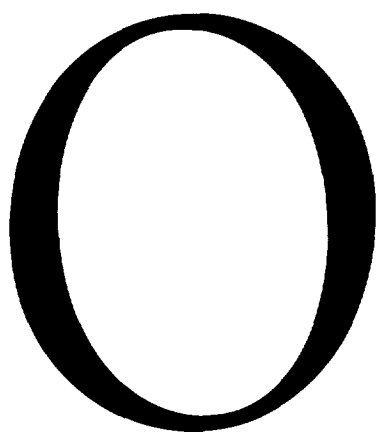# DEVELOPMENTS IN COGNITIVE SOCIALIZATION: IMPLICATIONS FOR DEAF EDUCATION

Over the past 2 to 3 decades, the cognitive socialization literature has advanced about 40 major issues that could have a major impact on the principles and procedures of deaf education. The article presents a conceptual model of the cognitive social bases of language that is derived from the philosophical view of constructionism and theoretical perspectives of speech act theory and relevance theory. With the cognitive socialization perspective and this conceptual model, 4 of the 40 issues are discussed: (a) the centrality of intent replacing reinforcement as a more viable account of language acquisition, (b) modality and core issues of language, (c) lack of construct validity in assessment, and (d) heterogeneity. Implications for the advancement of deaf education are discussed throughout.

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From its inception, deaf education has had a vested interest in language. The primary orientations have been structural and modal in nature.

However, over the past 2 to 3 decades, there have been several major shifts in philosophical views (Searle, 1992) and theoretical perspectives on language (Perera, 1994). Accordingly, approximately 40 major substantive issues have emerged (Cloud & Muma, 1999; Muma, 1998) that hold great promise for improving the education of deaf and hard of hearing individuals.

Cognitive Social Bases of Language

Of language acquisition, Roger Brown (1956) observed that it was "a process of cognitive socialization" (p. 247). This observation is important for three reasons. First, it stressed the cognitive and social functions of language rather than structure. Indeed, the functionalistic literature over the past 2 decades has shown that structure is subsumed by function (Muma, 1986).

Second, the literature, especially over the past decade, has substantiated the cognitive socialization perspective in terms of *cognition, codification, communication,* and *expression,* or *CCCE* (Bloom & Beckwith, 1989; Bruner, 1981, 1986, 1990; Clark & Clark, 1977; Grice, 1975; Nelson, 1985, 1986, 1996; Sperber & Wilson, 1986). Thus, the contemporary language acquisition literature has established the cognitive and social bases of language acquisition.

The cognitive socialization literature has identified the two main cognitive functions

of language (representation and mediation) and the communicative functions of language (intent and content). The linguistic or codification realms are subsumed by these functions. The realm of affect has also been appreciated (Bloom & Beckwith, 1989; Brown, 1977; Lock, 1978). With these developments, the core of language has emerged as CCCE.

Third, in keeping with the philosophical views of constructionism (Bruner, 1986; Searle, 1992) and functionalism (Clark & Clark, 1977), and the theoretical perspectives of speech acts (Clark & Clark, 1977; Grice, 1975), relevance (Sperber & Wilson, 1986), and informativeness (Clark & Clark, 1977; Greenfield, 1980), it becomes useful to posit a model of the cognitive-social bases of language. Muma (1998) has provided such a model. It has four levels.

Level 1: General cognitive-social base: Possible worlds, experiential worlds, and situated minds, which are the products of early procedural knowledge which eventually becomes converted into semantic knowledge with the assistance of mimesis (Nelson, 1996).

Level 2: Substantive functions of language: Intent and content. The irreducible nuclei of cognition and language are intentions (Bruner, 1986; Searle, 1992). The literature over the past 2 decades has established the centrality of intent and that content is in the service of intent. That is, content is a purposely selected balance between explicit (proposition) and implicit (presupposition) content with the purpose of making intent recognizable.

Level 3: Cognitive processes underlying messages (grammatical and pragmatic): Production (planning and execution) and comprehension (construction and utilization). This domain pertains to real-time

processing of information. Furthermore, such processing operates on representation (Mandler, 1983) rather than modality (Clark & Clark, 1977).

Level 4: Metacognitive and metalinguisitic capacities: These capacities are evidenced when an individual can reflect on the nature of thought, language, or both. These capacities are very useful for advancing language acquisition.

This model of the cognitive-social bases of language has major ramifications for deaf students' language acquisition. Deaf education may utilize this model, with its attendant scholarly literature, in addressing 40 major new issues in cognitive socialization.

