School as a site for natural language learning

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Abstract:

        According to the sociocultural perspective of language development, language learning is a by-product of communication that is meaningful. For deaf students, who often have limited access to communication at home, it becomes more essential that their school provides a rich communicative environment. Meaningful interaction is a powerful motivating force in human development and learning. When a deaf child is provided full communicative access in the classroom where the teachers and classmates play the facilitative role of helping the child understand and make meaning, the child is provided an invaluable opportunity to learn language naturally. This chapter will examine critical questions related to the access to, implementation of, and impact of a communication-rich environment. The research is grounded in sociocultural theories of learning to illuminate possible ways to mitigate the impoverished contexts for language, literacy, and cognitive development.

        Keywords: language learning, natural acquisition of language, sociocultural approach to language learning, communication and learning, communication-rich environment, communication access, deaf children, deaf child in school, deaf child in classroom.

Children in general cannot help but acquire language and do it in leaps and bounds. At the same time they are mostly unaware that they are learning language, and it is because it is happening without any effort on their part. The progress they make is amazing; yet, it is imperceptible. We can see a lot of progress only by comparing two different points in development. Children do make grammatical errors, but it is almost useless to try to directly teach or correct them as they are impervious to language instruction (James, 2004; Schlesinger, 1975). It is only through sustained use of language with more skilled language users that they will eventually figure it out. Humans are wired to learn language as much as they are wired to learn how to walk. Just as children need to be in contact with ground in order to learn to walk, they need to be in social contact with others in order to learn language.

Even though deaf children grow up surrounded by others, the typical social contact for most of them largely circumvents the use of language. Most deaf children are born into homes and grow up in communities where language is spoken. While some deaf children manage to have enough access to spoken language to enable the process of natural language learning, spoken language for many deaf children, including those with cochlear implantation, is not fully accessible. As a result, it leads to communication that is superficial. Without a shared language, the intellectual and emotional relationship with others cannot develop fully. Instead, whatever communication that does develop is mostly anchored in the concrete world of "here and now." Being deaf is not the cause of delays in language development; rather the delays are the direct manifestations of a social world in which language is not fully accessible and thus largely incomprehensible (Hoff, 2006; Meristo et al., 2007). Some hearing parents put a premium on quality communication with their deaf child and without much hesitation attempt to make

communication as accessible as possible. Some of them, for example, may decide to learn sign

language right away. Making a concerted effort to communicate with a deaf child does make a

difference. However, as is often the case communication at home for one reason or the other is

less than adequate. It is common that communication with deaf children is mostly limited to

topics related to what they are doing or what they can see in their immediate surroundings. With

communication limited to superficial topics, any opportunity to share thoughts, memories,

intentions, and beliefs with their deaf children is forfeited (Meadow, 1975). Communicative

interaction is often restricted to routines or behavior management such as telling the deaf child

what to do or that certain behaviors are not acceptable. For these families, playful or inquisitive

conversational exchange simply does not take place (Courtin & Melot, 1998). When deaf

children have limited linguistic access to their parents be it spoken or signed, it is next to

impossible for the parents to engage their deaf children in explanations about emotions, reasons

for actions, expected roles, and the consequences of various behaviors (Marschark, 1993).

Language development is prodded simply as a consequence of the need to communicate.

Communication is an opportunity to figure how to use language especially when the topic is

new, when the intent is modified, or when the interlocutor is not familiar. When we understand

others, we are subconsciously exposed to how language works. When we figure out how to

express our ideas, our emotions, our beliefs, and intentions, we do not realize we are also

figuring out how language works and as a result our skills with language grow. Many deaf

children, are simply not provided access to quality communication that would give them

opportunities to experiment with language. Linguistic access to others is often restricted or in

some cases non-existent.

With opportunities for natural language learning limited in the home, many deaf children arrive at school without adequate foundation in language. Educators commonly agree that learning would be limited without language and responded to this predicament through remedial measures. Often this involves directly teaching language, but that is not how language acquisition works. This is a misguided approach because deaf children, just like any children, do have natural language learning capability, and it stands to reason that they are similarly impervious to language instruction. The best way to support their language development is to give them accessible means to communicate. Often the language learning capabilities of deaf children have been left to fallow due to the mismatch between deaf children and the modality of the language in their midst both in the home and in the community and/or to the limited capacity of parents to find ways to include them in high quality communication. In reality deaf children's language learning capacities remain untapped simply because of the environment that is not accommodative to their particular needs for natural language learning.

A small part of the deaf children population grow up with adequate access to the language in their environment (i.e., either signed or spoken language). Those who do are able to enjoy a robust process of language learning that takes place naturally. Some of these children may have parents who are deaf, so they are already immersed in accessible communicative environment while some of the others may have hearing parents who do not hesitate to learn sign language and are able to learn it fairly well and fast enough to keep up with their children's developing signing skills. Some of those children may live in close proximity to schools where sign language is used and where enough deaf student peers attend. Some of them may be able to

benefit adequately from residual hearing, amplification, or accommodation in communication to ensure minimally meaningful access to spoken language.

The vast majority of deaf children, however, simply do not have access to the social milieu in which communication is at levels that support a robust language development. Too rarely are they in a two-way communicative environment where they not only can understand others but also can be understood. The importance of communicative access cannot be overstated as it is the only way the children will know that others do talk about thoughts, concerns, or confusion. Equally as important as the opportunity to communicate about those things is the means to get communicative feedback. Feedback helps us figure how to better express what we are trying to convey. Successfully conveying what we want to say means successfully figuring how to put ideas, perception, or puzzlement into words. The success of conveying meaning is often aided by the opportunity to respond to questions or comments from others who try to understand what is said (Wells, 1981). That is how language learning works. The importance of shared language between a child and others in the child's social milieu lies in the fact that it is through language that we gain access to the minds of others. When an adult is able to get into the child's mind, the adult is in a privileged position to better appreciate the child's current stage of development and how the child views and understands the world. As a result, the adult is able to guide the child in successfully expressing what he or she may not able to convey successfully on his or her own. Each successful articulation aided or not, of what the child wants to say helps the child become more competent in language.

Ideally the lack of access to language should be addressed *before* deaf children start school, but unfortunately usually not much is done until they are *in* school. Educators are

cognizant that without language learning will be severely constrained. They are right for looking at schools as the only and probably the last chance to remediate language delays. However, paradoxical as it may seem, schools may unwittingly conspire against giving deaf children what they really need to catch up with language learning. School as the place of instruction is tasked with the expectations that they teach what students need to learn. Natural language learning does happen at schools but it is rarely designated as an important function of school. Curricula emphasize language teaching rather than spontaneous language use. In the case of a child being delayed in language development, the typical course of responding to the situation is to remediate. To remediate means to instruct; instruction too often results in less opportunity for spontaneous communication. If psycholinguistics tell us that children are impervious to efforts to correct their grammar (e.g., Jackendoff, 1994; McNeill, 1970; Pinker, 1995), it would seem reasonable to extend that observation to the idea that directly teaching them language would not work, either. We often perceive the problem to be the children themselves; however, the real problem is the social world in which they grow up. Actually the best way schools can help support deaf children's language development is most likely by examining the ways they can promote authentic communication and by striving to promote the kind of pedagogy that incorporates authentic communication. School should become the place where deaf children thrive in accessible and engaging communication with others.

