# Hidden Expert Knowledge: The Knowledge That Counts for the Small School-District Superintendent

Adrienne E. Hyle
*University of Texas at Arlington*

Gary Ivory
*New Mexico State University*

Rhonda L. McClellan
*University of Texas at Arlington*

*Using Bereiter and Scardamalia's (1993) hidden expert knowledge, we explored what knowledge counts from the perspectives of working small school-district superintendents and the ways in which they gain that knowledge. This qualitative study used focus groups as its primary data collection method. Participants were 37 superintendents of districts with fewer than 1,000 students representing the Midwest, southwest and west, and southeast. We learned that what counts for our superintendents appears to be in constant and fluid negotiation because of the small-district context supporting themes of competing visions, you are the center of the wheel and balancing/negotiating/weighing decisions. We also learned that preparation programs may not help in all the ways necessary to prepare these superintendents for their jobs.*

Scholarship has guided the preparation of school leaders in a variety of ways. It has offered for consideration multiple sets of essential competencies (knowledge, skills, and dispositions); a continuing debate about whether any such set of competencies exist; and (if it exists) a variety of "best" strategies for its generation/acquisition. At one end of the continuum of opinions is the belief that systematic study of administration can and has yielded formula-like advice that administrators can apply in situations to produce predictable results. Proponents argue that this knowledge "can be used with confidence to guide leadership practice, policy, and research" (Leithwood & Reihl, 2003, p. 2). These same proponents assert that practical generalizations are possible because "some leadership practices are valuable in almost all contexts" (Leithwood & Reihl, 2005, p. 19) and that the preparation of leaders for our schools needs to include lessons learned from systematic study.

On the other end of the same continuum is English's (2006, 2007, 2008; University Council of Educational Administration, 2007) skepticism about the promise of systematic study and his claim that school administration is context-dependent, that it is not helpful to search for generalizations that apply in all situations, and that, therefore, leadership programs should not attempt to enshrine good practices "as the ultimate ends of preparation" (2008, p. 5). Greenfield (1993) had argued earlier that searching for scientific knowledge about administration indulged "at best in a premature hope and at worst is a delusion" (p. 5). In his view, to become a good administrator, one should strive to know oneself and to understand the human condition. Similar beliefs seem to have lead to Littrell and Foster's (1995) claim:

> Administrators accomplish . . . feats not because of their scientific training and their judicious use of principles of management, but because of their personal and moral presence, their sense of "what's right," and their attention to people's needs. This is an expertise that comes from experience, not theory. (p. 33)

The scholars in this camp call "attention to what leaders do day-to-day and how their choices and performance necessarily depend on the choices and performance of others and the communities in which they are situated" (Honig & Louis, 2007, p. 142).

Because of the disagreements within this scholarship, critics still claim that the keys to success in the superintendency are unclear. And, the ways in which preparation programs might best help aspiring school administrators and university faculty achieve expertise in administration and the superintendency is a ripe (and needed) field of inquiry (Murphy, 2006).

The school district superintendency is a challenging role, demanding that its practitioners and aspirants know how to develop as lead learners, effective managers as well as leaders, social scientists, key communicators, and purveyors of civic responsibility, democracy, and social justice (Bjork & Kowlaski, 2005). In the United States, the preparation of such school district leaders is the responsibility of state departments of education that recommend content and competencies of preparation programs and endorse individuals who successfully complete these programs and pass certifying exams.

Typically national organizations, such as the Educational Leadership Constituent Council, the American Association of School Administrators, and the Interstate School Leaders Licensure Consortium (ISLLC), have developed and refined competency requirements and standards for school leaders. Competencies and requirements, according to ISLLC, are "forged from research on productive educational leadership and the wisdom of colleagues" (Council of Chief State School Officers, 1996, p.iii). And, of these standards, it has been said that they "present a common core of

knowledge, dispositions, and performances that will help link leadership more forcefully to productive schools and enhanced educational outcomes" (p. iii).

*Types of Knowledge*

Built on prior initiatives in the study of expertise, three types of knowledge can influence the work of the superintendent: declarative, procedural and hidden. Bereiter and Scardamalia (1993) describe declarative knowledge as a set of theoretical, research-based, and "statable facts and principles, often of the kind found in textbooks" (p. 44). This "formal knowledge" they contrast with procedural knowledge, which is focused on sets of skills or performance, for example, knowing how to perform a task. In their analyses of the history of efforts to define superintendent competencies, Björk, Kowalski, and Young (2005) and Björk, Kowalski, and Browne-Ferrigno (2005) highlight dramatically that this history has involved mostly declarative and procedural knowledge, "the *knowledge and skills* needed to be a CEO" (Björk, Kowalski, & Browne-Ferrigno, p. 73, emphasis added). Bereiter and Scardamalia (1993) contend that expertise depends on kinds of hidden knowledge in addition to the declarative and procedural.

> Declarative [or "formal"] knowledge manifests itself in explanations, lectures, and justifications[; it is "knowing-about"]. Procedural knowledge manifests itself in performance[;

it is "knowing-how"]. But there are important kinds of knowledge that do not show in these ways, and these are the kinds of knowledge that most profoundly distinguish experts from nonexperts. (p. 46)

***Impressionistic, Informal, and Self-Regulating Knowledge.*** Bereiter and Scardamalia describe "the hidden knowledge of experts" (1993, p. 46). They list three kinds: impressionistic, informal, and self-regulating.

***Impressionistic knowledge.*** *Impressionistic knowledge* is "the distillation of experience, dominated by a few salient events" (p. 46). Bereiter and Scardamalia (1993) illustrate their point:

> What goes by the name of "intuition," an attribute ascribed to brilliant researchers, designers, and trouble-shooters, usually amounts to a strong *impression* that something is interesting, promising, or amiss. (pp. 57-58)

Impressionistic knowledge helps in solving problems in that it provides a synthesis of experience. Individuals typically find it impossible to explain exactly what an impression is based upon, but they are very clear about its importance as an essential component of their problem solving. It provides connections with formal knowledge, helping us to remember that "strong impressions make memorable the experiences out of which we reconstruct knowledge as we need it" (Bereiter &

Scardamalia, 1993, p. 56). Bereiter and Scardamalia further note

> Perhaps the most vital function of impressionistic knowledge in expertise, however, is to provide a basis for practical and theoretical judgments. Administrators often have to make numerous decisions on rather small matters. But the mark of expertise in administration is to make decisions that not only take care of the immediate problem but that at the same time support the higher-level goals of the organization. . . . An expert administrator, we suggest, will try to take the full range of considerations into account, but in order to do so will rely on a rich fund of relevant and trustworthy impressionistic knowledge. (pp. 56-57)

*Informal knowledge.* Similar to common sense, *informal knowledge* is "much more highly developed [in experts than in novices] and usually more heavily influenced by formal knowledge" (Bereiter & Scardamalia, 1993, p. 54). It permits an expert to recognize phenomena and to combine them in ways that others tend not to imagine. Informal knowledge is "profoundly influenced by formal knowledge . . . , consistent with it and could not possibly have developed without study of the formal discipline" (p. 52). However, "it can't be found in textbooks. Experts often cannot explicate it. [And,] when asked to

explain their craft they are likely to restate formal knowledge" (p. 52).