Level 1: General Cognitive-Social Base

Language acquisition is grounded on what an individual knows of the world. The scholarly literature has shown that what individuals think and talk about is what they know. Therefore, it is necessary to ascertain an individual's basic knowledge of the world, possible worlds (Bruner, 1986), experiential realism (Lakoff, 1987), or situated mind (Nelson, 1996). Importantly, these views are biologically, cognitively, linguistically, emotionally, socially, and culturally situated (Nelson, 1996).

Relatedly, three major shifts have occurred in the understanding of concept formation. One shift is that the literature no longer strives to ascertain "necessary and sufficient" parameters of concepts; rather, it recognizes that concepts are in fact fuzzy, and overlap with the concepts of other individuals who share similar social and cultural influences. Thus, concepts are defined experientially and function on mutual manifestness (Sperber & Wilson, 1986) in social commerce. Said

differently, social and cultural influences play significant roles in leveling out individual differences in concept formation. The implication for individuals who are deaf is that it is necessary to expand their social and cultural worlds.

Another related shift is the recognition of institutional and "brute" facts (Lakoff, 1987). Traditional views have been essentially based on formal or brute facts. These are facts that are formally defined—for example, *inch, pound, second*, even dictionary definitions. However, institutional facts are facts that are gleaned from experience by virtue of living in various social and cultural institutions. Thus, a child learns *mother, table, tree*, and myriad other concepts not by turning to formal definitions but by virtue of experience. The results of such learning are experiential realism (Lakoff, 1987), possible worlds (Bruner, 1986), and situated minds (Nelson, 1996).

The third shift pertains to the emergence of the theory of natural categories (Rosch, 1973). This theory recognized that thoughts and objects may be conceptually relevant in one context but not in others. Thus, an object may function as a core exemplar for one category but as a peripheral exemplar in another category. For example, *apple* may be a core exemplar for fruitness but a peripheral exemplar for *dessert*. With this recognition, the following two notions became useful: (a) Concepts are crucially prototypic summaries of experience, and (b) concepts extend to peripheral exemplars.

The implication of Level 1 is that it is necessary to consider the general cognitive social bases of language, especially for individuals who are pregrammatical. It behooves teachers and parents to expand and vary an individual's world, beginning with the individual's available routines, formats (Bruner, 1981), or scripts (Nelson, 1985, 1986), and including mimesis or selective reenactment. For example, a deaf child's knowledge of the world

may be so circumscribed that the child's concepts and language are relatively limited. In such situations, a role of the teacher and parents would be to expand and document the child's knowledge of the world, that is, by having new experiences.

Perhaps a brief comment on memory should be interjected here. The field of special education has been notoriously crude and downright wrong in dealing with memory. That is, it is fairly common in special education to use memory for digits or memory for commands as presumed evidence of memory. Yet those notions were shown to be invalid many years ago (Blankenship, 1938; Jenkins, 1974). The contemporary literature (Fivush & Hudson, 1990) shows that memory is specific to a task. This means that there is no such thing as memory per se. The implication of this finding is that it is necessary to ascertain skill repertoires with the attendant attribution criteria (Muma, 1998). For example, a teacher of the Deaf should ascertain an individual's range (repertoire) for various grammatical and pragmatic systems, that is, subject nominal, object nominal, auxiliary, verbal, and anaphoric.

Nelson's (1996) account of the situated mind expanded the notions of possible worlds and experiential realism to linguistic, social, emotional, and cultural dynamics of learning. That is, one's experiences are not only important for learning the nature of one's world, but such learning is linguistically, socially, emotionally, and culturally situated. This development has interjected social, emotional, and cultural dynamics into language acquisition.

Just as Nelson's (1996) notion of the situated mind incorporated the social bases of language acquisition, Rogoff (1990) and Wertsch (1991) have elaborated on the social bases of language acquisition. From a Vygotskian perspective, Nelson (1996), Rogoff (1990), and Wertsch (1991) indicate that learn-

ing in general begins on a social level and then shifts to a cognitive level. This finding is crucial because it means that the ways in which an individual is socially and culturally situated are defining issues for subsequent learning.

Thus, it behooves educators of the Deaf and parents to expand and vary an individual's experiential world toward establishing Level 1 of the cognitive social bases of language. Furthermore, they should expand and vary an individual's social and emotional worlds as well. This is necessary because many individuals with language impairment are socially and emotionally inactive, awkward, or isolated.

