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Increasing Aspiring Principals' Readiness to Serve: Knowledge and Skill Application Laboratories

Jeffrey W. Eiseman
University of Massachusetts-Amherst

Matthew Militello
North Carolina State University

Most leadership programs emphasize knowledge over skills, being skillful over how to be skillful, knowledge about skills over skill application, and ad hoc and hard-to-assess field activities over focused and observable skill practice. "Knowledge and skill application laboratories" provide opportunities to experiment with – and receive criteria-based feedback from multiple observers on – new ways of thinking and behaving. They challenge students to integrate course-specific content with universally applicable skills: diagnosis, goal setting, communication, teamwork, and conflict management. We describe the purpose, history, and objectives of this kind of laboratory, sample lab activities, design considerations, and what we learned.

Increasing Aspiring Principals' Readiness to Serve: Knowledge and Skill Application Laboratories

How leadership preparation programs and educational leadership educators prepare future school leaders is under scrutiny. A recent study titled "Educating School Leaders" by Arthur Levine (2005) indicts educational administration and leadership preparation programs. In his report, Levine stated, "The majority of programs range from inadequate to appalling, even at some of the country's leading universities" (p. 23). The purpose of this article is to explicate the purpose, design, and implementation of Knowledge and Skill Application Laboratories in a school leadership preparation program, and explain why laboratories may better prepare future school leaders.

We begin with a brief overview of the current state of principal preparation that describes the problems that knowledge and skill application laboratories are designed to address. After explaining our purposes in designing and implementing these laboratories, we explain why we call these learning opportunities "knowledge and skill applications laboratories." Then we articulate our specific goals for the laboratories. After providing two examples of how we use labs in our program, we discuss issues for faculty to consider in order to design and integrate laboratories into their preparation programs. We conclude by discussing how well our

laboratories met our expectations as well as some of the challenges and surprises we encountered.

Traditions of Learning in Pre-Service Principal Preparation

Principals matter. Variation in leadership accounts for a quarter of the proportion of variation in student learning that is attributable to school effects (Hallinger & Heck, 1996). Principals achieve this influence through setting direction, developing people, and redesigning the organization (see Leithwood, Seashore Louis, Anderson, & Wahlstrom, 2005; Marzano, Waters, & McNulty, 2005).

Historically, universities and colleges had a monopoly over the certification of school leaders. Recently, a number of critics have asserted that state certification programs do not prepare future school leaders adequately (see Finn, 2003; Hale & Moorman, 2003; Levine, 2005; Sykes, 2002; Tucker & Codding, 2002; U.S. Department of Education, 2004; Black & Murtadha, 2007). Levine (2005) asserted that most administrative preparation programs are deeply flawed, suffering from low standards, weak faculty, little clinical instruction, and a curriculum that is unrelated to how schools actually function. Similarly, Farkas, Johnson, and Duffet (2003) reported that only four percent of practicing principal survey respondents stated that on-the-job experiences or guidance from colleagues had been more helpful in preparing them for their current position than graduate school. In fact, 67 percent of principals reported, "typical leadership programs in graduate schools of education are out of touch with the realities of what it takes to run today's school districts" (p. 39). Hess and Kelly (2007) warned that this inadequate preparation "may leave aspiring principals prepared for the traditional world of educational leadership but not for the challenges they will face in the 21st century" (p. 268).

Kelley and Peterson (2002) noted, "Leadership preparation is not simply a matter of developing a set of discrete skills and building isolated bits of knowledge. Instead it means embedding skills and knowledge in a complex, analytical 'mental map' that can be applied to complex, varied, and uncertain situations" (p. 270). And Pounder, Reitzug, and Young (2002) noted, "One of the biggest challenges is for educational leadership faculty to move outside of their disciplinary, role-oriented, and administrative function 'silos' to a more holistic, focused, and integrated preparation of school leaders" (p. 285). As a result, many states have modified or abandoned the requirements for state certification pre-service principal licensure programs (e.g., the state of Michigan currently does not have a state principal license requirement).

To fill the gap, there has been a proliferation of alternative certification programs. The most popular of these programs have one or more of the following features: (1) they are delivered at district sites, (2) they put a high premium on an extensive and intensive field placement, (3) they minimize coursework that emphasizes theory, and (4) they enable students to finish quickly, sometimes within 12 to 15 months (Feistritzer, 2003). Colleges and university certification have not been quick to respond. While certain features such as cohort designs have become more common (Barnett, Basom, Yerkes, & Norris, 2000; Scribner & Donaldson, 2001), Sykes (2002) asserted that professional preparation models must change and include:

- an active role for adult learners in directing their own professional learning;

- group learning, through cohorts and group projects, in order to promote expertise in the areas of organizational and interpersonal communication, group dynamics, and conflict resolution;
- the use of problem-based learning, thereby providing students the opportunity to practice leadership through coaching, evaluating, and providing feedback with their peers, and
- field experiences that integrate theoretical and analytical knowledge, utilizing structured professional learning, often through a mentorship model.

A recent study of eight expert-recommended principal certification programs demonstrated that the combination of a balance of theory and practice, guidance from experts in the field, and coherent internships helped candidates learn professional practices (e.g., facilitate student learning), build a professional learning community, evaluate and provide feedback to teachers, guide curriculum development and instruction, use data to monitor school progress and develop solutions, work with teachers to change methods when students are not succeeding, and foster professional development (Darling-Hammond, LaPointe, Meyerson, & Orr, 2007).

In addition to fully accepting the points made by Sykes (2002) and Darling Hammond et al. (2007), we were motivated by the following concerns:

- Too little is done in most academic classes — partly because of the pressure to address too many issues — to enable candidates to practice applying what they have learned. Such practice is essential in order for candidates to have proficient skill when on the job.
- Even when college or university supervisors clearly state expectations for internships, too often, the responsibilities that candidates are given depend too much on idiosyncratic school needs, cooperating practitioner working styles, and strengths, experience, and interests that the candidates came to the internship already possessing. As a result, internships tend to fall short of providing systematic opportunities for candidates to develop the full range of essential skills. Furthermore, both candidates and their cooperating practitioners tend to stay clear of tasks that the candidates are not yet well prepared to handle.
- The nature and structure of internships rarely allows candidates opportunities to analyze how they handled their responsibilities from multiple perspectives.
- The current trend to cram knowledge and skill acquisition into 15 months or less creates programs that cannot foster the kind of cognitive development that prepare graduates to *practice* a fundamentally different kind of leadership.
- Candidates are rarely provided with opportunities to learn how to handle discrepancies they may encounter between values

expressed in academic courses—for example, those relating to providing democratic leadership or promoting social justice—and those prevailing in the schools in which they perform their internships.

