Using Interactive, Problem-based Simulations in a Mentoring Program for Novice School Leaders

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Leading American schools is a multi-faceted and complex role as states have adopted requirements for the mentoring of new principals. Interactive problem-based simulations can offer novice principals opportunities to practice solving job-embedded issues. This study explored practicing administrators interacting with simulations embedded into an existing mentoring program. The perceptions of participants reveal that simulations could be used widely in a school district for professional development, personalized to the needs of the district. The same simulations could also be used during internship component of principal preparation programs. Future school leaders could explore current problem based scenarios in a risk free environment.

Keywords: teacher and leadership preparation, educational leadership, mentoring in education, staff development, professional development and mentoring, simulations, novice school leaders, school management and leadership

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Principals navigate between implementing central office and state requirements, and at the same time, manage the school facility, the employees, and the community stakeholders that influence the school. The wide range of responsibilities faced by school principals requires a deep knowledge of instructional leadership and management practices as well as the skills used to implement these practices. Leading American schools is a multi-faceted and complex role. "The harsh truth is that the new school leader faces a dizzying array of tasks associated with managing a highly complex organization: from budgeting and busing to discipline, personnel and union matters and public relations," (Wallace Foundation, 2007, p. 6). More importantly, the principal sets the tone for the school culture and the academic expectations for students (Marzano, Waters, & McNulty, 2005).

The Professional Standards for Educational Leaders, formerly known as ISLLC standards, have been identified by the National Policy Board for Educational Administration (NPBEA) and are intended to guide program development for college and university principal preparation programs (NPBEA, 2015). They are aligned to the leadership and management practices needed for today's principals. State departments of education also fall in line with similar outcomes as measures of principal effectiveness. While principal preparation programs provide the theoretical knowledge needed by principals, they still fall short when providing practical, hands-on applications (Darling-Hammond, Meyerson, LaPointe & Orr, 2010) of the job related skills. Internships and mentoring programs have been designed to support novices in the development of these decision-making and problem solving skills.

States have adopted requirements for the mentoring of new principals. In many cases however, the existing state and district level programs result in "buddy systems" or checklist exercises that do not do nearly enough to help prepare principals to become knowledgeable and courageous leaders (Wallace Foundation, 2007). Interactive problem-based simulations can offer novice principals opportunities to practice solving job-embedded issues. The experience of the simulation provides participants opportunities for reflection and feedback of the decisions made during the simulation, thus developing new understandings of the situation and potential solutions. The development of a mental model (Daggett, 2014, Senge, et al, 2012) in the simulation exercise can be carried forward to future actions in similar situations as a school leader. Imagine a student with special needs who has just been kicked out of the classroom and sent to the principal's office for mixing together all of the glazes in art class. The art teacher is well-liked in the community and she is known for her inability to work with students who do not tow the line. Another scenario may ask participants to deal with the media and parents of a star athlete who is found ineligible for the playoff football game Friday night. The teacher did not let the principal know the athlete was academically in trouble. And, the high school football team has a long tradition of reaching the state championships every year. The names and players will change in real life and the circumstances will be different, but with the experience of the simulations, the principal will have familiarity with the nature of the situation.

The interactive nature of simulations can provide a stimulating and useful frame for mentoring programs for novice principals and assistant principals. "The divergent perceptions and interpretations from individuals and groups allows the construction of their situation that makes sense to them all— a joint construction" (Stringer, 2013, p. 75). The extent to which simulations in a mentoring program set the stage for exploring school-based problems and facilitate the development of solutions is the focus of this case study.

Research Question

What are the perceptions of participants to using interactive, problem-based simulations as a framework in a yearlong mentoring program for novice principals and assistant principals?

Review of Literature

Coaching and mentoring of school leaders can significantly shape the skills, dispositions, and career of the individual. If principals are to act as reform agents in schools, then their ability to define school scenarios and solutions more broadly is important to this task. Heifetz (2009) indicates that in order for adaptive solutions to occur, the leader should be able to consider the situation or problem in an adaptive frame versus a more technical frame. Technical problems are those situations in which a leader uses past models to satisfy next steps in addressing the issue. The ability to use a different lens to view the problem accesses a new set of solutions that fit the adaptive model, offering the potential for reform. The ability to think outside the box for solutions is a skill that can be developed and facilitated by mentors who view problems in much the same way.