This chapter is a compilation of individual research conducted by each of the five investigators whose work draws from sociocultural theories of language development and learning. Put together, their research serves to collectively examine the topic of natural language development for deaf children from across all walks of life within the framework of 1) access to,

2) implementation of, and 3) impact of communication-rich environments. The common thread uniting the research in the chapter ultimately points to communication-rich schooling as a way of mitigating the impoverished contexts typically experienced by deaf children that have a deleterious impact on their language, literacy, and cognitive development.

We propose that for deaf and hard-of-hearing students, we should examine school as an essential site of natural language learning. First, we review a case from O'Brien's research that documents what it was like for a teen-aged deaf student who had attended school for 12 years without communication access to suddenly find himself in an unfamiliar environment where people use sign to communicate. The point is to highlight that once communication is accessible, language learning can commence. Then the next investigation, conducted by Kuntze, offers a contrasting study and gives an example of a rich communicative environment that is too rare in deaf education. It shows what language development can look like for preschool aged deaf children who have access to communication both at home and at school with a teacher who can keep them communicatively engaged. The third study, by Smith, is an attempt to illustrate how the use of dialogic pedagogy in a high school social studies class provides the students with opportunities to use authentic language while learning about history and important concepts in social studies. The last two studies examine school-based programming that is informed by sociocultural perspectives of language development and learning. Research by Wolbers illustrates an interactive approach to children's development of writing skills. It is premised on the understanding that an interactive, communication-based pedagogy can simultaneously facilitate content and language objectives, in that the complex thinking and reasoning associated with school-based learning is inextricably linked with complex expression. Research by Golos

on the use of educational media to support language and literacy development is motivated by the challenge of bringing deaf children and language and cultural role models together and how the use of the educational media may help adults (who may not be fluent models of American Sign Language or another natural sign language) with the task of supporting deaf children's natural process of language learning.

Peer-supported language socialization

The extent to which communication is accessible in schools varies as a function of the ability of the school personnel to accommodate the different communicative needs and abilities across the diverse deaf student population. Schools with a large population of deaf students are usually those where communication is more accessible, and for a large number of deaf children, these schools serve as an important site of language socialization (Erting & Kuntze, 2007). It is primarily at these schools that there are at least some deaf peers to socialize with and through whom language skills of many others develop. O'Brien's (2011) research documented an observation that is representative of the experience that many deaf students with limited language skills may have when they enroll in a school with a large deaf student population. John (a pseudonym) was 16 years old when he accompanied his hearing parents to visit a state school for the deaf. Neither he nor his parents knew sign language and communication was very difficult, limited, and at times frustrating. John's attempts to use spoken language were very difficult to understand and he and his parents were unable to have meaningful conversations. John failed to achieve academically in various school settings where communication access was restricted to an aural language and he was required to speech read in order to communicate. Neither he nor his parents were ever exposed to a sign language until this initial visit to the

school for the deaf. His parents explained that they were told to never let John learn sign

language and that to function in a hearing world, John must learn to speech read and speak.

However, after 12 years in school, John's parents were told by the school that he was not

learning and that they should consider enrolling him in the state school for the deaf.

The family made an appointment to visit the state school for the deaf as a "last resort"

and to "investigate" whether his academic performance would improve in a school where sign

language is used as the language of instruction. Like John, most students with limited language,

upon arriving at the school for the first time, are often reserved, and their eyes are wide open. For

the most part they do not converse, and they often stay with their parents. However, if given the

opportunity, the veteran students try to communicate with them and use gestures to establish a

connection. Gestures are also used to facilitate the introduction of the signed vocabulary as the

new student enters the unfamiliar language community. The way language socialization may

begin varies as the veteran students try to figure what the newcomer may already know or is able

to make sense of.

Even for John who has limited language skills, a brief exposure to communication that is

potentially accessible can result in a rapid transformation. As soon as the assistant superintendent

started giving the family a tour of the school, it became obvious to him that John would rather be

playing with the boys he saw on a basketball court. John had been watching the boy play from a

window in a room where his parents were meeting with the assistant superintendent. After the

assistant superintendent made several futile attempts to communicate to John that he may go play

basketball, he asked the researcher if she would be willing to take John to the basketball court.

One of the players, Mark, saw John watching the boys playing basketball and walked over with a

basketball in his hands and signed, BASKETBALL, WANT PLAY? John's blank facial

expressions showed that he obviously did not understand. So Mark handed the ball to John and

showed the sign for basketball. Mark then took the ball back, waiting for John to sign basketball.

When John did not, Mark gave the ball back and repeated the sign for basketball. This time he

pointed to the basketball after signing BASKETBALL. John smiled and signed back. Mark then

gestured to tell John to join him in the basketball game. After the basketball game, John went to

the cafeteria with the boys where he continued learning the language. Mark mimed and gave

instructions to John about how to enter the cafeteria line, pick up a tray, and tell the cook what he

wanted to eat. Mark, along with the other boys, encouraged John during lunch to copy their

signs and learn their meaning as he tried to communicate with his new friends.

Many deaf people acquire sign language naturally as a result of coming into contact with

peers and elders in the Deaf community, and residential schools have historically been an

important site of language socialization process that would help new non-signing students move

toward an eventual membership in the larger Deaf community outside the school (Erting and

Kuntze, 2007; O'Brien, 2011). The students who already have been at the school for a while

usually take it upon themselves to assist the new students start the process of becoming adjusted

to a new language environment and learning ASL. There appears to be an understanding among

the students, especially those who had experienced schooling in which no signing was utilized,

of what it was like to be a non-signer in a signing environment.

A sociocultural perspective on language development is premised on the idea that

language and cognitive skills are first nurtured in a social interaction between a child and more

competent partners within the child's cultural environment before they become internalized as

part of the child's competency (Kumaravadivelu, 2006; Mead, 1934; Vygotsky, 1962). It is a

constant process whereby each step in language and cognitive development serves to enrich

future social interaction through which the child builds communicative and thinking skills. The

vignette about John shows that a brief social interaction with peers was enough to positively

impact his language development. This is how many non-signing deaf students receive support in

language development simply by coming into contact with peers who sign. The only

requirements are that language is fully accessible and that communication is two-way and

genuine.

Adult-mediated communication

While interaction with peers is important, it by itself is not enough. Research conducted

by Kuntze (e.g., Kuntze, Fish, Berlove, Goodman, & Kim 2008; Kuntze et al., 2010) on the

conversation interactions in a preschool classroom where everyone signs shows the importance

of interactions with partners who have much more mature language skills. The interaction with

the more competent communicative partner is an opportunity not only to be exposed to more

complex use of language and more complex cognitive stance but also more importantly to the

potential of understanding more deeply what is being talked about. The dialogue back and forth

between the child and the more advanced partner is an opportunity for the child to make sense of

what is being talked about and, if necessary, for the partner to figure out how to help the child

make sense of the topic. The object of any conversation is always to get meaning across to the

other and the course the dialogue takes is dictated by what it takes to get the meaning

successfully across. Learning language and new cognitive stances is never the goal but

nevertheless an important by-product of the process. The incremental progress in language and cognitive development serves to prepare the child for more advanced topics in the future.

