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Although general conceptions regarding the nature of mentoring tend to coalesce around the idea that mentoring involves a more experienced and more knowledgeable individual providing some form of support to a novice, great variance exists in the way in which these goals are realized in mentoring programs. In order to bring greater clarity to various perspectives on mentoring, a framework of mentoring models was developed based on a review of the literature. The framework allows users to position models in one of four zones corresponding to the program's views of teaching and learning and the number of aspects of teaching and learning that are addressed. The framework is useful for administrators and school leaders as they identify goals for mentoring programs and select, train, and support mentors and novices.

What is Mentoring?

The role of a *mentor* has long been understood as invaluable in helping an individual learn something new. The origin of the word mentor dates back to Greek mythology in Homer's *The Odyssey* (1961), in which Odysseus' most loyal friend Mentor was charged with educating Odysseus' son Telemachus in every aspect of life, including helping him to recognize and to learn from "his own errors in judgment" (Odell, 1990). This relationship, in which a wiser and more learned individual plays a role in supporting the development of a more inexperienced novice, is demonstrated throughout history in the relationships of Socrates, who mentored Plato, and Plato, who mentored Aristotle. The value and importance of a mentor in facilitating one's learning is further supported by the work of educational psychologists, including Vygotsky's (1978) conception of a "more knowledgeable other" – one who helps another move from one point to a point beyond where they could get on their own – and is demonstrated repeatedly in the field of education through research and practice in countless books, journal articles, publications, training centers, and web sites (e.g., Abell, Dillon, Hopkins, McInerney, & O'Brien, 1995; Britton, 2006; Feiman-Nemser, 2001; National Science Teachers Association, 2009; Odell & Huling, 2000).

Despite the prevalence of mentors and mentoring programs in teacher education, little agreement can be seen on the exact meaning of a mentor or the role he or she is expected to play in a novice's development of knowledge, understanding, or beliefs about teaching. General agreement exists that, in a mentoring relationship, the mentor is a more experienced and more knowledgeable individual who provides some form of guidance, advice, support, and/or feedback to a novice about a task or job in order to assist the novice in reaching some level of competency (Smith & Ingersoll, 2004). However, beyond this general description, little consensus exists regarding the roles, functions, abilities, tasks, or goals of a mentor or mentoring relationship. Consequently, as conceptions of mentoring are articulated by various groups, the general categorization of "mentoring" is difficult to distinguish from positions such as "supervisor," "coach," and "peer trainer." These differing titles imply a range of purposes and emphases, but the differences are not necessarily evident or clear.

Lindgren (2006) delineated between mentoring, supervision, tutoring, and peer grouping in terms of 11 characteristics, such as the mentor's (or supervisor's, tutor's, etc.) role in teaching; level of subject knowledge; and whether the mentor's responsibilities are contingent upon employment. Lindgren concluded that the prominent characteristics that distinguish mentoring from the other supports include mentoring as an honorary assignment and, unlike supervision, tutoring, or peer grouping, mentoring is non-judgmental, non-evaluative, and "founded on an independent relationship

between mentor and mentee" (p. 157). However, other researchers have characterized the same support systems in a different manner. McInerney and Hagger (1994) described supervision as a model of mentoring, while Jonson (2002) described a mentoring program in which the teacher/mentor is relieved of all teaching responsibilities and serves as a full-time paid mentor. Additionally, the mentor plays a role in evaluating the novice. Conflicting views regarding the defining characteristics are further detailed by Knight (2009), who explained that mentoring is only *one* role played by a coach, while Maynard and Furlong (1994) described coaching as a single aspect of a mentor's work. Clear disagreement exists as to that which distinguishes mentoring from other forms of support.

The current disagreement between the meaning of mentoring, and that which is not mentoring, overlooks characteristics that are shared between most of the mentoring type supports for novices. These characteristics include that mentors should possess teaching experience, are able to articulate their own teaching practices, can present content accurately, can support essential instructional processes, are empathetic and encouraging, show concern relative to the success of the novice, possess strong interpersonal skills, and mentoring relationships are sustained over longer periods of time (Jonson, 2002; National Science Teachers Association, 2009; Zubrowski, Troen, & Pasquale, 2007). Therefore, splitting hairs regarding that which constitutes mentoring is unproductive. *For the purposes of this review, mentoring is understood as any sustained relationship between a more knowledgeable person (or others) and a novice, in which the primary purpose is the professional development and/or overall growth of the novice toward a desired level of competency.* Thus, conceptions of coaching, supervision, etc., are considered in this review relative to the manner in which they inform and contribute to models of mentoring.