*Self-regulating knowledge.* Finally, *self-regulating knowledge* is knowing more than how to do the job; it is knowing how to manage one's self on the job. As stated in Bereiter and Scardamalia (1993), "For experts who work under time pressure or other strains, some of the most important self-regulatory knowledge has to do with rhythms of work and relaxation, production and reflection, concentration and incubation" and "may be thought of as knowledge that controls the application of other knowledge . . . often referred to as . . . 'metacognition'" (p. 60).

According to expertise scholars, the key is how formal knowledge is "used, transformed, enhanced, and attuned to situations" (Bereiter & Scardamalia, 1993, p. 46). Declarative and procedural knowledge are something that one *has*, but it is how one *calls upon it and applies it* from one situation to another that makes the difference between nonexperts and experts; furthermore, knowing how one uses one's declarative and procedural knowledge is often difficult to express, so difficult that it is commonly referred to as "tacit" knowledge. Though there is some controversy about whether or how one can discuss the "tacit," we believe the effort is worthwhile. Sternberg described it as "a kind of knowledge that *usually* remains buried beneath the surface" (1999, p. 231, emphasis added), but he has devoted considerable effort to discussing it. Björk, Kowalski, and Browne-Ferrigno noted, "Just because it is not openly expressed or stated does

not imply that it can't be articulated or taught" (2005, p. 87).

Hidden expert knowledge is more dependent than declarative and procedural knowledge on how the individual has processed and reflected upon experiences, situations, and self; hidden expert knowledge fluidly adapts the individual's declarative and procedural knowledge to particular problem situations. We refer to impressionistic, informal, and self-regulating knowledge as "hidden expert knowledge" and will show how it is important in the work of small-district superintendents.

### Purpose

The difference of opinion among scholars of leadership preparation, the continuum of these opinions, and the varying types of defined and valued knowledge emerging in the literature indicate the difficulty of identifying just exactly what knowledge counts for educational leaders and the challenge for preparation programs in developing it in their aspiring administration students. In hopes to improve our own and others' understanding of these issues, this paper focuses specifically on an exploration of what knowledge counts from the perspectives of small school-district superintendents, how they describe their learning, and the relationship between these realities and the development of hidden expert knowledge as a superintendent.

Wagner and Carter (1996) distinguished academic problems (such as those presented to university students) from practical problems (such as those faced by administrators). They noted that typically academic problems have been formulated by others and are disconnected from experience—they are well-defined, have complete information, and present few methods for obtaining a single, correct solution. On the other hand, practical problems are embedded in ordinary experience, unformulated, frequently ill-defined, missing information, and have multiple possible solutions and multiple methods for obtaining solutions. Therefore,

> Problem solving in real organizations is much more complicated that [*sic*] typical textbook treatments of the topic would suggest. An unbroken progression from identifying a problem, coming up with a solution, and implementing the solution is the exception rather than the rule. Problem solving is a recursive process that is delayed as a consequence of numerous interruptions. (Wagner & Carter, 1996, p. 467)

Expertise researchers have differentiated novice and expert behaviors (Dreyfus & Dreyfus, 1996; Ericsso, Charness, Feltovich, & Hoffman, 2006; Finnegan & Hyle, 2009) that do not overlap (Richmann, Gobet, Staszewski, & Simon, 1996). They have delineated the processes involved in the acquisition of skills (Anderson, 1983; Fitts & Posner, 1967), recognizing that expertise depends on "vast amounts of knowledge and [the development of] pattern-based retrieval" (Ericsson, 1996, p. 15). In their discussion of knowledge building and the development of

expertise, Bereiter and Scardamalia (1993) claim that being able to recognize and respond to emerging patterns differentiate the novice from the expert.

Many expertise researchers have concentrated their research on convergent disciplines and fields (in which professionals consider definitive questions and use practiced skills and knowledge to solve theoretical and applied problems), including physics (Anzai, 1991), law (Lawrence, 1988), medicine (Benner, 1984, 2004; Patel, Kaufman, & Magder, 1996), music (Ericsson, Charness, Feltovich, & Hoffman, 2000; Sloboda, 1996), chess (Charness, Krampe, & Mayr, 1996; deGroot, 1965), and sports (Deakins & Cobley, 2003; Ward, Hodges, Williams, & Starkes, 2004). Less research has focused on divergent fields such as the social sciences and humanities (the homes of leadership studies) in great part because they are characterized by a lack of epistemological and methodological agreement (Becher, 1989). We offer here our research on a divergent field—educational administration, specifically the small-district superintendency—in hopes of improving understanding of the need for impressionistic, informal, and self-regulating knowledge in this area. We hope our research here will guide subsequent efforts to prepare and develop individuals to serve education in this role.

We believe that within the arguments of English (2006, 2007, 2008), Greenfield (1993), and Littrell and Foster (1995), as well as the distinctions made by Wagner and Carter (1996) and revelations from the history of research on convergent and divergent disciplines, lies a path to understanding the development of expert school leaders through the development of yet another form of knowledge essential to success—hidden expert knowledge: *impressionistic, informal,* and *self-regulating* (Bereiter & Scardamalia, 1993).

## Methods

This qualitative study used focus groups as its primary data collection method. We used key interview prompts (Krueger, 1998; Krueger & Casey, 2000) to get at three topics: school improvement, democratic community, and social justice. Murphy (2002) argued that together these three concepts "channel the work of colleagues into collective action around a coherent framework for school administration" (p. 177).

*Data Sources*. The six focus groups conducted with 37 superintendents, 35 of them from districts with fewer than 1,000 students, as part of the larger UCEA *Voices 3* project (Acker-Hocevar & Ivory, 2004, 2006; Ivory & Acker-Hocevar, 2003), served as our data sources. Districts ranged in size from 95 to 955 students. Three of the focus groups were with superintendents from the midwestern U.S.; two from the southwest and west; and one from the southeast. Self-reports revealed that 33 (89%) of the superintendents were European-American and 29 (78%) were men. Years in the position (from the 33 who provided this information) ranged from first year superintendents to 20 or more years of experience. Participation in the

focus groups was strictly voluntary. Respondents are identified by number, region of the country, and year the focus group was conducted. Some numbers are larger than 37 because our participants are part of a larger dataset.