The socially mediated process in which the adult or more competent peer helps the child develop these higher order mental functions takes place in naturally occurring informal settings of the home, school, and community (Tharp & Gallimore, 1988). The child is assisted in the process of making sense of complex information through *scaffolding* a term first coined by Wood, Bruner, and Ross (1976) to describe this tutorial relationship between the adult and child which is critical to language learning. Scaffolding provided on the basis of the developmental needs of the child provides the child with just enough assistance to complete the tasks the child could not have done independently. The completion of the task helps the child know how to do it more independently the next time.

There are three important conditions to meet before the more competent other can effectively assist the child's performance. According to Trueba (1988), these include: a) effective communication between the child and the adult; b) shared cultural values and assumptions, and c) common goals for the activity. It is "through culturally and linguistically appropriate interaction [that] the child develops a suitable cognitive structure that is continually revised with new experiences and feedback" (Trueba, 1988, p.181). The conversation that is engaging and anchored in social context and that ensures understanding is key toward supporting language, cognitive, and social development, and it is an opportunity that is historically not adequately provided to many deaf children in different learning contexts worldwide (Ewoldt & Saulnier, 1992; Keating & Mirus, 2003; Martin et al., 2010; Muma & Teller, 2001; Mweri, 2012; Pribanic, 2006; Silverstre, Ramspott, & Pareto, 2006; Wilkens & Hehir, 2008).

The following interaction in ASL--but presented here in English translation--between a signing-fluent teacher and Jill (a pseudonym) at age 3;9 who has hearing parents is an example of a dialogue that cognitively engages the child. The teacher asked Jill which cracker she liked. They had already previously discussed two different flavors of goldfish crackers: cheese and pretzel. Jill said, "Brown" which clearly indicated she understood the teacher and gave an answer that unambiguously referred to a specific type of cracker. The teacher could have ended the conversation by pointing out that the brown cracker is a pretzel, but she wanted Jill to identify the cracker by type rather than by color. So she chose to continue the conversation by asking what kind of crackers the brown ones are. Jill said something unintelligible (on the tape). The teacher responded, "No, what kind of crackers are the brown ones? Are they cheese?" That was a technique for steering Jill to look at the difference between crackers by type rather than by color. Jill responded correctly by shaking her head that they are not cheese so the teacher repeated the question. Jill was stumped and started to give random answers: "Pink? ... Orange?" The teacher responded, "No, no, no" and pulled out a bag of pretzel goldfish crackers. Using the prop was probably a technique to ask the question in a new way without having to mention color. The teacher asked, "What kind of crackers are these?" Jill said "brown" as before. The teacher was persistent, saying, "Right, but what are they?" Jill gave the same answer, "Brown." The teacher went back to the same question she asked earlier on: "Are they cheese?" Jill quickly blurted, "Pretzel." When the teacher affirmed that it was correct, Jill beamed, "I knew it. I am awesome. Super good at this. Pretzel, pretzel, pretzel!"

The learning context in which the language of instruction is accessible to all children means more contact time with the language. The opportunity to eavesdrop is important as it helps

augment children's exposure not only to language but also to different topics of conversation that may be going on. In a setting like school where the one on one contact time between the adult and the child is limited compared to the potential contact time between a parent and a child at home, the ability for a child to eavesdrop a conversation that the child is not a part of is especially important. For example, the engagement discussed in the previous paragraph between the teacher and Jill about the goldfish cracker caught the attention of another child. Joe, the eavesdropping child, was following each turn of the dialogue, and then at precisely the same moment Jill said, "Pretzel" Joe said the same thing. A frame by frame examination on the videotape of the occurrence shows that both children answered the question at exactly the same split second. Based on the eye contact each child had placed on the teacher, it showed that each child gave the answer independently of each other. Even though Joe was not part of the conversation and the questions were not directed to him, he was able to mentally participate in it. An important reason it was possible was because he had access to the language of the conversation and had enough language skills to follow it.

The opportunity to learn as a result of observing what is going on in a conversation depends on whether the activity being observed is meaningful and interesting to the observer (Bandura, 1977). One assumption of social cognitive theory is that learning is based on triadic reciprocity (Bandura, 1986) among cognitive, behavioral, and social factors. In the case of language learning, it means that the trajectory of language development (behavior) is affected by the child's thoughts and knowledge (cognitive) and how the social context of the utterance mediates the child's effort either to make sense of what is uttered or what he/she wants to say. For some reason, Joe found the conversation about the pretzel interesting and relevant, possibly

because the class just had crackers for snack and the content was already familiar. Joe probably found the topic of the conversation interesting as he appeared to enjoy following each turn of the conversation between the teacher and Jill. The language context of this particular classroom supported language learning not only through students participating in the conversation directly but also by participating in it indirectly.

A lot of language learning occurs as a part of the mundane process of everyday communication, and we cannot possibly be aware of each instance the child learns a new word or what a phrase means. Language learning is pervasive, and it takes place as long as the language is accessible and the child actively participates in the conversation. In the following example, during a different time, Jill learned the sign for jellyfish as a result of having misunderstood the teacher and thinking she was talking about a different animal. Challenging the teacher that the animal she was referring to was not an octopus led to an opportunity to learn the new sign for a jellyfish and to distinguish it from the sign for an octopus. The sign for jellyfish has a phonological shape that if someone not familiar with the lexical item tried to guess the meaning on the basis of the form, the possibility of thinking it may mean octopus is not far-fetched. That it happened that way is plausible given the context of the story which was about what a fish saw as it explores its surrounding. The following exchange (also translated into English) took place while the teacher was reading (signing in ASL) a book (written in English) to the class:

Teacher: "The fish saw something he had never seen before: a jellyfish."

Jill: "No, it's not an octopus. No."

Teacher: "You're right. It's not an octopus. It's a jellyfish. They're different. You're right."

Jill (to herself): "Jellyfish."

In signing "jellyfish" to herself, Jill was probably trying to practice forming this new sign while making a mental note to herself that even though its form suggests it refers to an octopus, it actually refers to a different animal. In that process, she probably was also subconsciously reinforcing what she already knew about the sign for octopus.

These vignettes about John and Jill underscore the importance of a community where communication is accessible and understandable. It is in such a context that dialogic pedagogy becomes possible.

Dialogic pedagogy

Dialogic modes of instruction have been linked with higher cognitive capacities and critical thinking (Burbules, 1993; Hillocks, 2002; Nystrand, 1997; Ward, 1994), for language plays a critical role in mediating learning (Kraker, 2000) and transforming action (Wertsch, 1991). Language provides an avenue for accessing others' experiences and points of view (Bruner, 1996; Dewey, 1990; Greeno, Collins & Resnick, 1997), and it is through collaborative interactions that students are exposed to the strategies and problem solving techniques of others (Lantolf, 2000). Dialogic pedagogy not only provides students with an exposure to language associated with higher cognitive activities but also engaged use of language resulting in further language development (Gavelek & Raphael, 1996; Hartman, 1996). Mayer, Akamatsu and Stewart (2002) observed that exemplary teachers of deaf students are the ones more likely to ask meaningful, authentic questions that engage their students in learning.