Our program's knowledge and skill application laboratories were designed to address such concerns.

The Purpose of Knowledge and Skills Application Laboratories

Three overlapping purposes shaped the creation and design of our knowledge and skill application laboratories. The foundational elements of our purposes were based on five ideas:

1. The bulk of a principal's job is bringing to bear professional knowledge and skills when interacting with staff, students, district leaders, parents, and community members.
2. Because the application of this professional knowledge and skills involves interacting with these stakeholders, principals must simultaneously apply a set of universally applicable knowledge and skills related to conceptualizing and solving problems, communicating, coping with conflicts, and working in and with groups.
3. Most educators who seek a building-leadership position operate from a perspective and value system that posits that leadership and followship depend upon one's relative status and position (see Rost, 1991).
4. In order for the application of professional and universally-applicable knowledge and skills to result in an optimal set of outcomes, their use must be shaped by a perspective and value system that posits that the relationship among leaders and followers need to be collaborative. Wenger (1998) further clarifies collaborative professional practice as: joint enterprise, mutual engagement, and shared repertoire. Based upon principles of "morality, conceived as principles of justice, i.e., of reciprocity or equality" (Kohlberg, 1969, p. 349).
5. Moving from a perspective and value system that supports position-based leadership to an integrated system that supports collaborative leadership requires that our candidates undergo cognitive development—a complex, far-reaching process during which they fundamentally reorganize their cognitive structures.

Based on these ideas, we want to create the conditions under which our candidates will

1. increase their proficiency in applying the knowledge and skills that have been introduced or developed in their classes;
2. transform their entering cognitive structure (most likely based on a position-based perspective and value system) to one based on principles of collaborative leadership, and
3. transfer newly developed ways of thinking and acting to new

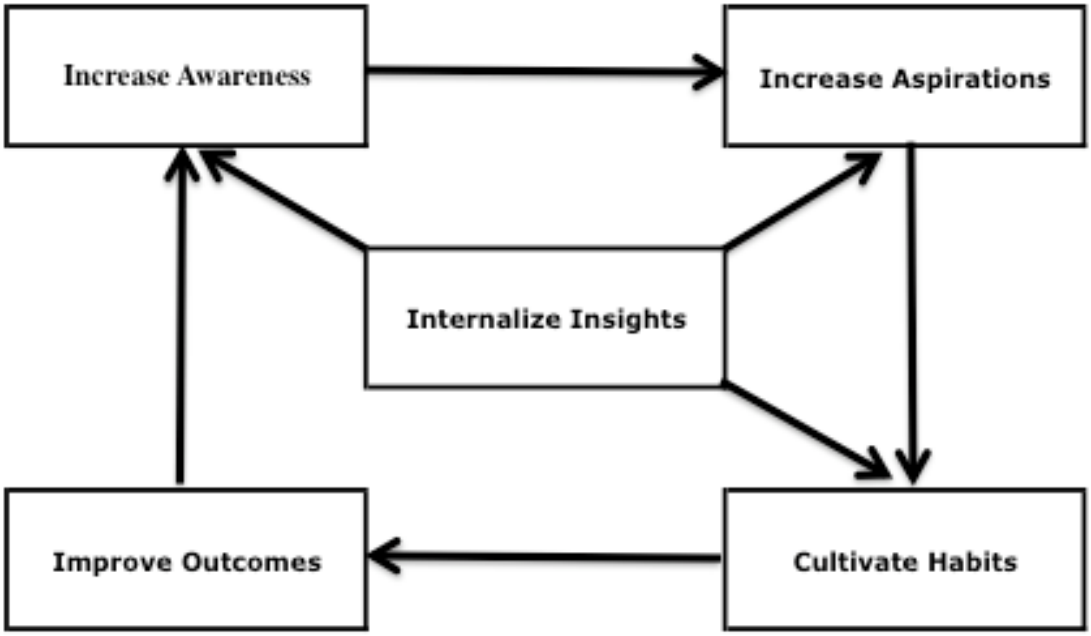
relationships and settings, including to settings that seem incompatible with implementing collaborative leadership.

We shall discuss each of these purposes one at a time.

Purpose #1: Increasing Proficiency

We want graduates who are prepared to direct psychologically-available knowledge and thoroughly-practiced skills toward providing a different kind of leadership in order to create a different culture in the school. To achieve these purposes, our candidates need to internalize specific insights that can increase specific kinds of awareness, make specific commitments, cultivate particular habits, and improve specific kinds of outcomes, which will then validate and lead to a deeper understanding of the internalized insights. Preparation programs are uniquely positioned to afford candidates such educational experiences. Figure 1 displays the relationships among these five goal categories, which are simultaneously the elements of a collaborative leadership cognitive structure.

Figure 1
Relationship Among Our Laboratory Education Goal Categories



Purpose # 2: Fostering Cognitive Development

Our graduates will only strive to create a psychologically safe, supportive, and collaborative culture in the school if they organize their cognitive structures toward becoming collaborative human beings. Reorganizing one's cognitive structure involves "accommodation." Piaget (1954, 1985) described "assimilation" and "accommodation" as complementary adaptive processes through which we internalize information and events encountered during our interactions with the environment. Whenever the nature and complexity of our cognitive structure is adequate to handle the nature and complexity of external information and events, we *assimilate* them—*for example*, we incorporate them into our existing cognitive structure without changing that structure. However, if our cognitive structure is not up to the challenge, we either

- distort the information so that it will fit our existing categories, thereby misinterpreting the information and undermining our subsequent performance;
- become overwhelmed by our lack of capacity to cope with what we have encountered, and either withdraw from the situation or experience some form of personal disorganization, or
- *accommodate—for example*, reorganize our cognitive structure so that it can cope not only with current information and events, but also those that have a similar nature and complexity.

Because assimilating new information and events does not require us to reorganize our cognitive structure, we assimilate smoothly, with little effort, and with minimal or no distortion or misinterpretation. However, accommodating new information and events is the process of reorganizing our cognitive structure—of creating new categories and altering our hierarchical preferences. Because accommodation always involves a struggle accompanied by uncertainty about how well our reorganized cognitive structure will serve us, when we undergo accommodation, we experience discomfort, and sometimes we experience emotional pain.