Mentoring to Address Aspects of Learning to Teach

A review of the literature on mentoring revealed a central component of all mentoring programs, which is the awareness and recognition by the mentor of the challenges faced by novices as they learn to teach. These challenges include, but are not limited to, building deeper and more dynamic understandings of subject matter, learning and implementing a wide variety of pedagogical strategies, developing an understanding

of the varied contexts in which teachers function, working with and developing curriculum, building and incorporating a knowledge of learners, utilizing effective assessment, and developing an awareness and comfort with classroom management strategies and techniques for motivating students (Grossman, 1990; Magnusson, Krajcik, & Borko, 1999; Wang & Odell, 2002). Consequently, the support provided by mentors reflects the challenges faced by novices as they learn to teach and serve as the focus of most mentoring programs. Examples of support provided by mentors include designing and working with existing curriculum, reflecting on teaching, building confidence, creating enthusiasm, building and maintaining trust, navigating policies and procedures, modeling and teaching lessons, exploring teaching strategies, helping with classroom management strategies, offering assessment and evaluation of teaching, providing resources, making observations, offering feedback, facilitating problem solving, and helping the novice transition to the culture of teaching (Abell et al., 1995; Ballantyne & Hansford, 1995; Bradbury & Koballa, 2007; Wang, Strong, & Odell, 2004). Therefore, as novice teachers wrestle with these aspects of teaching and learning, and because the mentor is available to help them do so, a framework for conceptualizing mentoring models should logically consider the ways in which specific models address these aspects of learning to teach. However, an examination of the ways in which models of mentoring address specific aspects of learning to teach is only one useful approach for describing these models.

"Traditional" and Reform-Minded Perspectives on Mentoring

In a discussion on mentoring, Gasner (2006) described the changing nature of mentoring programs and noted that, historically, mentoring was a fairly straightforward endeavor. Mentors were selected based on their willingness to work with a new teacher without receiving any incentive and with no release from other obligations. Additionally, mentoring included little to no training, as the skills of good teachers were the same as those of a good mentor. Therefore, the goals of mentoring were limited to "emotional support, a low level of technical assistance, and an orientation to the local culture" (p. 44) and generally did not include any emphasis on teaching or curriculum. Similarly, Little (1990) suggested that mentors are perceived as playing a minimal role in supporting novice teachers,

when teaching is understood to require simple skills beyond sound subject matter similar to those of driving a car. In this case, mentors can best support novices by offering helpful tips, hints, strategies, and prescriptive advice. This view reflects a positivistic perspective on teaching and learning (Giddens, 1974; Palmquist & Finley, 1997) typical of "traditional" approaches to instruction and fails to acknowledge alternative models of instruction or to reflect current understandings of the way in which individuals learn (National Research Council, 2000). Such traditional approaches to teaching and learning also include culturally reinforced "scripts" for planning and sequencing lessons (Stigler & Hiebert, 1999); transmission and "teaching as telling" views of instruction (Geddis, 1993; Geddis & Roberts, 1998; Mellado, 1998); and strong beliefs regarding the role of the teacher and the student in the classroom, including the view of the teacher as the source of knowledge and judge of student learning and the student as the receiver of knowledge (Wang & Odell, 2002).

These conceptions are in stark contrast to reform-minded views of teaching and learning that dominate the research literature and have been expressed in multiple reform documents (e.g., American Association for the Advancement of Science, 1993; National Council of Teachers of Mathematics, 1991; Next Generation Science Standards Lead States, 2013). These reform-minded perspectives reflect student-centered approaches to teaching and learning and are concerned with the active construction of ideas, including engaging students in concepts and beliefs relevant to their own lives (Bybee, 1997); exploring concepts and relationships; explaining and justifying conclusions and relationships; challenging misconceptions; sharing and examining ideas through discourse; and engaging in collaborative inquiry (Wang & Odell, 2002). From a reform-minded perspective, the teacher assumes the role of organizer, challenger, and facilitator of student learning.