Discourse with students gives teachers an invaluable strategy for engaging students supportively at higher levels of thinking and talking, which then leads to the expansion of their linguistic and cognitive capabilities. Outside school, deaf and hard-of-hearing students are less

likely to have access to the kind of communicative interactions that allow them to learn from

others or that engage them in critical thinking making it more crucial that schools attempt to

maximize those opportunities as a part of pedagogy. Dialogue is an important technique for

pinpointing areas of content that students may not fully comprehend or promoting students to

think at a higher cognitive level.

A good instructional conversation is comprised of a discourse led by a teacher who treats

students as equal partners. The teacher presents provocative ideas or experiences in a strategic

manner, and then asks questions, probes for reasons, persuades, or remains quiet. Only when

necessary will the teacher clarify and give direct instruction, doing so in an efficient manner,

without wasting time or words. He or she knows when to push and probe to draw out a student's

ideas, but also knows when to back off and allow thought and reflection to occur. The teacher

also knows when to get involved and when to retreat in order not to inhibit discussions. The most

important thing is to ensure that all students are engaged and contributing to a meaningful and

extended discussion about ideas that are relevant to them (Goldenberg, 1991).

While the teacher and students having the same language they can share is obviously

essential before dialogic pedagogy can even be considered, it, however, takes more than shared

language to make the most out of dialogic approach to teaching. Instructional Conversation (IC)

(Goldenberg 1992; Tharp & Gallimore, 1991) is a methodology to gauge the extent to which the

teacher listens carefully, makes guesses about intended meaning, and adjusts responses to assist

students' efforts. The development of IC evolved out of the Kamehameha Early Education

Program (KEEP) in Hawaii in the 1970's as part of an effort to improve teaching of native

children (Tharp & Gallimore, 1988). IC provides opportunities for the development of the

languages of instruction and subject matter by providing feedback to the teacher's efforts to

relate formal, school knowledge to the student's individual, family, and community knowledge.

In short, IC is a supportive and collaborative event that builds connection among individuals and

a sense of community. Since IC builds on interpersonal connection it helps the teacher achieve

individualization of conversation. The use of IC results in a setting that fosters language

development and stimulating cognitive challenges. IC and other instructional standards such as

child directed activity, complex thinking, modeling, and language and literacy development were

adapted as best practices for children in indigenous educational settings including Native

American schools (Center for Research on Education, Diversity & Excellence, 2014).

Smith (2015) used the elements of Instructional Conversation (IC) as a framework to

conduct an analysis of a dialogic approach to instruction in a high school social studies class at a

residential school that employs ASL/English bilingual communication. The topic of the lesson

was on business monopolies in the early 20th century. The teacher was a fluent user of ASL and a

member of the U.S. Deaf community. This teacher had more than 7 years of teaching experience

at K-12 residential schools for the deaf. The students in this classroom were diverse in terms of

ethnicity, early educational placements, and the age at which they learned ASL: Four of the

students were Latino, and one of each of the remainder was African-American, Asian-American,

and European-American. The school where the study was conducted used ASL as the language

of instruction. Some of the participants in the study went to the same school since early

elementary ages; a few entered during the middle school years; and one transferred from another

school during her freshman year. Some of the students were native ASL users while the rest had

exposure to various types of bimodal (simultaneously speaking and signing) communication environments in the past. At the time of the study they all appeared to have fluent ASL skills.

The IC framework is composed of 10 elements considered important for helping evaluating the robustness and success of a classroom discussion. One objective that the investigator had for doing the study was to investigate whether the IC framework which is designed for classroom conversation in spoken language is adequate as is for evaluating class discussion that takes place in sign. The second objective was to see if the IC framework would still be useful for evaluating a teacher already considered exemplar in leading class discussion. It was observed in the study that many of these elements were descriptive of the lesson as a whole. These are: connected discourse, a challenging but nonthreatening atmosphere, and self-selected participation. The dialogue was connected and made coherent by cohesive devices such as BUT, OK, NOW, and READY (Roy, 1989), spatial referents, and non-manual markers (Smith & Ramsey, 2004). A challenging and non-threatening atmosphere was apparent. Self-selected participation was evident throughout the lesson as students freely contributed to the discourse in a manner that was consistent with other studies of Deaf classrooms at younger ages (Erting & Kuntze, 2008; Golos, 2010; Ramsey & Padden, 1998). All of the students participated at least once, some more frequently than the others. To encourage maximum participation class-wide the teacher utilized effective eye-gaze to indicate who was being addressed (Mather, 1987), pointing to direct attention, and holding up an index finger to indicate waiting.

The thematic focus of the lesson was about the antitrust efforts of the Teddy Roosevelt administration (1901–1909). The discussion evolved into one about Deaf-owned small businesses trying to succeed in the face of big business competition, and it helped give context

and relevancy to the topic of the lesson which was about monopoly and the government's

response to make business practice more fair and competitive. By allowing the dialogue to be

student-led, the teacher was able to guide it to issues that arouse students' interest in topics

important to them, such as deaf people having a fair break in building businesses. The teacher

made a connection between Deaf-run businesses and the larger questions such as the

monopolistic practice of big business and why the government sees the need to restore

competition and fair business practices through antitrust efforts. Ultimately, based on subsequent

interviews with students, the dialogic approach helped make the topic meaningful and relevant.

The discussion about a new topic such as monopolistic practices and antitrust laws means an

opportunity not only to expand knowledge about the topic but also to absorb the vocabulary and

language for discussing about the topic.

  The dialogic approach to instruction also helps the teacher monitor student

comprehension. By making use of what the students say, how they respond to questions, and

what they ask about, the teacher is in a privileged position to determine how to use student

background knowledge and schemata to help them better understand the topic under discussion.

The investigator noted that the social studies teacher was able to go back to points covered in the

lesson and to tie them with students' current knowledge. Students appeared to have enough

background knowledge that they were able to draw on during the discussion and that suggested

that constant access to class discussions to date had helped them build knowledge and

participatory skills which in turn helps make future class discussions more productive and take

place at an even deeper level.

In addition to the 10 original IC elements, Smith (2015) added two other elements for classroom interaction conducted in signed languages. Smith and Ramsey (2004) noted that a deaf teacher in their study consistently elicited student responses to clarify content and used specific eye gaze for checking comprehension which the investigators considered reflective of sociocultural language practices used by Deaf teachers. It was not enough to just rely on how students responded to each other or to the teacher. The teacher tried to elicit student response as a strategy to check comprehension. The teacher did this simply by making pauses and raising her eyebrows, which in effect indicated she was posing the "Are you following me?" question. She did it frequently, and it was followed by a downward head nod as if asking for affirmation and maintaining eye-gaze checks. The immediate collection of various forms of student feedback such as head nods, facial expressions, and interjected comments helps the teacher determine the best course to take for continuing the discussion. If all is going well and the students are following with the needed level of comprehension, the teacher can continue the discussion. If not, the teacher would backtrack to repair the sites of comprehension breakdown.

