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ABSTRACT

With the growing recognition that teachers' decisions are guided by their thinking and knowledge, this study examines the educational principles of two experienced kindergarten teachers' classroom decisions and actions and shows how teachers' ideas are related to classroom practice. Data were collected from mid-March to early June and from late August through October, 1993, in the form of participant observation, interviews, videotaping, and document collection. Both teachers had taught in the same school district in Illinois for over 10 years, and their students were from mostly working-class families. Four major findings emerged. First, the study successfully used educational principles to conceptualize the teachers' practical knowledge of teaching. Second, the educational principles that guided the participants' decisions and actions were derived from images of themselves as teachers as well as from knowledge of and values and beliefs about children's learning and development, curriculum, teaching processes, and classroom organization. Third, the teachers' vision of themselves as teacher played an important role in their interpretation of their actions and classroom events. Fourth, the teacher's practical knowledge was found to evolve out of both personal and professional experience. (Contains 20 references.) (JB)

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Educational Principles Underlying the Classroom
Decision-Making of Two Kindergarten Teachers

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Introduction

This study is grounded in the growing recognition that teachers' decisions are guided by their thinking and knowledge, and that studying personal practical knowledge provides a means of understanding their decision-making processes. It examines the educational principles of two experienced kindergarten teachers' classroom decisions and actions and shows teachers' ideas related to classroom practice.

Personal Practical Knowledge

The emergence of systematic research on teachers' knowledge and its acquisition signaled a recent shift from studying teacher behavior to studying what teachers know and how that knowledge is applied in classroom. Teachers are rich and worthy sources of knowledge about teaching. Studying teachers' classroom decision-making within this framework enable us to better understand (a) how teachers use their knowledge to interpret their roles within their teaching contexts, (b) how teachers' knowledge guides their teaching practice, and (c) how past professional and personal experiences help shape teachers' knowledge.

For example, Spodek (1988) has attempted to identify the educational principles underlying early childhood teachers' classroom decisions. He observed nine teacher and interviewed them about the nature of their decisions and the reasons for making these decisions. Spodek discusses the following important findings. First, teachers in the same school, regardless of quite different professional preparation, shared more beliefs than teachers who were working in different schools. This suggested that teaching context and colleagues might have a stronger influence on teachers' beliefs than pre-service teacher education. Second, most of the teachers' educational principles identified in the study were related to maintaining classroom activities. This raised the issue of the foundations of early childhood educational practice, since knowledge of child development has long been considered by many early childhood educators as the only proper basis for teachers' decision-making. Third, there was a great diversity in the values reflected in these teachers' decisions in spite of the fact that they all came from the same community and some of them came from the same school. This indicated that the teachers' educational goals were based more on personal influences than on school or community factors.

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Spodek concluded that few of the educational principles held by these teachers were grounded in technical knowledge of child development. Rather, the teachers' decisions seemed to be informed by their personal practical knowledge.

Elbaz (1983) studied the practical knowledge of one experienced high school English teacher, Sarah, through informal interviews and classroom observation. She discusses Sarah's practical knowledge in terms of its content, orientation, and structure. She identifies five broad domains of Sarah's practical knowledge: (a) subject matter, (b) curriculum, (c) instruction, (e) self, and (f) the milieu of schooling. Elbaz also describes how Sarah's knowledge evolved. Five orientations of her practical knowledge were identified: theoretical, situational, social, personal, and experiential.

Structure is particularly important in understanding Elbaz's notion of practical knowledge. Elbaz identifies three levels in the organization of practical knowledge. These three levels reflect the relationship between practical knowledge and practice, the teacher's experience, and the personal dimension. The first level consists of rules of practice, which are brief, clearly formulated statements of what actions to take in particular situations when purposes are clear. The second level consists of practical principles, which are broader statements used in reflecting upon situations and selecting from among practices which apply to specific circumstances. The third level of practical knowledge consists of images, which are general, orienting frameworks. Elbaz considers that the level of image was the most powerful influence in organizing the teacher's knowledge and in bringing it to bear on practice.

Elbaz's study demonstrates that a teacher's knowledge is broadly based on experiences in classrooms and schools and is directed toward the handling of problems that arise at work. Her study also provides insights into the overall scope and organization of a teacher's knowledge, and into the connection between that knowledge and the practical conditions of teaching.

