The Constructivist
Fall 2004

Vol. 15, No. 1
ISSN 1091-4072

The Role Dispositions, Efficacy, and Autonomy Play in the Education of Preservice Teachers

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A basic premise of constructivism is that each of us constructs our own knowledge through observing, questioning, documenting, and reflecting. To assist preservice teachers in their "learning journey" we suggest dispositions, efficacy, and autonomy play important roles in their educational preparation. We argue that the confluent nature of dispositions, efficacy, and autonomy has a substantial impact on what takes place in the classroom. Definitions and examples of these constructs are provided as well as recommended classroom practices that support future teachers' autonomy, efficacious behavior, and dispositions.

Defining Dispositions, Efficacy, and Autonomy

*Dispositions: A*lthough Lilian Katz alerted the early childhood community to the important role of dispositions in the teaching and education of young children, only recently have higher education faculty begun to seek clarification about the nature and roles of dispositions (Katz, 1993; Katz & Chard, 2000; Katz & Raths, 1985). This is due in large part because the National Council for Accreditation of Teacher Education (NCATE) requires teacher education institutions to provide documentation of how dispositions are evidenced, used, nurtured in students, and assessed. Moreover, awareness abroad concerning the pivotal role of dispositions has recently come to light. In England, research associated with the Accounting for Life

Long Learning (AcE) Project (Pascal & Bertram, 2002) expands our understanding of the elements that comprise effective learning. One of the three elements identified are four educative dispositions considered indicative of the "Effective Learner" (Bertram & Pascal, 2002).

- Independence
- Creativity
- Self-motivation
- Resilience

So what exactly are dispositions? Katz (1993) tentatively defined "a disposition as a pattern of behavior exhibited frequently and in the absence of coercion, and constituting a habit of mind under some conscious and voluntary control, and that it is intentionally and oriented to broad goals" (p. 16). A more technical definition of dispositions is proposed by Buss and Craik (in Katz & Raths, 1985). They posit dispositions are summaries of act frequencies. Therefore, "When an individual enacts certain behaviors with sufficiency, one can infer that he or she has a given disposition" (p. 301). Similarly, Bertram and Pascal (2002) define dispositions as "behavioral characteristics and attitudes exhibited frequently in young children and in the absence of external coercion, threat, or reward which indicate internalized habits of mind under conscious and volunteer control" (p. 246).

Given the aforementioned definitions, a clearer understanding emerges, namely one that regards dispositions as habits of thinking and doing that are voluntary and frequent, not to be confused as mindless habits but rather "habits of mind" (Katz, 1993, p. 303). Another important characteristic of dispositions is that they are environmentally sensitive meaning that they are acquired, supported, or weakened by interactive experiences in an environment and with significant adults and peers (Bertram & Pascal, 2002). Dispositions can further be delineated as desirable and undesirable. Desirable dispositions such as resourcefulness, curiosity, persistence, and striving for accuracy should be strengthened. Conversely, diminishing undesirable dispositions such as selfishness, impatience, and whining is also a desirable goal.

Efficacy: Just as the construct of dispositions is receiving increased attention among researchers with implications for higher education, so too is the construct of efficacy. More specifically, teaching efficacy has been the focus of studies by several researchers (Ashton & Webb, 1986; Enoch & Riggs, 1990; Gibson & Dembo, 1984; Guskey, 1988; Woolfolk & Hoy,

1990). These investigations are noteworthy because levels of teaching efficacy have been shown to influence a novice teacher's resilience in the face of obstacles (Ashton & Webb, 1986) and willingness to stay in the profession (Hall, Burley, Willeme & Brockmeier, 1992). Research also indicates that stronger levels of teaching efficacy are linked with stronger commitments to teaching (Coladarci, 1992; Evans & Tribble, 1986; Trentham, Silvern, & Brogdon, 1985).

The literature on efficacy further suggests that in an educational era influenced so strongly by standards, accountability, and the call for change, that an important catalyst for educational reform is the individual teacher and that teacher's values, behaviors, and beliefs, for which teaching efficacy is certainly one component (Bandura, 1977; 1986; 1995; Fullan, 1993). Research on efficacy of teachers suggests that behaviors such as use of innovations, persistence at a task, and risk taking are also related to degrees of efficacy (Ashton & Webb, 1986).