Internally, consistent cognitive structures are organized around a central theme, such as position-base leadership. Cognitive development occurs when an individual reorganizes his or her cognitive structure around a more complex central theme, such as collaborative leadership. The reorganized cognitive structure is more stable because it enables the individual to cope successfully with a wider range of situations and tasks. Achieving and stabilizing this kind of cognitive reorganization takes about two years. Yet it is unlikely to occur that quickly, if at all, unless candidates can help to construct psychologically safe conditions within which they continually encounter (1) challenging problems that require them to act and (2) assistance in detecting and reflecting on the consequences of their actions (Kohlberg, 1969).

Purpose #3: Transferring News Ways of Thinking and Behaving

Finally, the ability to transfer the new ways of thinking and behaving that result from this kind of cognitive reorganization to future work settings

requires three precursor achievements:

> First, it takes much practice to develop interpersonal skills because they are complex, and much unfreezing is usually required. . . . [The individual] must have come to the conclusion that his old modes of behavior are no longer effective, a conclusion that needs to be based on actual experiences in the learning situation in which he used old modes of behavior and found them wanting.
> Second, the individual must develop new modes of behavior that have also been tested and found them more effective than the old. These new modes of behavior must have been practiced often enough so that the individual feels confident in the ability to use them.
> Third, the individual must develop new modes of adjunct behavior that may be called for in the practice of his new modes of behavior. For example, if the individual learns to express his feelings of anger or love more openly, he may also have to develop new competence in dealing with individuals who are threatened by such openness. It is important, therefore, for the individual to learn how to express these feelings in such a way that he minimizes the probability that his behavior will cause someone else to become defensive. (Argyris, 1970, pp. 221–222)

Why Are We Using the Phrase "Knowledge and Skill Application Laboratories"?

Below we describe the origin of laboratory learning and explain why their founders called them laboratories. Then we discuss our modifying phrase.

During the summer of 1946, the executive director of the Connecticut State Inter-Racial Commission, asked Kurt Lewin to help train leaders and conduct research on the most effective means of combating racial and religious prejudice in communities. Lewin's response was to assemble a team (which included Ronal Lippitt, Leland Bradford, and Kenneth Benne) to design ways to help people deal more effectively with complex human relationships and problems.

According to interviews by the researchers, the 41 participants

> hoped to develop greater skill in dealing with other people, more reliable methods of changing people's attitudes, insights into reasons for resisting change, a more scientific understanding of the causes of prejudice, and a more reliable insight into their own attitudes and values. (Marrow, 1969, p. 211)

At the end of the first day, the researchers were to meet to report and discuss their observations with the training staff. These brief sessions soon turned into regular in-depth de-briefing sessions. These sessions took on more than simple debriefing, rather they became

> the significant learning experience of the day, with the focus on actual behavioral events and with active dialogue about differences of interpretation . . . of the event. . . [T]he staff discovered that feedback had the effect of making participants more sensitive to their own conduct and brought criticism into the open in a healthy and constructive way. (Lippitt, in Keltner, 1989, p. 33)

The activity was deemed so useful—not only to its trainees, but also to its designers and researchers—that the next summer, the action research team launched the National Training Laboratories, which continues to hold laboratory education sessions every year. Since 1947, laboratory education strategies have been used in business, educational, and community settingsthroughout the world.

Bradford, Gibb, and Benne (1964a) wrote:

> The term "laboratory" was not idly chosen. A training laboratory is a community dedicated to the stimulation and support of experimental learning and change. . . . [Participants invent and test new patterns of behavior] in a climate supporting change and protected . . . from the full practical consequences of innovative action in ongoing associations. (p. 3)

While we embrace the term "laboratory" because it is a protected setting in which participants are encouraged to experiment with new behavior and helped to recognize, analyze, and interpret data, we have reservations about two other terms that Bradford and his colleagues have used: "training" (in 1947 when naming the "The National Training Laboratories") and "re-education" (in the subtitle of the Bradford, Gibb, and Benne 1964 book: *Innovation in Re-Education)*.

Table 1, an adaptation of a more detailed eight-row table (Eiseman, 1985), compares training to education, thereby clarifying not only what we reject, but also what we embrace. See Table 1 in Appendix.

Even the inventors of human relationship laboratories wanted to avoid the connotation that "training" labs were focusing on transmitting new skills. The following passage explains why they sometimes used the word "re-education." They said that laboratory educators

> need to be continuously aware that they are working with trainees toward *re-education*. Laboratory learners have already learned many [relevant] values, concepts, and behaviors . . . Some of these past learnings are functional; some are dysfunctional. Some of them are already well articulated; others are held and used preconsciously and in an inarticulated fashion. For the learners,… [laboratory experiences] are full of episodes of relearning, or reorganization of previous learnings, of confrontations of old patterns with new possibilities, of recognition and understanding of own and others' motivations and feelings, and of . . . explorations of the gains and losses potential in revising goals and modifying behavioral strategies. This means that the achievement of each learning objective ordinarily involves examination of the relationships between old and new experiences, between old and new learnings, and the arduous process of achieving some viable choice or synthesis between the old and the new. (Benne, Bradford, & Lippitt, 1964a, p.19, emphasis in the original)

Because we agree with Benne et al., we consider "re-education laboratories" to be a more accurate term than training laboratories. However, "re-education" also conjures up other associations that we do not intend. At its website—en.wikipedia.org/wiki/Reeducation—Wikipedia describes three meanings of "re-education." While the third—adult education—is the one Benne et al. had in

mind, the first two have to do with brainwashing and rehabilitation. We wanted to use a term that directed attention toward what we wanted to promote while at the same time avoiding any hint that we were engaged in either brainwashing or rehabilitation.

Human relationship laboratories are typically free-standing. They are separate from their participants' work setting, even if their company sent them. If the lab is only open to the employees of one company, it is still usually off-site, to emphasize the differences between workplace norms and the norms that are developed in labs. In contrast, our labs are an integral part of our educational program. We call them "knowledge and skill application laboratories" because we want to emphasize that what happens in the lab builds upon and helps candidates use what they are learning in their courses, and even upon their experiences in the field, including their internships.

The Goals of Knowledge and Skill Application Laboratories

As previously indicated, we have grouped our goals under five category headings. Under each, we list what we consider to be the five most important goals. As you move from goal category to goal category, you will recognize that the goals under one category are not only related to each other, but also to those under other categories. These connections are what give a collaborative leadership cognitive structure its integrity, internal consistency, and coherence.