Drawing upon Elbaz's work, Clandinin (1986) used "images" to study the personal practical knowledge of two experienced primary teachers, Stephanie and Aileen. Clandinin discusses in detail how Stephanie's and Aileen's images embodied their personal and professional experience as well as how these images were expressed in their classroom practices and in their personal life. For example, the image of "classroom as home" was identified in Stephanie's personal practical knowledge. Stephanie's classroom was her "idea of how a home should be . . . a group of people interacting and cooperating together" (p. 370). With such an image, activities contributing to a home-like classroom environment were important. Baking, cooking, planting, and farewell parties for students moving to other classrooms were carried out with passion to create a warm homey atmosphere.

Clandinin also links this image with its origins. She found that the "classroom as home" image was rooted in four areas of Stephanie's past experience--her professional experience, her professional training, her own school experience, and her private life. This image was also heavily influenced by Stephanie's negative view of her own public school experience and her experience at Teacher's College, where she began her professional life. Stephanie described her childhood public school as a "packaging" system. She did not fit the package and was "left out." Also, her image was affected by her positive feelings about "home," which she wanted to reconstruct in her classroom.

From a stance similar to Clandinin's, Johnston (1993) examined both the substance and processes of an experienced elementary school teacher's thinking about her social studies curriculum as well as the sources of her ideas. Through intensive interviews, Johnston uncovered the images of teaching and the teaching principles of Helen, the teacher in this study. Images helped Helen envision her social studies program and gave her an overall direction for teaching; principles helped her translate those images into the actual approaches she used to teach social studies. Much of the substance of Helen's teaching images and principles were related to her personal values. Her curriculum decisions were thus heavily influenced by who she was as a person and as a teacher. Johnston's study highlights the importance of the personal values and experiences that teachers bring to their curriculum decision-making. Johnston's study also suggests the importance of helping teachers both reflect on their values, as well as make explicit their implicit understandings of their teaching and classrooms.

Bullough (1992) explored the relationship between curriculum and teachers' professional development by examining two beginning English teachers' personal teaching metaphors. There were two major findings in Bullough's study. First, differences in age and personal maturity were important factors in teachers' development. Second, cooperating teachers played an important role in beginning teachers' development. Bullough's study suggests that past experience, personality, and context dramatically influence the decisions which beginning teachers make as they negotiate their teaching role, and adopt, adjust, and create a program of study for their students.

Research on personal practical knowledge have provided us with information about how teachers use their knowledge to plan and carry out instruction as well as how teachers develop knowledge-in-action. However, little of this work has been conducted with early childhood teachers.

Teaching in early childhood education probably requires a body of knowledge different from that held by teachers of other grades. A study focusing on early childhood teachers' practical knowledge can provide insights about both the nature of early childhood teaching and the knowledge that early childhood teachers apply in their teaching. Our study was therefore designed to closely examine these aspects of early childhood teaching through two kindergarten teachers.

The Research Questions

Qualitative, interpretative methods were used to examine the classroom decisions of two experienced kindergarten teachers, Mary and Brenda (pseudonyms), through their educational principles. An educational principle, as used here, is a component of teachers' practical knowledge, informed by self-understanding, values, and beliefs about teaching and learning as well as by past experiences. Although not necessarily articulated, educational principles guide teachers' classroom decisions and actions.

Questions addressed in this study are:

1. What educational principles do these two kindergarten teachers have about their classroom practices?
2. How do these two kindergarten teachers' educational principles guide their classroom decisions?
3. What are the biographical factors influencing these two kindergarten teachers' educational principles?

Mary and Brenda had taught in the same school district in Illinois for more than ten years. Both Mary's and Brenda's school serve children ranging from kindergarten through fifth grade, mostly from working-class families.

Method

Data was collected from mid-March to early June and from late August through October, 1993. The data collection period was approximately six months in duration. Different data collection modes were used, including participant observation, interviews, videotaping, and document collection.

Data Collection

Participant Observation

This study began with classroom observation. In order to observe the various activities taking place in each classroom, observations were made at different times on different days. Each teacher's classroom was visited at least twice and usually three times each week, twice in the morning and once in the afternoon. Observation generally lasted two hours in the morning and one hour in the afternoon.

Notes were taken during observation. After leaving the schools--usually on the same day--these were reconstructed into fieldnotes. These were continuously analyzed in order to provide more focused and relevant accounts of the teachers' practice. These analyses also helped to generate interview questions and discover emerging patterns.