Recommendations for novice principal support in the form of mentoring and/or coaching can enculturate new principals into open frames of solving problems as well as assist them to develop proficiency with the varied roles of the job (Darling-Hammond, et.al, 2010). Mentoring and coaching of school leaders provide two very different perspectives. Coaching models focus on the development of specific skills. Once the skill is developed, the coaching is complete. Mentoring is based on a long-term relationship between mentor and mentee. It is the reciprocal relationship between the two that allows for an exchange of ideas (Crow, 2012). While the mentor may have more experience dealing with specific situations, the mentor and mentee have the opportunity to co-construct meaning. In both cases, mentoring and coaching are used to transfer the knowledge, skills, and dispositions of an accepted set of skills for the particular job.

In 2007, the Wallace Foundation identified at least 22 U.S. states that required mentoring programs for new school leaders. In many of these cases, the mentoring programs were nothing more than checklists or "buddy systems" "that don't do nearly enough to help prepare principals to become knowledgeable and courageous leaders of better teaching and learning in their schools" (Wallace Foundation, 2007). Effective programs for training and supporting new principals must have thoughtful structures, a clear focus, and strong elements to build a culture of support (Wallace Foundation, 2007, p. 4). School cultures are rich with everyday situations that can be isolated and dissected in order to understand the dynamics at work. Of course, no situation is exactly the same, but over time, principals learn to recognize and understand these dynamics in order to meet the challenge of the situation more fully.

Time, place, and general social dynamics influence how a leader responds to the problem. At play is the moral framework that informs the intended action. School leaders act within a professional community with a moral vision that has set boundaries of what is acceptable and what is not. The leader's moral framework is influenced by the moral architecture of the school and at the same time, he influences the same moral structure. Moral architecture encompasses the values, beliefs, and behaviors of the organization. Decisions leaders make inform the professional community of the acceptable moral architecture of the school. "Leaders committed to working with stakeholders further develop the moral architecture, creating and strengthening bonds between other leaders, staff, and students" (Wagner & Simpson, 2009, p. 5). Moral leadership is

distinct from and does not replace decision-making protocols, rather it is the hand that guides the pen.

Denning discussed that "if stories that mentors and protégés tell can be used as instruments for critical reflection and inquiry, they can be channeled as powerful tools that awaken, prod, expose, and create new ways of thinking about the roles and impact of leaders" (as cited in Crow, 2012, p. 238). Problem-based models provide a structure for mentoring exercises that inform and guide the mentor and mentee in situational conversation. Thinking through issues using a guided process enhances the mentoring experience by expanding the contextual factors. In a variety of instructional settings, simulations have been found to engage and motivate learners (Ebner & Druckman, 2012).

Theoretical concepts are linked with practical applications in a given simulation by using common themes or problems. Participants then role-play steps to resolve this real life situation, making meaningful connections along the way. Ebner and Druckman (2012) found that students using simulations experienced enhanced, short-term concept learning, deeper understanding of the concepts presented, long-term retention of the concepts, and higher degrees of motivation and engagement among participants. Graduate students in a leadership preparation program indicated that they too, experienced satisfaction and enhanced learning when using online, problem-solving simulations (Staub & Bravender, 2014a).

Simulation Tool

The web-based capabilities of a simulation tool offer a way to provide a specific environment that places the user in a scenario requiring decisions and consequences. It allows users to work from home or in a small group setting. These environments can be created to fit any situation such as a school setting. This chosen simulation software provide templates that are easy to manipulate and allow the designers to scaffold problem-based content. The simulations used in this study were text-based, meaning that no audio or video was used, as seen in figure 1.