The IC framework proved useful for identifying areas for improvement even for the teacher considered exemplary in leading class discussion, as it helps the teacher and investigator focus on areas that probably would have escaped scrutiny. The two areas that were noted in need for improvement were related to the missed opportunities to dig deeper via extended discourse: elicitation of bases for statements and elicitation of student response/clarification. Inquiries for bases of statements involve the use of evidence and reasoning to support an argument or position (e.g., "How do you know?" and "What makes you say that?"). Setting up a problem and asking for clarification prompts students to clarify, solve, or provide missing information. Both of these

types of elicitations from students involve critical thinking skills. Elicitations also are a means of

seeing how much background knowledge students can apply to a situation. These two missing

elements from the teacher being observed are related to task persistence. One of the positive

attributes of a good teacher of deaf students (or actually any teacher) is high level of task

persistence in their discourse (Harris, 2010; Kluwin, 1983; Smith & Ramsey, 2004).

The use of IC can help teachers who already use dialogic pedagogy expand their

repertoire of extended discourse strategies and give students more opportunities for natural

language learning. It can help other teachers, including those who teach younger students to

consider adopting dialogic pedagogy as a part of their teaching practice.

Impact of communication-rich schooling

Smith's (in preparation) analysis of dialogic pedagogy in a high school social studies

classroom is an example of how content-area instruction may be conducted in a way that

students are simultaneously provided with opportunities for language development. The course

of students' language development is mediated by the nature of the topics of conversation they

are part of and by the extent to which their participation is supported and maintained by the

relevance or meaningfulness that the conversation has to them. Implementation of dialogic

pedagogy then becomes the means through which teaching and learning of social studies is

achieved and can subsequently promote the development of both conceptual knowledge and

language. Communication-rich schooling allows for the integration of dialogic pedagogical

approaches into every aspect of the deaf child's school day, embedded in the teaching and

learning of content areas such as science, math, and PE.

One particular challenge for teachers of the deaf is how to teach students to read and write in English when many are still developing expressive and receptive language competency. Traditionally language has been taught to deaf students using structured curricula, where grammar aspects are taught explicitly and systematically (Rose, McAnally, & Quigley, 2004). Communication-rich schooling, on the other hand, means the creation of school-based environments where natural language learning can occur, and that embedding dialogic pedagogical approaches into the teaching and learning of any content, including reading and writing, can allow for students to make progress in both language and content. While such an approach may be deemed time-consuming, we argue that the development of language and critical thinking skills is inextricably linked to the opportunities the child is provided to communicate concepts, perspectives, and ideas. In the next section we illustrate how communication-rich schooling can impact both language as well as literacy-related content objectives, and therefore can be a means to accomplishing content objectives while simultaneously promoting language development.

Wolbers (2007) has pioneered a communication-based approach to writing instruction, namely Strategic and Interactive Writing Instruction (SIWI), which encompasses the dual objectives of promoting expressive/receptive language development and the writing skill development. For the purpose of this chapter, two elements of SIWI are described in detail. They are a) the dialogic, interactive format of guided writing and b) the use of communication strategies for the purpose of meaning making and meaning sharing in a space called the language zone. A full description of SIWI model can be accessed elsewhere (Wolbers, Dostal, & Bowers, 2012; Wolbers, Graham, Dostal, & Bowers, 2014).

One element of SIWI is a dialogic, interactive approach to guided writing whereby deaf and hard of hearing students engage in writing with other students and the teacher. It is through this dialogic, interactive format that students are apprenticed as writers and provided a conversation through which natural language learning can occur. They share their ideas, build on each other's contributions, and cooperatively determine the necessary writing actions. The approach is based on dialogic pedagogy principles that purport understanding is constructed through collective problem solving in shared activity (Wells, 2000).

Successful use of dialogic pedagogy predicates on the teacher having a disposition toward learning that is inquisitive and exploratory (Burbules, 1993) while valuing and encouraging student contributions (Tharp & Gallimore, 1988). It also means the teacher having the ability to skillfully orchestrate students' talk on a moment-to-moment basis by questioning, eliciting, or listening and then contingently reconceptualizing, expanding, clarifying, challenging, offering or weaving comments into a larger tapestry of meaning (Gavelek & Raphael, 1996; Goldenberg, 1992). In short, the goal is to sustain conversational involvement as a means of advancing understanding (Mariage, 2001). Being engaged in conversation with students helps the teacher monitor the level of independence the students have for an activity and provide the needed level of support they may need to successfully complete the activity. In other words, by using open-ended questions or providing more subtle prompts, the teacher knows when to "step back" to release control over the learner's activity, and when to "step in" by offering guiding comments or modeling when the activity is out of reach (Englert & Dunsmore, 2002). One example of "stepping in" is the teacher communicating what she would be thinking if she were in student's shoes at a given moment of the student's writing activity. By thinking

aloud, the teacher makes the normally invisible cognitive activity of an expert writer visible

through language and when done in language students understand, deaf students are able to

appreciate the real deliberations, negotiations, and struggles a writer experiences. Therefore, the

dialogic exchanges of guided writing allow students to develop their thinking, talking, and

actions as mature writers. Mayer, Akamatsu and Stewart (2002) have alluded to the dialogic

pedagogical practices of exemplary teachers of the deaf as those with potential to spur the

conceptual and linguistic development of deaf children.

A second important element of SIWI is the provision for meaning making and meaning

sharing in a space called the *language zone*. Sustained communication between the student and

the teacher helps support students in expressing their thoughts, clarifying intended meanings or

repairing communication breakdowns. Once meaning is understood and shared between

members, concepts can be paired with ASL and/or spoken English. The teacher looks for

opportunities to model language around understood concepts, and then encourages students to

take up modeled language in their own expressions through natural turn taking about the

concepts. The following dialogue that transpired in a 3rd grade classroom serves to illustrate

such a communicative interaction. The students and teacher had baked a pumpkin pie for a

Thanksgiving celebration and were in the process of recounting that experience in a newsletter to

their parents. While engaged in planning for writing, the students exhibited difficulty explaining

in signs what they had done to bake the pie. They revisited digital pictures taken during the

baking activity, and the teacher asked open questions like, "What did we do here? What is that?"

Student responses were largely limited or confusing. For example, when pointing at a picture of

two students measuring the brown sugar, the teacher asked what they were doing, and a student

responded, "Freeze". The teacher tried to clarify by asking, "Freeze? Like ice?" The student

pointed at the picture and added, "Cold." The teacher tried to probe deeper into the student's

understanding by pointing at the sugar and asking, "Cold?" At that point, she directed the class to

a different student who was signing, "Sugar." She asked, "Do you remember what kind of sugar

that was? Which color was it, white or brown?" The students responded with, "Brown sugar."

The first student again joined the conversation by pointing at the sugar and saying, "Sugar

freeze", and he proceeded to communicate something that resembled the claw-shaped hands

coming together like a ball and pressing inward. The teacher then understood what he intended to

express and recasted his expression by saying, "Yes, the sugar was hard. It was hard." The

student copied the teacher's use of the sign "hard" while nodding his head.