*Focus Group Protocol.* Superintendents participated in focus group interviews that lasted approximately two hours. Interview questions used in the focus groups were previously generated by the research team of the *Voices 3* project, and interviews were more standardized than in most qualitative studies (Acker-Hocevar & Ivory, 2004). The *Opening Question* was intended to make participants comfortable and initiate discussion; the *Transition Question* set the stage for more productive *Key Questions*; *Key Questions* elicited the most important information by soliciting the primary study findings and probing for elaboration, examples, and anecdotes, and, finally, the *Summary and Ending Questions* ensured that valuable ideas had not been overlooked and helped to clarify conflicting comments and assign weights to comments (Krueger & Casey, 2000).

*Analysis.* From repeated readings of the focus group transcripts, patterns began to emerge, and we were able to generate a depiction of what knowledge counts from the small-district superintendent's perspective and the ways in which he or she came to acquire this knowledge. We then looked at this data through the lenses of impressionistic, informal, and self-regulating knowledge (Bereiter & Scardamalia, 1993) to assess the ways in

which small school district superintendents show their use and awareness of these kinds of hidden expert knowledge.

*Findings*

Three distinct "what knowledge counts" themes emerged from the transcripts and defined superintendent leadership within the small school district context: impressions of competing visions, being the "center of the wheel," and balancing/negotiating/weighing decisions. We present each theme in the following section and show how each one illustrates the knowledge needed by the small-district superintendent. We also connect each emerging theme with forms of hidden expert knowledge.

*Competing Visions: Directions From Impressions.* As our participants conversed within their focus groups, we heard them speak to the focus that they must maintain as leaders—their vision. This vision, as defined throughout all groups participating, maintained that schools must do what is best for the students; they found the need to negotiate among stakeholders' competing visions of what would be best for students challenging. Their impressionistic knowledge of what they could accomplish amid competing visions was crucial.

Although many of the participants used the term "vision," the term did not carry the connotation that we associate with the more business-like missions and visions written for organizations. Instead participants referred to vision as simply the purpose of their work: doing "what is good for

kids" (Superintendent 38, Midwest, 2004). Superintendent 11 claimed

> If we're going to make a mistake, we're going to make it on the side of the students . . . . And in trying to make the decision, we sometimes defer the decision to these people who have specific needs and try to meet those needs with the children's best interest in mind. (Southeast, 2006)

When describing the difficulties of upholding their vision, our participants frequently referred to the influences or impact of others, particularly the school board. They described their awareness of the competing visions within the school district. They reminded us, "Their [board] policy is what you are going to have to implement and . . . their direction is still paramount to what you implement" (Superintendent 37, Midwest, 2004). Superintendent 37 continued by recounting a specific example of the competition or mismatch between his vision and that of the district facilities-planning committee, which was a board selected committee:

> We had a facilities-planning committee in our district. We were supposed to try to lay out what we thought were our priorities in our facilities in the next five years [and] how we were going to make [things] better in the next five years. We had a chairperson on the board that has been on the board for probably nine years . . . , and we

have an elementary building and a high school building, and about a mile away, we have a middle school in another town. We went to all the different buildings, and then we were supposed to compare notes, the facility committee of three members as well as a head maintenance person. And I had my priority list and they had theirs and they did not match.

Clearly, at times, others' priorities compete with the superintendent's vision for funding and implementation.

Our participants told us that they understand the competition as a necessary component of their job as a small school district superintendent and important in understanding others' perspectives and setting in place their vision. Superintendent 35 eloquently summed this up in the following:

> I feel that when someone has a stake in something, they definitely want to have their voice or their opinion listened to or accepted and then [have] decisions based on that. In our positions, we always have outside opinions on how to make things better. We are in such a unique profession that all these community members—we have their children in our schools, so they obviously have a vested interest. We need to accept their opinions and listen to them. Our salaries are paid through these people, so we are in a unique position where we need to listen

to these people. Each and every one of these individuals has a stake at what goes on in our classrooms, and there are many times that they may be way off base, and we know that that isn't the best for education. We obviously don't implement that, but we do listen. That is why we have two ears and one mouth, so we can listen twice as much as we talk. (Midwest, 2004)

All of our participants recounted as Superintendent 11 from the Southeast did: "The child needs to be the center of those decisions—how is it going to impact the child?" (2006). At the same time, our participants described in great detail the plethora of responsibilities they had as district superintendents, responsibilities that may distract them from focusing on their vision of doing the right thing for all kids.

[There are] so many things pulling at you, sometimes it's easy to not [be] able to tell what your vision is or even think about [what's best for students] on any given day or week. And, you know, two weeks ago, I was standing in three inches of water on a Monday morning . . . , trying to mop it up. There wasn't a whole lot of visioning going on there, and I wasn't thinking about how we're going to educate kids. I was thinking, "How are we going to get all this water up?" . . . You have to wear so many hats that sometimes it distracts you from your vision.

(Superintendent 13, Southeast, 2006)

Superintendent 22 from the Midwest noted his work at "trying to make decisions and help [others] make decisions that are the best for all students" and lamented

This is my second superintendency, and I was thinking about what I have really spent my time on the last two years in the district. Most of the time, as much as I really hate to say it, I have not had the opportunity to spend my time thinking about what is best for students. If I'm really honest, it seems like I have spent the majority of my time in my particular situation working with the board trying to help the board to understand things, trying to help the board to see the bigger picture, and not having the luxury of focusing on kids. And I don't . . . see any way in our district where decisions are truly made based on what's best for kids. I don't see board members looking at the big picture and seeing that they have to make a decision because it's the best thing to do for kids. (2004)

The superintendents in this study clearly express a belief in the vision for their work and decision-making: what is in the best interest of the child. This clear vision is stewarded by impressionistic knowledge when they

"know" that given our vision, how "interesting, promising, or amiss" (Bereiter & Scardamalia, 1993, p. 56) are our current efforts. Bereiter and Scardamalia argue that the novice's impressionistic knowledge is less well developed than the expert's; thus his or her impressions of whether efforts are likely to enhance pursuit of the vision or are less helpful. But as our superintendents describe, they negotiate decisions by what sounds like a consideration of practical and theoretical guides—"doing what's best for students with the available resources" along with impressions "that support the higher-level goals of the organization" (p. 57)—whenever possible. The knowledge a superintendent has to make this work may well be hidden from even his or her closest associates.

