What's in a Name? A Literature-Based Approach to Understanding Mentoring, Coaching, and Other Constructs That Describe Developmental Interactions

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What's in a Name? A Literature-Based Approach to Understanding Mentoring, Coaching, and Other Constructs That Describe Developmental Interactions

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Employee development can take a variety of forms including "developmental interactions" such as coaching, mentoring, apprenticeship, and action learning. The broad literature on approaches to development lacks agreement on what these constructs represent. Rather than impose new construct definitions on the field, the current research addressed the need for construct clarification using existing descriptions of common developmental interactions to create a snapshot of the developmental interaction literature. A qualitative, literature-based approach developed a nomological network of 13 common developmental interaction constructs. A total of 227 construct descriptions were extracted from 182 sources. These were systematically analyzed for the characteristics that help explain construct meanings. A model (i.e., nomological network) was developed to summarize the current understanding of developmental interaction constructs. Analysis of this model provides better understanding of the current state of the literature, identifies gaps in the literature, and informs and directs future research on developmental interaction constructs.

Keywords: *nomological network; employee development; development; mentoring; coaching*

Employee development can occur in a number of ways. One popular approach, which we term "developmental interactions," involves interactions between two or more people with the goal of personal or professional development. Developmental interactions can take a variety of forms rang-

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ing from coaching, mentoring, and apprenticeship to action learning and tutoring. These contacts may occur in a brief interaction (e.g., when a coach provides information and advice in a one-time exchange) or in a long-term relationship (e.g., an in-depth mentorship).

Developmental interactions have generated a tremendous amount of attention among researchers, consultants, and practitioners. These interactions are increasingly used to enhance skills and socialize individuals as well as for career and professional development purposes (Douglas & McCauley, 1999). Organizations that promote the use of developmental interactions may see strong productivity (Carr, 1999), improved retention rates (Higgins & Thomas, 2001; Zeeb, 2000), and enhanced organizational success (Tannenbaum, 1997). Despite the potential uses and benefits of developmental interactions, there remains a great deal of conceptual confusion and controversy among those working in the organization sciences and related fields.

Statement of the Problem

The published research literature, as well as opinions expressed at conferences, on-line, and in the popular press, fails to agree on what mentoring, coaching, apprenticeship, and other developmental interaction constructs represent. Gray (1988) stated, "Since the mid-1970s, there has been much confusion about what mentoring is—even to the point of confusing it with on-the-job coaching" (p. 9). This comment is the tip of the iceberg. By reviewing numerous descriptions of common developmental interaction constructs, it is clear that the problem occurs at two levels.

First, conceptual confusion occurs when descriptions of the same construct vary from author to author. For instance, there is a lack of agreement within the action learning community (Marsick & O'Neil, 1999) and the mentoring community (Bova, 1987; Burke, McKeen, & McKenna, 1993; Leibowitz, Farren, & Kaye, 1986; Pollock, 1995; Ragins & Cotton, 1993; Riley & Wrench, 1985) about the meaning of the constructs.

Second, conceptual confusion is evident when exploring the similarities and differences between constructs. For instance, some have argued that mentoring and coaching are the same (e.g., Sperry, 1996). On the other hand, others suggest that mentoring differs from sponsorship, guidance, peer relationships, coaching, or a traditional boss-subordinate relationship (Chao, 1998) and that developmental terms are often mixed up (Gray, 1988; Keele, Buckner, & Bushnell, 1987; Yoder, 1995).

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These statements suggest that a great deal of conceptual confusion exists in the literature. There is a need to better understand the meaning of developmental interaction constructs for the field to advance with more certainty, clarity, and agreement. Honing these definitions has been called for in the literature in very explicit ways (e.g., Mayer, 2002; Russell & Adams, 1997; Thibodeaux & Lowe, 1996). As Russell and Adams (1997) stated,

> Researchers should continue to refine the definition of mentoring and explain how it differs in terms of antecedents and outcomes from other related interpersonal behaviors (e.g., coaching, networking, and advising) and from other organizational constructs. . . . Also, it is critical to be able to distinguish group or peer mentoring from individual mentoring. (pp. 9-10)

Goals of the Current Research

Clarifying the meaning of developmental interaction constructs and generating an overarching framework for understanding the similarities and differences among the constructs can address some of the conceptual confusion in the literature. Rather than impose new definitions of these constructs on the field, the goal of the current research was to use existing descriptions of these constructs to create a snapshot of how common developmental interactions are currently understood. We focused on the following 13 types of developmental interactions: action learning, apprenticeship, coaching, distance mentoring, executive coaching, formal/structured mentoring, group mentoring, informal/unstructured mentoring, multiple mentors/developers, peer coaching, peer mentoring, traditional/classic mentoring, and tutoring. Each of these constructs describes exchanges between two or more people with the intention of development (either career-, task-, or personally relevant development). Constructs that were not developmental in nature or were not "interactions" between developers and learners were not included in this research. In addition, we chose not to include formal training or other work-based education experiences. Although the literature could benefit from increased conceptual clarity on these two constructs, we were concerned that in trying to sufficiently address the extensive literature and numerous approaches to work-based education and training (e.g., on-the-job training, classroom training, computer-based training), we would complicate our resulting developmental interaction taxonomy to the point of contributing to construct confusion rather than providing greater clarity.

Using a theoretical nomological network approach, we provide a structure for those who work with developmental interaction constructs to develop clearer definitions of their construct of interest. The nomological network explores the developmental interaction constructs across a comprehensive list of characteristics that can be used to describe them. The goal is to provide a common language and schema to facilitate comprehension of

individual constructs and for making distinctions among multiple constructs.