Goal #1: Internalizing Insights

The most foundational of the goal categories has to do with the insights that are expected to shape our candidates' awareness, aspirations, habits, and outcomes. They include:

1. How we act—*how* we gather information, develop diagnoses, express tentative positions, and make and communicate decisions—effects others beyond the effects created by our decisions themselves.
2. Situations and actions trigger emotional reactions that their owners often conceal.
3. Individuals differ in how they perceive the same act or event.
4. Individuals are more likely to work toward common goals with an educator if they perceive that the educator has listened to and understood them and has interacted with them openly and honestly.
5. Leaders are often convinced they face a choice between two options when careful diagnosis and problem solving may result in their revising their goals and to their generating or considering viable and more satisfying options (see March, 1999).

Goal #2: Increasing Awareness

Warren Bennis (1970) identified four "meta-goals" of laboratory education (p. 18). Bennis wrote that extracting individuals from their day-to-day work settings

> and transplanting them into a culture where they are urged to observe and understand [interpersonal interactions] creates conditions where "givens" become choices—or at least potentials for choice. Laboratory training . . . de-routinizes . . . [and] slows down for analysis processes which are "taken for granted." It . . . questions

> received notions and attempts to "unfreeze" role expectations . . . The impulse for this cognitive restructuring comes about primarily because the control mechanisms taken for granted in institutionalized behavior are decisively absent in a laboratory. (1970, p. 19)

After talking about other analogues to the laboratory setting, including therapy. Bennis concluded:

> Laboratory training, then, realizes its meta-goal of "expanded consciousness and recognition of choice points" by way of a very complicated process: extracting participants from their day-to-day preoccupations, cultural insulation, and de-routinization. Parallel to, and combined with this unfreezing process, is an emphasis on awareness, sensitivity, and diagnosis, all of which encourage the participant to think about his behavior—most particularly to think about how he chooses to behave. (1970, p. 20)

The above passages introduce the concept of "choice points." In laboratory education, participants are constantly encouraged to revisit and reflect upon behavior that other participants have witnessed, some of which subsequently led to regrettable consequences. One of the reasons for doing so is to help participants recognize that they had other options. At the time when they engaged in the now regretted behavior, they often had not sensed that they were engaged in a choice point. Our goal is to increase the extent to which participants recognize and act intentionally in future choice points.

Given the above, we strive to increase our candidates' awareness of

1. choice opportunities;
2. the expectations, norms, and dynamics associated with a range of school- and community-related settings;
3. differences in the way that individuals perceive actions or events;
4. emotional reactions and expressions—their own and those by others, and
5. the effects of their actions on others.

Goal #3: Increasing Aspirations

Previously, we mentioned that Bennis identified four meta-goals for laboratory education, the first being "expanded consciousness and recognition of choice" (p. 19). Bennis' remaining three meta-goals were the inspiration for our first four motivational goals. One of his meta-goals was for laboratory participants to develop "authenticity in interpersonal relationships" (p. 21). He explains that communicating feelings—and in turn evoking valid feelings from others

> involves the overcoming of obstacles to valid communication… where valid communication is defined as interpersonal communication free—as far as humanly possible—of distortion. (1970, p. 21)

Another of his meta-goals was for participants to develop "a collaborative conception of the authority relationship" (p. 21). He writes:

> Permeating the atmosphere of laboratory training is a concept of the authority relationship which differs substantially from the legalistic Weberian emphasis on legitimacy of position. The contractual elements are understressed, and the collaborative and interdependent elements are accentuated. (1970, pp. 21–22)

Bennis goes on to cite three elements of a collaborative relationship among individuals holding different status, one of which is the following:

> Management by objective, i.e., the requirements of the job are set by the situation (they need not be seen by either party as personal requirements established by the superior), so that the authority relationship is viewed as a collaborative process where superior and subordinate attempt to develop ground rules for work and productivity. (1970, p. 22)

Finally, Bennis wrote that it is a meta-goal of laboratory education to develop a "spirit of inquiry" (p. 20). While agreeing with what Bennis says, we framed our first four motivational goals somewhat differently:

1. to act authentically;
2. to use collaborative attitudes and processes to cope with problems and conflicts;
3. to base actions on valid data, and
4. to be a continuous, curious, and experimental learner.

We design our laboratories to encourage participants to develop or deepen one other commitment. As an educator, a supervisor, or a critical friend, it is not possible to promote learning and development in others without serving as a source of help. Similarly, receiving help is an important part of learning and developing.

> Each learner is asked to become an analyst of his own processes of learning. This involves development of abilities to take initiative in seeking and using the resources of others to enhance his own learning. It involves, reciprocally, becoming an effective resource in giving help. This has deep implications for the kind of self the learner is seeking to become. It directs his efforts toward achieving a self-identity which is active, reflective, realistically optimistic, and collaborative. (Benne, Bradford, & Lippitt, 1964a, p 19)

Thus our fifth motivational objective is to develop an increased commitment to fostering helping relationships.

Goal #4: Cultivating Habits

Glynis Nunn, the 1984 Olympic heptathlon gold medalist, said, "Everyone has dreams. But it is what you do with these dreams that is important" ("Creating Minds", n.d., p. 1). We believe that in order for our candidates' aspirations to result in valued outcomes, they must cultivate habits. The five mutually supportive habits that we encourage candidates to develop are directly or indirectly related to what Bennis (1970) called the spirit of inquiry and Benne, Bradford, and Lippitt (1964a) called a commitment to science. They are:

1. questioning received wisdom—especially related to goals, norms and practices, role expectations,

and hypotheses or explanations for recurring practices;

2. acting in ways that make others feel safe enough to express themselves candidly;
3. facing all of the facts involved in a problem and its solution, including those about how one's own actions affect others' perceptions, feelings, and inferences;
4. striving for objectivity—trying to consider the perspectives of those who see things differently—when collecting, analyzing, and interpreting data, and
5. experimenting with new ways of behaving—taking risks that could result in deeper, more trusting relationships—and detecting and reflecting on the outcomes.

Argyris and Schön (1974) make a distinction throughout their book between "single-loop learning" and "double-loop learning" that clarifies the relationships among these objectives. They asserted that learning involves the detection and correction of error. When something goes wrong, *single-loop learning* occurs if we adopt or devise strategies or plans that will better achieve existing goals and meet existing value commitments; these involve engaging in cycles of collecting and using data, reflecting, and experimenting with new ways of behaving. *Double-loop learning* occurs only if in addition to cycles of collecting and using data and reflecting, we critically examine and consider revising the prevailing goals, norms and practices, and role expectations.