So what exactly is efficacy? When Bandura's (1981) theory of efficacy is applied to teaching, the construct of teaching efficacy comprises two domains, namely an outcome expectancy belief and a self-efficacy belief. Bandura (1986) suggests that individuals develop specific beliefs related to their ability to cope with change, and he defined this as self-efficacy. Self-efficacy, then, implies a belief in one's own ability to perform a specific behavior. Outcome expectancy implies an individual's expectation that certain behaviors will result in specific outcomes. Bandura (1986) suggested, "Perceived self-efficacy is a judgment of one's capability to accomplish a given level of performance, whereas an outcome expectation is a judgment of the likely consequences such behavior will produce" (p. 391).

In terms of defining teaching efficacy, other researchers support the distinction between self-efficacy and outcome expectancy. Enoch, Smith, and Huinker (2000) suggest, "Personal teaching efficacy has been defined as a belief in one's ability to teach effectively and teaching outcome expectancy as the belief that effective teaching will have a positive effect on student learning" (p. 194). Further, Gibson and Dembo (1984) stated,

> "Outcome expectancy would essentially reflect the degree to which teachers believed the environment could be controlled, that is, the extent to which students can be taught given such factors as family background, IQ, and school conditions. Self-efficacy beliefs would

> indicate teachers' evaluations of their abilities to bring about positive student change (p.570)."

While some early definitions do not acknowledge a distinction between self-efficacy and outcome expectancy (Fuller, Wood, Rapoport, & Dornbush ,1982; Newman, Rutter, & Smith, 1989), more recent research does in fact recognize this important distinction between these two belief domains. Further, while the two constructs are not one in the same, they are yet related. "Teachers who believe that they can teach well are also likely to believe that their students can learn well" (Raudenbush, Rowan, & Cheong, 1992, p. 151).

Autonomy: A third construct receiving increased attention in the literature today is that of autonomy. Constructivists Piaget (1932/1965), Kamii and Housman (2000), and DeVries and Kohlberg (1987) have written about the importance of autonomy. Kamii and Houseman (2000) distilled the aim of education into the single aim of autonomy. This evolution was a process of circling around and closing in on an essential goal characterizing all constructivists' considerations. "Autonomy is thus conceived as an objective inclusive of all other objectives. None of the other Piagetian approaches focused on autonomy as a central consideration of their objectives" (DeVries & Kohlberg, 1987, p. 58).

So what exactly is autonomy? Autonomy implies the ability to know what is fair and true, both morally and intellectually. In a Piagetian sense, autonomy means "the ability to decide for oneself between right and wrong in the moral realm and between truth and untruth in the intellectual realm, by taking relevant factors into account" (Kamii & Houseman, L., 2000, p. 57). Further, Piaget's theory suggests that autonomy implies not merely the right but the ability to be self-governing in both the moral and intellectual realms. Autonomy is self-regulation, namely the ability to decide for oneself without having to be told by others.

Autonomy, then, is the opposite of heteronomy. Being unable to make judgments for themselves, heteronymous individuals are governed by someone else. Autonomous individuals, by contrast, can take into account the viewpoints of others and make decisions for themselves (Kamii & Housman, 2000). Autonomy is evident when you consider others' perspectives, coordinate your own views with theirs, and then make a reasoned and informed decision based on that coordination (Branscombe, Castle, Dorsey, Surbeck, & Taylor, 2000).

With regard for teaching, autonomous teachers possess the professional knowledge that enables them to articulate their reasoning to others. Hence, this sense of professional autonomy develops when pre-service teachers, as well as novice and experienced teachers, are given opportunities to share views with others and to hear and to debate the views of others. "An autonomous teacher, then, takes into consideration the perspectives of others and then decides what action to take, regardless of how popular that action might be" (Branscombe, et al., 2000, p. 459). Kamii states that "autonomous professionals can set their own goals from day to day and can plan their own activities based on scientific knowledge about how children learn" (as cited in Branscombe, et al., 2000, p. 459). Similarly, DeVries and Kohlberg (1987) suggest that "autonomous teachers do not just accept uncritically what curriculum specialists give them. They think about whether they agree with what is suggested. They take responsibility for the education they are offering children" (as cited in Branscombe, et al., 2000, p. 459). Teachers who are knowledgeable about current research can articulate reasons for their perspectives. They know why they teach the way they do, and they are able to explain to others, providing a reliable and credible rationale for their practices (Kamii, 1992).

The Confluent Nature of Dispositions, Efficacy, and Autonomy

The confluent nature of dispositions, efficacy, and autonomy has an influence on the professional development of preservice teachers and their eventual classroom teaching experiences. Levels of teacher efficacy and autonomy influence those dispositions that are the outcome of habits of thinking and doing that are voluntary and frequent. So what does the confluent nature of these three constructs look like when it comes to preparing preservice teachers for their future classroom experiences?