Relevant Past Efforts

Some progress has been made toward the goal of conceptual clarification. Recent research has begun to define some of the constructs in relation to one another, and others have made initial attempts to develop a nomological network. These efforts are described in more detail below.

Theoretical Advancement

McManus and Russell (1997) made great strides in relating mentoring to a variety of other constructs. Their "theoretical nomological network" (p. 145) approach examined the overlaps among mentoring, leader-member exchange, organizational citizenship behavior, support, and socialization across seven characteristics (i.e., developer's required effort, developmental orientation, events leading to the activity, learner's outcomes, and what is labeled in the current study as location, duration of developmental relationship, and beneficiaries).

However, their nomological network efforts can be advanced in several ways. First, there are other developmental constructs (e.g., tutoring, apprenticeship, action learning) that could be included to generate a more complete nomological network. Second, the field can benefit from comparing these constructs across a more comprehensive domain of characteristics. Third, it is possible that their approach confused developmental interaction constructs with some of the behaviors that are subsumed within them. For example, mentoring (a construct in the current study) can offer support and socialization (characteristics in the current study). However, McManus and Russell (1997) grouped informal mentoring, social support, and socialization together as constructs. There is a need to make clear distinctions among the developmental interaction constructs and the characteristics used to describe them.

Noe, Wilk, Mullen, and Wanek (1997) have also contributed work that relates to the current effort. They compared employee development with training, looked at various forms of development (e.g., relationships, mentoring, job experiences, classroom-type learning, assessment), and evaluated five characteristics of development (i.e., "incremental versus framebreaking" learning, "introspective versus interactive" development, and what is labeled in the current study as formality, choice to participate, and time frame) (pp. 156-157). Their work has helped to identify some of the characteristics of developmental interactions and has clarified future research needs. Again, though, there remains a need to examine a larger

group of developmentally oriented constructs across a more comprehensive set of characteristics.

Putting the Constructs Under One Umbrella

Several researchers have pushed for finding a common thread in the developmental interaction domain. First, Higgins and colleagues argued that mentoring does not only occur in the traditional, dyadic, downward, hierarchical fashion (Higgins, 2000; Higgins & Kram, 2001; Higgins & Thomas, 2001). They aligned mentoring with developmental relationships in general and suggested that developmental interactions can occur with multiple development providers, from varying sources, and with varying degrees of relationship strength. These researchers proposed that those working in the field use the term "developers" (Higgins, 2000, p. 278; Higgins & Kram, 2001, p. 269) when referencing mentors, coaches, sponsors, peers, and other developmental relationships. This places a variety of developmental relationship roles under one common umbrella of "developers."

Second, Douglas and McCauley (1999) studied 300 American firms' industry practices related to formal developmental relationships. Included in their study were mentoring, apprenticeships, several types of coaching activities (e.g., peer, executive), action learning, and structured networks—all as types of formal developmental relationships. By taking this inclusive approach, Douglas and McCauley placed each of these constructs under the developmental relationship umbrella. Bierema (1999) praised Douglas and McCauley for having advanced the field, and we use the progress they have made as part of the context for our research.

The efforts of these scholars suggest that the 13 constructs under examination in this research fall under a common umbrella of development. Therefore, applying the same set of characteristics to clarify their meaning and to compare them is a suitable approach. It also creates a common frame of reference that may facilitate advancement in the developmental interaction field.

A Taxonomy of Characteristics

Developmental interactions involve exchanges between two or more people with the goal of personal or professional development. Although various literatures refer to these participants by different terms (e.g., mentor and protégé, master and apprentice), we use the generic terms "developer" and "learner." A developer is the person(s) who provides the development (Higgins, 2000; Higgins & Kram, 2001). Developer is the generic term adopted to describe the role commonly referred to as master, mentor, or

tutor. A learner is the person receiving the development. Learner is the generic term adopted to describe the role commonly referred to as apprentice, protégé, mentee, or tutee. Note that the "learner" may not be focused solely on learning as an outcome of the development or the developer's teachings. For example, the participant may be looking for aid, confidence, counsel, encouragement, or socialization.

Interactions between a developer and learner can take many forms. For example, the participants can meet only once or many times, the relationship can be informal or formal, or the developer can encourage the learner to perform at a higher level or support the learner emotionally. In fact, our review of 182 sources suggests that there are a total of 23 characteristics that can be used to describe developmental interactions.

Using an iterative approach, we simultaneously reviewed the developmental interaction literature and generated a list of the common descriptive characteristics that experts use in reference to developmental interaction constructs. Going back and forth between the sources and the pattern of characteristics we observed resulted in the preliminary list of characteristics. We revised, regrouped, and clarified this list to ensure readability and parsimony (i.e., the smallest, clearest set of descriptors that could be applied across the different developmental constructs of interest). The resulting taxonomy appears in Table 1.

The 23 characteristics can be grouped into six categories. Some of the categories focus on the characteristics of the interaction or the characteristics of the participants. Other categories focus on the purpose of the interaction or the behavioral expectations (i.e., learning, emotional support, and career progression) that are either exhibited during the developmental interaction or are built into a formal developmental "program." The goal of the taxonomy is to provide enough information to thoroughly describe any of the developmental interaction constructs. The behavioral expectations were based, in part, on the works of Kram (1985) and McCauley and Young (1993) and the remaining categories and characteristics emerged from our review of the sources for this research. The categories of characteristics in our taxonomy are as follows:

1. Participant demographics: The age, knowledge level, or career experience of the participants.
2. Interaction characteristics: The duration of interaction, regularity of interactions, medium used to facilitate interaction, or span of relationship.
3. Organizational distance/direction: The hierarchical direction, reporting relationship, or organizational location of participants.
4. Purpose of interaction: The object of the development, the time frame for the development's purpose, or the beneficiaries of the development.
5. Degree of structure: The formality of the developmental interaction including the presence of a development coordinator, the choice to participate, the participant matching process, provision of preparation and support, evaluation of interaction, or formality of interaction termination.