    While recapping the activity in each of the digital pictures, the teacher asked students to

name the items in the pictures and explain what they were doing with those items. Based on

students' responses, she was able to support students in their expressions when there were gaps

in vocabulary or grammar. Because the teacher's model language was purposefully more

complex and complete than the expressive abilities of the students, she carefully grounded newly

exposed language to the concrete objects and actions in the pictures by pointing frequently to

help connect language with meaning. After recapping the activity using the digital pictures, the

students made decisions about what information they wanted to include in their writing. The

events or ideas they wanted to include were drawn on medium-sized sticky notes and then

ordered on the board the way they would be presented in writing. This provided the students with

two more opportunities to express the various events of making a pumpkin pie, once while

deciding what events to include on the sticky notes and once again when discussing how to order

the events. The teacher used every opportunity to guide the students to fully describe and express

the events in ASL. A rule of thumb used by SIWI teachers is to provide sufficient language

modeling and supported engagement around understood concepts so that the student will be able

to leave the room with enough linguistic resources acquired to explain the event to someone new

with greater clarity and detail than they currently have.

Next, the teacher and students worked on moving the expressed concepts in ASL to

writing their ideas in English for the newsletter. They tackled one drawing at a time, labeling the

drawing with English words and phrases and then using the notes to construct English sentences.

At times, the ASL expression needed to be further expanded or clarified. For example, the

teacher asked the students to come to the front of the class to role play an event which helped

them notice actions that were not included in their language expressions. One student became the

oven and another student was the teacher who turned on the oven. The teacher pointed at the

person role playing the turning on of the oven, and asked, "Who?" The students then realized

neither their drawing nor their expression included the teacher, so they added a picture of the

teacher and also wrote the word "teacher" next to the drawing. The teacher then asked, "What is

the teacher doing?" She guided the students to express the event, by supplementing or

supplanting the gesture and role play actions with ASL, "The teacher turned on the oven." Once

expression of the concept in ASL was clear and complete, the teacher began asking for the

English words associated with each item or action in the drawing or role play. She guided them

to finding equivalence in English for what they had just fully expressed in ASL. "When we sign

this (turning of knob), what are the words we use in English for that?" asked the teacher. One

student responded with "on" and the teacher reacted positively and provided more scaffolding by

relating the concept to turning on the lights. Once they had found the English equivalent and they had labeled the picture with "teacher", "oven" and "turn on", the teacher requested them to start putting together the ideas into a full English sentence that could be drafted on their English board and revised for their newsletter.

In this example, we see how the teacher and students were engaged in a writing activity; yet much time and care is taken in the language zone with digital pictures, drawings, role play and gesture to clarify, develop, and expand students' expressive language in ASL associated with the shared concepts. Thus, the teacher is intentional to build understanding and skills for writing by first expressing concepts through the air. In that regard, SIWI is premised on the notion that good writing is based on having a clear idea on what to say.

With the embedding of dialogic pedagogical practices during guided writing and the use of meaning making and sharing strategies, SIWI serves as an example of a communication-rich school program that can simultaneously address both content and language objectives. In fact deaf and hard of hearing students receiving SIWI, when ASL is the expressive language of focus, grow in their abilities to express increasingly clear and complex language as measured by gains in mean length of ASL utterances and declines in unintelligible utterances. Furthermore, students, regardless of lower or higher language proficiency at the start of instruction, show similar language growth over time (Dostal & Wolbers, 2014).

At the same time, quasi-experimental research demonstrates that elementary and middle grades students receiving SIWI who are diverse by hearing loss, school setting, and language mode also make statistically significant literacy gains. Students have evidenced greater improvements with writing skill associated with a taught genre, such as information reports, as

measured by primary trait rubrics; they also show greater gains than students in a comparison

group with untaught genres of writing (Wolbers, 2008a). Second, there are statistically

significant gains in writing fluency as measured with length variables such as total words or

number of T-units (Dostal & Wolbers, 2014; Wolbers, 2010). Students have additionally

demonstrated significantly greater progress with written language (e.g., subject/verb agreement,

correct use of determiners, number of complex sentences) and conventions (e.g., punctuation)

than comparison group students (Wolbers, 2008a). Third, there are significantly greater gains in

word identification ability among students who receive SIWI compared to those who do not

(Wolbers, 2007). Lastly, SIWI studies, exploratory in nature, show similar positive outcomes for

primary traits of writing, written language, writing fluency, and word identification (Wolbers,

2008b; Wolbers, Dostal & Bowers, 2012) while suggesting possible improvements in students'

abilities to edit and revise their writing (Wolbers, 2008b), write with greater sentence complexity

and awareness (Wolbers, Dostal & Bowers, 2012), and reduce the ASL grammatical features

present in their writing (Wolbers, Bowers, Dostal & Graham, 2013). Altogether, we can deduce

that the time and care taken to provide a school-based environment conducive to natural

language learning does not need to happen at the expense of academic content learning, but

rather, both can happen jointly. The outcomes of SIWI allude to the importance of accessible,

meaningful, and rich communication as the central driving force of effective school-based

programming for deaf students. Ultimately, instructional and programmatic approaches should

support natural processes of language development. We have illustrated how this occurs in

preschool, a social studies, and a writing program. The next section shows how the principle of

accessible, meaningful, and rich communication may be applied in the design of video-based

educational programming for supporting students' development of ASL and English literacy.

Use of interactive, educational media to broaden language input

The greatest challenge in the education of deaf students probably lies in the question of

how we can provide deaf children with access to communication that is understandable as well

as a communicative environment that allows them to communicate easily with others. Many deaf

children start preschool without much language. The children's education is thus held hostage by

the limited communicative skills they have. Ideally, they should go to a quality early childhood

education program with highly qualified teachers who not only can communicate well with them

and provide rich language and literacy experiences but also who are knowledgeable of child

development especially in the areas of language, literacy, and cognitive development. These

teachers would know how best to meet the individual needs of each child by identifying where

the child is in regards to their language development and then scaffolding these skills by using

strategies such as asking open-ended questions, providing new vocabulary and connecting

classroom activities to the students' everyday lives (e.g., IRA/NAEYC, 1998). However, there

may not be enough of these types of high quality settings for deaf children in any type of school

including those that provide fluent sign language models.

One indication of impoverished language environment in early childhood education

programs for deaf children is the extent to which literacy activities are incorporated into the daily

classroom routine throughout the day in various classroom activities. For example, interactive

read-alouds provide opportunities for fostering key language and literacy skills and researchers

(e.g., Trelease, 2013) recommend reading aloud multiple times throughout the day in an early

childhood classroom. Yet, in a recent survey of 70 early childhood educators of the deaf in the

United States, 60% of teachers reported reading aloud to children only between 1-15 minutes per

day (Golos, Moses & Roemen, 2015).

Another indication is in the number of times teachers include ASL stories such as ABC

stories (which are stories that use only the signs that utilizes the handshapes of the alphabet and

putting them in the alphabetic order), handshape stories (telling a story in a poetic way by using

signs formed by a limited range of handshapes and putting them together in a patterned fashion),

or number stories (telling a story using signs with the same handshapes that numerical signs use

and putting them together sequentially in number order). These activities provide deaf children

an opportunity to experience the language in a way that may help become more attuned to the

phonological aspects of ASL (e.g., handshape, movement, palm orientation, location), letters of

the alphabet and numerical symbols. In fact, McQuarrie and Abbott (2013) suggest that an

increased understanding on language through language play may be an important component to

successfully learning to read. However, the survey responses from 44 schools that use either

ASL or Total Communication revealed only 6 teachers who provided ASL stories daily.