In an early childhood methods course, preservice teachers created a math board game that had a connection to a particular piece of children's literature. They were also required to write a reflection on the experience. Pam described her feelings and interpretation of the children's feelings while playing the math game. "The children were excited playing this game. It made me feel good that I had created a game that would keep their attention and would keep them smiling" (P. Kautz, personal communication, February 15, 2004). She further wrote,

> "This was a good experience for me. It showed me that I could make a game that is meaningful to the children and help them with math. It showed me that I did not have to go out and buy a game that would cost lots of money. I also liked the idea of joining a piece of literature with math to make the experience more meaningful (P. Kautz, personal communication, February 15, 2004)."

Pam's reflection suggests the interconnectedness of dispositions, efficacy, and autonomy. The dispositions to be creative, solve problems, and take risks are inherent in the construction of a unique math game. Her personal teaching efficacy was strengthened because she created a math game that helped children learn mathematics. Specifically, this game creation experience supported both her self efficacy and outcome expectancy beliefs because Pam's judgment in her capability to know what is effective mathematics teaching and in her belief in her own ability to help children learn mathematics were strengthened as a result of this experience in her program of preparation. (Enoch, Smith & Huinker, 2000). Pam also experienced a budding sense of autonomy when she saw how her own games and not a mass- produced game supported children's skills and dispositions.

Kris also gives us one glimpse into the confluent nature of these three constructs. As a part of an experiential based teacher education program, she recently completed a brief internship experience to be followed later by a semester- long internship experience. Having been assigned to a 3rd grade classroom, Kris's clinical teacher invited her to present a lesson on multiplication of whole numbers. Convinced of the importance of teaching mathematics conceptually as supported by the National Council of Teachers of Mathematics in their *Principles and Standards for School Mathematics* (NCTM, 2000), she was determined to teach mathematics from this framework in spite of the procedural approach to mathematics that had characterized learning thus far in that classroom. She envisioned a classroom where students were actively engaged in learning important mathematics in a way that helped them make connections between classroom learning and their daily-lived world experiences.

When her clinical teacher offered textbook-related worksheets to guide her lesson, Kris politely declined the materials choosing alternatively to create her own conceptual experiences and materials. She planned a lesson on multiplication initially framed with a piece of children's literature, *Amanda*

Bean's Amazing Dream: A Mathematical Story (Neuschwander, Woodruff, and Burns, 1998) culminating in experiences and dialogue connected to the developmentally appropriate partial product approach to multiplication that precedes the standard algorithm.

The lesson on multiplication presented an opportunity for Kris to grow as a future teacher. While the lesson encountered bumps along the way, she admitted,

> "I stand firm on teaching conceptually. I grew as a teacher and know what I would do differently next time. I would still teach the child conceptually even if it were against the way everybody else was teaching. Their idea of teaching was to use worksheets. When they handed them to me, I just said, "No thank you."
> (K. Frame, personal communication, April 18, 2004).

Efficacy, autonomy, and dispositions are embedded within this teaching experience. By her own admission, Kris described her lack of confidence when it came to learning and teaching mathematics prior to the experiences she had in her mathematics modeling courses at the university level. However, upon completing her twelve hours of required mathematics coursework taught from a modeling perspective, she described a much stronger sense of mathematics teaching efficacy because she was more confident in her own ability to learn mathematics and in knowing what to do to help students learn mathematics conceptually as well as procedurally.

In the example above, Kris modeled a sense of autonomy because as the literature suggests, she decided what action to take in the lesson regardless of how popular it might have been (Branscombe, et al., 2000). Her sense of efficacy and autonomy nurtured the dispositions within Kris to take risks, to be persistent, and to be resilient when encountering new and unusual problems, attributes suggested through the literature to be critical for success as a novice teacher (Ashton & Webb, 1986; Hall, Burley, Willeme, & Brockmeier, 1992; Coladarci, 1992; Evans & Tribble, 1986). Her sense of mathematics teaching efficacy influenced her willingness to be autonomous and to support the dispositions that were so critical for success not merely in her internship experience but also for her as a novice teacher when she transitions from student of teaching to teacher.