TABLE 1: Taxonomy of Characteristics That Describe Developmental Interactions

Categories and Characteristics	*Descriptions*
Participant demographics	
Age	The age of the developer in relation to the learner.
Experience/knowledge	The experience or knowledge level of the developer in relation to the learner. The developer may be more experienced or knowledgeable than the learner, or it may not matter.
Career experience	The career experience or background of the developer in relation to the learner. The developer and learner may have similar or different career backgrounds.
Interaction characteristics	
Duration of relationship	The length of time the developer and learner interact for the purposes of development—not how often they meet. The relationship can be short-term (up to 6 months of interactions) or long-term (more than 6 months).
Regularity of interactions	How often the developer and learner interact for the purposes of development. There can be a single developmental interaction, participants may interact on a regular schedule, or there may be no schedule in place.
Medium	The means by which the developer and learner communicate. The interaction can occur face-to-face, at a distance, or some combination of the two.
Span	The number of developers and/or learners participating in the interaction. Interactions can be between two individuals (dyadic), group-oriented (one developer for a group of learners), or multiple developers for a single learner.
Organizational distance/direction	
Direction	The hierarchical level of the learner in relation to the developer. The relationship can be lateral (e.g., peers, teammates), downward (e.g., learner is at a lower hierarchical level), or upward (e.g., learner is at a higher hierarchical level).
Reporting relationship	The line of reporting relationship of the learner in relation to the developer. The developer and learner can be in the same or different hierarchy.
Location	The organizational location of the developer in relation to the learner. The developer can be in the same organization as the learner (i.e., internal) or in a different organization than the learner (i.e., external).
Purpose of the interaction	
Object of development	The specificity of the goal of development. The object of development can be specific skills or knowledge or development of the individual in general.
Time frame	The primary purpose of the interaction may be to support the learner's short-term performance (i.e., their present job or task at hand) or their longer-term development (i.e., their career).
Beneficiaries	The person(s) who benefit from the development. The interaction can have unidirectional purposes (e.g., one-way, in which one party derives virtually all the benefits) or bidirectional purposes (e.g., the interaction is two-way, mutual, and reciprocal whereby all involved benefit).

(continued)

TABLE 1 (continued)

Categories and Characteristics	*Descriptions*
Degree of structure	
Formality	The level of formality inherent in the developmental interaction. The interaction can vary from informal or unstructured to programmatic or formal.
Development coordinator	The presence of a coordinating party and the degree to which the party is actively involved in organizing and supporting key activities.
Choice to participate	The choice the parties have to participate in the development. Individuals might self-select or volunteer to participate, or participation may be mandatory.
Participant matching	The formality of the participant matching process. Developmental pairs can form naturally or be formally matched by a coordinator.
Preparation/support	The provision of training, orientation, or other interaction support to build the readiness of developers and/or learners.
Evaluation	The presence of an interaction evaluation or assessment process.
Termination	The presence of exit strategies that provide structure to the termination of the interaction or relationship.
Behaviors exhibited	
Learning	The behaviors exhibited by the developer that enable the learner to learn. These include: • Collaborating: The extent to which the developer and learner work together in a collaborative manner. • Directing: The degree of direction provided to the learner. • Goal setting: The establishment and tracking of goals and the provision of goal-related support. • Helping on assignments: The provision of task assistance or technical support to the learner. • Modeling: The demonstration or modeling of appropriate behaviors by the developer. • Observing: The observation of the learner in a work setting for developmental purposes. • Problem solving: The developer working with a learner to examine and resolve a particular problem. • Providing practical application: The provision of experience or practice with hands-on projects or challenging work for the learner. • Providing feedback: The provision of feedback or constructive criticism to the learner. • Sharing information: The provision of information to the learner. • Teaching: The instruction or teaching of the learner to build expertise, skills, or knowledge.
Emotional support	The behaviors exhibited by the developer that provide emotional support to the learner. These include: • Affirming: The provision of communications indicating acceptance and confirmation of the learner. • Aiding: The provision of aid or help to the learner. • Befriending: The provision of friendship to the learner.

(continued)

TABLE 1 (continued)

Categories and Characteristics	*Descriptions*
	• Calming: Actions or communications designed to reduce the learner's anxiety or stress. • Confidence building: Communications or actions taken to enhance the confidence or self-esteem of the learner. • Counseling: The provision of counseling, advice, or guidance to the learner. • Encouraging: The encouragement or motivation of the learner. • Supporting: The social, emotional, or personal (i.e., psychosocial) support of the learner.
Career progression	The behaviors exhibited by the developer that assist the learner's career progression. These include: • Advocating: The sponsorship of the learner to advance in the organization or field. • Introducing: The provision of opportunities for the learner to network, increase visibility, and gain exposure to others in the organization or field. • Sheltering: The protection of the learner. • Socializing: The socialization or orientation of the learner to the organization or field.

Note: Categories are italicized.

6. Behaviors exhibited: The developer may exhibit learning-related, emotional support-related, or career progression-related behaviors in the course of the interaction.

Method

A qualitative, literature-based approach was used to develop a nomological network of 13 common developmental interaction terms. A nomological network helps to "make clear what something is" by stating a number of "laws" that can be used to "relate . . . different theoretical constructs to one another" (Cronbach & Meehl, 1955, p. 290). In the current research, the nomological network approach uses characteristics to help clarify the meaning of developmental interactions and how they relate to each other. The nomological network approach is often empirically based. However, qualitative conceptual comparisons have provided useful contributions in the areas of corporate consciousness (Campion & Palmer, 1996), work experience (Tesluk & Jacobs, 1998), and mentoring (McManus & Russell, 1997).