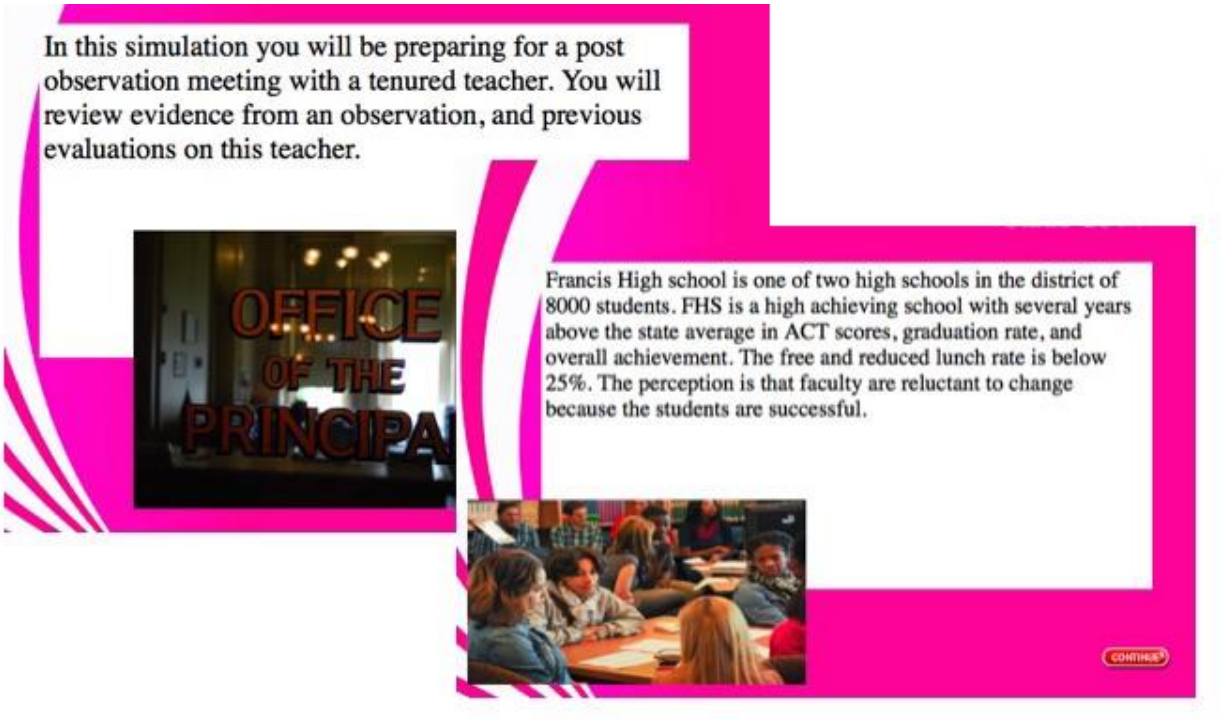

Figure 1. Example: scenario background information

In these simulations, the user must first read the background, context, and dialogue. The designers wrote and displayed scenarios, housed resource documents, provided pathways to decision points, and listed outcome options. Then figure 2 shows how the participant was presented with a dilemma within the context of the school and scenario described in the previous slides.

