional leaders, it's our job to figure out for this particular teacher what things and what areas should I really focus on.

Again, this was perception was shared by many class members due to the fact there is a set script for how the avatar could respond and was required for the simulation setting to be created and supported by TeachLivE.

Providing More Authentic Experiences to Develop Interpersonal Skills

A large part of our work the past three years has been to take the feedback provided by our class members about the usefulness of the laboratories of practice that we have created and improve their usefulness in transforming theory into action. We value creating a space where information flows from both researchers to practitioners and practitioners to researchers, particularly as this type of exchange allows us to reflect upon how we can create learning structures that allow educators to create their own action research. Our study on creating laboratories of practice for educators to apply theories of supervision in action has gone through three cycles where we, as instructors, have planned, acted, observed, and reflected upon (Mertler & Charles, 2005) how feedback from aspiring administrators translated into adaptations of our *Educational Supervision* courses to provide authentic supervision experiences. These sources of feedback not only inform how we better prepare aspiring administrators to provide high quality supervision, but also offer insights into interpersonal skill acquisition on a practical level.

Using feedback from our class members, we decided to think creatively on how we could create a more authentic laboratory of practice. We wanted to create a simulation that included real human interaction, but not with a trusted colleague as we wanted to replicate an interaction an aspiring administrator might have to address in practice. To ensure a clinically rich instructional supervision experience that would better prepare our class members for their future professional careers, we decided to update our laboratory experiences to include the use of actors who portrayed a teacher who was resistant to change or receiving feedback. The actors we recruited were either retired administrators or people with teaching experiences. These actors were given character backgrounds – short narratives that explained their disposition and previous actions – and were shared with class members (see Appendix A). The character backgrounds, along

with provided observational notes (see Appendix B) provided enough information for our aspiring administrators to create their own post-conference questions, and using the character backgrounds, the actors took part in a laboratory setting that was driven by improvisational acting. The goal of providing this type of learning experience was not only to provide more authentic learning opportunities, but to also further develop interpersonal skills and reflection that are hallmarks of successful supervision.

While we have only used this for one year in our *Educational Supervision* courses, the feedback from class members has been overwhelmingly positive. One educator commented,

> I think back to cohort life, and we did a lot of role playing with people in our cohort to try and build on some of those skills. Like, if there was a staff meeting or a challenging veteran teacher we would take on roles to do some of that. But I think that having actual people there or someone you didn't know, if you didn't really know what they were going to say, really made you think. [With the actor] I didn't know how she was going to react, and even though I've been in those situations a number of times, I thought, 'Oh, ok, how am I going to navigate around that statement that she just made?' That more than the TeachLivE lab.

Another aspiring administrator reflected,

> When you're going into [a supervision conference] with someone that you don't know, as you are talking you are trying to feel it out and adjust as need and try different strategies. I definitely felt like I was more on my toes and I had to think about, 'This isn't going well,' just exactly like a lesson in class. What do I need to try now? Where do I need to go next? And [the actor] was just phenomenal…she was a really good learning experience for me, I really appreciated it.

From this feedback we feel confident that while the TeachLivE laboratories are important starting points to create laboratories of practice for aspiring administrators, there are other supervisory laboratories that can be created that provide realistic and authentic supervisory experiences.

Conclusions

As we continue to explore options to improve supervision experiences for aspiring administrators, we believe our work can offer important reflections and lessons learned for scholarly-practitioners and instructors of educational

supervisors. Notably, Glanz (2005) comments, "action research has recently gained favor among principals as a way of improving schools by focusing on reflective practice for instructional improvement" (p. 18). As such, we strongly believe there are important opportunities for leadership preparation programs to reflect upon the professional practices and interpersonal skills being taught to support the ability for leaders to develop a reflective and thoughtful disposition in their supervision of teachers.

Learning laboratories are crucial if aspiring administrators are to be able to employ an action research approach that drives their own knowledge development and reflection (Huang, 2010; Sagor, 2000). By providing clinically rich experiences that allow practitioners to theorize, apply, reflect, and adapt, the hope of our coursework is to empower class members to develop tools to have a greater understanding of how they apply learning in action (Fisher & Phelps, 2006). Through our work, we believe our class members have been able to develop a deeper understanding of the importance of relationship building and interpersonal reflection, and how this translates into action considering when and how to apply different kinds of supervisory feedback. Additionally, an important part of our work is to provide experiential learning opportunities that allow aspiring administrators the freedom to develop their *own* understanding of how and when to be nondirective, collaborative, or directive, rather than being told. It is through this guided reflective practice that these leaders will become more skilled in providing supervision in their school buildings and thus increase student outcomes.