A comprehensive review of the literature was conducted for articles pertaining to the developmental interaction constructs and written during the period of 1981 to 2002 in the following respected journals that publish research and writing on our constructs of interest: *Journal of Applied Psychology*, *Personnel Psychology*, *Journal of Applied Social Psychology*,

Academy of Management Review, *Academy of Management Journal*, *Journal of Vocational Behavior*, *Journal of Management*, and *Human Resource Development Quarterly*. This search generated 78 potential articles for inclusion in our research.

There were three criteria for inclusion in our study. First, the article needed to use the construct in a developmental, work-related context. For example, an author who used the term "coach" to describe a sports coach would not meet this criterion. Second, the article needed to provide a description of the construct either explicitly (e.g., in an operational definition) or with enough information provided throughout the introduction, method, results, and discussion sections of the article to clearly indicate the meaning of the construct. Third, the description needed to be provided for the author's purposes as part of their current (e.g., research) efforts. For example, just a literature review of the construct would not meet this criterion.

Ten articles failed to meet these criteria. The remaining 68 articles that met our criteria provided 78 descriptions. However, this sample provided a data set where several constructs had only 1 description (i.e., tutoring, apprenticeship), and some had between 2 and 5 descriptions (i.e., group mentoring, multiple mentoring, action learning, peer mentoring). As our goal was to explore a wide range of developmental interactions to generate a more comprehensive and inclusive nomological network, we determined that there were too few descriptions for several of the constructs. Thus, we needed to obtain construct descriptions from a wider group of sources. Following the lead of other researchers (e.g., Lohman, 2002), we searched for additional sources by looking at publications that had been referenced in articles that met our criteria. We also examined other journals, books, conference proceedings, Web sites, and popular press articles for construct descriptions meeting our criteria. This review added 149 descriptions to our sample, resulting in a total of 227 descriptions taken from 182 sources. A complete list of these sources is available from the authors.

The descriptions that were extracted from the sources show the characteristics associated with the meaning of the constructs. The sources were examined for authors' definitions of the constructs, ways the terms were described, and any indications that authors provided of what they were studying. This information was extracted and was content coded using the characteristics, categories, and coding schema summarized in the taxonomy presented in Table 1.

One of the researchers acted as the primary coder. This individual coded approximately 175 construct descriptions from an initial subset of articles. Once these descriptions were coded, the research team met to review and discuss the initial set of ratings. As a result, minor changes were made to the coding schema and process. We used this group process of establishing the

coding schema and reviewing the primary coder's application of the schema as a way of ensuring a meaningful, content-valid set of results. After all articles were reviewed and several months had expired, the same author recoded a sample of construct descriptions (77% of the final sample) to ensure that the schema was being applied consistently. The test-retest reliability was .95.

The coding process involved the following criteria. When a construct was described by a source using one of the characteristics, a "1" was recorded for that characteristic. For example, when Chao, Walz, and Gardner (1992) defined mentoring as "an intense work relationship between senior (mentor) and junior (protégé) organizational members" (1992, p. 624), a "1" was marked in the downward direction (for senior/junior) and internal location (for between organizational members) characteristic columns. However, if the same authors repeated that characteristic within the same source, possibly using other words (e.g., boss to subordinate), that characteristic was not coded again. Furthermore, characteristics that were implied in the source but not explicitly stated were coded. For example, for a source that described a construct as "a manager to subordinate relationship," a number of relating characteristics were coded including internal location, dyadic span, downward direction, and in the same hierarchy (i.e., reporting relationship).

Interpreting the Matrices

The large number of characteristics and coding options that emerged from this research requires that the findings be depicted in three separate nomological network matrices. Tables 2, 3, and 4 contain nomological network matrices that summarize the findings for the 13 constructs across all characteristics, organized by the taxonomy presented in Table 1.

In each matrix, the 13 constructs appear across the top. The last row of each matrix states the number of descriptions that were located in the sources and reviewed for each construct. The categories, characteristics, and coding options appear down the left sides of the matrices. Categories represent the higher-order groupings of characteristics that we created for readability purposes. Characteristics represent the defining characteristics that can be used to describe the 13 developmental interaction constructs. Coding options represent the various possible dimensions of a characteristic. We coded the construct descriptions that were pulled from the literature according to these options. For example, the characteristic "direction" under the category "organizational distance/direction" might have one of three coding options: "downward," "upward," or "lateral."

Frequencies generated through the content analysis process described above were converted to percentages for standardization purposes. These percentages indicated the proportion of expert descriptions that suggest a characteristic is

related to a construct's meaning. For ease of interpretation, these percentages were assigned one of four letter rankings. Letters A through D indicate the percentage of descriptions that used each characteristic to describe each construct. Matrices containing exact percentages are available from the authors.

- A = 76%-100%, so between 76% and 100% of descriptions include this characteristic in the construct description, indicating that this is most likely a defining characteristic of the construct.
- B = 51%-75%, so between 51% and 75% of descriptions include this characteristic in the construct description, indicating that this is a commonly mentioned characteristic of the construct.
- C = 26%-50%, so between 26% and 50% of descriptions include this characteristic in the construct description, indicating that this characteristic is occasionally associated with the construct.
- D = 1%-25%, so between 1% and 25% of descriptions include this characteristic in the construct description, indicating that this characteristic is infrequently associated with the construct.

A "blank" cell (i.e., no letter rating indicated) implies that sources did not use the characteristic to describe the construct.

