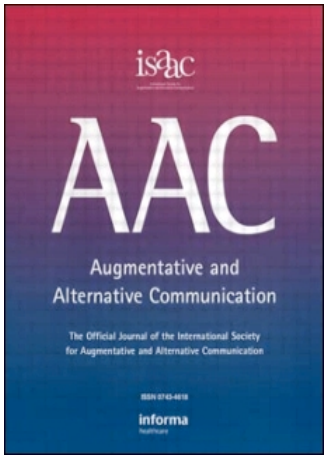

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AAC Augmentative and Alternative Communication

Teaching Facilitators to Support the Communication Skills of an Adult with Severe Cognitive Disabilities: A Case Study

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This paper presents a case study which illustrates the approaches used to teach the facilitators of a 27-year-old woman with severe cognitive disabilities. The goal of this instruction was to encourage the facilitators, that is, the significant others in the client's daily environment, to provide her with access to communication opportunities and to provide her with the support required to ensure her participation. The facilitator instruction involved a general in-service, participation in the assessment and goal setting process, individual instruction in interaction strategies, and follow-up instruction to review goals and procedures. Directions for future research and implications for clinical service are discussed.

KEY WORDS: adults with severe cognitive disabilities, assessment and intervention, augmentative and alternative communication, case study, facilitator instruction

Communication is a dynamic and transactional process: the participants in the interaction influence each other in the course of their exchange. Historically, clinical and research attention has focused on the individual using the augmentative and alternative communication (AAC) system. While the importance of the partner(s) in interaction has not always been recognized, the partner is a major factor in the success or failure of many communicative interactions. The role of the partner is especially critical in interactions involving individuals with severe and profound cognitive disabilities (Romski & Sevcik, 1988). These individuals may require considerable support to communicate effectively with others in their natural environment. As Stillman, Aylmer, and Vandivort (1983) have suggested, often communicative interaction is successful only because the partner involved understands and interprets the intent of the client's actions.

Several studies have documented individual variation in the style and strategies of speaking partners (Beukelman & Yorkston, 1980; Blau, 1986; Light, Collier, & Parnes, 1985). Kraat (1985) has concluded that there is, no doubt, a continuum of competencies across natural speakers: some partners are clearly more successful than others in adapting to the unique requirements of interactions involving individuals using AAC techniques. To date, there has been little attention directed toward the effectivenss of instructing facilitators to improve partner interaction strategies and to thus facilitate interactions with individuals using AAC systems. A single case study by Calculator and Luchko (1983) found that a 30-minute in-service for staff at a residential facility effected some basic changes in staff interaction strategies and resulted in some positive changes in the client's interaction patterns. Culp and Stahlecker (1986) reported on the efficacy of a communication facilitation program which involved not only the children using AAC systems but also their parents. While there is growing recognition that it is often necessary to provide instruction to the facilitators or significant others in the client's life to ensure that they provide the necessary support for the client to communicate effectively in daily interactions, further research is needed to clearly delineate the variables pertinent to facilitator instruction and its impact on client interaction skills.

Since 1979, the Augmentative Communication Service at the Hugh MacMillan Medical Centre in Toronto has advocated a two-pronged model of service delivery which includes direct intervention with the client and instruction for the client's facilitators (Parnes, 1985). Beukelman and Mirenda (1987) discuss the strengths of such a model of service delivery which focuses not only on the development of the client's communication skills, but also on the reduction of societal barriers to communication. As they have suggested, such a model provides: (a) intervention with the client to ensure *communication access* (e.g., the selection and development of communication systems, the development of effective interaction strategies), and (b) intervention with the partners in the environment to ensure *communication opportunities.* The goal of intervention is to maximize opportunities for participation and communication. This model is a particularly useful one for intervention involving individuals with severe cognitive disabilities, for, as Calculator (1988) has noted, these individuals typically

"underfunction" in their natural environments. The caregivers for these individuals often anticipate their needs and wants, thereby giving them few opportunities to communicate. The clients are often "pre-empted" from opportunities to communicate by the facilitators in their environment (Halle, Baer, & Spradlin, 1981).

For the past 3 years, the Augmentative Communication Service has provided services on a consultative basis, through its two-pronged model of intervention, to a community-based program for 35 adults with severe and profound developmental disabilities. This paper presents a case study of a 27-year-old woman, Linda, who currently receives services from this 'community-based program. The primary focus of this case study is to illustrate the approaches used to teach Linda's facilitators to provide communication opportunities and the appropriate client support in a wide range of situations.