***Situated Decisions.*** Informal knowledge is one's "educated common sense" (Bereiter & Scardamalia, 1993, p. 51) as well as the ability to situate knowledge within a particular context or environment. We found that our participants described a series of decision making processes founded on negotiation and balance. Specifically, our participants mentioned that during their decision-making processes, they gathered and listened to many perspectives regarding a situation but were ultimately solely responsible for the decisions they made. They avoided rushed decisions when possible and acknowledged the subtlety and significance of small events; furthermore, they acknowledged the angst and unavoidability of making decisions without a clear right or wrong

answer and the likelihood of informing—but not resolving—one situation via the issues and resolutions generated for another.

To navigate through the ambiguity, our participants described the necessity of seeing every situation anew, seeing that what gets resourced or funded this time may not the next go-round, and the people who might get their way in this decision may not in the next situation. The participants also mentioned that returning to the vision or touchstone of what is best for students helped balance their decisions. In practice, simultaneously navigating ambiguous situations and adhering to a vision requires great dexterity.

Repeatedly, our participants valued the ideas of others. They pointed out that gathering a variety of perspectives allowed them to see the number of attitudes, benefits, and consequences connected to their decisions. Their decisions, therefore, were not a matter of finding the one clear answer but in achieving a thoughtful response that entertained and weighed the outcome for a number of items and community stakeholders. They recognized the "strength of decisions when tied to specifics relevant to the situation" (Bereiter & Scardamalia, 1993, p. 53).

The complexity of their decisions and the weight of their responsibilities lead our participants to stall rather than make overly quick or rash decisions. By finding time to reflect, the participants argued, more thoughtful and collaborative decisions are made. Consider the following:

When we [school superintendents] make decisions, we never do today what we can put off till tomorrow. Now this is just the opposite of [how] I was raised; the Puritan [way] is that you do it and don't procrastinate. Our motto is, Procrastinate [making a decision] as long as you possibly can because the longer [you do], the more you work to find possibilities and think outside the box and get solutions—the better decision you actually come up with. So we involve people as much as we can through the process and delay the decision until the last possible minute in order to make a good decision. (Superintendent 23, Midwest, 2004)

Superintendent 24 described a situation when he had to learn from a failed bond issue by listening to and collaborating with people who opposed the bond. He argued that in better understanding the arena, he was able to make and lead more effective efforts.

Well, we need to build a middle school, and we had a bond referendum that failed last December. There were some people in the community that were opposed to it; some of whom will vote "No" [no] matter what because their idea is simple: no taxes, no new taxes, nothing . . . . So, when it failed, my friend [and a co-chair of the opposition] called me up, and he said, "I really would like to take you out to lunch." And we had a real[ly]

good talk about things, and we *re*-formed our committee. On the new committee we had people who were actively involved in the opposition, and we had the architects come in. We went through all the data again and looked at different options about the location . . . . First of all, [we asked,] "Do we remodel the existing one?" All of them agreed, "No, we don't want to do that." They saw firsthand what the need was. So we're working through that process right now, and I think that this time, knock on wood, it'll be successful. (Midwest, 2004)

Despite the fact that our small district superintendents indicated that they often have to go against the popular opinion and make final tough decisions, they repeatedly spoke to the importance of gathering many viewpoints.

When most people think of negotiating decisions about what is important, they think of pitting one item against another. The image of the traditional scale emerges, the touchstone of doing what is right for students poised against the cost of doing what is right. Our participants, however, spoke of having to weigh a number of concerns simultaneously. The metaphor of a scale falls short here. Our participants rarely had the opportunity to weigh just one issue against another. Instead, they weighed benefits against costs, present needs against future ones, one group of people against another, and probabilities against other probabilities, all practically

simultaneously. Additionally, our small school district superintendents mentioned that this problem-solving process was not done once and then simply applied in new situations. Instead, they talked of carrying out the process repeatedly. These superintendents talked about a process that is complex, multidimensional and dynamic, a process that involves intertwining variables that change as the problems and people associated with them change. This may well require informal knowledge, the hidden expertise that good superintendents can exhibit, but that even the best may not be able fully to articulate.

*Regulating Balance: Knowing How to be the "Center of the Wheel".* Small school district superintendents are the "center of the wheel," and feeling solely responsible for the district can be overwhelming for the novice. Bereiter and Scardamalia (1993) contend that the expert learns uniquely to "self regulate anxiety to better do the work" (p. 60). Our participants spoke of the multitude of responsibilities they face. They discussed how they had to prioritize and balance responsibilities and their time. In the small school district context, superintendents described a world in which ultimately they alone were accountable.

Communities see the superintendent as the conduit into the district and *the* representative for the district: "I'm responsible for everything that happens in that school system" (Superintendent 16, Southeast, 2006), and "you have to set yourself up as being knowledgeable and in charge of, literally, everything" (Superintendent

11, Southeast, 2006). Virtually every job associated with the district—bus driver, mechanic, handyman, classroom teacher, counselor, cook and cafeteria manager, curriculum leader, FFA sponsor, disciplinarian, public relations—may be required of superintendents during their 24/7 work week.

In the small school district, the superintendent is a member of the community, a neighbor, who is available and accessible, responsive to the public, and hence accountable.

> The unique difference in school divisions is people expect to have a voice with the superintendent all the time. They don't want to talk to anybody else. They want to go directly to the superintendent. They want the superintendent, even if we don't agree, to listen. It's unique. In larger divisions, that doesn't happen at anywhere near the same level as it does in smaller divisions. And, people feel very free to do that in small places. And, so, what you get is—you have a lot of voices coming at you every single day, probably 180 degrees difference in regard to what someone wants or doesn't want and everybody wants to be listened to. And, so, your challenge from a rural superintendent [point of view] is to make sure that access and listening is available. (Superintendent 12, Southeast, 2006)

Superintendent 17 described how this worked in his district:

> We are expected to be out in front on every issue and we become a lightning rod for an array of issues that, you know, if you're not keeping a close watch on it, you reach a tipping point where everybody in the community believes, "Oh my goodness, the superintendent really is responsible for everything that's ever been wrong in the school division." (Southeast, 2006)

And Superintendent 36 responded that

> We wear more hats probably than most superintendents [in larger districts] . . . . And we are trouble shooters and we put out fires; people are open to communicate with [us]; [we] are the cheerleader[s]; [we] are at the events and all the activities and different aspects of the districts. (Midwest, 2004)

Part of being the center of the wheel has to do with the small numbers of individuals available to do the myriad jobs of the district. One metaphor used during the focus groups to describe this balancing of multiple factors was the wheel and its spokes. Superintendent 24 commented