When characteristics in the matrices have several coding options (e.g., duration of developmental interaction can be short-term or long-term), the higher of the two letter ratings helps to clarify the meaning of the term according to the descriptions we reviewed. Specifically, when ratings are equal (e.g., both D ratings), an asterisk indicates whether one of the options had a higher percentage (e.g., within the 1%-25% range) and suggests that it was referenced by a greater percentage of the descriptions reviewed. When ratings are unequal (e.g., one option is rated B and the other is rated C), the option with the higher letter rating (B) indicates the option that was referenced by a greater percentage of the descriptions reviewed.

Applications and Implications of the Nomological Network Matrices

The nomological network matrices shown in Tables 2, 3, and 4 contain a wealth of information that can be used, primarily, as a starting point for researchers but may also be of interest to practitioners. The tables represent a tool that can be used to better understand the current view of various developmental interaction constructs, to identify gaps in the literature, and to improve future research efforts on developmental interactions.

Understanding the Current State of the Literature

A primary purpose of this research was to provide a mechanism for more clearly defining and understanding the meaning of developmental interac-

(text continues on p. 375)

TABLE 2: Nomological Network Illustrating the Meaning of Constructs Across Participant Characteristic, Interaction Characteristic, and Organizational Distance/Direction Characteristic Categories

			Developmental Interaction Constructs													
Categories	*Characteristics*	*Coding Options*	*Action Learning*	*Apprenticeship*	*Coaching*	*Distance Mentoring*	*Executive Coaching*	*Formal or Structured Mentoring*	*Group Mentoring*	*Informal or Unstructured Mentoring*	*Multiple Mentors or Developers*	*Peer Coaching*	*Peer Mentoring*	*Traditional or Classic Mentoring*	*Tutoring*
Participant demographics	Age	Same age											D	D	
		Developer is older						D		D				D*	D
	Experience/knowledge	Developer has more than learner		C		C	D	C	C	B	C		C	B	C
		Doesn't matter											D	D	
	Career experience	Different backgrounds					D								
		Same backgrounds			D										
Interaction characteristics	Duration of developmental relationship	Short-term	D		D		D*	D	D		D		D		C
		Long-term	D*	D		D	D	D	C	C		D	D	D	
	Regularity of interactions	Single interaction	D												
		Regular schedule	D*		D	D	C	C	D			D	D	D	
		Unscheduled			D					D					
	Medium	Face-to-face	C		D*		D								
		Distance			D	A	D	D					D		
		Combination	D			D	D								
	Span	Dyadic		C	C	C	C	B	D	C		D	C	B	B
		Group-oriented	B	D	D	D		D	A		D		D	D	D
		Multiple developers				D*	D				A			D*	
Organizational distance/direction	Direction	Lateral	D		D	D		D*	C	D*	D*	A	A	D	C
		Downward		D	C	D*		B	C*	C	C		D	B	
		Upward						D		D	D				
	Reporting relationship	Same hierarchy			C			D		D*	D*			D*	
		Different hierarchy			D			D*		D	D			D	
	Location	Internal			C	D*		B	D	C	B*	D	C	C	
		External			D	D	C	D	D	D	B		D	D	
	Total number of descriptions		14	11	21	9	11	21	7	16	9	9	14	79	6

NOTE: Letters indicate the percentage of descriptions that suggest characteristics are related to a construct's meaning. A = 76%-100%; B = 51%-75%; C = 26%-50%; D = 1%-25%. Asterisks (*) are used to indicate the higher percentage when a dimension has multiple options and the same letter ranking. For example, traditional mentoring has D ratings for both "same" and "older" ages, but 1% reported "same age," whereas 24% reported "older," thus "older" receives an asterisk. No asterisks indicate that the percentages were equal.

TABLE 3: Nomological Network Illustrating the Meaning of Constructs Across Purpose of Interaction and Degree of Structure Characteristic Categories

			Developmental Interaction Constructs												
Categories	*Characteristics*	*Coding Options*	*Action Learning*	*Apprenticeship*	*Coaching*	*Distance Mentoring*	*Executive Coaching*	*Formal or Structured Mentoring*	*Group Mentoring*	*Informal or Unstructured Mentoring*	*Multiple Mentors or Developers*	*Peer Coaching*	*Peer Mentoring*	*Traditional or Classic Mentoring*	*Tutoring*
Purpose of the interaction	Object of development	Specific	D	A	C*	C	C	C	B	D		B	C	D	B
		General	C		C	C	B	B	C	C	C	D	C	C	
	Time frame	Short-term performance		D	C	C	C	D	C	D	C	C	D	D	
		Long-term development	D	C	D	D	D	B	B	B	A		C	B	
	Beneficiaries	Unidirectional purposes			D	D	D						D	D	
		Bidirectional purposes	D			D*	D	D	D	D		C	C	D*	C
Degree of structure	Formality	Informal or unstructured			D	D				A	D	D	D	D	D
		Programmatic or formal	D	B	D*	D*	B	A	D		D	D*	D	D	D
	Development coordinator(s)	Highly involved	D					D				D			
		Available	C	D				D*				D	D		
	Choice to participate	Self-select or volunteer				D	D	C		D		D	D	D	D
		Mandatory						D							D
	Participant matching	Naturally or unmatched				D		D		C				D	
		Formally matched		D	D	D	C	A	D			D	D	D*	D
	Preparation or support	Preparation or support provided					D	C	D		D	C	D	D	C
	Interaction evaluation	Assessment occurs	D	D	D	D	C	D	D			D	D	D	
	Interaction termination	Exit procedures			D	D	D	D						D	
		None								D					
	Total number of descriptions		14	11	21	9	11	21	7	16	9	9	14	79	6

NOTE: Letters indicate the percentage of descriptions that suggest characteristics are related to a construct's meaning. A = 76%-100%; B = 51%-75%; C = 26%-50%; D = 1%-25%. Asterisks (*) are used to indicate the higher percentage when a dimension has multiple options and the same letter ranking. For example, coaching has C ratings for both "specific" and "general" objects of development, but 38% reported "specific" and 29% reported "general," thus "specific" receives an asterisk. No asterisks indicate that the percentages were equal.