Level 2: Substantive Functions of Language

As indicated above, the two main communicative functions of language are intent and content. Three of the foremost language scholars have established intent as the central issue. Bruner (1986) and Searle (1992) indicated that intent is the irreducible nucleus of language. Grice (1975) indicated that the purpose of sentences (grammar and pragmatics) is to make intent recognizable. Thus, intent has emerged as the central issue of language. In so doing, it has superseded reinforcement as providing the more viable account of language acquisition.

Thus, it behooves deaf education to shift away from behaviorism and reinforcement toward the contemporary scholarly literature that supports the centrality of intent. The need for this shift is based not only on the necessity to become aligned with the scholarly literature but on the reality that so much of language assessment and intervention in deaf education is based on elicitation rather than intention.

There are two main kinds of content: explicit and implicit. Explicit content is the propositional nature of a message. That is, explicit content per-

tains to the basic ideas entailed in a message. In contrast, implicit content is an individual's knowledge of worlds, possible worlds, or the situated mind. The significance of these two kinds of content can be seen in the following sentence: *I like a Heddon crackleback 300.* Unless the reader is a collector of antique fishing tackle, this sentence is meaningless. That is, the reader does not have the necessary implicit knowledge to make this sentence meaningful. With this knowledge, the reader would know that *Heddon* is a lure manufacturing company, that *crackleback* is a color pattern, and that *300* is a type of lure. Thus, it is necessary to have both explicit and implicit knowledge in order to have a sentence work as intended.

The distinction between explicit and implicit knowledge has implications for deaf education. It underscores again the need for enlarged and varied experiential and social bases of language. It also brings into question the presumed value of various tests that merely rely on sentence recall or drill activities that deal with elicitation.

Level 3: Cognitive Processes Underlying Messages

Level 3 pertains to the mental abilities to use grammatical and pragmatic devices to produce or comprehend messages. This is the domain of psycholinguistics. Clark and Clark (1977) provided the most thorough account of these abilities. They described the various mental processes that enable someone to produce or comprehend messages. Production entails planning and execution of messages. For example, an individual needs to decide what information should be implicit and what should be explicit in order to make a particular intent recognizable. Comprehension entails construction of possible propositions and utilizing these propositions within the context of what that individual knows of the world. The more recent literature on

parallel processing has added greatly to this perspective (e.g., Anderson, 1983; Wellman & Gelman, 1992).

Inasmuch as these mental processes may not be observed directly but inferred (Sperber & Wilson, 1986), it is necessary to provide evidence that warrants such inferences. Recognizing that spontaneous speech or signed communication provides prima facie evidence of what an individual can do, it behooves professionals to obtain representative language samples that can be used to ascertain repertoires of grammatical and pragmatic skills, progress in acquisition sequences, strategies of learning, and active loci of learning. Such evidence is available in spontaneous language samples and is regularly used by trained professionals in the field. The reader should note that language tests do not have these capabilities.

Level 4: Metacognitive and Metalinguisitic Abilities

Metacognitive and metalinguisitic abilities are the abilities to reflect on the nature of thinking and language, respectively. It is fairly common for young children to play with thought and language. When such activities occur, professionals should be quick to facilitate them because they are very potent. It is virtually a given that when children play with language, spurts of learning follow.

Cognitive Socialization: Four Illustrative Issues

With this model of the cognitive-social bases of language in mind, it is useful to consider four related issues: (a) centrality of intent, (b) the modality and core issues of language, (c) lack of construct validity of language tests, and (d) heterogeneity of clinical populations.

Centrality of Intent

Although subtle, perhaps the foremost change in the literature over the past 2 to 3 decades has concerned the centrality of intent. As indicated above, Bruner (1986) regarded intent as the irreducible nucleus of language. Searle (1992) indicated that there can be no serious account of language acquisition that does not focus on consciousness. Intent is a specific instance of consciousness.

Surprisingly, special education has remained silent about the centrality of intent. Rather, special education has held on tenaciously to reinforcement as a presumptive account of learning, even at the cost of ignoring a large literature on theories of learning, notably active learning (Bruner, 1981, 1986), discrepancy learning (Kagan & Lewis, 1965), the shift from procedural knowledge to semantic knowledge with mimesis (Nelson, 1996), representation (Mandler, 1983, 1990), and much more. In short, reinforcement theory has seen its day (Bruner, 1986). The scholarly literature has dismissed reinforcement as a viable account of learning in general and language acquisition in particular.