> To me the most important thing is working to keep the wheel of successful education in balance . . . . As a community we all have a role. The students have their role

in terms of working hard and being on task and being respectful and all of those things. And then the teachers have their role making sure that they're doing their jobs. The principals have their role; I have my role; the board members do too. And when anyone of those spokes starts to get loose or out of balance, then it causes the ride to get real[ly] bumpy. When you have board members who aren't really committed or they don't have the courage to do the things they need to do, if you only think about the financial strength of the district but you don't think about what's good for kids, you say, "Thirty-two kids in a section . . . , I think we can handle that." Well, no. But on the other hand, if you can't ever [find] the courage—if you have to do reduction-in-force because of declining enrollment, and [you find yourself saying,] "I just don't want to deal with that". . . . So [your] ratio is way out of whack in terms of faculty and students. You can't let that happen either. So it's working hard to keep that wheel [with all its spokes] in balance. (Midwest, 2004)

Learning to monitor the pressure of one's responsibilities and the multiple roles of the superintendent within the small school district and community is stressful enough, but federal policy also adds to the strain. As Superintendent 23 noted of the impact of *No Child Left Behind*

We only have two administrators for 300 people, so we have to juggle things quite a bit anyway, so with only two administrators, we have to decide who has to do this reporting and who has to do this training. [We] have to do training before [we] do the reporting, and getting everybody together to orchestrate that has been a challenge. I don't think any of us districts have a person where we just say, "Okay you're the NCLB person, and everything that comes down, you just take care of that," and we can go about doing our jobs and not have to worry about that. That's just not possible. We don't have the budgets for that, so I think it's been a huge impact that way. (Midwest, 2004)

Recognizing that the traditional district organization chart does not reflect realities in small districts and that one must self-regulate to get myriad jobs done despite lack of clear definitions of roles is key knowledge for these superintendents.

How does one self-regulate? Our participants remarked upon the power of remembering their guiding vision. Sometimes, the best way to gain insight for the multiple tasks ahead is through direct encounters with students or former student. For it is in these direct encounters that the vision of doing what is best for kids can come back into focus; for example, Superintendent 18 recounted that "sometimes you have to go back to a class and teach for a couple

days to remember what that was like" (Southwest and West, 2005). Superintendent 48 said

I left administration to teach kindergarten to better understand what teachers are going through and to take a break from the superintendency. I found that I lost my planning-time to help others. I had 27 kindergarten kids to plan for. This experience really opened my eyes. I resented the faculty meetings because they were scheduled and no one really listened. Now I talk much more about being a good listener. This teaching experience made me a much better superintendent. (Southwest & West, 2004)

For survival in a demanding context, the small school district superintendent, to prioritize needs and balance availability, must recognize the need to self-regulate.

*Summary*

To achieve their vision in a setting in which they are the "center of the wheel," our participants spoke of a myriad of negotiations that they encountered, ranging from funding, policy, and accountability to including voices in decision making. When reflecting about the choices they made, our superintendents spoke to the importance of balancing what is available and right for achieving the school's vision, to listen to multiple perspectives but to know that they are ultimately the one responsible. Bereiter and Scardamalia (1993) described this

kind of knowledge as "the expert's common sense . . . profoundly influenced by formal knowledge and is more complex in that it cannot be deliberately applied like formulated models are" (p. 52). The complexity of this internal weighing of decisions calls for what our participants described as an exhausting and isolating process.

We do not claim that our superintendents were experts, only that their words shed light on the nature of expertise in their profession. To reiterate a point we made above, the attempts to define competencies needed to be an effective superintendent are not misguided, only incomplete. We believe, for example, that Björk and Kowalski (2005) were correct when they stated that superintendents needed to be instructional leaders, organizational managers, et cetera. We contend, however, that acquiring the formal knowledge and skills to perform those tasks is not what makes the superintendency challenging and not what distinguishes expert from non-expert superintendents. Rather, performing these roles well amid conflict and complexity is at the heart of the role and of expertise in it. And to perform them well requires impressionistic, informal, and self-regulating knowledge. This knowledge is not often discussed because it is so difficult to get at it. This is the sense in which we refer to it as hidden—not that it is impossible to discuss it or to teach it, but that it is a challenge to do so with the common tools of the academic researcher and professor. Our examination of the superintendents' revelations in these focus groups is our

preliminary attempt to meet that challenge.

We learned that what counts for our superintendents appears to be in constant and fluid negotiation because of the small-district context. Continuing this line of thinking, we concluded that this inquiry of *what* counts fell short in comparison to the understanding of *how* superintendents make decisions. Clearly, knowing the definition of a competency (declarative knowledge) and being able to perform it (procedural knowledge) is not enough. One must also know when and how to perform it in given situations and be able to put the multitude of components into play when maneuvering through daily practice. What counts in one scenario may not have the same weight in another scenario. And, to further complicate matters, our participants spoke of the multitude of responsibilities, tasks and strategies that they weighed and relied upon when making decisions. They alluded to factors, we believe, that are well addressed by the concepts of impressionistic, informal, and self-regulatory hidden expert knowledge in their work. Evidence of the influence and importance of hidden expert knowledge abounded.

Clearly, from the perspective of these small school district superintendents, the superintendency can be seen as a place to handle everyday practical problems in which the information necessary to determine a solution strategy is often incomplete; thus, it is an arena in which declarative and procedural knowledge alone are insufficient to the tasks at hand. To

become an expert superintendent, one probably always has to be willing to step off the edge and risk taking on problems that are new and for which there is no guarantee of success; for example, what does one do in the superintendency when one has students who are not successful? The experienced non-expert might classify those students as "other"; for example, in Texas in the 1970s, we used to say about the academic achievement of low-income minority students, "I think our kiddos do pretty well, considerin'." In Bereiter and Scardamalia's words, that is "progressive problem reduction" as opposed to "progressive problem solving" (1993, p. 98). It is reframing the problem to fit what we already know. But, attempting to solve the problem entails drawing on that hidden expert knowledge to be able to consider and weigh competing visions, understand what it means to be the center of the wheel, and to persist in reading each unique situation and weighing ambiguous decisions, all the while remaining positive, with no guarantee that efforts will bring good opportunities to all students and learning from one's experiences through critical reflection and resourcefulness. We see the following implication from Bereiter and Scardamalia's explanation of expertise: the non-expert superintendent reframes problems in terms of deviation from the status quo and all solutions as getting things back to normal; the expert superintendent confronts such situations as places to learn new competencies and understandings—to put slack mental resources into learning how to provide

better education "rather than dissipating them or directing them elsewhere" (p. 82).