Children greatly benefit from having both linguistic and cultural role models at a young

age (e.g., Holcomb, 1997). While ideally all deaf children should be exposed to Deaf role models

and fluent users of sign on a daily basis, few teachers reported providing such exposure (Golos,

Moses & Roemen, 2015). Bringing in a Deaf person to the classroom as a guest, volunteer, or

aide would be a good way to supplement deaf children's exposure to adults who can serve as a

language model Erting & Pfau, 1997) and who can engage them in extended conversation. Yet, it

appears this is not happening as frequently as it should (Golos, Moses & Roemen, 2015). For

some, this may simply be due to living in areas that do not have easy access to Deaf adult role models.

While not intended to replace "live" models, research suggests that incorporation of educational media is a promising *supplemental* tool for providing language and cultural role models for those who do not have adequate access to them (e.g., Fisch, 2004;). Research on educational media programs such as *Sesame Street* and *Blue's Clues* has long suggested that media can provide rich interactive experiences with language and literacy, particularly for struggling readers (Fisch, 2004) and even more so when teachers encourage interaction with media (e.g., Linebarger, 2009). More recent research reveals the same to be true for interactive educational media in ASL (e.g., Golos & Moses, 2013a). In a series of five studies (Golos & Moses, 2010; 2011; 2013a; 2013b; 2015), when deaf and hard-of-hearing children (N=75) have been exposed to a research-based educational video series (the *Peter's Picture* video series), they make significant gains in language and literacy skills targeted within each episode (e.g., vocabulary, knowledge of story elements, sequencing skills). This video series (see Golos & Moses, 2013a, for a detailed description of the series and research studies) models Deaf characters interacting with other Deaf characters in ASL and was originally developed for parents and teachers to use in the home or classroom settings to supplement "live" fluent language and cultural role models.

Similar to research-based strategies used during shared reading and other literacy activities, these videos incorporate strategies (e.g., chaining, asking questions) to elicit interactive behavior between the characters on screen and the viewing audience. For example, in one episode, the main character, Peter explains one of the target vocabulary, "backyard." After

he describes what different types of backyard may look like, he asks both the child characters in the video and virtually the audience viewing the video, "What does your backyard look like?" He then pauses giving the viewing audience time to respond. This provides an opportunity for children viewing the video to either think of an answer in their head or respond in sign or spoken language. If not, an adult watching the video alongside the child can repeat or explain Peter's question to elicit a response. After the pause, Peter proceeds to answer his own question providing multiple possible answers: "Maybe your backyard looks like this…(followed by a description of a type of backyard such as one that is flat with grass and surrounded by a fence)…or that…(followed by a description of a different type of backyard such as one with rolling hills, no fence and lots of trees). By providing the child different possible answers to the question, the child is given a chance to affirm or change their answer. More importantly, the interaction gives the child exposure to how language works and how to think, and it helps them realize that for some questions there are different possible answers. It also provides critical background knowledge for children who may have had limited opportunities to communicate through spoken language, ASL, or other sign languages in different types of daily experiences (e.g., discussing that not everyone's backyard looks the same; children who grow up in a city have a different type of backyard than those growing up in the suburb or in rural areas).

        After discussing the meaning of each target vocabulary, Peter helps viewers make a connection between the discussion about "backyard" and the printed English word by asking the viewing audience (along with child characters onscreen) to copy him as he signs the target vocabulary (e.g., BACKYARD), then fingerspells (e.g., B-A-C-K-Y-A-R-D), and finally repeats the same target sign (e.g., BACKYARD) while the printed word appears simultaneously across

the screen. This process is repeated multiple times throughout each episode for the target

vocabulary.

In each episode, Peter introduces new theme-based vocabulary before taking the onscreen

children along with the viewing audience on a virtual adventure where he introduces them to one

of his deaf friends, each of whom has a different type of job (e.g., librarian, chef, etc.). Different

events occur, and Peter takes pictures. They then return to "Peter's Place" where they sequence

the pictures, play a word game, make a book, and retell the story of their adventure. This

provides children, their parents and teachers access to linguistic and cultural models through

Deaf children and Deaf adults interacting with one another, as well as modeling how to make

connections between ASL and written English in different contexts.

This type of interactive media has been effective in eliciting language and literacy-related

behaviors from children who view the program. When viewing in small groups of peers, children

engage by answering questions (in sign and/or spoken language), copying target vocabulary by

signing or fingerspelling the words, asking questions, making comments related to the story, or

pointing to print on screen. (See Golos & Moses, 2013a, for a review of studies). However,

similar to live experiences, children learn and engage even more when adults make use of the

media series to encourage communicative interaction with and support and build on the

interaction the way educational programs like *Peter's Picture* are designed to elicit (e.g., Golos

& Moses, 2011).

Golos and Moses (2013a) recommended that to best utilize the videos, teachers facilitate

learning by conducting activities before, during, and after video viewing. For example, when

teachers promote interaction during video viewing such as encouraging the children to copy

Peter's signing or by pausing the video to ask open-ended questions, learning increases (Golos &

Moses, 2013a). Furthermore, when teachers were provided with materials and implemented

activities following video viewing, teachers reported that not only did children's learning

increase but that they carried over strategies demonstrated in the video into other daily activities

(Golos & Moses, 2015).

        One particularly interesting finding across studies is that engagement and learning

occurred regardless of participants' diverse backgrounds, use of amplification, or whether they

had prior exposure to ASL. This includes deaf children who attended programs using

ASL/English, spoken language, or a combination of both. In fact, results from a recent study

show that educational media in ASL may also benefit hearing children (Moses & Golos, 2015).

Results across studies indicates that this type of media may be of even greater benefit for

children who arrive at preschool already delayed in language and literacy skills. It also supports

previous research that suggests that exposure to sign language may foster language and literacy

development even for children whose primary mode of communication is spoken language (e.g.,

Mayberry 2007). These types of materials can be particularly useful for early childhood

educators who do not have access to Deaf adult role models and are thus unable to bring virtual

fluent language models into the classroom. Teachers in rural or mainstream settings or teachers

who have many language delayed students may particularly benefit from these media as a means

of not only providing cultural and linguistic role models but also building background

knowledge. In fact, anecdotal evidence suggests that some teachers are already incorporating

these types of videos into the classroom. According to one teacher of deaf students:

"We use the videos as a 'virtual' field trip. These videos provide in-depth access to language. Our students are able to 'visit' places that are not accessible for them due to low economic status. Also, many of their families are not able to communicate to their children the places (stores, hospitals, library, etc.) in which they go."

Pedagogy driven by communication that is authentic

For the most part the education of deaf students has been driven by the persistent fact that many deaf children are not making progress in language development, at least at a pace that is commensurate with what is expected of any normally developing child. Children generally are expected to acquire language without any assistance. That is not a wrong perception; however, that perception inadvertently fosters a misinformed response that when a deaf child does not make progress in language development as "expected," something is wrong with the child. Such perception may be rooted in the fact that people take many things about language development for granted. If we look into the world of deaf children through a sociocultural lens, we begin to understand their anemic progress in language development more broadly. This will help free us from the perception of the child's language learning capabilities as the site of problem and allow us to move to the language learning context as the site to address the child's language learning needs.