Client Description

It is not within the scope of this paper to discuss in detail the assessment of Linda's communication skills; rather, this study highlights the assessment procedures and findings. The procedures used in the assessment of Linda's communication skills were based on those described by Light, McNaughton, and Parnes (1986) and included: (a) gathering background information, (b) observing and describing client interaction skills within naturally occurring contexts, (c) investigating the client's skills within structured eliciting contexts, and (d) setting appropriate goals for client intervention.

Background Information

As a first step in the assessment process, background information was gathered by the clinician by reviewing past reports and by completing a questionnaire regarding Linda's communication status with her primary facilitators. At the time of the assessment, Linda (chronological age: 27 years, 10 months) had a diagnosis of severe mental retardation as a result of hypoxia at birth, moderate spastic quadriparesis, and scoliosis. There were no reports of seizure activity and she was not receiving medication. She was ambulatory with the aid of a walker. Her fine motor skills were limited, but were functional for many daily activities. She was able to dress and feed herself with minimal assistance and was independent in toileting. A screening of Linda's visual abilities did not reveal any significant problems in this area. Audiological assessment indicated normal acuity in her right ear and a mild to moderate hearing loss in her left ear. Her facilitators reported that she typically accommodated for this loss by turning her head toward the source of sound. Linda understood and demonstrated the functional use of familiar objects (e.g., she used a comb to comb her hair), but she was unable to match these objects to photographs or line drawings of these items. She became excited at the appearance of familiar people, but showed little interest in photographs of these individuals. If required to complete a nonpreferred activity, Linda often became upset and at times demonstrated aggressive behaviors such as hitting, biting, scratching, and screaming.

Linda had not previously received a comprehensive communication assessment. Staff reported that they believed Linda understood some speech (e.g., simple instructions within routine situations) but were unsure of her overall comprehension skills. Staff also reported that Linda's expressive communication skills were poor, and she rarely initiated interaction.

Linda had lived at home until the age of 13, at which time her parents were unable to care for her any longer. She then moved to an institutional setting in which she received minimal daily programming. A few months prior to the assessment, after 14 years within the institution, she moved to a group home setting and began participating in a day program operated by a community-based agency. Her individualized program plan in these two settings included the following goals: (a) to increase independence in eating, grooming, and dressing; (b) to promote better use of unstructured time; (c) to improve muscle tone and promote better walking patterns; and (d) to eliminate inappropriate tantruming behaviors.

Observations within Naturally Occurring Contexts

Formal observation and on-line coding of Linda's communicative interaction took place within four naturally occurring contexts (e.g., a food preparation activity, a recreational activity). These observations were conducted on different days within a variety of tasks to ensure that a representative sample of Linda's communicative behavior was obtained. Several of these interactions were videotaped to allow for repeated viewings; some of these videotapes were used at a later date during the instructional sessions with facilitators.

During these observation periods, Linda demonstrated the following skills: she reached out to accept items when offered to her, and she requested attention by vocalizing with appropriate intonation, but only if the desired person was within close proximity. (See Table 1 for a summary of Linda's communication skills observed within the natural environment.) For the most part, Linda assumed a passive role in her environment. She was seldom expected or given the opportunity to communicate by her facilitators. For example, during the lo-minute food preparation activity (identified by the facilitator as a context in which Linda would be motivated to express needs and wants), Linda was given no opportunities to request objects and activities, nor did she initiate any requests. Staff reported that the passive behavior observed was typical for Linda.

Eliciting Contexts

In order to further explore Linda's capabilities, the clinician then set up a series of eliciting contexts designed to provide Linda with situations in which there

TABLE 1: **Communicative Behaviors Observed in Natural and Elicited Contexts**

Communicative Behavior	Context	
	Natural	Elicited
Acceptance of object offered	+	+
Turn taking within an activity	-	+
Protest/rejection	-	+
Communication of choices	-	+
Greeting/closing	-	+
Request for assistance	-	+
Request for object/action		
Within immediate environment	-	+
Outside immediate environment	-	-
Request for attention		
In close proximity	+	+
At a distance	-	+
Providing information	-	-
Requesting information	-	-

Note. The "communicatwe" behaviors listed above include basic preintentional behaviors as well as more explicit. Intentional communicative behaviors. The communicative behaviors are coded as follows: behaviors which were observed are coded with a "+," and behaviors that were not observed are coded with a "-"

was ample opportunity and the clear necessity for her to make use of previously unobserved communicative behaviors. The tasks were designed to replicate communication demands which might be encountered in daily experiences by Linda.