Superintendents in the *Voices 3* focus groups provide evidence of this expert reframing. In addition to formal knowledge, some used informal knowledge or "educated common sense" (Bereiter & Scardamalia, 1993, p. 51). They also used impressionistic knowledge to make "decisions that not only take care of the immediate problem but that at the same time support the higher-level goals of the organization" (p. 57). They used self-regulatory knowledge, knowing how to pace themselves amid the pressures and uncertainty of their efforts, and knowing that an approach that worked in the textbook or for a predecessor or colleague may not work for them. In sum, we saw these administrators exhibiting both the formal knowledge and the impressionistic, informal, and self-regulating knowledge that Bereiter and Scardamalia (1993) described.

*How Superintendent's Learn.* Given the knowledge that counts for small school district superintendents, we wondered in what ways they go about getting this knowledge. We did not ask this question in the focus groups and, clearly across the six focus group transcripts, this was not a big topic. Our participants wanted us to know what was important about their jobs, their trials and tribulations and their processes for accomplishing what some might think was "the impossible." We had not asked specifically how they learned it. At the same time, our participants did provide some insights.

In talking about how they must do and know all because they are the center of the wheel, one superintendent admitted: "I can't look back and think of anything in leadership that I took in college that set you up for that" (Superintendent 1, Midwest, 2004). Superintendent 1 continued, when recounting the need to fight against some legal mandates, "We weren't taught how to fight that and I don't know that you can be taught. Maybe you just jump in and hope your suit's fireproof." Clearly for this individual, the preparation program did not offer coursework aligned with all work responsibilities.

This person was not alone. Superintendent 19 lamented his lack of preparedness when entering the superintendency: "I didn't know squat about school finance. I was a rookie. I was a rookie superintendent. I didn't know anything about it" (Southwest & West, 2005). This message rang loud and clear from our participants: "The training that you get to be superintendent is on-the-job training, and talk about having to be an expert in so many things—especially in a small school—oh my god! (Superintendent 18, Southwest & West, 2005).

While many individuals described a glass half empty, others indicated that our preparation programs have made a positive impact. Two female superintendents from the Midwest provide examples linked to the usefulness and helpfulness of either their administration preparation program or off-site professional development. Superintendent 7 noted that she was "well-trained in

disaggregating data in terms of looking at free and reduced lunch" (Midwest, 2006). She recounted that "book study and discussion" were an important part of the learning process.

As a way of summing up the glass-half-full perspective of how one learns "what accounts as knowledge," consider the following dialogue among superintendents from the Southwest and West (2005) when asked if there were anything else that we needed to know about their jobs:

Superintendent 20: I think the unpreparedness of the new superintendent.

Superintendent 19: We're absolutely not prepared….

Superintendent 20: Absolutely clueless when it comes to finance, discipline, issues with parents, issues with the State Department, trying to deal now with No Child Left Behind, trying to deal with the . . . new student information system. I think we're the most unprepared people when we take a job that we could possibly be. And you'd better have a good finance person, secretary, sittin' beside you, before you take it on. If you don't, you're in a world of hurt.

Superintendent 19: I think we come out thinkin' that we're gonna deal with curriculum, that we think we're gonna be in a situation where we can make things better for the kids, that

we're going to be able to make changes, and it's all gonna be wonderful. And the bottom line is you're gonna deal with money; you're gonna deal with the state department.

Superintendent 21: And every one of those has some kind of conflict.

Superintendent 19: Right. Conflict. And you're not gonna have a clue because you've never had any experience with that. You don't even know it's out there. You don't know what those federal programs are. You don't have any idea of where the money comes from, how it gets there and what you can do with it. And that's the first thing you're responsible for, is all the financials, all the financial stuff. And the legislation, the legislative part, y'know, how involved you get in that.

Generally, cognitive researchers have analyzed experts by examining their processes of working toward solutions of problems and puzzles. These analyses isolate the component parts of making decisions, including the end solutions, as well as the strategies and decision rules employed to arrive at solutions. We believe that our research has shown that the problem solving of leaders in schools cannot be explained by isolating component parts or listing strategies and decision rules, or prescribing declarative and procedural knowledge. The problem solving of

school district administrators is more complex, intricate and intertwined than lists would suggest (Ivory, McClellan, & Hyle, 2009). Scholars of school administration may envy scholars in convergent disciplines such as physics and medicine their scientific status and credibility. But our data suggest that divergent disciplines may be more promising for illuminating the work and expertise of the small-district superintendent. For the expert, knowledge is not static or complete, awaiting situations that will be addressed with what is known; knowledge is at best only loosely defined, ever-expanding, and developing as the expert encounters new problems that require new thinking.

So, how does this apply to superintendents and their perspectives on "competing visions, being the "center of the wheel," and "weighing decisions"? What are the implications for superintendent preparation? The school-administrator-preparation question we have seen for years—"Do university preparation programs adequately ready folks to take on the superintendency?" —now seems misguided. How could they, given that Bereiter and Scardamalia's (1993) concept of expertise, define it as dependent on declarative and procedural knowledge only as foundations, on which competence must be built through years of experience and years of pushing oneself into further learning and progressive problem solving (p. 98). University preparation programs can help with the acquisition of knowledge and field experiences, but

171

cannot in traditional programs of study provide the years of experience or the opportunities for progressive problem solution essential in the mix. So, the emphasis must shift to providing professional growth opportunities throughout the superintendent's career rather than on having university pre-service programs that somehow do the preparation once and for all.

So, how might we in the university think about the ways we prepare aspiring superintendents? The focus ought to be on how we can best give them a good start. What is the best way to start folks out on the road to developing expertise? The stock answer is to provide lots of practica, blending of theory and practice, lengthy full-time internships, case studies, et cetera. But, research should address the question of how we know when we are doing that well. What are the elements of effective practica, blending, internships, case studies, et cetera? The issue ought not be whether our preparation programs provide such experiences, but whether we provide them effectively in light of the need to develop hidden expert knowledge.

Not only did experiences and reflections in the field contribute to our superintendents' knowledge and understanding, their classroom-based experiences and opportunities to acquire academic knowledge and to test assumptions did as well. Given Bereiter and Scardamalia's (1993) suggestion that experts are those who have continually pushed themselves to learn new things, we believe preparation programs should contain explicit teaching of how to acquire and use new kinds of knowledge and become more expert. Learning about the need to engage in impressionistic knowledge use, the importance of informal knowledge, and self-regulatory behaviors must become part of the curriculum for administrator preparation programs.