Goal #5: Improving Outcomes

The ultimate purpose of applying (and integrating) previously developed knowledge and skills is for the new insights, awareness, commitments, and habits to lead to improved outcomes. Three of the outcomes that effective laboratory education should produce should be visible within the laboratories themselves. The first is increased congruence between self-perceptions and perceptions of self by others. Humans employ many strategies that give people inaccurate notions about how others see them. For example, some people suppress negative feedback to others in order to avoid hurting their feelings, avoid conflict, or lose their friendship or suppress positive feedback to avoid engendering suspicion that they are currying favor. If laboratory participants learn to seek and provide accurate feedback, their self-perceptions are likely to more closely match the perceptions others have of them.

The second desired outcome also involves congruence: increased congruence among beliefs, intentions, decisions, actions, and consequences. If laboratory education is successful, participant beliefs, decisions, and actions will much more closely match their experiences and stated intentions. And when the consequences are examined, they will also come closer to matching their intentions.

Our third outcome is to generate greater trust from all key stakeholders. We have adopted Megan Tschannen-Moran's definition of trust, which had two parts. The first states that when others trust you, they are allowing themselves to be vulnerable to you based on their perceptions of your attributes; the second identifies the five attributes that matter most. She says that trust is a "willingness to be vulnerable to another based on confidence that the other is benevolent, honest, open, reliable, and competent" (Tschannen-Moran, 2004, p. 17).

The fourth outcome is a more democratic school with higher proportions of students, staff, parents, and community members actively engaged in the work of the school. According to Benne et al., (1964a) those who promote democratic arrangements assert :

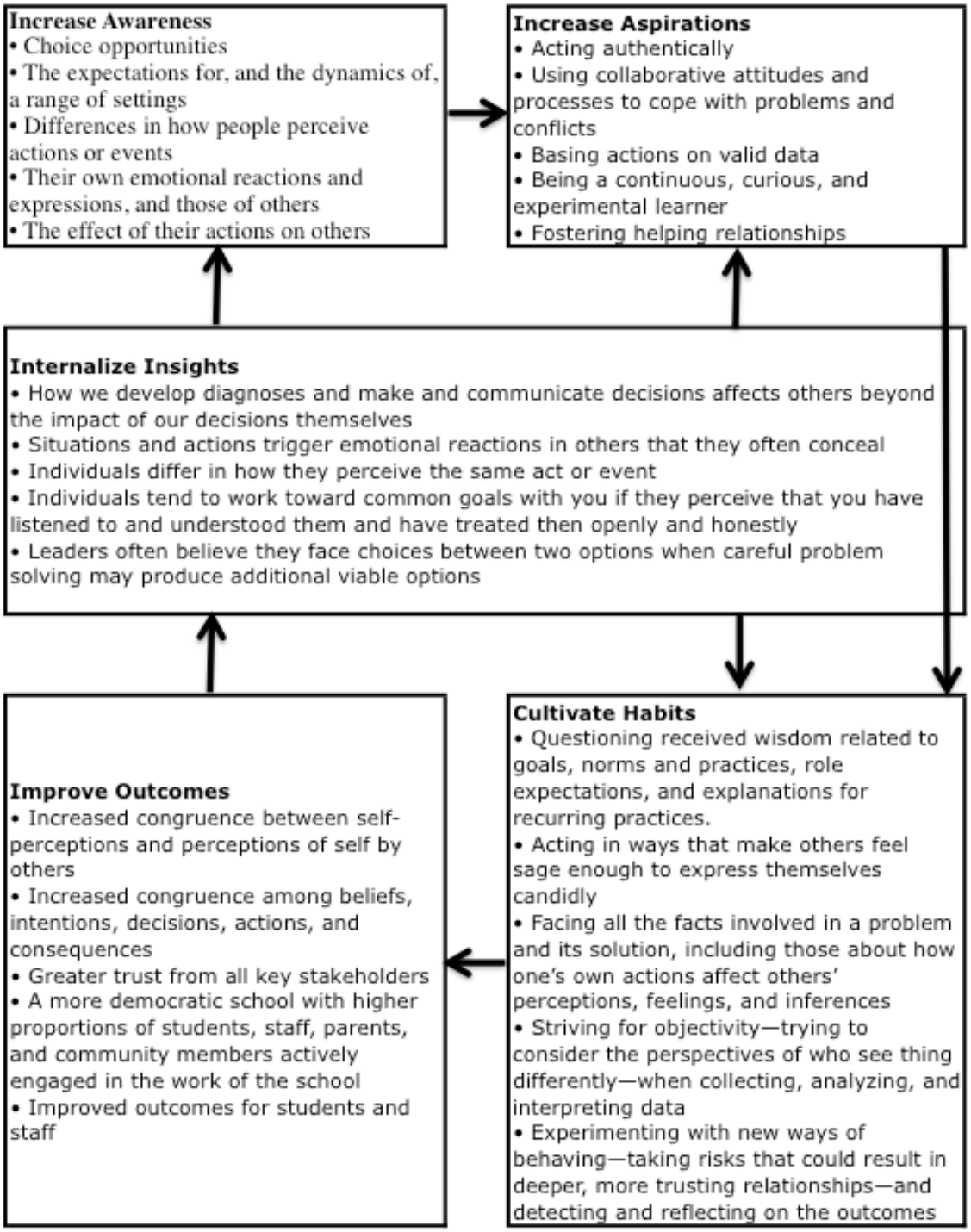
> that common problems cannot be well solved without the participation of those affected by the solution. This view of democracy assumes a procedure of consensual validation as the final arbiter of the rightness of any collective judgment or arrangement… [However, the] democratic principle of "consensus" assumes that group agreements can be wrong and incorporates important safeguards against the "tyranny" and "mistakenness" of the majority or indeed of the entire group… [T]he spirit of democracy extends to the reduction of barriers to free participation . . . People must learn to gather and furnish information necessary for valid decisions…, to participate with others in the interpretation of the evidence and in the creation of forms and arrangement consistent with the evidence (This means facing and dealing constructively with value conflicts and power conflicts in any pluralistic group, organization, or community) . . . [and] to test commitments to established ways of doing and interpreting things and to work experimentally toward new ways more consistent with new evidence and newly articulated goals and values. (Benne, Bradford, & Lippitt, 1964a, pp. 34–35)

These four outcomes contribute to the most remote outcome: for deeper learning, greater intellectual, social, emotional, and moral development, and more meaningful achievement on the part of present and future students and school staff. When school principals have internalized the five insights, increased their awareness, and embraced the five commitments by cultivating the five habits, how do we expect them to act? Because we expect them to set goals, make plans, and carry them out in such a way that the consequences they achieve match the consequences they intended, we also expect them to exert a major impact on the school's systems and culture, on staff decision-making, on the community, and, indirectly, on students.