A Framework for Conceptualizing Models of Mentoring

The assumption that teaching and learning are central components of any mentoring relationship implies that views of teaching and learning are reflected in conceptions of mentoring. Consequently, models of mentoring reflect traditional and/or reform-minded views of teaching and learning. These views, coupled with the various aspects of learning to teach as previously discussed (e.g., transitioning to the culture of teaching,

classroom management, reflection, etc.), serve as the backbone for this framework for conceptualizing models of mentoring. The following framework places models of mentoring in one of four zones indicated in Figure 1, but it acknowledges that every mentoring model may not fit neatly into one category, particularly due to blurred distinctions regarding that which constitutes traditional versus reform-minded perspectives. However, the framework and corresponding distinctions serve as helpful tools for considering models of mentoring. It is important to note that the label of "reform-minded approaches" does not describe mentoring based on reform documents specific to mentoring; mentoring reflects the general perspectives and tenets espoused in reform documents targeted at content-specific teaching and learning.
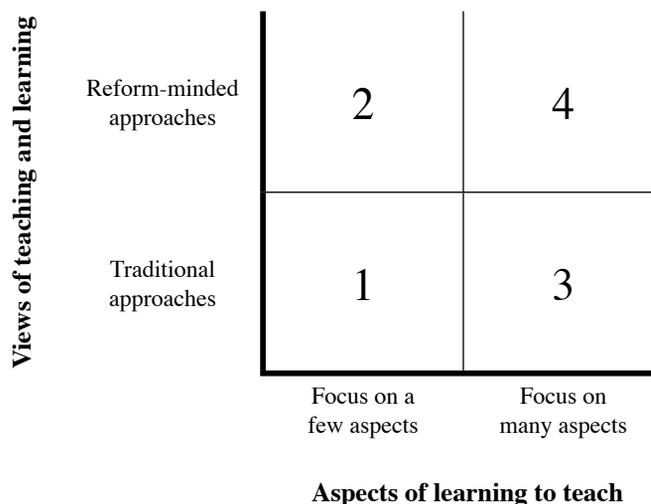

Figure 1. *A framework of mentoring models*

Zone 1 – Few Aspects/Traditional Approach

Zone 1 captures models of mentoring that focus on a few, or even a single aspect of learning to teach, and that do so using a traditional approach to teaching and learning. These models typically draw upon those developed in contexts outside of education, primarily in areas of management (McInerney & Hagger, 1994). They usually are system-wide and focus on the interests of the dominant stakeholders (McInerney, Hagger, & Wilkin, 1994). For example, models of mentoring that are developed and implemented by school administrators may reflect a staff management perspective, from which the primary focus is on the effective socialization of the novice into the current culture and practices of the school. These models generally rely on formal observations and evaluations by administrators or department heads. Observations

typically are followed with written or verbal feedback, largely in the form of constructive criticism, evaluation, and/or prescriptive advice.

These models are influenced largely by models of clinical supervision (Cogan, 1972; Goldhammer, 1969), in which the supervisor begins the process by explaining the purpose and sequence of the supervision to the novice (Sullivan, 1980). The novice then plans a lesson and discusses the lesson with the supervisor prior to a formal observation, during which the supervisor analyzes the novice's teaching. The observation is followed with a post-teaching conference, in which the supervisor and novice discuss the lesson, decide on needed changes, and create a plan to implement the changes. The process is repeated for subsequent lessons. Mentoring models are characterized by their focus on a narrow range of topics (e.g., enculturation, lesson planning, and delivery) and traditional perspectives on teaching and learning, namely, the mentor as the source and evaluator of knowledge and the novice as the passive receiver of information and feedback.

Zone 2 – Few Aspects/Reform-Minded Approach

Zone 2 captures models that focus on a few aspects of learning to teach but that reflect a reform-minded approach to teaching and learning. For example, Little (1990) described humanistic models in which the mentor's primary role is to help beginning teachers cope with the transition to teaching by focusing primarily on reducing the conflict between their personal and professional lives (Gold, 1996; Little, 1990; Wang & Odell, 2002). Therefore, the emphasis is less on helping the novice develop understandings of the content or teaching strategies and more on helping the teacher transition into the culture of teaching by developing a healthy professional identity and positive self-esteem. From this perspective, the mentor's role resembles that of a counselor, helping the novice identify and work through any needs, difficulties, or issues as confidence is built in the role as a teacher. Consequently, mentors typically possess strong interpersonal skills, including the ability to listen well, identify needs, and help others build confidence. Mentors from the humanistic perspective are encouraged to be open-minded, positive, non-judgmental, and understanding. They also are skilled at guiding novices in the use of effective problem-solving strategies and possess the ability to help others articulate their own feelings and understandings.