Interviews

To discover the educational principles and beliefs underlying each teacher's actions and classroom decisions, a series of unstructured, open-ended interviews were conducted. Each interview was audiotaped and later transcribed. After each interview, the participants were given a transcript from the previous interview and a list of questions for the following session.

The initial interviews focused on each teacher's biography and also included a number of "grand tour" questions (Spradley, 1979). The questions elicited information on each teacher's past, present, and outlook into the future of her career, one of her typical teaching days, how she planned and implemented her curriculum, and how she organized her classroom. As the study progressed, we began to sense what was salient about the information these two teachers provided. The interview questions therefore become more and more specific, mostly derived from classroom observations, previous interviews, and video clips. In final interviews, the educational principles were identified and the teachers invited to react to them. This "member checking" validated the constructions that were made and induced the teachers to add new information.

Videotaping

Some teaching episodes were videotaped to be use in the interviews. Our videotapes included many daily routines, like scenes of arrival and departure, indoor and outdoor play, structured learning activities, free-choice activities, and snack and nap time. More unique incidents were also taped, such as children's fighting, teachers' comforting and disciplining children, and special events.

The tapes were used to, in Erikson's (1986) words, find out what "these actions meant to the actors involved in them, at the moment the actions took place" (p. 121). We first analyzed the videotaped sessions and then selected a few events for further elaboration. We assembled a number of video clips and watched them with each teacher during our interviews. We then asked them to explain the why's and how's of their decisions and actions in the tapes.

Document Collection

Documents from both schools and classrooms were collected, such as parents' handbooks, descriptions of the schools, class schedules, teachers' plans, classroom calendars, weekly newsletters, and notes to parents.

Data Analysis

A grounded theory approach was used to analyze the data, meaning that a framework for analysis was allowed to emerge from the data collection and then was tested against further data collection and analysis (Glaser & Strauss, 1968). As we searched through the data for regularities and patterns, several themes emerged. These themes were the educational principles we were looking for in this study. For example, Mary frequently talked about "teaching children to appreciate different perspectives" and "showing children that they are cared for." Brenda was particularly concerned about "listening to children's developmental readiness" and "giving children positive reinforcement and logical consequences." We pursued and focused on these emerging educational principles in detail in subsequent observations and interviews. We also used them as the new coding scheme to organize the data.

Each kind of data contributed to answering to the three research questions posed for this study. The teacher's educational principles about teaching and children's learning were derived mostly from interview data. Observation data and documents were used to determine if a teacher's decision or action reflected her educational principles. After combining observation and interview data, we searched for the relationship between the teachers' educational principles and classroom decisions. The biographical information--each teacher's past personal and professional experience--from the initial interviews was summarized and presented as a narrative. We examined the evolution of each teacher's educational principles using interview data in conjunction with the background narrative.

Findings and Discussion

Educational principles and Classroom Decisions

Both Mary's and Brenda's classroom environments reflect their educational principles. We identified seven salient educational principles underlying Mary's practice: (a) stretching children's developmental levels, (b) helping children to facilitate each other's learning, (c) providing experiences for children to appreciate different perspectives, (d) allowing children to take ownership of their learning, (e) helping children gain self-control, (f) showing children that they are cared for, and (g) seeing parents as co-educators of children. Brenda's five important educational principles that were identified are: (a) listening to children's developmental readiness, (b) giving children repetitive experiences, (c) giving children positive reinforcement and logical consequences, (d) giving children more attention, and (e) giving children opportunities to become independent.

These educational principles were useful reference points to help each teacher make choices, not blueprints for action. Mary and Brenda used these theories to reflect upon situations and select the most appropriate practice from a range of possibilities. In essence, this is similar to Walker's (1971) notion of "platform" used to describe the practical knowledge of the participants in his study. According to Walker (1971), the "platform" includes "an idea of what is and a vision of what ought to be, and these guide the curriculum developer in determining what he should do to realize his vision" (p. 52). These educational principles are also reminiscent of Elbaz's (1983) "practical principle" which is defined as a "more inclusive and less explicit formulation in which the teacher's purposes . . . are clearly evident" (Elbaz, p. 132).