Concluding Statement About Our Goals

Figure 2 summarizes much of the previous information. It recapitulates the relationships among goal categories that had been displayed in Figure 1; it groups the five most important goals under each goal category heading, and—because they are one and the same—it displays the elements of a collaborative leadership structure.

Figure 2
Laboratory Goals – the Element of a Collaborative Leadership Cognitive Structure



But the laboratories will not serve their purposes if our candidates merely achieve all 25 individual goals. Their progress toward achieving the kind of cognitive development that we are describing depends on the extent to which they come to recognize that both the goal categories and the individual goals grouped under the goal categories fit together. For example, much of Figure 2 can be summed up by saying that we hope that the future behavior of our candidates will be shaped by interdependency of the three action themes:

1. attending to socio-emotional processes;
2. putting yourself in the shoes of others (role taking);
3. taking inquiry-based experimental risks and reflecting on the desirability of the resulting outcomes.

Use of Laboratories in Our Principal Preparation Program

In this section, we describe how our laboratories fit into our program in broad strokes, and then provide two examples of major laboratory activities.

How the Labs Fit Into Our Program

During every semester, candidates participate in a one- or two-credit, semester-long lab. The typical lab task provides opportunities for candidates to apply knowledge and skills that they have been developing in the program. Some of the skills that are highlighted are analytical while others are interpersonal. Sometimes a particular aspect of a planning or interpersonal skill is highlighted before the candidate is expected to perform. Whether or not there is attention drawn to the highlighted skills at the front end, the post performance review looks separately at the substantive (knowledge-related) and procedural (skill-related) issues involved in the task.

Some tasks are focused on a single skill and are over quickly. Others have a broad scope, feature a range of skills, and last over several weeks or even months. Some skill-intensive tasks are structured so that candidates can rehearse one or more times before they engage in the performance that counts. When there are two rehearsals, the conditions of the second typically come closer to matching those in the final performance than those in the first.

Another category of lab tasks provides candidates with the opportunity to learn about the expectations for and the dynamics of various kinds of settings—both within-school settings—for example, disciplinary hearings or meetings of teams debating Individualized Educational Plans—and field settings—for example, school board meetings, social agencies, or businesses.

Table 2 shows some of the major laboratory activities carried out during the program. During Year 2, the emphasis begins to shift from faculty-directed to self-directed inquiry, and from learning about a school leader's perspective to searching for a chance to serve as a school leader. See Table 2 in Appendix.

Two Examples

Below are two sample multiple-part lab activities. The first is a one-time task that provides opportunities to work on developing both data-related and teamwork skills. The second includes rehearsals and provides opportunities to work on developing planning and oral communication skills.

A Simulation Involving the Use of School Data.

In this age of assessment accountability, school leaders must be able to use school data to inform their decision-making, to advance their teachers' pedagogical practice, and to ultimately advance student achievement. However, principal candidates are often misinformed about the various types of data—not only achievement data (both summative and formative, and both criterion-referenced and norm-referenced), but also demographic data, perceptional data, et cetera—and how each type of data can be best used for the intended purposes.

In this laboratory simulation, candidates must cope with a set of data from a school district that includes state assessment data, a national norm-referenced assessment, student and teacher demographics (including each teacher's "highly qualified" status), student grades, school climate surveys, and local formative assessments. Throughout the simulation, candidates assume and remain in roles, such as parents, teachers, principals, and superintendent.

Candidates begin by completing a School Data Audit in order to understand the types of data currently available. Next, the district team is asked to analyze the data—provided in multiple Excel spreadsheets—to uncover any patterns by classroom, school, and district.

Candidates report analytical findings in an Administrative Team Meeting Session, then use the results to construct a plan of action to be delivered to a school board. The plan of action must include specific objectives that are aligned to local and state learning standards and must describe how any new data will be collected and used. The plan must also include timelines, responsibilities, administrative systems that support the plan, and "Safety Nets" for both students (e.g., flexible scheduling for remediation) and teachers (e.g., professional development opportunities). Each team delivers its presentation to a simulated school board that is comprised of local school educators. Local practitioners provide specific feedback to the candidates.

After completing and examining rubrics for the School Data Audit, the plan of action, and the school board presentation, candidates reflect on their experiences and conduct a meta-analysis of the data simulation process itself.

A Simulation Involving Community Outreach.

Traditionally, principal preparation programs emphasized school management. Recently, instructional leadership has been spotlighted. The third leg of the leadership stool—community leadership—has too often been reactive: dealing with complaining parents and invasive media. The community outreach simulation is one of several lab activities designed to prepare our candidates to approach various aspects of the community pro-actively and constructively.

Candidates are to design a community outreach plan and simulate carrying out its initial steps. From a list of community organizations—that includes a parent teacher organization, three social agencies, and five businesses—each candidate is to select one organization so that collectively a wide range is represented. Next, they are to select one of the following kinds of help that a school might seek: listening to students reading, listening to students trying out various forms of oral communication (for example, giving a prepared speech, responding to a mock job interview, and engaging in informal conversation), serving as a correspondent (that is, reading and responding to student letters), and serving as a mentor, advisor, "big sister," or "big

brother"; the choices are negotiated so that each kind of help is selected equally often.

During the first lab session devoted to this simulation, each candidate is to plan for a meeting with a liaison from the selected organization in order to convince him or her to convene a second meeting to be attended by about a dozen organizational employees. (The candidate's goal at that second meeting will be to induce as many of them as they can to serve as organizationally-sponsored volunteers to launch the project.) Working alone, the candidates are given five minutes to develop strategies for receiving authorization from decision makers, and to develop a list of talking points that might be used to "hook" the organization's employees to volunteer to participate in the project.

Meeting in trios, the candidates are given five minute turns in which to present their plans to the other members of their trio, followed by another five minutes in which their two colleagues provide feedback focused on the desirability and feasibility of the project, the clarity of the plan, the potential strengths that were emphasized, and any potential weaknesses to be reconsidered. When receiving feedback, candidates are restricted solely to listening to the feedback. They may ask for clarification, but are to refrain from trying to insert explanations into such questions.

For homework, candidates (1) describe their initial plan and the feedback that they received, and (2) outline the changes that they will make in their plan. In the next lab session, they practice five minutes worth of opening remarks with their partners role playing as potential volunteers and then receive another round of feedback. Finally, in front of all of the lab participants, they simulate the first 15 minutes of a meeting with potential volunteers from the organization. This time, their peers fill out feedback sheets, using a task-specific rubric, and then give oral feedback.