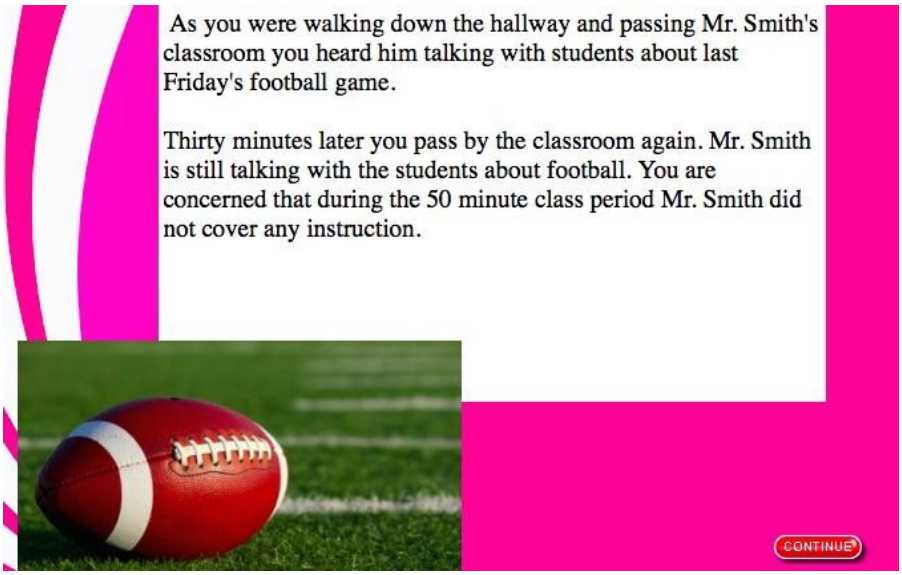

Figure 2. Example: simulation dilemma in context

Each dilemma consists of four decision options as seen in figure 3. The participant must choose one of the decision options to respond to the dilemma. Anytime a user selects a decision option, it leads to feedback that identifies the choice as good, mediocre, or poor with an action or reaction that might occur as a result of this decision. The consequences in the scenarios, created from these actions and reactions, then require users to make further decisions by again selecting from another set of choices until the scenario comes to its conclusion. Each time participants chose a decision option, the option is scored with a numerical rating associated with the decision: good-three points, mediocre-two points, and poor- one point.