TABLE 4: Nomological Network Illustrating the Meaning of Constructs Across the Behaviors Exhibited Category of Characteristics

			Developmental Interaction Constructs												
Categories	*Characteristics*	*Coding Options*	*Action Learning*	*Apprenticeship*	*Coaching*	*Distance Mentoring*	*Executive Coaching*	*Formal or Structured Mentoring*	*Group Mentoring*	*Informal or Unstructured Mentoring*	*Multiple Mentors or Developers*	*Peer Coaching*	*Peer Mentoring*	*Traditional or Classic Mentoring*	*Tutoring*
Behaviors exhibited	Learning related	Collaborating	C	D	D	D	D					C	D	D	C
		Directing		D	D		D				D			D	D
		Goal setting	D	D	C	D	C	C		D		C	D	D	
		Helping on assignments		D				D		D		D	D	D	
		Modeling	D	D	D			D	B	C	D	D	D	C	C
		Observing		D	D		D	D				B	D	D	
		Problem solving	A	D	D	D	D	D	D			C		D	
		Providing practical application	A	B	C	D		D	C	C	D	C	D	D	D
		Providing feedback	C	D	C	C	C	D	C	D	D	A	D	D	C
		Sharing information	C	D		C	D	D	C	D	D	D	D	D	
		Teaching	A	B	B	C	C	D	B	D	D	C	C	D	A
	Emotional support related	Affirming				D		D	D	D	D		D	D	
		Aiding	C	D	D	D	C	D	C	D	B	B	C	D	B
		Befriending				D	D	D	C	D	D	C	C	D	C
		Calming			D	D		D	C	D			D	D	
		Confidence building	D	D	D	D		D	D	D	D	D	D	D	
		Counseling		C	D	C	D	D	B	C	B		C	B	D
		Encouraging	C		D	D		D	D	D	D	D	D	D	
		Supporting	D	D	D	D	D	C	A	C	B	C	B	B	C
	Career progression related	Advocating			D			C	C	B	B		C	B	
		Introducing			D			D	B	C	C		C	C	
		Sheltering						D	D	D	C		D	C	
		Socializing		D	D	D		C	C	D	D	D	D	D	
	Total number of descriptions		14	11	21	9	11	21	7	16	9	9	14	79	6

NOTE: Letters indicate the percentage of descriptions that suggest characteristics are related to a construct's meaning. A = 76%-100%; B = 51%-75%; C = 26%-50%; D = 1%-25%.

tion constructs. To that end, the nomological network matrices can be used to understand the current state of the literature by (a) clarifying the meaning of individual constructs and (b) comparing and contrasting the meaning of multiple constructs.

Clarifying individual construct meanings. Interested authors can look at one construct and the letter ratings that are indicated by the literature; identify the characteristics that have A, B, C, and D ratings; and use those ratings to determine the meaning of the construct according to the current literature. This process is discussed in detail below, using action learning as an example.

Action learning has been described as a form of management education and development (MacNamara & Weekes, 1982) in which people learn from "practical experiences" by solving actual problems (Revans, 1986, p. 71) in a peer-group environment (Raelin, 1997). Using the matrices shown in Tables 2, 3, and 4, first scan down the column vertically for letters A or B. These indicate characteristics that are critical to the meaning of the construct and were mentioned in a majority (i.e., more than 50%) of the descriptions reviewed. These critical characteristics are problem solving, providing practical application, teaching, and group-oriented. Referring to the definitions of the characteristics in Table 1, a definition of action learning might include such phrases as examining and resolving a problem; providing experience or practice with hands-on projects or challenging work; instructing or teaching so that expertise, skills, or knowledge can be learned; and development in a group setting. Many of the descriptions that we examined used these characteristics when describing action learning.

Next, scan the Action Learning column for the letter C. This indicates characteristics that were mentioned by 26% to 50% of the descriptions reviewed. These are characteristics that are occasionally associated with the construct and include face-to-face medium, general object of development, an available development coordinator, collaborating, providing feedback, sharing information, aiding, and encouraging. Referring to the definitions in Table 1, a definition of action learning may imply that the developmental interaction occurs face-to-face, that the goal of the development is less specific and is aimed at the individual in more general terms, that a coordinating party is available to facilitate and organize the interactions, that the parties work together in a collaborative manner, that feedback and information are shared during the interactions, and that help and motivation are a part of the development.

Finally, scan the Action Learning column for the letter D. This indicates characteristics that were mentioned by less than 25% of the descriptions reviewed. Although less than a quarter of prior researchers used these characteristics to describe action learning, the characteristics may still be important. Recall that this nomological network is based on the existing literature. Prior researchers chose to exclude certain characteristics when defining or

describing key constructs. Some of these infrequently cited characteristics may have been inadvertently overlooked or perhaps undervalued by prior researchers, suggesting opportunities for future research. Alternatively, researchers that chose to include an uncommon characteristic may have been overextending the construct, creating construct confusion. Recognizing the decisions made by prior researchers can help future researchers better define and describe the constructs they are studying.