Design Considerations

In this section, we describe the kinds of opportunities that candidates need and the conditions that need to be established in order to provide those opportunities, which include the actions that are required from laboratory educators and participants.

The Opportunities That Candidates Need

Benne, Bradford, and Lippitt (1964b) described six kinds of opportunities that laboratory participants need. Below is our reformulated, more compact version of their list. Laboratory learners need to:

1. identify and assess their degree of discomfort with incongruities between their current and desired behavior as well as among their intentions, actions, and consequences;
2. seek and consider guidance from trusted colleagues regarding what to try changing, and how to formulate a plan for changing, and
3. devise and implement cycles—involving practice, internalization, and application to actual work settings—of experimenting with new behavior, discovering and using information about its consequences to assess its effectiveness, and reflecting on whether to adjust any of the "governing variables" before undergoing the next cycle.

However, because one of our purposes is to stimulate cognitive development, we add

another opportunity that candidates need: encountering optimally mismatched challenges. As indicated above, if the demands of the tasks that candidates encounter come too close to matching the capacity of their current cognitive structures, they will merely assimilate, that is they will treat the task as if it were similar to tasks that they have already successfully handled. And if the mismatch between the task demands and the capacity of their cognitive structures is too large, then the candidates become overwhelmed: they either give up or distort the task or information related to it. It is when the mismatch is optimal—large enough to require that the candidates stretch, but small enough so they can, with sufficient effort, cope with the task successfully, that individuals accommodate their cognitive structures—that is, while they are coping with the task, they are also engaging in and making some progress toward the long-term cognitive development process.

The Conditions and Actions That Provide the Needed Opportunities

Robert Gagné (1965) described a hierarchy of intellectual tasks, with problem solving being the most complex. He asserted that each category of outcomes called for a different type of instruction. Among other things, he directed attention to different combinations of external and internal conditions, and therefore both different design elements and different learner processing requirements. In keeping with his approach, we shall compare and contrasted three types of learning: academic learning, internship learning, and laboratory learning.

Table 3 focuses on how each learning mode handles three different kinds of knowledge:

1. declarative knowledge — "knowledge about" which can be used to recognize and classify concepts, things, and states of the world;
2. procedural knowledge —"know how" or knowledge of how, especially how best, to perform particular tasks (Procedural knowledge can be further divided into skills and strategies), and
3. situational knowledge — knowledge specific to a particular situation.

See Table 3 in Appendix.

Note that both internships and labs emphasize procedural knowledge. They both remind candidates what they have learned in their classes, and provide the opportunity to developed more advanced procedural knowledge. However, labs are settings in which the emphasis on procedural knowledge is more likely to be planned, facilitated, and explicit. Similarly, lab faculty tend to be more systematic than internships supervisors can be about attending to situational knowledge—first by presenting tasks that sample a wide range of settings, and then by shining the light on the key features of each setting encountered in the lab.

Table 4 focuses on what individuals do when in these learning modes when they are learning skills or strategies and tactics. Whereas academic classes tend to be cognitive and analytical, both internships and labs require human interaction. See Table 4 in Appendix.

Table 5 focuses on the consequences of mistakes—both the nature of possible adverse consequences and the potential impact of their mistakes on others. Academic classes tend to be safe because the impact of mistakes on fellow participants is minimal or non-existent. Internships tend to be the riskiest setting,

because mistakes may matter; individuals can be hurt. As a result, cooperating practitioners are reluctant to allow interns to handle responsibilities that require finesse, diplomacy, and discretion until the candidate has demonstrated that they are trustworthy. Labs provide a safe haven for experimentation: mistakes can be discussed candidly in a supportive way and rectified. See Table 5 in Appendix.

Table 6 focuses on how lab faculty respond to learner behavior or products—specifically, what, if anything, they do to encourage both reflection and follow-up by the learner. While internship and lab faculty both highlight consequences of actions, because internship supervisors do not have an opportunity to witness internship activity first hand, they are dependent on interns' self-reports. Consequently, neither the interns nor their faculty supervisors may even be aware of the most significant consequences. In contrast, lab faculty often witness candidate activity and its consequences, and when they do not, other lab participants do observe it and experience the consequences. As a result, candidates are much more likely to develop awareness of the consequences of their choices in the lab. In addition, compared to classroom faculty or supervisors, lab faculty are much more likely to design tasks to follow up issues that they have identified. See Table 6 in Appendix.

Based the information provided in Table 6, in order to achieve the goals of the labs (listed in Figure 2) it is necessary to establish the following four conditions:

Condition #1: Psychological Safety and Support for Experimenting With New Behavior.

The more our responses to a situation deviate from our typical behavior, the more vulnerable we are likely to feel and the more awkward our actions. To feel psychologically safe and supported means that laboratory participants must be supportive of each other when providing feedback, and to refrain from describing a fellow participant's laboratory behavior to colleagues outside the lab.

Condition #2: A Sharp Focus on the Link Between Actions and Subsequent Consequences.

Improving effectiveness comes from adopting more effective strategies and tactics. However, the motivation for substituting new behavior for familiar behavior comes from discovering that the familiar behavior leads to unwanted consequences. In addition, the motivation for continuing to use and try to improve new behavior comes from discovering that the new behavior—even if awkward—leads to desirable consequences. Accordingly, laboratory education puts a premium on helping participants focus on links between actions and subsequent consequences. Consistent with the work Albert Bandura (1969, 1977, 1986)—who provided empirical evidence regarding the existence, importance, and mechanics of vicarious learning processes—learners examine not only consequences flowing from their own actions, but also those flowing from the actions of their peers.

Condition #3: Extraordinary Steps to Increase the Chances That Participants Receive Accurate Feedback.

Our willingness to provide feedback is often complicated by a variety of motives. When we see others behave in counterproductive ways, our socialization guides us to withhold feedback or express it euphemistically. Sometimes feelings such as frustration or anger override our socialization, but then a desire for revenge or poetic justice may shape our actions. For all of these reasons, the feedback that we give and that which we receive from others is usually distorted—either too benevolent

or too harsh. However, accuracy and trust are inherent dangers if laboratory participants have had no previous experience that legitimizes giving accurate feedback. Accordingly, feedback must not only accurate, but—as stipulated in our description of the psychological safety condition—must also be delivered gently.

Condition #4: Multiple Mechanisms to Encourage Reflection.

As Dewey (1933) has stressed, reflection is the critical act that converts experience to learning, development, or any form of increased capacity to act. Yet educational leaders tend to favor action over reflection. Therefore, laboratories need to include many forms of encouragement for candidates to reflect—literally to bend back upon—their experiences. One key strategy is to have candidates participate in long-term helping partnerships, each partner encouraging the other to select and reconstruct an experience of her own choosing, derive meaning from that experience, and seek ways to use the results of the reflection as a resource to guide her subsequent experience.