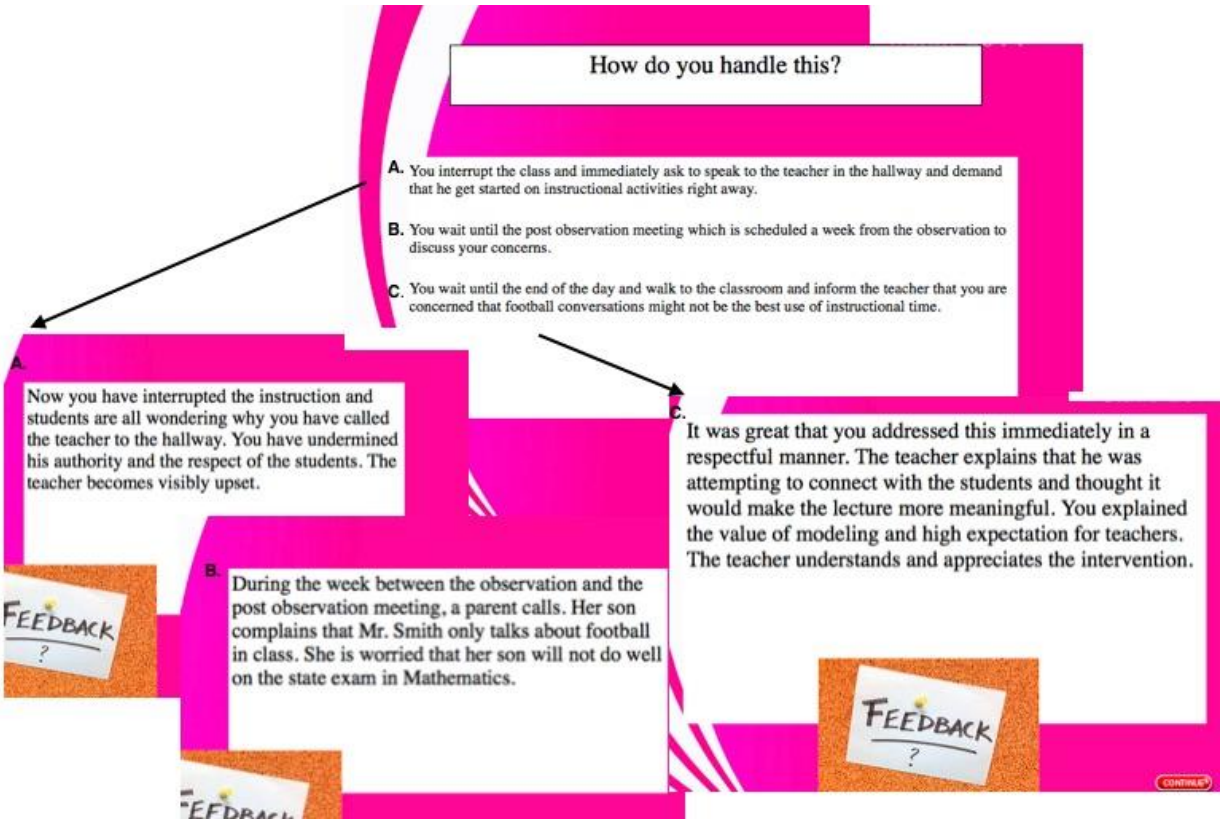

Figure 3. Example: decision options and corresponding feedback

Methodology

The links to web-based, interactive simulations were provided to the coordinator overseeing the novice principal mentorship program in a Midwestern school district. The district itself has 10 schools with more than 8,000 students, reporting that just over 50% of those students would be considered economically disadvantaged. The simulations were embedded into an existing mentoring program. Given the configuration of the mentoring program that included 15 participants and a coordinator, a multilevel research model was utilized. The multilevel research model allowed for collecting data from two different groups simultaneously (Creswell, 2009). A quantitative approach would provide an analysis of the overall experience by the participants but the same survey would not be able to address the perspectives of the coordinator facilitating the mentoring sessions. Case study methodology would allow the coordinator to be interviewed providing comparison data to the results of the survey data from the principals and assistant principals. Thus, a mixed method approach was implemented.

Participants

The coordinator of the mentorship program for novice principals and assistants was a veteran principal and teacher of 12 years. She had been given the responsibility of designing a program to support new school leaders in the district. Over the course of her leadership for three years, the program evolved from an informal series of meetings with principals to discuss pertinent issues to

a more structured program identifying specific topics to be covered each month during the school year. In the process of creating a more formalized approach to the mentorship program, the coordinator attended a workshop on the principal simulations. Based on her review of the simulations at the workshop, she requested access to them so that they could be integrated into the district's principal mentorship program.

There were 15 active principals or assistants enrolled during the time of this study. Each novice came to the administrative role having been a classroom teacher. Eleven members of this group possessed more than four years of teaching experience. Five of the 15 participants were employed as assistant principals.

The Process

The veteran principal coordinator had been facilitating a year-long mentorship program for novice principals in her district. They met once a month for mentoring and coaching pertaining to district policies, issues, and professional development. Each meeting was three hours long with a new topic introduced each time.

At the beginning of year three of the program, the veteran principal coordinator requested use of the problem-based simulations. It was arranged that she would receive one or more simulations created by the research team every month. The facilitator would review each simulation on her own before presenting it to the group. Principals were given time to work through the simulation on their own and receive feedback on their decisions that was built into the simulation. The principals then discussed the simulation and their decisions as a group facilitated by the coordinator. Over the course of the year 11 different simulations were analyzed. An important component to the analysis of the simulation was the connection the participants made to their own district policies and/or school cultures. Novice principals were encouraged to share their personal experiences and explore possible avenues to resolve past or present conflicts.

At the end of the eight month process, an online survey was emailed to the coordinator who then sent it out to the 15 participants. There were additional areas for participants to add comments and subjective responses. The facilitator of the mentorship program participated in a phone interview with the research team.

Limitations

In this study limitations stem from the bias of the researchers, design of the simulation, small sample size, bias of the interviewee, and multilevel methodology. The bias of the researchers from the outset of the study is important so that the reader understands the position of the researchers and any biases or assumptions that impact the inquiry (Merriam, 1988). In this clarification, the researchers' comment on past simulation use, experiences, biases, prejudices, and orientations that have likely shaped the interpretation and approach to the study.

Limitations can be attributed to design and use of any simulation. It is impossible to include every possible decision option in a text-based simulation. The possibility exists that some logically correct responses were not included in the decision points provide in the simulation. Simulation is not exact, but is intended to provide a set of the responses to different conditions. Simulation is not always able to replicate real-life situations in the exact nature in which they play out. It is not possible to completely reproduce complex educational leadership and ethical issues with the exact context.

User engagement is another limitation. Without real consequences for mistakes, students may not take the simulation process as seriously as intended, underperform, or lack engagement in the training (Gray, 2002). In addition, the results and feedback given to a user are only as effective as the actual training provided prior to the simulation and in follow up after the feedback has been provided.

Another limitation posed by this study is the small sample size. It is a study of one principal preparation program and the facilitator using simulations. The sample might not be a true representation of the population of novice leaders within different types of school districts.