Mary and Brenda developed a repertoire of teaching strategies to fit each of their educational principles. Their teaching strategies are, in Elbaz's (1983) terms, "rule[s] of practice"--"brief, clearly formulated statement[s] of what to do or how to do it in a particular situation frequently encountered in practice" (p. 132). These teaching strategies, including the substance of the teaching content and the appropriate way to teach, provide more specific guidelines for both teachers as they translate their educational principles into classroom decisions and actions. For example, Mary activates her educational principle of showing children that they are cared for by teaching children to treat others in the way they want to be treated, helping children see that they each have a gift, maintaining children's self-esteem while disciplining them, tending to children's various needs, and so on. She implements these strategies in various ways; for example, she tends to the children's various needs by paying field trip costs for those who can not afford them. Brenda's educational principle of giving children the opportunities to become independent led to teaching children to do things for themselves and encouraging children to become independent thinkers.

Personal Factors Informing Each Teacher's Educational principles

Mary's and Brenda's educational principles are an amalgam of their image of self as a teacher; their values; and their beliefs about teaching, the purpose of schooling, children's learning and development, classroom organization, and so on. There are striking differences between Mary's and Brenda's educational principles, as well as the curriculum experiences provided in their classrooms. In the following, we discuss and compare their educational principles and teaching practices in terms of their images of self as a teacher, as well as their personal values and beliefs about teaching and learning.

Image of Self as a Teacher

Mary and Brenda hold strikingly different images of themselves as teachers. They both strive for a teaching style that matches their conceptions

of their roles as teachers. Mary described herself as a "facilitator/learner." As a learner, she is a growing professional committed to her personal and professional development, as well as an innovator, willing to experiment with new ideas and challenge her taken-for-granted ideas. As a facilitator, she creates an environment to support children's learning and to cultivate children's self-direction. On the other hand, Brenda conceives of her role as a teacher as a "giver of information" and "the one in control." As a giver of information, Brenda views teaching as one-directional, telling and showing. As someone who wants to be in control, Brenda believes teachers must have control of the classroom in order for teaching to begin. Specifically, Mary's and Brenda's differences in their images of self as a teacher are reflected in their conceptions of early childhood curriculum--children's work and play, teacher-parent relations, and their roles as cooperating teachers.

While Mary views play as work and work as play, Brenda believes play and work are distinct. Seeing herself as a facilitator, Mary is highly concerned with providing a child-centered program. Play is one focus of her curriculum, in which children are provided with opportunities to interact firsthand with people and materials, as well as to apply, construct, and test their knowledge. For Brenda, though, play is a chosen activity and a reward for work. She views work as an activity defined by her and done for her, and which cannot be refused. Seeing herself as a giver of information and the one in control, play--a time when she is not at center stage directing and imparting knowledge--can be used as a reward for children only after they finish work. In addition, Brenda feels that it is her responsibility to teach children the distinction between work and play because, as she sees it, work takes on a more central role than does play in the elementary school.

Mary and Brenda also have different conceptions of teacher-parent relations, although they both emphasize the importance of parental involvement. They both think that they have to make an extra effort to get parents involved, since most children in their classrooms are from working-class and/or single-parent families. Mary views parents as partners/co-educators. As a facilitator, she strives to encourage parents to take an active role in their children's learning. For example, she keeps parent-teacher communications open, invites parents to her classroom, and suggests activities parents can do at home. Brenda, however, always struggles when working with parents. Seeing herself as the one in control, she feels that it is an indication of her inability to handle her classroom if she calls on parents to discuss their children's problems. In addition, she feels that parents are judgmental of teachers without understanding what is going on in the classroom. Perhaps her image as the one in control, in conjunction with her image of parents, has impaired her willingness to be in touch with parents, although she values parental involvement.

Mary and Brenda also hold different conceptions of their roles as cooperating teachers. A number of studies (e.g., Bullough, 1992; Johnston, 1994) have found that cooperating teachers play an important part in beginning teachers' professional development. Cooperating teachers who are open and flexible appear to have a greater impact on how novices think about teaching than do teachers who are less flexible and more extreme in their thinking. While we did not explore how Mary and Brenda influenced their student teachers' views about teaching, we did find that their images of self as a teacher influenced how they worked with their student teachers. Mary enjoyed having student teachers in her classroom. Brenda, however, did not work with student teachers until 1993 and then it was not a rewarding experience.