*Next Steps.* Being able to identify what counts as knowledge for superintendents is only a part of understanding the work and preparation of superintendents. Much of the literature and the understandings we have about the profession come in the form of declarative or "formal" knowledge essential when employed as a superintendent. Additional literature supports the importance of experience in the lives of the superintendent. Through our research, we learned that what counts for our superintendents appears to be in constant and fluid negotiation because of the small district context. We also believe that this research has identified the existence of and potential for hidden expert knowledge, knowledge built on declarative (e.g., school law, finance, personnel, cultural awareness, and instructional leadership top this list) and procedural understandings (e.g., collaborative, cooperative, and democratic processes). This hidden expert knowledge includes impressionistic, informal, and self-regulatory knowledge, forms of knowledge that are best learned on the job. But, we believe, this on-the-job learning can probably be enhanced by appropriate mentoring, coaching, and other professional development.

We agree that what knowledge is fixed is at best only the surface declarative and procedural knowledge, what is obvious and visible. We now believe that there is messy, ambiguous, and hidden expert knowledge that is essential to the success of the superintendent. This hidden expert knowledge, we argue, should and can be targeted and discussed in preparation programs designed to cultivate expertise in the superintendency. Some learning experiences aspiring leaders should encounter in their programs are knowing what the literature says, incorporating skills that have been proven to work, and putting these into practical application. In addition, aspiring leaders should learn that this formal knowledge will not suffice if they expect to thrive as experts. Particularly, they must be encouraged to recognize patterns as they experience daily work; they must learn to form thoughtful impressions about people and objects; they must learn how to do their jobs within the constraints of who they are as individuals (Bereiter & Scardamalia, 1993). Most importantly, they should realize that the potential to develop this hidden expert knowledge will occur while on the job—if they are open to and reflective about their work and thinking, and if they avoid progressive problem reduction in favor of "working . . . at the edge of [their] competence, accepting the strains and the risks with doing so, but gaining in return progressively higher levels of competence and achievement" (Bereiter & Scardamalia, p. 73).

Bereiter and Scardamalia's (1993) insights into expertise have helped us see that the small district superintendency requires a vast array of knowledge and a great amount of experience, but experience is a necessary (not a sufficient) condition. Specifically, the development of expertise is dependent on declarative and procedural knowledge provided by most preparation programs *and* on hidden expert knowledge obtained through experience and self-reflection. We have evidence that non-experts reframe new problems to fit what they already know. They use existing knowledge, as constant and set, and as a way to solve the problem (i.e. "this is what I know and this is how it fits the problem"). On the other hand, experts reframe their understanding in creative and unique ways when they encounter new problems. Impressionistic, informal, and self-regulatory hidden expert knowledge allows flexibility, creativity and opportunities to move in new directions and solve problems differently.

Research for further studies include
- how to attempt to make superintendents' hidden expert knowledge explicit, as Nestor-Baker and Hoy did in 2001;
- learning from superintendents how they developed their expertise (Sosniak, 2006);
- evaluating professional development efforts with superintendents for their effectiveness in developing informal, impressionistic, and self-regulating knowledge and

using methods such as those suggested by Guskey (2000), and

- finally, in addition to enhancing our understanding of what counts as knowledge for the rural school superintendent, linking our findings to the documentation of divergent disciplinary expertise, therein expanding the underdeveloped knowledge base on expertise in divergent disciplines.

The role of the small district superintendent is central to the development, improvement, and maintenance of an effective system of public education in this country. We believe efforts to understand what it takes to be good in the role must be continued, and findings from those efforts must be applied and evaluated for their contribution to this important work. Because the large data sets, typically used to study small school-district superintendents and the studies investigating general, prescribed administrator competencies, have yet to reveal the nuances of hidden expert forms of knowledge, we encourage more individual case studies and other forms of qualitative inquiry (Bereiter & Scardamalia, 1993) to understand better what counts as knowledge for these experts.

## References

Acker-Hocevar, M., & Ivory, G. (2004). *Voices from the field phase 3: Principals' and superintendents' perspectives of school improvement, social justice, and democratic community: Instructions for focus-group moderators.* Retrieved May 13, 2010, from http://education.nmsu.edu/emd/documents/voices-from-the-field-phase-3-principals-and-superintendents.pdf

Acker-Hocevar, M., & Ivory, G. (2006). Update on Voices 3: Focus groups underway and plans and thoughts about the future. *UCEA Review*, *48*(1), 22-24.

Anzai, Y. (1991). Learning and use of representations for physics expertise. In K. A. Ericsson & J. Smith (Eds.), *Towards a general theory of expertise* (pp. 64-92). Cambridge: Cambridge University Press.

Becher, T. (1989). *Academic tribes and territories: Intellectual enquiry and the culture of disciplines.* The Society for Research into Higher Education. Milton Keynes, England: Open University Press.

Benner, P. (1984). *From novice to expert: Excellence and power in clinical nursing practice.* Menlo Park, CA: Addison-Wesley.

Benner, P. (2004). Using the Dreyfus model of skill acquisition to describe and interpret skill acquisition and clinical judgment in nursing practice and education. *Bulletin of*

*Science Technology Society*, 24(3), 188-199.

Bereiter, C., & Scardamalia, M. (1993). *Surpassing ourselves: An inquiry into the nature and implications of expertise.* Chicago: Open Court.

Björk, L. G., Kowalski, T. J., & Browne-Ferrigno, T. (2005). Learning theory and research: A framework for changing superintendent preparation and development. In L.G. Björk & T. J. Kowalski (Eds.), *The contemporary superintendent: Preparation, practice, and development* (pp. 71-106). Thousand Oaks, CA: Sage.

Björk, L. G., Kowalski, T. J., & Young, M. D. (2005). National education reform reports: Implications for professional preparation and development. In L.G. Björk & T. J. Kowalski (Eds.), *The contemporary superintendent: Preparation, practice, & development* (pp. 45-69). Thousand Oaks, CA: Sage.

Charness, N., Krampe, R., & Mayr, U. (1996). The role of practice and coaching in entrepreneurial skill domains: An international comparison of life-span chess skill acquisition. In K. A. Ericsson (Ed.), *The road to excellence: The acquisition of expert performance*

*in the arts and sciences, sports, and games* (pp. 51-80). Mahwah, NJ: Lawrence Erlbaum Associates.

Council of Chief State School Officers. (1996). Interstate school leaders licensure consortium standards for school leaders. Washington, DC: Author.