A limitation of multilevel research methodology is the disproportionate weight of the two types of data collected. The survey of participants included perspectives of 15 principals while the interview of the veteran principal is only one person. The online nature of the survey did not allow the researchers to clarify the statements and questions that were provided to participants which is not the situation in case study interviewing. The two methods are unequal in their priority and this approach could result in unequal evidence within a study causing issue when interpreting the final results.

Findings

Participant Survey

A survey was used as a direct measure of the attitudes of participants and their experience using the simulations. At the end of the school year, the novice principals and assistants were emailed a request to participate in the survey about their mentoring program experience. The 13 questions were grouped into four key areas: 1. Relevancy of the simulation topics to the realities of the job, 2. Value of the simulations to the development of learners, 3. Frequency of Simulation Use, 4. Identification of issues for future simulations. For each item, participants were given a three point rating scale such as negative, neutral, or positive; ie. not helpful, somewhat helpful, helpful; once, more than once, frequently. A section for comments was provided after each question to allow the participants to provide more detail to their responses and/or suggestions to the researchers. Of the 15 participants in the mentoring program, 80% or 12 people responded to the survey.

Relevancy of the simulation topics to the realities of the job

The participants worked through simulations regarding the relevancy of the simulation topics to the daily life of a principal and the issues that land on a principal's desk. Over 90% or 11 of the 12 respondents reported that the simulation topics frequently connected to issues which occurred in their current role. The participants responses in the comment section for each of the items within this category illuminated two particular findings. The first finding was the recognition that four of the simulations were more instructive than the other seven simulations. The simulations titled Teacher with Student Lacking Engagement, Teacher Observation, Athlete with Poor Grades, and Crisis Management, provided the participants with information they previously did not know. The second finding from participants was the recommendation that specific follow up discussion questions be added to each simulation topic.

Value of the Simulations to the Development of Learners

All 12 of the respondents reported that the use of simulations was somewhat or very helpful for novice principals. When asked how helpful the simulations might be for graduate students in a

principal preparation program learning how to respond to school related issues, 100% of the of respondents noted them as helpful. In the comment section for the two questions in this category, respondents identified three other groups that could benefit from the use of simulations: regular education classroom teachers, special education teachers, and special education administrators.

Frequency of Simulation Use

The participants primarily worked through the simulations in the mentorship meetings. However, 33% of the respondents reported that they walked through the simulations again at a time different than the mentorship meeting. Additionally, 91.7% of the respondents indicated that they participated in follow-up discussions about a specific topic from the simulations at a later date. The follow up conversations were described as occurring with another member of the mentorship program, the facilitator, a veteran principal, the district superintendent, or another colleague. The simulations with the highest participation rates were Teacher with Student Lacking Engagement, Teacher Observation, Athlete with Poor Grades, IEP Concerns, and Crisis Management.

Identification of Issues for Future Simulations

At the end of the survey, participants were asked to recommend simulation topics that would be useful for future decision-making simulations. The most reported topic pertained to managing parent concerns and the subsequent communication with those parents. Other suggestions reported (three or more times) were dealing with student discipline and parents, grade conflicts and parents, parent complaints about a teacher not communicating frequently enough with them, mitigating issues at staff meetings, involving staff in creating authentic professional development, and discussion techniques when having difficult conversations.

Feedback from Facilitator

The veteran principal leading the mentorship program was asked to reflect on her experience with the novice principals through a phone interview with the research team. When asked about the design of the mentorship program, the mentor principal indicated that the current program had developed organically. There was a need several years ago to provide support in the school district to novice principals. Overtime, this veteran shaped the program into a more formal monthly structure with specific topics to be covered each time they met. The novice principals were given a topic to discuss as a group. This was followed by dinner together and an opportunity for more informal discussion. In the year the simulations were presented, the veteran administrator indicated that the design of the mentorship program was to use a simulation to begin each meeting followed by another set of discussion topics that she prepared. However, the simulation topics seemed to develop a life of their own. Once the simulation was introduced and the participants had walked through the online portion, the discussion of the simulation topic did not end. Each simulation topic had implications to procedures and policies that the novice principals and assistants wanted to explore. These discussions, she reported, lasted through dinner.