As a growing professional, Mary sees helping novice teachers as a way to reflect on her own teaching and to help the teaching profession grow. As a facilitator, she feels that having student teachers in her classroom is beneficial for children because they can learn to work with different adults. She supports and encourages her student teachers to experiment with their ideas in her classroom. When helping student teachers reflect on their experiences in her classroom, she frequently reminds them that they are operating in a pre-determined classroom culture and that they should see this more as a learning experience rather than as a constraint. On the other hand, Brenda decided not to be a cooperating teacher anymore after working with two student teachers in 1993. Her image of herself as the one in control was challenged on several different levels when there was a student teacher in her classroom. On one level, she felt that she had no control of the classroom during or after the student teachers' "take-over" because, as she saw it, children could not get used to different teachers. On another level, although she required her student teachers to implement her reading curriculum, she felt unable to teach what she needed to teach, since the student teachers had to design and implement a number of their own activities. In addition, Brenda's lack of enthusiasm in working with student teachers is probably also informed by her belief that teachers will eventually learn how to teach on the job.

Values and Beliefs About Learning and Teaching

Mary's and Brenda's images of themselves as teachers are influenced by their values and beliefs. Together, these give rise to the educational principles guiding their teaching practices. Most of their educational principles are rooted in beliefs related to their views about children's learning and development. As a result, each teacher's educational principles are interrelated, in accordance with her image of self as a teacher.

Mary's core values and beliefs which shape her educational principles include:

1. Children are capable and active learners. They can perform tasks requiring capabilities beyond their present developmental level with the guidance of adults and more competent peers. Teachers should help children achieve higher levels of development through interactions with the physical and social environment.
2. Children's development is domain-specific. Children may be very developed in some areas of their development but less so in others. Therefore, all children can learn from each other.
3. Children are intrinsically motivated. Teachers need to provide opportunities for children to experience autonomy and to take initiative.
4. Children are not egocentric. Teachers must provide children with opportunities to appreciate and respect individual and cultural differences as they learn about the world around them.
5. Children learn best when they feel safe, when they have a positive concept about themselves, and when they trust the environment and the people in their lives.
6. Life in school must be thought of as life itself, not simply as preparation for later life.
7. Learning is more powerful when information is integrated into experiences and larger personal contexts.
8. Learning is an active process. It involves physical and mental interaction with things and ideas.
9. Teachers must facilitate and support, rather than direct children's learning. Teachers should invite children to the journey of learning by asking themselves what is most worthwhile for children to know and what are the best ways to provide access to that knowledge and those experiences.
10. Teachers must share the partnership of education with parents, strongly encouraging them to take an active role in their children's education.

Brenda's core beliefs and values which influence her educational principles about teaching include:

1. Children's development, as Gesell's theory describes, is constrained by biological maturation. Teachers and parents have to give children time to grow instead of frustrating them with unrealistic expectations.

2. Children are not intrinsically motivated. Teachers can regulate children's behavior by using positive and negative reinforcement.
3. Each individual has different learning styles. Learning, at least for some children, is memorizing. Teachers therefore should provide them with repetitive experiences.
4. Children learn better when they feel safe and have control over their environment.
5. The more teacher-child interaction there is in a classroom, the more children learn. Teachers should make themselves accessible to children as much as they can.
6. Teachers should teach children to learn how to learn on their own.

It was evident that Mary's and Brenda's classroom practices are, to a great extent, influenced by their views on how children grow, develop, and learn. This finding is consistent with Yonemura's (1986) year-long case study of a preschool teacher's thoughtful deliberations connecting her objectives for individual children's development with her planning and interactive teaching. Taken together, these findings illuminate one distinctive characteristic of early childhood teaching--the relevance of child development to curriculum planning and implementation. Knowledge of child development, although it cannot serve as the sole theoretical basis for early childhood practice (Spodek, 1991), allows teachers to anticipate what young children are capable of learning as well as the processes through which they learn--processes which are different from those of adults and older children.

Brenda and Mary share several beliefs, but these beliefs are not necessarily manifested in their teaching in the same ways, since each classroom action and decision results from an interplay of a variety of beliefs, value judgments, images of self as a teacher, and past experiences. For example, both Mary and Brenda believe that children learn better when they feel safe and comfortable in their learning environment. Mary puts this belief into practice by showing children that they are cared for--attending to their different needs, assuring children that they are capable learners and worthwhile people, and helping children respect and care for each other. While Brenda also responds to children's need to feel safe, she does so by showing them that they have control over their environment; for instance, she provides predictable routines and structures as well as consistency in dealing with inappropriate behavior.