Comparing and contrasting multiple constructs. Without agreement on the core meaning of a term, comparison with other constructs is difficult (Marsick & O'Neil, 1999). However, given adequately defined individual constructs, the similarities and differences between constructs can be explored. Researchers have explicitly called for this type of work (e.g., Mayer, 2002; Russell & Adams, 1997; Thibodeaux & Lowe, 1996).

Once individual constructs have been examined using the process described above, multiple constructs can be compared and contrasted by identifying the characteristics that are common across the constructs. Coaching and traditional mentoring are compared below as just one example. This process can be used whenever there is disagreement about the uniqueness of a construct as compared to other constructs or whenever an author wishes to identify similarities and differences across relevant constructs.

Some have argued that mentoring and coaching are the same activity (e.g., Sperry, 1996). By comparing data from Tables 2, 3, and 4 on coaching and traditional mentoring, it is clear that the characteristics currently used in the literature to describe these constructs do not support this contention. Focusing on characteristics with A, B, and C ratings (i.e., referred to by at least one quarter of the sources), we find that descriptions in the literature suggest that there are some clear differences between the constructs.

Specifically, traditional mentoring has a general object of development, whereas coaching is more strongly associated with a specific one. The time frame for coaching is short-term performance, whereas traditional mentoring tends to relate to long-term development. Traditional mentoring is more concerned with modeling, counseling, supporting, advocating, introducing, and sheltering as exhibited behaviors, and coaching is more concerned with goal setting, providing practical application, providing feedback, and teaching. Although both constructs share dyadic span and downward direction characteristics to some extent, and they agree on an internal location of developer, there are enough unique characteristics to suggest that coaching and traditional mentoring are not the same.

This process enables us to determine the similarities and differences among developmental interaction constructs such as coaching and mentoring. An understanding of the meaning of each individual construct is required as a foundation for the process, but with individual construct clar-

ity, we can make connections and distinctions across multiple developmental interaction constructs.

Implications for researchers. Knowing where the field stands now is an important step toward improving future efforts. Not only can the nomological network matrices be used to better understand the current state of the literature, but researchers can also use this information to decide whether to accept the characteristics most commonly associated with the construct in question or consciously choose to challenge the prevalent definition of the construct to better clarify its meaning.

Identifying Gaps in the Literature

The nomological network matrices provide a mechanism for exploring any gaps or confusion in the literature about the meaning of developmental interaction constructs. As discussed below, the matrices illustrate that different, sometimes contradictory, characteristics are used to describe developmental interactions. By using the nomological network matrices to explore these inconsistencies, researchers can direct their research toward clarifying contradictions about the meaning of constructs.

Inconsistencies in the matrices. An examination of each construct across Tables 2, 3, and 4 shows a large number of characteristics with C and D ratings. This indicates that there is not enough consistency in construct descriptions to yield many high letter ratings (i.e., A and B) and suggests that researchers often refer to different characteristics when describing the same construct.

The construct of action learning serves as a good example of this issue. Thirteen characteristics were used to describe action learning. Of those 13, only 2 characteristics had A or B ratings (i.e., span and learning-related behaviors). This means that only 15% of the characteristics that applied to action learning were consistently used (i.e., referenced by more than 50% of the descriptions).

Another example might help to clarify this problem. The matrices show that not a single characteristic was used by more than three quarters of the researchers to describe traditional mentoring (i.e., there are no A ratings). Even more interesting is that of the 20 characteristics that are used in the sources to describe traditional mentoring, only 6 have B ratings (i.e., experience/knowledge, span, direction, time frame, emotional support-related behaviors, and career progression-related behaviors). This indicates that only 30% of the characteristics that were linked to traditional mentoring were consistently used (i.e., used by more than 50% of the descriptions).

The above analysis illustrates the inconsistency and wide variety of definitions that are used to describe constructs. Examining a description from the literature helps to explain the issue further. Yoder (1995) described mentoring in the following manner:

> Mentoring . . . incorporates the instrumental and psychosocial functions. . . . Mentoring occurs when a senior person with experience and position provides information, advice, and emotional support for a junior person (protégé) in a relationship lasting for an extended time and marked by a substantial emotional commitment by both parties. . . . The hallmarks of mentoring are the duration of the relationship and the power differential of the parties involved. (p. 292)

In some ways, this is a relatively thorough description. It implies that mentoring is a dyadic interaction and describes mentoring by the functions served (e.g., sharing information, counseling, supporting), the direction of the interaction (i.e., downward), the experience/knowledge of the developer (i.e., more experienced), and the duration of the relationship. However, Tables 2, 3, and 4 indicate that other experts have used modeling, encouraging, collaborating, sheltering, developer's location, and beneficiaries (e.g., uni- or bidirectional purposes) as characteristics that describe mentoring—characteristics that are not included in Yoder's (1995) description.

Contradictions in the matrices. Construct descriptions sometimes explicitly contradict one another. Specifically, there are situations in which different experts point to two conflicting characteristics when defining a common construct. For example, the object of development is unclear for action learning. Some descriptions suggest that there is a specific object of development (rated D), whereas many others suggest that the object of development is general (rated C). Coaching, too, has been argued to have both specific and general objects of development. As another example, Table 3 shows that some describe peer mentoring as a unidirectional learning experience, but more sources suggest that it is bidirectional.

Implications for researchers. Because authors focus on different characteristics in describing the same construct, ambiguity exists over the functions that developmental interactions serve, the role of the developer, and the characteristics of the interaction. This becomes especially troublesome when we attempt to summarize our knowledge about a construct across multiple studies (Riley & Wrench, 1985). In essence, researchers may be examining different constructs, despite using similar labels (Chao, 1998), thereby greatly decreasing our confidence in summary findings. We challenge future researchers to clarify the relevance of these characteristics to a construct's meaning when describing their developmental interaction construct.