Hopefully the reader can bring to mind examples of a positive classroom or school outcome that can be viewed as a melding of dispositions, efficacy,

and autonomy. Jenny, a kindergarten teacher, related a situation in her school that exemplified this blending. Moreover, it is a hopeful message of what can be achieved when teachers, their principal, and parents come together to advocate on behalf of children's education.

Prior to the beginning of the school year, a letter was sent notifying school personnel that it was on the low performing list for the state and were warned if test scores did not raise, the principal was in danger of losing her job. As a result of the school's low performance, a literacy program that touted a 100% success rate was to be implemented in the fall. Though the teachers were highly skeptical of the purported success rate, they attended a four-day workshop. Jenny found the program extremely inappropriate for kindergarten. The daily two and one half hour program comprised 30-minute group times during which children were drilled with letter recognition plus many transitions and required work sheets or games. She explained, "The program was extremely hard for my active students to deal with." "Even worse the units were so shallow and made little sense" (J. Jamison, personal communication, March 22, 2004). For example, there was a gardening unit at Christmas time! When the teachers questioned those who selected the program, they received mixed messages. Yes they could modify it, but without straying from the script. They were told to supplement and use it as a resource tool. Their confusion was coupled by sinking morale. Despite being a magnet school, which had five nationally board certified teachers and Masters degreed teachers, they were being forced to read daily from a script. Teachers felt degraded and embarrassed plus discipline problems skyrocketed. The principal wrote a letter to the superintendent, curriculum director, and school board members requesting that the school be released from the program; all teachers that taught the literacy program signed the letter. The response to the letter was either to implement the program or be fired. The teachers continued to work for release from the program. Parents began asking questions and meeting with school board members. Teachers were nervous about the threat of losing their jobs and the publicity they were receiving in the local newspaper. Teachers put their fears aside and along with the principal and parents spoke at a special board meeting. A vote was taken which resulted in being released from the program. Jenny wrote, "Now the children are being taught the skills they need to be successful in a meaningful context" (J. Jamison, personal communication, March 22, 2004). By the way, teachers learned later their school was not ever on the state low performing list.

Despite considerable pressure, these teachers did not accept the literacy program that was given them. When teachers critically examined the literacy and found it inappropriate, they took personal responsibility for the education they provided children (DeVries & Kohlberg, 1987). According to Branscombe and others (2000), an autonomous teacher "possesses the professional knowledge that enables them to determine what is educationally appropriate for children and to articulate their reasoning to others" (p. 459). As autonomous teachers, they were able to explain to others, articulating credible reasons why they could not accept a literacy program that was promoted by the State Department of Education. The teachers had a strong sense of personal teaching efficacy and teaching outcome expectancy (Enoch, Smith & Heinker, 2000) that caused them to reject the literacy program that they saw was undermining children's learning and compromised their ability to teach. The dispositions that emerged were tenacity to pursue an unpopular position, communication, and collaboration with other stakeholders in the education of children.

Nurturing the Confluent Nature of Dispositions, Autonomy, and Efficacy in University Classrooms

Having described examples of what the confluent nature of dispositions, autonomy, and efficacy might look like, it is critical to examine how these constructs might be nurtured in university classrooms. First and foremost, university classrooms must provide opportunities for preservice teachers to become knowledgeable about dispositions, autonomy, and efficacy and to examine how these constructs are connected to them personally.

Dispositions, autonomy, and efficacy can be further nurtured within university classrooms, for example, when professors offer a plethora of research-based theories suggesting that students make their own informed decisions about how these theories affect them as they compare and contrast ideas. By encouraging students to think for themselves, the dispositions to become risk takers and to become autonomous and efficacious may be nurtured. Paget is one pre-service teacher whose sense of efficacy, autonomy, and dispositions blossomed when encouraged to synthesize ideas and think for herself. She summarized the value of this type of university classroom experience.

> "Very often I have noticed in my university classes professors insisting that students conform to a specific philosophy. Interestingly, in the next breath, these same professors preach the benefits of

> constructivism. This practice is so prevalent that I was dumbstruck when a professor actually acknowledged that we might develop our own philosophy [generate our own thoughts]. . . With this simple gesture, she demonstrated value for our individual thoughts and abilities. As the class continued, she acknowledged us as people with worthy contributions. She created an atmosphere where we could share ideas freely without risk of ridicule. We knew all suggestions would be taken seriously and considered thoughtfully. We were always encouraged to think for ourselves but to consider different viewpoints. I gained confidence in my abilities as a teacher because I was treated with the respect the title deserves. I truly felt that I was preparing to impact the future – one child at a time. . . . I flourished in this classroom. It's easy to learn when you feel valued, intelligent, and confident. . . . While I soon will be taking the title of teacher, I will always be a student of my students."
> (P. Thomas, personal communication, May 5, 2004).