Biographical Factors Influencing Educational principles

Mary's and Brenda's educational principles were influenced by many diverse experiences over a long period of time. For example, Mary's

educational principle "facilitating children to be facilitators of each other" originated in both her professional and personal experiences. These included her observation of children's learning over the years, her readings of peer-cooperation studies, her own past school experiences as a lonely learner, and her experiences in collaboration with colleagues and student teachers. Another of Mary's educational principles "providing children opportunities to appreciate different perspectives," grew out of her professional experience of student teaching in Britain, her personal interests in traveling and studying other cultures, and living in a multicultural community. Brenda's educational principle "giving children more attention" stemmed from her personal experience of feeling neglected at school as a fifth grade student, her readings of studies of teacher-child interactions, and her past teaching experience of grouping children by ability. This study, of course, did not exhaust all possible experiential origins of Mary's and Brenda's educational principles. Even a longitudinal study of teachers' knowledge growth cannot uncover all the factors which shape their educational principles.

However, we were able to link several biographical factors, such as significant experiences, people, and events in Mary's and Brenda's lives, with certain educational principles and beliefs they held. In the following discussion, we describe particular factors or experiences which helped shape Mary's and Brenda's educational principles.

Brenda's educational principle of "listening to children's developmental readiness" was influenced by her experience of retaining her son in second grade. When sensing her son's struggle at school, Brenda was convinced by her interpretations of Gesell's theory that her son was developmentally unready for second grade and that the only remedy was to give him time to grow. Her son grew academically and socially during his second year in second grade. Brenda internalized this experience and came to believe that parents and teachers have to wait for children to blossom. Using this experience to justify her teaching practice, Brenda encourages parents to retain children whom she perceives as needing additional time to grow. She also avoided activities which may have required capabilities beyond what she considered to be the children's current developmental levels. Over the years, she has never received any negative feedback from the parents who have retained their children. This, in turn, has reinforced her belief. In fact, contrary to her belief, reviews of retention research consistently conclude that children who repeat a grade are worse off in terms of achievement, emotional adjustment, and self-concept than children who are promoted with their age-mates (Smith & Shepard, 1987).

Another of Brenda's educational principles, "giving children positive reinforcement and logical consequences," was influenced by a child's outburst--"maybe I should be bad." Early in her career, she punished children for their inappropriate behavior but did not give them rewards for behaving

well. She based this practice on her belief that good behavior itself was enough reward for children. However, years later, she was instructed to daily reward several Behavior Disorder (BD) children in her class for being good. A child who was not in the BD program questioned Brenda about this practice and made the above comment. This bothered her, making her realize that she was not being fair in the children's eyes. She therefore started giving all children rewards as well as punishment. This experience, in conjunction with her doubt that children were intrinsically motivated, gradually led her to believe that "education now is based on incentive, built on rewarding good behavior". During our observations, extrinsic rewards were very much emphasized in her classroom.

Mary's story echoes Lortie's (1975) observation that teachers are socialized into teachers' roles long before making the decision to become teachers. Mary already had a wealth of knowledge and a set of strong beliefs about teaching before she started the teacher education program. Her bitter memory of her early schooling, along with her mother and her seventh grade teacher, contributed significantly to this. Mary's teachers in elementary school either made her believe that she was unready to participate in other children's activities because she was a year younger, or made her feel that she was a poor learner because she did not apply herself enough. Until very recently, she was still angry that she was denied an educational experience which valued her as a worthwhile person capable of learning. Consequently, she sees it as her moral obligation to help children recognize that they each have gifts. In addition, Mary's mother and her seventh grade teacher were important role models of teaching. She learned from her mother, an experienced first-grade teacher, about children's development, children's self-concept and the unit approach to curriculum planning. Her seventh grade teacher, who led her to discover the joy of learning, showed her how important it is to ground teaching in children's interests and talents. The influence of Mary's early schooling and these two persons continually manifested in her teaching practice.

Summary

There are four major findings in this study. First, different concepts have been used to describe the ways in which teachers' knowledge is structured, such as images (e.g., Clandinin, 1986; Johnston, 1993), personal philosophy (Connelly & Clandinin, 1988), and metaphor (Munby, 1986). In our study, we used the notion of educational principles, as inferred from both teachers' narratives, to conceptualize their practical knowledge of teaching. Although there is no widespread agreement about the nature of these concepts, our study and other studies all were intended to "get inside teachers' heads to describe their knowledge, attitudes, beliefs, and values" (Feiman-Nemser & Floden, 1986, p. 506).