Improving Future Research Efforts

Finally, analysis of the information contained in the nomological network matrices sheds light on ways to improve future research on developmental interactions. We observe in the matrices that individual construct descriptions often overlook potentially important factors and certain char-

acteristics appear to be in the spotlight. The implications of these findings for future research are described below.

Overlooked factors in the matrices. As previously noted, characteristics with A and B ratings are in the minority in Tables 2, 3, and 4, whereas characteristics with C, D, or blank ratings are in the majority.

Returning to the action learning example, many characteristics were infrequently mentioned (i.e., rated C or D), indicating that the descriptions may have missed relevant information that may be important for describing the construct. For example, development in this form may involve sharing information, collaborating, goal setting, and supporting, even though these elements have received little attention from experts in the past.

Even more concerning is the finding that potentially important characteristics have been completely overlooked (i.e., blank cells in the matrices). Again, considering action learning, behaviors such as befriending, calming, and counseling may be relevant to the meaning of the construct but have been ignored by experts in the past. Furthermore, the literature suggests that individuals in action learning settings work together (i.e., collaborate) for solutions to actual problems. However, the literature fails to address the fact that help on assignments (i.e., the problem at hand in this case) may occur because of this collaboration. These characteristics and others with blank cells were overlooked in the set of descriptions analyzed in the current research.

Certain characteristics are in the spotlight. In the developmental interaction literature, experts and researchers tend to gravitate toward certain characteristics when describing constructs. The matrices illustrate that there are more A and B ratings for span, direction, object of development, time frame, formality, and learning-, emotional support-, and career progression-related behaviors across all constructs than other characteristics. For example, span appears in six different constructs (i.e., action learning, formal/structured mentoring, group mentoring, multiple mentors/developers, traditional/classic mentoring, tutoring), with ratings of more than 50%. Object of development appears with high letter ratings in six constructs as well (i.e., apprenticeship, executive coaching, formal/structured mentoring, group mentoring, peer coaching, tutoring). Time frame is also a popular characteristic, appearing with ratings more than 50% in five constructs.

Having identified a domain of 23 characteristics that could be used to describe the meaning of a construct, we are surprised that only 8 characteristics appear to be dominating construct descriptions. It is clear that current attention is paid to these characteristics, but there is a need to expand the focus to a broader group of defining characteristics. There are 15 characteristics that are receiving less attention in the developmental interaction field. Including them in construct descriptions may help clarify the meaning of

constructs. For example, explaining the duration of the developmental interaction, the regularity of interactions, the location of the developer, and the beneficiaries of the interaction may improve construct descriptions.

Implications for researchers. Future work that attempts to consider the full domain of characteristics may improve the definition of action learning and other developmental interaction constructs. An "incomplete" nomological network can leave the meaning of the constructs "underdetermined" (Cronbach & Meehl, 1955, p. 294). It is beneficial for those working and publishing in the field to provide sufficient information on all relevant characteristics when defining and describing their construct of interest.

Implications for Practitioners

With such a small percentage of learning attributable to formal training programs (Tannenbaum, 1997), developmental interactions such as coaching, tutoring, and peer mentoring become an important source of development and thus organizational learning. Yet practitioners, such as human resource development professionals, line managers, and employees, are prone to the same conceptual confusion as researchers. Within an organization, phrases such as "mentoring," "coaching," and "action learning" may be used interchangeably or used by different people to mean different things. When an employee says, "I need some coaching," or a middle manager reports that "we don't get enough mentoring around here," will their request be interpreted as intended? A practical implication of this conceptual confusion is that developmental needs may be unclear and expectations may not be met. The findings described in our study can hopefully provide a starting point for an organization to adopt a common way of talking about developmental interactions, thereby enhancing communication and clarity.

It is increasingly important that human resource development professionals and other practitioners understand the developmental options available to them and consider the choices associated with those options. A review of the taxonomy contained in Table 1 may aid them when selecting or designing an intervention that involves developmental interactions. It could help practitioners explicitly consider their choices and clarify their intentions.

For example, when an organization is considering the implementation of a mentoring program, the program designers should ask the following types of questions: Who is expected to participate? Do we expect experienced people to help less experienced people? Will the program involve mentoring of direct reports? How often and how long do we expect participants to interact? What is the desired medium for the interactions? Will people have a choice to participate? What behaviors will we expect people to exhibit?

Table 1 can be used to foster a dialogue about these and other similar questions, clarifying the intent of the intervention, driving more effective design decisions, and allowing for the communication of clearer expectations.

Conclusion

As mentoring, coaching, and other developmental interactions are critical to individual development and organizational success, it is important for researchers to conduct research that explores the cause-and-effect relationships of these interactions. A critical first step, however, is a clear understanding of the construct in question. One way to develop that understanding is by providing "precise explication[s]" of constructs and considering all characteristics of a construct—doing so helps avoid "construct underrepresentation" and improves construct validity (Cook & Campbell, 1979, pp. 64-65).

Given the variety of descriptions, the contradictory descriptions, and dominating characteristics in the literature, the taxonomy of characteristics shown in Table 1 can be a useful starting point for the movement toward conceptual clarity. When applied to the literature on developmental interactions, the resulting nomological network provides a schema that can be used to explore the commonalities of descriptions, both espoused and in practice, as well as the similarities and differences across constructs. The findings can also be used to assist researchers in their efforts to form more complete and sound definitions of developmental interaction constructs. We encourage researchers in each developmental interaction area to review the matrices, note prior agreements and discrepancies, and explicitly state their assumptions (i.e., the characteristics of the construct they are studying). In some cases, it is less about the construct's name and more about the characteristics that are used to describe the construct.

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