Expectations Met, Challenges Faces, and Surprises

Our expectation for the knowledge and skill laboratories was simple: to provide valuable hands-on experience to principal candidates throughout their coursework. Too often preparation programs become paralyzed by time and faculty often say "If I only had extra time I would . . . " Now in our second year, our labs have met our expectation of providing such practical experiences coupled with our coursework. Additionally, our lab activities have provided students with reflection, honest, critical, and double-loop feedback (focused not only on strategies but also on goals), and critical friends (peer to peer, faculty to candidate, and practitioner to candidate).

One of the pleasant challenges we faced was to make feedback reality-based by including local educators: we were able to forge new relationships with local educators, asking them to be experts. What we found most challenging and surprising through this process was largely organizational and institutional. One was market-driven: adding credits to our program put us at a competitive disadvantage with both other higher education certification programs and alternative certification programs. Moreover, the policies of the university provided a number of barriers we had to overcome. Specifically, developing a sequence of one- or two-credit, continuous enrollment courses became a bureaucratic nightmare. When developing non-traditional courses, institutions tend to adhere to their traditional guidelines and expectations, slowing the process of innovation.

Happily, laboratory activity is beginning to influence our program's academic classrooms. Faculty members are not only working with the lab instructors to align lab activities with their course content, but some are incorporating lab-like activities into their courses.

Conclusion

The decisions to change how and what we do to prepare future school leaders are too often driven by the latest policy-making or market-driven fads. Yet failing to consider experimenting with meaningful and carefully planned program innovations puts future school principals at a disadvantage. We note that labs cannot achieve their purposes if they are merely appended to an existing program. To achieve their full potential, they must be an integral part of a coherent program.

Laboratories not only provide a venue for candidates to practice applying their knowledge and skills, but also encourage them to develop and internalize values related to engaging in democratic leadership and promoting social justice.

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Jeffrey W. Eiseman is an associate professor in the Educational Policy, Research and Administration Department at the University of Massachusetts at Amherst. His research interests include developing and assessing procedures for solving problems, resolving conflicts, conducting productive meetings, and orchestrating educational reform.

Matthew Militello is an assistant professor in the Educational Leadership and Policy Studies Department at North Carolina State University. He was previously an assistant professor at the University of Massachusetts at Amherst where he was also the educational administration program coordinator. Militello was a public school teacher and administrator in Michigan for more than 10 years. His research interests focus on how leadership is (or is not) transformed by specific school activities such as the use of school data.

Appendix:

Tables 1 - 6

Table 1
Differences Between Training and Education

Dimension	Training	Education
Focus of Lesson	On performance—on *How to*	On principles and process—*on Why*
Intended student role	Imitate role models or practice skills in prescribed ways	Seek input from multiple sources, experiment, observe results, and revise their perspectives accordingly
Nature of intended outcomes	Achieving specified levels on particular skills by the end of the program	Improving their knowledge, skills, attitudes, and habits and building the capacity to continue improving after the program
Responsiveness to differences among students	Low: Requires trainees to start at the same point and adjust to a single standardized instructional approach	High: Adapts to each participant's entering knowledge, skills, style of learning, and stage of development
Desired post-program variation among students	Low: The goal is uniformity	High: Expects participants to figure out how to rely primarily on their strengths and problem solve around competency areas they have not yet mastered

Table 2
Major Lab Activities During the Program

Year	Term	Major Activities
1	Fall 1 credit & Spring 1 credit	• Establish a supportive, trusting, and psychologically safe laboratory community; • Become familiar with the basic cycle of encountering and responding to a challenge, and recognizing, eliciting, and reflecting on feedback; • Begin a "program portfolio" of work products and performance reports; • Prepare for and participate in an expulsion hearing simulation, and • Prepare for and participate in a community outreach simulation.
	Summer 1 credit	• Explore the reality of communities and schools from the perspectives of both school leaders and a range of community members.
2	Fall 2 credits & Spring 1 credit	• Carrying out a complex simulation relating to collecting, analyzing, interpreting, and deriving action implications from various kinds of school and community-related data; • Use helping partners as a resource to (1) gain perspective on and work out strategies for coping with problems encountered during internships; (2) review their portfolios to develop personal agendas for practicing skills in the lab; and (3) establish design specifications for lab activities to carry out these agendas; • Respond to loosely-structured, complex, instructor- and peer-designed tasks to carry out their skill improvement agenda; • Draw from their practice portfolios to develop "professional portfolios" to send to potential employers, and • Develop job-seeking strategies, write sample cover letters, practice their job-interview skills, and receive feedback from instructors and practitioners related to each of these.

Table 3
How Various Kinds of Knowledge are Handled Across Learning Modes

Kind of Knowledge	Academic Learning	Internship Learning	Laboratory Learning
Declarative	Emphasized	Relearned or filled in as necessary	Relearned if necessary
Procedural	Candidates receive	Candidates apply	
	Introductory	Advanced	Advanced and explicit
Situational	Neglected	Partly planned, partly accidental	Planned, facilitated, and explicit

Table 4
How Expected Candidate Activity Differs Across Learning Modes

Expected Activity	Academic Learning	Internship & Laboratory Learning
Skills	Writing, presenting, and discussing	Communicating, interacting, and working with others
Strategies & Tactics	May be asked to develop strategies	Face the need to select and apply strategies and tactics

Table 5
How Consequences of Candidate Mistakes Differ Across Learning Modes

Impact of Mistakes	Academic Learning	Internship Learning	Laboratory Learning
Nature of the consequences	Candidates may receive low grades or earn a poor reputation	K-12 students or staff may lower their self-esteem or increase their alienation from school	Colleagues may feel resentful; teammates may feel let down
Size of the impact on others	Minimal or none	Mistakes may matter, whether or not candidates discern the damage	Consequences are limited; candidates tend to discover and try to mitigate them

Table 6
How Faculty Responses to Candidate Activity Differ Across Learning Modes

Faculty Response	Academic Learning	Internship Learning	Laboratory Learning
Encouraging reflection	Cites strengths and weaknesses	Ask candidates to identify and reflect on their actions and on perceived consequences	Focus attention on key issues and on the consequences their actions trigger
Attending to follow-up	Rarely propose follow-up tasks, then bill them as optional	View follow-up as primarily based on school needs	Routinely pose follow-up challenges: e.g., revising and resubmitting, or facing similarly structured challenges