As a viable account of language acquisition, reinforcement has some fundamental flaws (Kohn, 1993). These include (a) failure to appreciate the centrality of intent or any mental state, (b) silence about language acquisition sequences, available repertoires, and active loci of learning, (c) reliance on frequencies (or percentages) as presumed evidence of learning, and (d) capricious decisions concerning content, sequence, and pacing in language acquisition. In short, reinforcement has merely provided an educational procedure for making teachers operational, even though the more substantial issue is to what extent such procedures are appropriate (Cazden, 1972).

As just indicated, the scholarly literature over the past 2 to 3 decades has established intent as the central

issue of cognition in general and of language acquisition in particular. This issue is outside the purview of behaviorism in general and reinforcement in particular (Kohn, 1993; Searle, 1992). Perhaps it is appropriate to provide a series of quotes from major language acquisition scholars. The first set of quotes decry the value of reinforcement as a viable account of language acquisition. The second set of quotes affirm the centrality of intent.

Decrying the value of reinforcement. "Models of language acquisition built explicitly on assumptions of positive and negative reinforcement are no longer acceptable" (Nelson, 1985, p. 33). "The absurdity of behaviorism lies in the fact that it denies the existence of any mental states" (Searle, 1992, p. 35). "In part, the shift stems from the move away from behaviorism, with its denigration of mental events, to cognitive theories that directly focus on those events" (Mandler, 1983, p. 421). "Many researchers were persuaded by Chomsky's arguments that the then-reigning theory of learning, behaviorism, was incapable of accounting for the acquisition of grammar" (Bowerman, 1994, p. 329). Macken (1987) indicated that the cognitive system underlying language acquisition is "quite unlike an empiricist reinforcement schedule" (p. 380). "In principle, such S-R [stimulus-response] analyses of language behavior can never adequately account for the acquisition and maintenance of language" (Palermo, 1971, p. 135). And as if special education did not get the point: "To put the conclusions bluntly: Reinforcement did not exist, frequency did not correlate, and expansions did not help" (Cazden, 1988, p. 281).

Affirming the centrality of intent. "In short, the personal and social world is inherently complex and interactive. More importantly, human action is intentional and thus demands interpretation" (Nelson, 1985, p. 37). "Any successful effort toward an understanding of language development

must be grounded in a theory which takes an intentional stance...that is, a theory that explains behaviors as expressions of beliefs and desires" (Bloom, Beckwith, Capatides, & Hafitz, 1988, p. 101). "A theoretical model of intentionality and language development...proposes that children acquire language in order to express what they are thinking about in their consciously active, mental states. We are calling these states of mind intentional states" (Bloom et al., 1988, p. 100). "The role of situational structure is relative to the child's communicative intention. It is the child's communicative intention within which uncertainty or alternatives are perceived" (Greenfield, 1980, p. 217). "Describing speakers' repertories of communicative intents and rules for expressing those intents is crucial to any complete description of the language capacity" (Ninio, Snow, Pan, & Rollins, 1994, p. 157).

Halliday (1975) has provided a useful appreciation of the kinds of intentions that are evidenced in early language acquisition. The following are descriptions of the early intentions.

Instrumental: A word serves to obtain something.
"Cookie" gets a cookie.

Regulatory: A word regulates the behavior of another.
"Mama" gets the mother to return to the crib.

Personal: A word draws attention to the speaker.
"Mama" gets the mother to turn to notice her child.

Interpersonal: A word leads to interaction.
"Mama" gets the mother to join her child's activities.

Heuristic: A child plays with words.
"Mama" is said in different ways to experience variations.

Imaginative: A child says a word while pretending to be or do something.
"Mama" is said as a child pretends to be Mama.

Informative: A child provides information.
"Mama" is said to notify the mother that the juice was spilled.

The reader should note that the instrumental intent is evidenced when a child signs or says "cookie" and receives a cookie. This should not be confused with reinforcement, for two reasons. First, the instrumental intent is an internal mental state that issued the sign or word *cookie*. Second, the response to the sign or word *cookie* is not what would be predicted by reinforcement theory. This theory states that the effect of a positive reinforcement is an increase in the behavior that was reinforced. However, rarely do children sign or say "cookie" upon receiving a cookie. They typically sign or say "um-good" or simply eat the cookie. These behaviors are outside the purview of reinforcement theory, but they are consistent with intentionality.