Perhaps the most interesting learning experience for us, as instructors, has been what we have learned about the use of technology assisting the translation of supervision theory into action skills of practitioners. Technology, like the TeachLivE software, is highly useful in the sense that it gives entrée to unexperienced practitioners to acquire and develop supervision skills through a simulated learning experience. That said, there are other technologies (and by this we mean the Greek definition of technology, which is a skill or action that expresses understanding) that might be just as useful in developing the interpersonal abilities to apply supervision theory in action. The benefits of interpersonal skill development for educational leaders are profound, notably the ability to reflect on an interaction, consider altering an approach to improve the relationship between herself/himself and a given teacher, and work together as a team to drive improvement within a school building (Donaldson, 2008; Johnson & Johnson, 2017). By using an actor instead of an avatar in our supervision laboratories, these learning opportunities can create endless possible interpersonal

skill development and reflection opportunities through which an aspiring administrator is able to apply theories of supervision in action.

From this work, we offer several suggestions we consider important for both practice as well as for future research in the area of educational supervision. With regards to, recommendations for practice we believe more can be done to help develop the instructional leadership skills necessary to develop 21st century administrators. We would never put a teacher in a classroom and expect them to continue to grow as an instructor and reflect on pedagogical practices without professional development, and yet, very little support is provided to administrators to further develop supervision skills once they have become a principal. Providing professional development to reflect on andragogical practices and interpersonal skill development as part of district training opportunities are often missing in practice and could be crucial to better providing formative feedback to teachers to help improve student outcomes.

With regards to recommendations for future research, we believe much can be done in this area as well. Much of what we know about educational supervision is conceptual, meaning that while we have a strong theoretical underpinning to suggest appropriate practices in our field, little has been scientifically studied with modern social science methodologies. We believe that laboratory settings can be used to investigate how supervision can be scientifically measured and applied, including setting up studies that allow researchers to explore and code peer-to-peer exchanges (diads), gather biometrics from supervisors within laboratory settings, and even examine brainwave functions during these laboratory exchanges to explore how the brain responds to different types of interpersonal exchanges. In short, we believe more can (and should) be done to scientifically document and explore what occurs between two people when a supervisor attempts to provide formative feedback.

As our society continues to rapidly transition interpersonal interactions to online platforms, perhaps there is an important opportunity to help educators stay grounded in the face-to-face exchanges that students, teachers, and administrators experience on a daily basis. Focusing on creating laboratories of practice for scholarly-practitioners that incorporate more diversity in these staged settings could be helpful, particularly need to acknowledge positionality from either the teacher's point of view or the aspiring administrator's point of view. In doing so, educators can begin to understand different cultural nuances and reflect on how this could be incorporated into a laboratory setting. Additionally, and perhaps most importantly, there is a real need to provide opportunities for aspiring administrators to develop rapport and build relationships with teachers they are

charged with supervising. It is the flattening of the hierarchical order of most school cultures that allows for formative feedback to be considered and for teachers to develop their own reflective stance. To accomplish this goal, leadership preparation programs must continue to develop new and engaging practices using a variety of resources and tools. A changing educational landscape requires that we all consider how consistent and timely feedback is crucial to improvement of teachers and school leaders.

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Appendix A

CONTEXT OF THE PRE-CONFERENCE

Rachel is a starting her tenth year as a middle school social studies teacher. Rachel is a self-described no-nonsense teacher who is known throughout the community as having strict guidelines for behavior in her class and demanding that students follow her classroom rules. Highly respected by the previous principal who employed a traditional approach to learning and retired two years ago after serving 30 years in the profession, last year you came in as the new principal and immediately noticed the need to change instructional strategies to greater engage student in their instruction. Last year you gave Rachel some feedback and ideas on how her instruction might be altered to provide greater engagement and learning for the students in her class, but this led to little change in her practice. In the second year in office, you have decided it is necessary to engage in a deeper conversation with some teachers who appear unwilling to reflect on their own instruction. Teachers have begun to schedule their pre-conferences with you, and Rachel's pre-conference is today. During this conference, you will discuss the planning of a lesson, instruction of the lesson, and the structuring of Rachel's classroom.

LAUNCHING OF THE LESSON

Aspiring administrator students can use the questions below as a guide to the pre-conference, where you will have to decide which questions are most important to you to ask based on preference. These questions are:

1. Tell me about the learning objective of the lesson.
2. What are some of the instructional resources and materials you might use in this lesson?
3. Tell me how you plan to communicate the lesson objective and what this will look like when you launch the lesson.
4. What are some instructional strategies you are thinking of using in this lesson?
5. Tell me how you plan to engage students in this lesson.
6. How might you assess the outcomes of this lesson, and how will you know if it was successful?
7. How do you plan on using established classroom procedures to support student learning?
8. Tell me how you plan to reinforce and reward student learning.
9. Tell me how you will arrange your room to support student learning.
10. What are some of the behavior management tools you using this year in your classroom?