Kise (2009) also described a mentoring model referred to as differentiated coaching. This model is unique, in that it centers on the personality types of the mentors and novices. Its rationale results from the argument that "teachers form their practice around what they do best, their strengths are related to their own personalities and learning styles, their personalities and learning styles drive their core educational beliefs, and changing their teaching practices means changing those core beliefs. That makes change very, very difficult" (p. 147). Therefore, the mentor does not consider the novice as resistant to change, but rather, asks, "How can I adjust my coaching style to meet the needs of this teacher?" (p. 147). Underscoring the model is the notion that individuals possess different learning styles and process information in various ways. Therefore, mentoring strategies are different within each relationship. The differentiated coaching model follows a four-step process, in which the coach first draws a hypothesis about the teacher's natural style and identifies the teacher's beliefs. The coach and teacher then work together to identify the problem the teacher desires to solve and to develop a coaching plan intended to address the problem.

Zone 3 – Many Aspects/Traditional Approach

Zone 3 represents models in which the approach is traditional in nature, but the focus is broadened to include a wide variety of aspects of learning to teach. One example of this type of approach is a consultation model of mentoring, in which the mentor's role is to inform the novice "regarding processes and protocols," provide "advice based on well developed expertise," and "advocate for particular choices and actions" (Lipton & Wellman, 2001, p. 20). Conversations between the mentor and the novice are characterized by the mentor providing technical information about content, skills, student needs, teaching strategies, policies, and procedures. Due to their vast experience, consultants can provide novices with insight regarding the consequences of particular choices and can model expert thinking and problem solving. In consultation, mentors offer recommendations, demonstrations, and suggestions in an attempt to help the novice make gains in pedagogical knowledge, content knowledge, and skills. The advice and suggestions promoted by the mentor often reflect ideas associated with the current culture of teaching and learning. It is thought that, in order to be successful, "a consultant must have permission from the teacher to consult, which requires a high degree of credibility and trust" (Costa & Garmston, 2002, p. 12).

Maynard and Furlong (1994) described another model of mentoring entitled systematic training. According to proponents of systematic training, learning to teach occurs by developing competencies on a predefined list. The mentor acts as a systematic trainer, observing the novice when teaching on a predefined schedule, providing feedback related to the desired competencies, and coaching on a list of behaviors largely determined by others. Over time, the novice is encouraged to assume greater levels of responsibility for teaching and learning.

In an apprenticeship model of mentoring (Hillgate Group, 1989; O'Hear, 1988), skills for teaching are thought to be "best learned by emulation of experienced practitioners and by supervised practice" (Maynard & Furlong, 1994, p. 78). From this perspective, apprenticeship is more important than instruction, and the novice needs only to work with an experienced other in order to learn to teach. The mentor acts as a guide and interpreter by helping the novice make sense of all that is being experienced and by providing and articulating "recipes" that work. As an example, the novice might work with the mentor to plan a lesson or unit, but take responsibility for teaching only a small portion of the lesson. As such, the novice gains exposure to the teacher's role while avoiding becoming overwhelmed. This model focuses primarily on the skills, techniques, and approaches of the mentor and minimally involves the novice in constructing and wrestling with ideas, evaluating practice, or challenging misconceptions.

Zone 4 - Many Aspects/Reform-Minded Approach

Zone 4 captures models that focus on a wide variety of aspects of learning to teach and that reflect a reform-minded approach to teaching and learning. Feiman-Nemser (2001) described educative mentoring, a model based on Dewey's (1938) conception of educative experiences, or experiences that "promote rather than retard future growth and lead to richer subsequent experiences" (Feiman-Nemser, 2001, p. 17). The mentor attends to the "beginning teachers' present concerns, questions, and purposes without losing sight of long-term goals for teacher development" (p. 18). This includes interactions that promote an inquiring perspective and the development of skills and habits of learning from practice. Mentors provide and create opportunities and conditions that promote the growth of the teacher based on their expertise and knowledge of the novice's level of development. Rather than providing emotional support

to make novices feel more comfortable and to ease them into teaching, the mentor encourages them to confront difficult problems of practice and to use their experience in the classroom as an opportunity for learning. By doing so, the novice develops the ability to use every aspect of learning to teach as an avenue for growth.