Educators are correct when they consider language learning as an important area to address. It is likely the most important consideration to make because many things about the child's development and academic achievement are dependent on the level of language skills a child has. Educators by default try to address the language delay within the framework of school and instruction. Ideally deaf children's limited access to language should be remediated in the

home and in the community, but it is in school that educators have more leverage to address the

problem. The language development difference between deaf children and other children often

quickly and uncritically leads to the notion that deaf children need remediation in language

learning.

Over the years, the professionals working with deaf students have tried to address deaf

students' language learning needs by focusing on approaches that are largely designed to teach

language. What we are trying to argue is that instead of the *direct* teaching of language to deaf

students, educators should be looking more at the creation of opportunities for *natural* language

learning within the classroom and less at the remedial approaches in language instruction. It is

necessary to make use of deaf children's inherent language learning capabilities. If the social

context of deaf children's lives in the home and the community does not give deaf children

ample opportunities to tap their language learning capabilities, then school should step in and

create the kind of language learning opportunities deaf children are not provided at the home and

in the community. Further, social context of learning is rarely discussed in deaf education and a

possible reason for that is the prevalent perception that the ability to benefit from a social

approach to learning presupposes the child has enough language to begin with. Another reason is

that the teachers especially those with limited signing skills may find it difficult to sustain

extended conversation with the child.

The studies discussed in the chapter collectively reveal the importance of access to

communication-rich environments, argue for their implementation, and give examples of the

impact of providing deaf students with those kind of environments. We have seen from the

vignettes about John and Jill how the home environment can make a huge difference. Both have

hearing parents but how they responded to their children being deaf had an impact on their

language development. John's parents decided on a spoken language approach for John as the

sole communication mode. They most likely may have wanted what they believe to be in John's

best interest and may also want John to learn language the way most children do. Unfortunately

his progress in development of spoken language was slow and arduous, indicating that it was not

a feasible way for him to acquire language. John subsequently fell further and further behind.

Jill's parents, on the other hand, were under a completely different set of circumstances. The

school district where the family lived did not have a program for deaf students because there was

a state school for the deaf in the neighborhood. Jill's mother unwittingly set her daughter on the

course of learning sign language almost immediately. She was told that she needed to learn

signs; she just obliged and managed to learn them. The preschool class (in that state school) that

her daughter went to being full of signing deaf peers and the teacher being a skilled signer were

crucial in keeping Jill constantly engaged in daily communicative interactions and to do it in a

way that pushed the limits on Jill's development of language and cognitive abilities.

Some signing teachers unwittingly but fortuitously teach in a way that opportunities for

students to acquire language skills are provided—that is through the act of communicating and

discussing about the content the teacher is trying to cover with the class. Some teachers utilize

dialogic pedagogy without realizing it and by not being aware of it, they do not know its

potential value and that they could have sought to increase the efficacy of using it as a teaching

methodology. The merits of dialogic pedagogy should be expounded on, its use encouraged, and

its practice more widely promulgated. The formal evaluation of dialogic pedagogy using a tool

such as Instructional Conversation has the potential to help increase the recognition of dialogic

pedagogy as a viable teaching methodology and help individual teachers develop the fine points

of the methodology. Dialogic pedagogy is an effective way to nurture natural language

development without making language learning the main focus. Learning about the content is the

goal of schooling and dialogic pedagogy is an effective approach to help students think,

understand, and learn about that content. After all, as Tharp and Gallimore (1988, p. 111) put it,

"To most truly teach, one must converse; to truly converse is to teach," and we add that teaching

that is steeped in authentic communication is the kind of teaching that results in the acquisition

of language as a by-product of talking and learning about the content.

Instructional programming for deaf students that is informed by sociocultural theories of

language development and learning is in nascent stage of development. SIWI and educational

media-based curriculum like *Peter's Picture* are examples of how instructional innovations for

helping students learn written English are designed on the principles of meaningful and

understandable communication, and that communication needs to take place in the language that

allows students to communicate effectively. Any design of instructional programming for deaf

students needs to involve a thoughtful consideration of how the provision of the opportunities to

communicate may be a part of the mix. Educators need to consider the value of providing deaf

students with an opportunity, not only to express what they want to say or what they are not clear

about in ways that others can understand but also to get information from others that they need in

ways that they can understand. The effort to support students' development of a sign language

such as ASL does not necessarily compete in the use of instructional time with the goals of

helping them learn literacy skills. As a matter of fact, the success of both the SIWI which is for

helping students develop written English skills and *Peter's Picture* which is for helping students

acquire key language and early literacy skills in both ASL and English suggests that using the most accessible language that students are most comfortable with is effective not only in helping them learn written English more efficiently but also in helping bolster their primary language. It is arguably conceivable that instructional programming that is based on authentic communication using whatever modes that are required to maximize communication has the potential to also support language and literacy learning for children for whom spoken language is the primary mode of communication.

In summary, we believe firmly that deaf children do not differ from other children in terms of language learning capabilities. Once deaf children are exposed to language that is fully accessible, they exhibit robust language development (Meier, 1991). The challenge is in making sure there is a goodness of fit between a deaf child and the language in the child's environment. Language needs to be accessible, and there needs to be enough people with whom deaf children are able to communicate.

For too long the prospect of language development of deaf children has been left to chance and largely dictated by the sociocultural world that they are born into. Some are born into the world where language in a visually accessible modality is already present. As a result those children are in an environment where their natural language learning abilities flourish naturally. However, for many deaf children, the prospect of natural language learning is determined by different variables that are there by chance. Some parents may innovate by going ahead and learning sign language or by improvising on the language of the home. Some deaf children have enough residual hearing or are able to benefit from the use of cochlear implants that enable varying levels of development of spoken communication. In short, the scope of language

development that each deaf child undergoes is subject to the extent of access they have to different formats of communication and to the quantity of high quality communicative interaction. The extent of access to understandable communication is the ultimate factor that determines the quality and quantity of language that they are exposed to, and that is what shapes the course of their language development. The most ideal course of action is of course to help families figure how to make communication as accessible as possible for their deaf child and how to ensure that the deaf child is able to participate in various formats of communicative interaction at home. Despite the best efforts in early intervention programs, schools will continue to receive deaf students of all ages whose language development reflects the consequences of limited access to communication. Schools need to seek ways to level the playing field for deaf students' language development by providing enriched opportunities for natural language learning, and a powerful way of doing it is by shifting to instruction that is driven by authentic communication.

It may be a little unusual for school as the place of instruction to consider being a place for natural language learning. Usually opportunities for natural language learning belong to the domain of the home and the community. However, for deaf children school needs to become an extension of the home and the community. Schools have the potential to create the needed personnel and resources to become the place where deaf children are provided an opportunity not only for natural language learning but also for catching up with language development. We need to acknowledge that the best course of language development is to acquire it naturally, and schools will go a long way by instituting pedagogical practices that recognize that deaf children

need to be provided opportunities for natural language development and to ground content area

instruction in authentic and meaningful communication.

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