Furthermore, Slobin (1970) documented a principle of language acquisition that pertains directly to these early intentions. The principle is: New forms come in with old functions and new functions come in with old forms. Recognizing that the word *Mama* is a form and the different kinds of intentions are functions, this language acquisition principle is evidenced as *Mama* takes on new functions. The other side of the coin is when each of these functions becomes expressed in new ways. Thus, this principle of language acquisition provides a viable means of assessing the effects of intervention.

In addition to intent, an individual's emotional state should be considered (Bloom & Capatides, 1987). The research on attachment theory (including stranger anxiety and separation anxiety) has yielded a clinical procedure that has been very effective with individuals who may be socially awkward or reticent. This procedure has been described elsewhere (Muma, 1981). The point here is that it is crucial for individuals to have access to their "security-base" as an option in language intervention. The security-base is a social-emotional orientation from which an individual functions. For example, a young child faced with a stranger or new environment is likely to stay close to his or her mother, who is the security-base. In the case of deaf individuals, they are likely to stay within a group of other deaf individuals or others with whom they can readily identify and communicate.

Modality and Core Issues of Language

Traditionally, deaf education had a modality view of language whereby the expressive modalities (speaking, signing, writing) were deemed to be crucially different from the receptive modalities (listening, lipreading, reading signs, reading). An accompanying perspective is that auditory or visual processing was deemed to be crucial.

The essential problem with the modality view of language is that it missed the core of language. As indicated above, the core of language is the following: *cognition, codification, communication,* and *expression* (CCCE). *Expression* in this perspective pertains to affect rather than modality.

While there are modality differences, the core issues are essentially shared by all modalities and should have priority in rendering appropriate education. Regardless of modality, a sentence has essentially the same cognitive, structural, communicative, and expressive functions. For example, the following sentence has essentially

the same cognitive, structural, communicative, and expressive functions whether it is spoken, signed, heard, read, or written: *The dog barked.*

There are three ways of appreciating that the modality model lacks support in the scholarly literature. First, it would be informative to turn to the *Journal of Child Language.* Over the past 2 decades, articles dealing with modalities are exceedingly rare in its pages; yet, articles on CCCE are richly evident.

Second, advances in the philosophical views (Searle, 1992) and theoretical perspectives (Perera, 1994) of language have steadfastly dismissed a modality perspective while advancing a CCCE perspective. Indeed, none of these views and perspectives over the previous 3 decades have held a modality perspective.

Third, none of the major language scholars, such as Bloom, Bruner, Brown, Cazden, Chomsky, Clark and Clark, Gopnik, Grice, Macken, Nelson, Snow, Searle, or Sperber and Wilson, among many others, hold a modality view. They all address CCCE or some aspect of CCCE. Perhaps two quotes would suffice to illustrate this point:

> A theory of semantic development must deal with three problems: the communicative context within which meaning is expressed and learned; the child's cognitive system, which interprets and intends meaning; and development—cognitive, linguistic, social——which changes the parameters of the system throughout the period. (Nelson, 1985, p. 7)

> We offer a theory of language development which integrates the social interaction, cognitive, and linguistic theories. (Bloom et al., 1988, p. 103)

The modality view of language had a very short life span in the scholarly literature. It was essentially over with when Clark and Clark (1977) showed that modality information is purged early in information processing, with the bulk of language processing occurring in mental representation (Karmiloff-Smith, 1992; Mandler, 1983, 1990) drawing upon an individual's knowledge of the world, experiential realism (Lakoff, 1987), possible worlds (Bruner, 1986), or situated mind (Nelson, 1996). Indeed, Tallal (1990) summarized the research on auditory processing and concluded that mental processing of language is not modality specific. Thus, rather than modality problems, individuals who evidence "specific language impairment" evidence difficulties that are not modality specific. "These deficits are neither specific to speech stimuli nor confined to the auditory modality.... The deficit in rapid temporal analysis and production is not specific to linguistic information per se, or to the auditory modality" (Tallal, 1990, pp. 616-617).

Needless to say, it is incumbent on deaf education to become more aligned with the scholarly literature and address CCCE rather than hold to the modality view. With a CCCE perspective, many of the views and practices would change toward more appropriate and effective teaching.

Lack of Construct Validity of Language Tests

Another major issue is the use of language tests that lack construct validity. Messick (1975, 1980), perhaps the foremost scholar in the field of testing and measurement, showed that all assessment must be construct referenced. *"All measurement should be construct referenced"* (Messick, 1975, p. 957). *"All* validity is at its base some form of construct validity.... It *is* the basic meaning of validity" (Guion, 1977, p. 410).