McInerney and Hagger (1994) described a mentoring model developed around four components. In the first component, the mentor and novice jointly plan a lesson, but divide the teaching, with the novice's portion being less than the mentor's. In this way, the teacher and mentor can play different roles, while maintaining sight of the big picture. The second component provides opportunities for the novice to gain access to the mentor's knowledge of the craft. This is accomplished through the dissection of lessons, the novice's questioning, and the mentor's explicit reflection as to the reason the decisions were made in specific situations to accomplish certain tasks. In the third component, the mentor helps the novice reflect upon his or her ideas about teaching and learning, including the effectiveness, practicality, educational merit, and acceptability of decisions. The mentor serves as the practical authority but focuses on exploring ideas with the novice in lieu of providing definitive verdicts. In the final component, the mentor helps to manage the novice's learning, which may include providing opportunities to observe or work with other teachers in the building, providing exposure to the teaching of a wide variety of subjects, and including colleagues in the training and informal evaluation of the novice's growth. The novice then takes the lead in setting agendas and making judgments when approximately two thirds of the experience has occurred.

Dunne and Bennett (1997) described a model designed around three components: (1) a post-Vygotskian (1978) influenced psychological model, (2) a pedagogical model derived from the aforementioned psychological model and from notions of teaching as text, and (3) a methodological model describing the roles of the participants. These components inform frameworks for the mentor; a co-teacher (in the same building, but teaching a different class); and a university supervisor. The model is based on aspects of learning to teach and the corresponding levels of performance. Progress is measured by the student developing an agenda prior to the lesson that outlines the content and sequence of a teaching episode and focuses on one of the teaching dimensions. The cooperating teacher then annotates the agenda while observing the lesson. This is followed by a post-teaching conference based on the agenda

and subsequent conversations with supervisors and co-teachers. Two to three agendas and observation cycles are required per week, as well as at least five conferences with co-teachers and supervisors. The focus of the conversations with the mentor teacher is on knowledge of the craft. The focus of the conversations with the supervisor and co-teacher is on practical reasoning about teaching based on description, explanation, justification, and reformulation. All mentors are asked to frame conversations around an institutional design model divided into domains of knowledge (the way in which children learn, dimensions of teaching, subject matter knowledge, research and theory on teaching processes, curriculum knowledge, and craft knowledge) from which teachers are expected to draw as they teach. This model serves as the basis for mentor training and is built into university courses in order that students are familiar with it as a tool for developing knowledge and skills.

Implications

The use of the framework of mentoring models has the potential to support school leaders and administrators as they identify needs regarding mentoring and develop programs to meet those needs. The lack of a framework may result in mentoring that occurs from any number of views of teaching and learning and is focused on any number of aspects of learning to teach. However, as administrators and leaders more effectively target the specific needs of beginning teachers and the desired outcomes of a mentoring program, the program more likely will be effective. For example, induction programs in American schools typically include some type of mentoring component, although these programs can range from single orientation meetings at the beginning of a school year to highly-structured comprehensive programs that include a large number of supports over a period of several years (Smith & Ingersoll, 2004). Due to this variance, the goals of mentoring are different from one context to the next. Therefore, in order to maximize the benefits of mentoring, administrators and leaders should identify the desired outcomes of an induction program and align those outcomes with corresponding models in the framework. If the implicit desire is that a mentor serves as a consultant for teachers exploring a small number of ideas, this can be made explicit and a mentoring program can be developed that focuses on a small number of aspects from a more traditional view of teaching and learning. If, however, the implicit desire is that a mentor helps teachers to understand a large

number of aspects of teaching and learning using reform-minded approaches, a program from that perspective can be developed. Similarly, the mentoring framework can support administrators and school leaders in the selection, training, and support of mentors.

Conclusion

Although general conceptions regarding the nature of mentoring tend to coalesce around the idea that mentoring involves a more experienced and knowledgeable individual who provides some form of support to a novice, great variance exists in the way in which these goals are realized. The framework for mentoring models described in this article can support administrators and school leaders in explicitly identifying both the desired outcomes and the design of mentoring programs. By more clearly articulating mentoring perspectives, mentors and those they mentor are more likely to benefit from the programs that are developed.

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