Aspiring administrator students should also be working on establishing rapport with the Rachel while asking these questions, working to understand Rachel's perspective but also to guide her in areas of necessary growth. The struggle will be to work through the questions quick enough to understand Rachel's thinking about instruction, but also to figure out where you will need to provide direct feedback and when she is more willing (and able) to make decisions on her own. This is a real-world scenario where administrators are crunched for time and need to make interpersonal decisions that will have an impact on instruction.

Note: Rachel is a pseudonym for the purposes of the laboratory setting.

Appendix B

OBSERVATION NOTES FOR RACHEL TAYLOR (4TH PERIOD SOCIAL STUDIES)

10: 34	Entered class immediately after period 3 was dismissed. Sixth grade students begin to trickle in for the start of period 4, and Ms. Taylor reminds students to read the objective on the board and write the objective down in their daily social studies journals.
10:36	Most students have entered the room; Ms. Taylor reminds students to sit down quietly and write down the objective for the day in their journals.
10:37	Bell rings. Ms. Taylor shuts the door and begins to collect homework from the night before. A few students try to enter the room after the door is shut; Ms. Taylor tells them to go to the office and get a late pass.
10:38	"Today we are going to learn about the Wabanaki Tribe. Who knows about the Wabanaki?" Ms. Taylor's question is met with silence. Immediately she tells the class to open to p. 38 in their books and read a passage silently about the Wabanaki.
10:42	Some of the class members quietly whisper to each other. Roughly half the class still seems to be reading. A few students do not seem to have yet begun the reading. Ms. Taylor begins to discuss how students will create a poster in groups today. "Today you will use the mobile computer lab to search for information on the Wabanaki…" Students cheer and seem excited to use technology.
10:43	Assistant principal drops off late students to Ms. Taylor. She tells them they must write down the objective written on the board.
10:44	More verbal directions. Do not see any directions written on the board or on a handout. Ms. Taylor tells students they may pick who they want to work with. Students begin to run around the room looking for partners. There is lots of yelling. "How many people can be in a group?" one boy asks. A group of six girls move into a corner of the room.
10:45	Ms. Taylor yells to get the attention of the class. "It's this kind of behavior that prevents you from doing this kind of work" she tells them. She then tells the class she only wants groups of 2 or 3. The group of six girls stay in the corner and do not separate.
10:50	After lots of confusion, most of the class members are on computers. Ms. Taylor asked the group of six girls to separate. They move slightly apart into two groups of three, but still talk to each other.
10:51	One group of students is working collaboratively on their laptops and talking about how they will create their poster. When I ask them what they are working on they say, "We all work together in our gifted and talented class, so we decided it would be interesting to work together on our Wabanaki poster." When pressed further about the objective, they say "To learn about the Wabanaki people."
10:53	Another group seems to want to start their project but also seem to be confused about the objective of the lesson. When asked they say "We're not sure what we're supposed to be doing." When I suggest they ask Ms. Taylor to clarify, one boy says "I don't want her to be mad at me…."
10:56	A group of three boys are laughing and pointing on their computers. They are looking at a picture of a Native American woman who is topless. Ms. Taylor comes over and takes away the laptops from them and tells them all to open their books to complete the rest of the lesson. As she walks past me she says, "This is why I don't like doing group work."
10:59	Ms. Taylor tells the class "You should be working on completing your posters in the next 10 minutes." Some groups seem surprised by the amount of time left.
11:03	The group of three boys that had their laptops taken away are disengaged and have their heads down. Ms. Taylor reminds them they will get a bad grade if they don't do their work. When I ask one boy about the reading, he says "I don't understand the words…they are too big. I'll just read them in my special class."
11:08	Most groups are working frantically to complete their posters. Some look good…others look clearly rushed. Ms. Taylor continues to walk around the room. She praises the ones that look good. She also tells the groups whose posters don't look as nice that presentation matters and points will be "taken off for sloppiness."
11:11	I ask one group how they are doing with their poster. One girl says, "I'm not even sure this is what she's looking for."
11:13	Ms. Taylor tells the groups to clean up their work and return the computers and move back to their seats.
11:16	Ms. Taylor hands out a half-sheet of paper which reads, "Tell me what you learned today about the Wabanaki Tribe."
11:19	Students have mixed responses to the exit slip. Some seem to continually write about what they learned, while others have blank sheets. Some students begin to talk to each other; Ms. Taylor reminds everyone this is a form of an assessment and they should not be talking to each other. One girl mutters to herself, "I was just trying to talk about what we learned."
11:22	Bell rings. Students hurry out of the class and seem excited to go to lunch. Ms. Taylor says, "You know, they all completed their posters. These exit slips aren't great however…only about half of the class wrote anything of substance about the lesson. I bet they would have learned more if I had just taught them with a lecture and had them take notes!"