Deakins, J., & Cobley, S. (2003). A search for deliberate practice: An examination of the practice environments in figure skating and volleyball. In J. Starkes & K. A. Ericsson (Eds.), *Expert performance in sport: Recent advances in research on sport* expertise (pp. 115-135). Champaign, IL: Human Kinetics.

deGroot, A. D. (1965). *Thought and choice in chess.* Paris: Mouton and Company.

Dreyfus, H. L., & Dreyfus, S. E. (1996). The relationship of theory and practice in the acquisition of skill. In P. Benner, C. Tanner, & C. A. Chelsa (Eds.), *Expertise in nursing practice: Caring, clinical judgment, and ethics* (pp. 22-47). New York: Springer.

English, F. W. (2006). The unintended consequences of a standardized knowledge base in advancing educational leadership preparation.

*Educational Administration Quarterly, 42*(3), 461-472.

English, F. W. (2007). From the president: Toward re-founding the field of educational administration. *UCEA Review, 46*(3), 14-16.

English, F. W. (2008). *Anatomy of professional practice: Promising research perspectives on educational leadership.* Lanham, MA: Rowman & Littlefield Education.

Ericsson, K. A. (1996). The acquisition of expert performance: An introduction to some of the issues. In K. A. Ericsson (Ed.), *The road to excellence: The acquisition of expert performance in the arts and sciences, sports, and games* (pp. 1-50). Mahwah, NJ: Lawrence Erlbaum Associates.

Ericsson, K. A., Charness, N., Feltovich, P. J., & Hoffman, R. R. (Eds.). (2006). *The Cambridge handbook on expertise and expert performance.* Cambridge: Cambridge University Press.

Finnegan, D., & Hyle, A. E. (2009). Assistant to "full": Rank and the development of expertise. *Teachers College Record, 111*(2), 443-479.

Fitts, P. M., & Posner, M. I. (1967). *Learning and skilled performance in human performance.* Belmont, CA: Brock-Cole.

Greenfield, T. (1993). Theory about organizations: A new perspective and its implications for schools. In T. Greenfield & P. Ribbins (Eds.), *Greenfield on educational administration* (pp. 1-25). New York: Routledge.

Guskey, T. R. (2000). *Evaluating professional development.* Thousand Oaks, CA: Corwin.

Honig, M. I., & Louis, K. S. (2007). A new agenda for research in educational leadership: A conversational review. *Educational Administration Quarterly, 43*, 138-148.

Ivory, G., & Acker-Hocevar, M. (2003). UCEA seeks superintendents' and principals' perspectives in "Voices 3." *UCEA Review, 45*(2), 15-17.

Ivory, G., McClellan, R., & Hyle, A. E. (2009). Resurrecting pragmatism as a philosophical frame for understanding, researching, and developing performance in the small-district superintendency. *Educational Considerations, 36*(2), 35-39.

Krueger, R. A. (1998). *Developing questions for focus groups: Focus group kit 3.* Thousand Oaks, CA: Sage.

Krueger, R. A., & Casey, M. A. (2000). *Focus groups: A practical guide for applied research* (3rd ed.). Thousand Oaks, CA: Sage.

Lawrence, J. A. (1988). Expertise on the bench: Modeling magistrates' judicial decision-making. In M. T. H. Chi, R. Glaser, & M. J. Farr (Eds.), *The nature of expertise* (pp. 229-259). Hillsdale, NJ: Lawrence Erlbaum Associates.

Leithwood, K. A., & Riehl, C. (2003). *What we know about successful school leadership.* Philadelphia: Laboratory for Student Success, Temple University. Retrieved May 12, 2010, from http://forms.ncsl.org.uk/media/F7B/98/randd-leithwood-successful-leadership.pdf

Leithwood, K.A., & Riehl, C. (2005). What do we already know about educational leadership? In W. A. Firestone & C. Riehl (Eds.), *A new agenda for research in educational leadership* (pp. 12-27). New York: Teachers College Press.

Littrell, J., & Foster, W. (1995). The myth of a knowledge base in educational administration. In R. Donmoyer, M. Imber, & J. J. Scheurich (Eds.), *The knowledge base in educational administration: Multiple perspectives* (pp. 32-46). Albany, NY: State University of New York Press.

Murphy, J. (2002). Reculturing the profession of educational leadership: New blueprints. *Educational Administration Quarterly, 38,* 176-191.

Murphy, J. (2006). *Preparing school leaders: Defining a research and action agenda.* Lanham, MD: Rowman & Littlefield Education.

Nestor-Baker, N. S., & Hoy, W. K. (2001). Tacit knowledge of school superintendents: Its nature, meaning, and content. *Educational Administration Quarterly, 37,* 86-129.

Patel, V. L., Kaufman, D. R., & Magder, S. A. (1996). The acquisition of medical expertise in complex dynamic environments. In K. A. Ericsson (Ed.), *The road to excellence: The acquisition of expert performance in the arts and sciences, sports, and games* (pp. 127-167). Mahwah, NJ: Lawrence Erlbaum Associates.

Richmann, H. B., Gobet, F., Staszewski, J. J., & Simon, H. A. (1996). Perceptual and

memory processes in the acquisition of expert performance: The EPAM model. In K. A. Ericsson (Ed.), *The road to excellence: The acquisition of expert performance in the arts and sciences, sports, and games* (pp. 167-188). Mahwah, NJ: Lawrence Erlbaum Associates.

Sosniak, L. A. (2006). Retrospective interviews in the study of expertise and expert performance. In K. A. Ericsson, N. Charness, P. J. Feltovich, & R. R. Hoffman, (Eds.). *The Cambridge handbook on expertise and expert performance* (pp. 287-301). Cambridge: Cambridge University Press.

Sternberg, R. J. (1999). What do we know about tacit knowledge? Making the tacit become explicit. In R. J. Sternberg & J. A. Horvath (Eds.) *Tacit knowledge in professional practice: Researcher and practitioner perspectives*, 231-

236. Mahwah, NJ: Lawrence Erlbaum Associates.

University Council of Educational Administration. (2007). Reflections on UCEA's profound transformation: An interview with 2006 UCEA President Fenwick W. English. *UCEA Review*, 46(1), 5.

Wagner, R. K., & Carter, R. L. (1996). Research outside the field of education. In K. Leithwood, J. Chapman, D. Corson, P. Hallinger, & A. Hart (Eds.), *International handbook of educational leadership and administration* (pp. 447-476). Boston: Kluwer.

Ward, P., Hodges, N. J., Williams, A. M., & Starkes, J. L. (2004). Deliberate practice and expert performance: Defining the path to excellence. In A. M. Williams & N. J. Hodges (Eds.), *Skill acquisition in sport: Research, theory and practice* (pp. 231-258). London, UK: Routledge.