The mentor elaborated on the most memorable dinner conversations. She mentioned the dress code conversation was something almost everyone had a personal story which they could reference. Many noted that the simulation surrounding how to address a school board or individual board members identified their personal feelings of uncertainty when it came to dealing with the

school board of education. She explained that the simulations regarding Teacher Observation and the Teacher with Student Lacking Engagement were discussed at length. These two particular simulations hit close to home since they were similar to the evaluation process the novice principals and assistants experienced as classroom teachers with their own principals. The simulation sparked a discussion that provided multiple approaches to handling these situations and conversations with teachers

The coordinator was asked to describe what she observed during the use of the simulations and her perceptions of what participants enjoyed or did not enjoy in the process. She noted that everything related to the simulations in the mentorship sessions was positive. Participants appeared to like receiving immediate feedback when they selected an option that responded to a scenario/issue. Each time they selected a decision option they received a an explanation telling them how their choice could be considered good, mediocre, or poor and why. Reading an explanation of a consequence to their decision was preferable to saying the participant was right or wrong.

Each time participants chose a decision option, the option was scored with a numerical rating associated with the decision. The mentor indicated that the scoring mechanism of the simulations was ignored by participants. The participants appeared more focused on how the simulation content connected to their specific school and district policies rather than on a passing score on each decision option.

The researchers inquired as to which questions the participants asked the coordinator regarding the topics posed in the simulations. The coordinator noted that rather than asking questions, the participants would share thoughts and experiences with each other. If they did have questions about a specific policy in the district, the mentor had the participants look for the information in their own district policy document. Her plan was to show them that the policies existed and how to locate the material if needed. Regarding the format of the simulations, the coordinator suggested that it would be helpful to have more information provided in the directions of what to expect on the slides as well as including tips on how to best use the feedback slides.

Case studies have been used in educational leadership preparation programs to teach problem-based learning. The coordinator was asked to compare her experience using case studies to the use of these online simulations.

> I preferred the simulations because case studies tend to guide or lead the student. Simulations were more "real" because being a principal you don't have the whole picture when making a decision. You have to start making decisions on how to get the whole picture. Where case studies give you all the facts and force you to make a decision (High School Principal, personal communication, 2015).

The coordinator further explained that simulations allowed participants to construct knowledge as they moved through the simulation making this a more formative process of learning.

Given the coordinator's decade of experience as a principal, she was asked if there were differences in the discussions she listened to between the less experienced novice principals and those with some experience in an administrative role. She indicated that the novices with some administrative experience appeared to ask more questions. They wanted to know the background or the "why" of an issue more frequently.

> That sort of thinking was key to the course and what new administrators needed to hear. Those with a little bit of experience were more willing to challenge a [decision option] and then explain why they might have chosen something else (High School Principal, personal communication, 2015).

The coordinator went on to discuss the value she saw in the simulations for general professional development opportunities. She said that she originally sought to have the simulations at all district meetings, but that did not work out. They were only used in the mentorship program. However, the novice leaders attending the mentorship sessions would talk so much about the simulations, that the leaders in central office were considering using simulations at all leadership meetings.

The mentor was asked her overall impressions about the use of the online simulations in the mentorship program.

> This activity was the most effective piece that has been implemented into the mentoring [program] so far. Assistant principals were able to have free flowing conversation with building principals to strengthen bonds, create community, as well as learn more in depth about the buildings within the district and community stakeholders (High School Principal, personal communication, 2015).

Feedback from the facilitator sets the stage for an expansion of simulation topics and situations and increased use of simulations as professional development for novice principals.

Implications

The perceptions of participants when using interactive, problem-based simulations as a framework for a yearlong mentoring program for novice principals and assistant principals reveal a number of implications. The positive feedback from the participants and their recommendations for future simulations suggest simulations to be an effective tool used for mentoring programs. The simulations are accessible and user friendly allowing group facilitators ease of use. The online capability of the simulations extends their use to individuals in an anywhere environment. Mentors and mentees can meet one-on-one and use simulations as a guide or starting point for discussion about school issues and practices addressing the different issues. The dynamic experienced in the simulation discussions can reveal cultural aspects to resolving problems within their specific district.