In her closing thoughts, Paget describes the disposition to be a life-long learner. She further describes how her sense of autonomy and efficacy were nurtured when valued as a learner who can make informed decisions about those issues which will affect her future practice. Valuing preservice teachers as learners capable of becoming efficacious, classroom teachers who are confident in their own sense of autonomy is critical for nurturing dispositions.

Guiding preservice teachers through the project approach (Helm & Katz, 2001) is a powerful process that supports university students' dispositions, autonomy, and efficacy. When first exposed to the project approach, students are often apprehensive and some openly negative. One of the most vocal opponents was Kelly. Yet, her opposition was transformed into enthusiastic support. Soon after her professor paired Kelly with a graduate student, who taught kindergarten in an impoverished area, Kelly actively updated her professor as she and the children progressed through each of the project phases. By the end of phase three, Kelly's persistence, creativity, and problem solving enabled the children to conduct their fieldwork at a local airport—the only time children were able to leave the school during the academic year.

Introducing future teachers to the project approach has great potential for nurturing dispositions, autonomy, and efficacy. Because project work

"provides contexts in which intellectual dispositions can be strengthened" (Helm & Katz, 2001, p. 4), future teachers became aware that the dispositions they displayed influenced children's dispositions. Some of the dispositions often manifested by preservice teachers and children during the project work included problem solving, creativity, resourcefulness, and seeking deeper understanding.

Since most longtime teachers are unaware of this curricular approach, the preservice teachers are primarily responsible for implementing the project process. Once an appropriate topic is selected, students have the autonomy to implement the project. The classroom teacher encourages the project by providing time for children to conduct their inquiries.

For students, successfully implementing the project approach bolsters the belief that they can positively effected children's learning. Consequently, students' personal teaching efficacy and teaching outcome expectancy are enhanced. In so doing, the likelihood that future teachers will use the project approach is increased.

Finally, the value in providing preservice teachers with opportunities to observe and participate in professional-practice classrooms where teachers exemplify positive dispositions, autonomy and efficacy cannot be understated. Together the teacher educator and future teachers then reflect on their observations to determine how classroom practices are impacted by a teacher's dispositions and efficacious behavior. How is autonomy displayed in the classroom? Instructors can also share instances on the local and national level of professionals who embody the aforementioned attributes. Instructors should strongly articulate their support of these teachers to their university students.

One author provided her undergraduate students with the opportunity to observe Heather, an outstanding kindergarten teacher. For most students this was the first time they observed constructivist theory transformed into a variety of learning experiences. Students saw how Heather's positive dispositions influenced children's dispositions. The preservice teachers listened with interest when their instructor relayed Heather's struggle to maintain her autonomy despite implicit pressure to conform. Heather readily acknowledged her educational philosophy was different from other teachers in the building--except for the Head Start teacher who often visited her room—and her principal. Fortunately, Heather and the Head Start teacher

supported each other as they shared ideas and problem solved classroom situations. Similarly, the instructor urged her future teachers to actively seek out like-minded professionals to buffer feelings of isolation that can occur.

Heather's efficacious behavior was evident when, despite her principal's lack of support, she and her students created a play for parents. Her response to the principal's indifference to the play was, "My principal thinks it is fluff, but I can point to several areas in the course of study that specifically state the children should be involved in these activities. Anyway, that's okay, I get my thanks from the parents" (Da Ros-Voseles, Danyi, Aurilio, 2003, p.36. Heather displayed a strong sense of efficacy despite repeated pressure to conform to other ways of thinking which were not supported by current research.

Conclusion

The definitions and examples contained herein support our argument that the confluent nature of dispositions, efficacy, and autonomy, can influence what takes place in the classroom, whether it be with a preservice teacher in an internship experience or with a seasoned classroom teacher. As future teachers, experienced classroom teachers, and teacher educators seek to maintain their commitments to constructivism, opportunities to nurture dispositions and strengthen efficacy and autonomy continue to present themselves through field and classroom experiences. Dispositions, efficacy, and autonomy work in concert together and contribute to the mindset of those who believe in constructivist theory. The hopeful outcome of this will be the potential of influencing students so that they too might learn how to nurture dispositions within themselves thus becoming efficacious and autonomous learners in their own journeys to constructing knowledge.

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