Second, the educational principles which guide Mary's and Brenda's classroom decisions and actions are derived from images of themselves as teachers as well as from knowledge of, and values and beliefs about, children's learning and development, early childhood curriculum, teaching processes, and classroom organization. Mary's and Brenda's beliefs about child development have a great impact on their curriculum planning and implementation. Views of child development have not been identified as part of the practical knowledge of teachers in higher grades. Our findings underline children's development as a critical consideration in providing meaningful early education and as an important component of teacher expertise in early childhood education.

Third, Mary's and Brenda's images of themselves as teachers play an important role in their interpretation of their actions and classroom events. Their conceptions about children's work and play again reflect the unique nature of early childhood teaching. Teachers' conceptions of children's work and play were not found in the practical knowledge of teachers in higher grades. Mary's and Brenda's contrary conceptions of work and play reflect, respectively, the characteristics of early childhood curriculum and common concerns of kindergarten teachers. Mary's conception of play and work as the same expresses the perception of many kindergarten teachers that play activities are the core of early childhood curriculum and, at that level, are the prime ways children learn. On the other hand, Brenda's conceptions of play and work as distinct reflects many kindergarten teachers' significant concern about socializing children into elementary school by teaching them the distinction between work and play.

Fourth, this study found that teachers' practical knowledge evolves out of both personal and professional experience. Mary's and Brenda's educational principles have evolved over several years and have been informed by different experiences. Mary's story demonstrates the powerful influence that teachers' own schooling has on their views about the role of the teacher. It must be noted, however, that Brenda's experiences with retention and rewards led her to certain beliefs which are actually inaccurate.

Implications

This study suggests that how teachers conduct themselves in the classroom is related to their teaching ideals. Teachers' past experiences, self-understanding, perspectives, intentions, values, and beliefs influence the sense they make of classroom situations and in turn lead to their classroom actions. The values and beliefs teachers hold about teaching may or may not be reasonable, justifiable, true, or coherent. As long as teachers' values and beliefs go unexamined, are not challenged by others, and engender no conflict that would prompt teachers to question them, teachers are likely to continue acting on beliefs without regard to evidence, believing in things that they may not be justified in believing. It is, therefore, important for teachers to explore

the values and beliefs underpinning their own teaching, to bring to awareness the reasons for the strategies and options they use, to make conscious the knowledge stored in their heads, and to connect these with the formal bodies of knowledge valued in teacher education.

Researchers studying teacher thinking and knowledge have developed methods that teachers can use for reflection even without being involved in research. The methods frequently used in this line of research include journal keeping, document analysis, classroom observation, interviews, and teacher biography. It has been found that these methods when used by researchers have had consequences beyond producing rich data for researchers to analyze. Teachers who have participated in studies of their thinking and knowledge reported that the process of reflection imposed by the research made them more aware of their work (Clark & Lampert, 1986).

In our study, teacher interviews proved to be a very useful tool in aiding the teachers to get in touch with the beliefs and values underlying their actions. Already a highly mindful, reflective, and analytical teacher, Mary expressed that she started to put many things happening in her classroom into perspective when we inquired about her teaching. Brenda told us that our questions forced her to think for the first time about why she did what she did. Teachers could really help each other seriously examine and reflect upon their practice and underlying beliefs and theories by engaging in interviews or "teacher-teacher conversation," in Yonemura's (1982) terms.

Our study also suggests that teachers' actions can only be understood in terms of their antecedents and the direction toward which they are headed. As Ayers (1989) puts it so simply, "asking 'who am I? How did I get here?' opens the door for asking 'who will I be? How will I get there?'" (p. 18). Autobiography is a useful method for teachers to trace the growth of their experiences, reflecting on the meanings of the past and determining how those meanings will shape their future. Autobiography should be advocated in teacher education programs as a way to increase a teacher's awareness of his/her beliefs about teaching. This, as Lortie (1975) states, would allow a teacher to "become truly selective and work out a synthesis of past and current practices in terms of his/her own values and understanding" (p. 231). The potential for growth never ends as one continues to reflect on one's own experiences.

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