Professional Development

Web-based simulations can be embedded into professional development. Since they allow for customization, districts can tailor the simulations to specific district protocols to ensure novice principals and assistant principals have practice exploring district specific policies and procedures. For example, how a school leader handles the media following a school crisis is often determined by the superintendent; the school principal could follow the protocol set by the superintendent for talking with the media in this type of event. A different possibility is to design the crisis situation with options that guide the professional toward the steps prescribed by the district for handling a crisis. The district's culture and the local community become part of the simulation. The use of the simulation in this context is not limited to school leaders but could be designed to engage counselors and teachers as well.

The structure of professional learning communities (PLC) is yet another setting that can be enhanced by the use of simulations. Research suggests that high-quality preparation for new principals continues after a degree is conferred by way of careful on-the-job coaching or mentoring (Sutcher, L., Podolsky, A., & Espinoza, D., 2017, p. 10). Simulations spark conversation and learning that results from rich dialogue. The PLC for example, could participate in a series of

problem-based simulations that use the lens of long standing district policies to determine whether the policy should be revised to be more in line with state and federal guidelines or societal trends.

Leadership preparation

Use of simulations in leader preparation courses provides a safe space for future leaders to practice decision making. Simulations can provide the practical application of the theoretical concepts taught in the class and the relevance to the principal's job that will reinforce the learning and course objectives. Students can tackle the complexity of decision making required of school leaders invested in educational change but doing so in a risk free environment. As Fullan (2002) points out, "Only principals who are equipped to handle a complex, rapidly changing environment can implement the reforms that lead to sustained improvement in student achievement" (p. 16). Problem based scenarios create discussion of the plethora of issues and external forces that go into making decisions that affect staff, students, and parents. It is a good time for candidates to reflect on the personal values and beliefs that shape one's thinking and how their own ethical code is influenced by the morale architecture of the profession. Students may also want to design their own simulations based on current experiences in schools thus, allowing them to think through the problem and related issues. Of particular note may be the development of simulations around issues with parents--a topic recommended by the participants in the mentoring program presented in this study.

Internships

The principal internship in leadership preparation programs could also be enhanced with the use of problem based simulations. Simulations could be provided to students in the order in which a principal might realistically encounter them in a school year for a realistic approach to topics of conversation. "Given the time constraints of full-time teachers to participate in on-the-job training, simulations can be used as some or all of the internship experiences" (Staub & Bravender, 2014b, p. 183). Linking the simulations to leadership preparation standards aligns the experiences with the requirements of accreditation programs.

Interns work with cooperating administrators in the field for an on-the-job experience intended to give students responsibilities for leading, facilitating, and making decisions typical of an educational leader (Darling-Hammond et al,, 2010). Problem based simulations can set the stage for specific conversations that may not have come up during the time frame of the internship. As a mentoring tool the simulation can leverage the experience and knowledge of the coordinating administrator. Students can work through the simulations and develop a series of questions to ask the coordinating administrator. Alternatively, the coordinating administrator and the intern could work through a simulation together. This allows for reflection about the many decisions an educational leader makes, why certain choices might be preferred over others, and issues that may be not be immediately evident or below the surface on different types of problems. Rich dialogue can lead to discussions about how principals operationalize the school's vision in short and long term goals reinforcing concepts presented in the leadership program. The opportunity exists for differences to be pointed out with regard to urban and rural schools or the district's policies supporting the various topics. Given the realistic nature of the simulations and the ensued discussion, the leadership preparation program might consider the inclusion of these experiences toward the required clock hours of the internship.

Conclusion

This study explored the perceptions of participants when using interactive, problem-based simulations as a framework for a yearlong mentoring program for novice principals and assistant principals. The experience provided opportunities for reflection and feedback of the decisions made during the simulation, thus developing new understandings of the situation and potential solutions. It is clear that future school leaders could explore current problem based scenarios in a risk free environment with the use of simulations. The perceptions of participants reveal that simulations could be used widely in a school district for professional development, personalized to the needs of the district. The potential to redesign professional development models through online access only makes them that much more appealing. Leading American schools is a multi-faceted and complex role. This online model can allow principals to stay in the school during the day where they are most needed.

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