Construct validity is the "appropriateness of inferences" (Messick, 1980, p. 1014). Construct validity issues from the theoretical perspectives underlying an assessment. "The fundamental feature of construct validity is construct representation, whereby one attempts to identify...the theoretical mechanisms underlying task performance" (Messick, 1995, p. 742).

Thus, all language tests should provide evidence of construct validity. To put it differently: What are the theoretical premises of each test? Muma and Brannon (1986) surveyed the 10 most widely used language tests in special education to determine if they had construct validity. None did. Ironically, the same circumstance remains even today for the various language tests that have been revised.

For example, the Peabody Picture Vocabulary Test (3rd ed.), or PPVT-III (Dunn & Dunn, 1997), is claimed to be a test of vocabulary or word knowledge, and even receptive language. Therefore, it would be appropriate to ask if this test addresses three central issues of vocabulary knowledge: intentional meaning, referential meaning, and combinatorial meaning. Rather than intentional meaning, this test deals with elicited meaning. Referential meaning pertains to the principle that one word has many referents (*chair* can refer to many chairs) and one referent has many words (a particular chair can be labeled several different ways). There is no opportunity on the PPVT-III to evidence referential meaning. Combinatorial meaning refers to the use of a word in combination with other words to construct various grammatical structures. There is no opportunity to evidence combinatorial meaning on the PPVT-III. Thus, the clinical fields are in a peculiar position by virtue of using the PPVT-III as a presumed test of vocabulary.

Heterogeneity of Clinical Populations

Heterogeneity is a crucial issue for deaf education. Recognizing that deaf education relies to some extent on

standardized normative tests such as the Stanford Achievement Test (Center for Assessment and Demographic Studies, 1996) and a priori teaching approaches, it becomes necessary to ascertain the degree to which such policies and practices address heterogeneity. Traditionally, such policies and practices have been based on homogeneity, as evidenced by a normative orientation both in assessment and in intervention.

Perhaps it is necessary to scrutinize various language tests to ascertain if they provide valid assessments. Such scrutiny should not only address the extent to which heterogeneity is considered but also several related issues. Muma (1998) indicated that the assumptions of homogeneity, objectivity, and necessary and sufficient evidence become threatened, if not undone, by virtue of dealing with clinical populations that are inherently heterogeneous—hence the indication in Muma (1998) that heterogeneity haunts special education to the core.

Heterogeneity is evident in early language acquisition with normal populations. It is much greater in clinical populations by virtue of the fact that it is virtually impossible to find two clinical cases that are alike. Baumeister (1984), one of the foremost scholars in the field of mental retardation, indicated that the most outstanding characteristic of mental retardation is heterogeneity. Thus, rather than make a normative comparison, it is appropriate to ascertain each individual's repertoire of skills, progress in acquisition sequences, available learning strategies, and active loci of learning. These issues are more useful in dealing with the seven basic clinical assessment issues than comparisons to norms (Muma, 1998).

Heterogeneity is a threat to the notion of objectivity. Objective evidence is presumably free of bias. Philosophers have raised the question of whether it is even possible to have objective evidence, simply because everything that humans do is inherently subjective (Lakoff, 1987). With heterogeneous clinical populations, it is a given that virtually all performances vary; thus, such variance may be a threat to objectivity.

Another traditional cornerstone of normative testing is that a test provides necessary and sufficient evidence of what is claimed to be assessed. As indicated above, there is now great concern that the various language tests may not provide "necessary and sufficient" evidence simply because they lack construct validity. These tests may be nothing more than the test developer's dogma sanctioned by norms. If that is so, such tests are vulnerable to the serious problem of being disconnected from the scholarly literature. In contrast, providing descriptive evidence for repertoires of skill, progress in acquisition sequences, available strategies of learning, and active loci of learning constitute "necessary and sufficient" evidence in keeping with the scholarly literature and the criteria of appropriate evidence (Muma, 1998). These criteria are that evidence must be (a) relevant to the scholarly literature and (b) relevant to an individual's available repertoire.

Summary

The cognitive socialization literature and the model of the cognitive social bases of language acquisition offer new and improved ways of rendering services in deaf education. Toward that end, 40 issues emerge for changing various concepts and practices in deaf education. Of these 40 issues, 4 were discussed in the present article: (a) centrality of intent, (b) the modality and core issues of language, (c) lack of construct validity, and (d) heterogeneity of clinical populations.

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