During the structured eliciting contexts, Linda demonstrated the following skills: (a) she accepted an object presented to her; (b), she demonstrated the ability to take turns within a structured activity (e.g., playing catch); (c) she protested by means of vocalizing or pushing items away; (d) she communicated a choice between two items presented to her by her partner by reaching for and grasping the preferred item; (e) she responded to greetings by returning a handshake and vocalizing; (f) she requested assistance by holding up an item and vocalizing; (g) she requested objects and actions within the immediate environment by vocalizing and pointing at the desired item; and (h) she used an appropriate gesture and vocalization to request the attention of a partner at a distance, following a prompt by the clinician.

Linda requested assistance and requested objects within her environment infrequently and only within situations structured by a facilitator. Linda was not observed to (a) request objects and activities outside the immediate environment, (b) comment or provide information, or (c) request information (Table 1).

Linda expressed herself through eye gaze, vocalization, reaching for desired items, and pointing. She was unable to imitate vocal sounds upon request. During trial learning sessions with the clinician, she imitated a few simple signs and gestures within meaningful contexts (e.g., an approximation of the sign for "more," touching her ear to indicate "radio").

Linda demonstrated the following receptive skills: (a) she turned and made eye contact when her name was called; (b) she followed routine one step instructions when accompanied by contextual and gestural cues (e.g., "Hang up your coat"); (c) she was unable to identify familiar items in response to the verbal label (e.g., "Show me coat"); (d) she was unable to follow unfamiliar one step instructions without contextual or gestural cues (e.g., "Stir the soup"); and (e) she was unable to respond to simple questions (e.g., "Where is Tom?").

Although Linda had demonstrated the capabilities outlined above within the eliciting contexts, these skills were rarely observed in everyday interaction. She was seldom given opportunities to communicate or provided with the support she required. The primary focus of the initial intervention, therefore, was to teach Linda's facilitators to provide the opportunities and the support she required to communicate effectively within her daily environment.

Facilitator Instruction

Linda's facilitators included the 15 staff within her day program and the 10 group home staff. The staff at her day program and group home had various educational backgrounds, including high school education, community college degrees in programming for individuals with disabilities, and undergraduate degrees in psychology or nursing. The majority of the staff had less than 18 months experience working with individuals with severe disabilities, and most had no prior experience working with individuals who made use of AAC techniques.

The goal in teaching the facilitators was to help them develop the knowledge and the skills necessary to support the client's communicative development, that is, to "empower" them to assume primary responsibility for Linda's communication program. From the group of facilitators, two individuals were identified by the administrators at the community-based program to act as Linda's "primary" facilitators: her primary staff at the day program and her primary staff at the group home.

These two individuals were active participants in the assessment process and in the development of Linda's communication program. They assumed responsibility for the implementation of the program on a daily basis. They also became resources for other staff concerning Linda's program, and were responsible for sharing the programming recommendations and documentation with the appropriate staff.

Instruction for the facilitators involved four steps: (a) a general in-service for all staff at the group home and day program, (b) participation of the primary facilitators in the assessment and goal setting process, (c) individual instruction for the two primary facilitators, and (d) a follow-up instructional session for all 25 staff to review the communication goals of the clients that they were involved with. The instruction, including a preparatory and follow-up session, took a total of 9 hours during 7 sessions over a 14 month period.[1] A summary of facil-

[1]In considering the assessment-intervention time frame, it should be noted that Linda was one of 32 clients being followed within the community-based program by the clinician during this 14-month period. It should also be noted that changes in staffing at the program occurred on several occasions; these changes no doubt affected the rate of Linda's progress.

TABLE 2: **Facilitator Participation in Assessment and intervention Activities**

Activity	Facilitator Participation	Time Period	Number of Sessions	Total Time Required of Facilitator
1. Group in-service	Discuss team approach Discuss assessment goals and procedures	March 1986	1	2.5 hours
2. Assessment and goal setting activities		August/September 1986	3	3 hours
Gather background information	Complete questionnaire with clinician			
Observe and describe client	Interact with client in natural contexts			
Investigate client's skills	Assist in eliciting contexts			
Set appropriate goals for client	Discuss goals for intervention			
3. Individual facilitator instruction	Review client goals and facilitator support strategies Observe clinician interact with client Interact with client while clinician provides feedback	October 1986	2	1.5 hours
4. Follow-up in-service	Review goals and progress of clients	April 1987	1	2 hours
Total			7	9

itator involvement during this time period is provided in Table 2.

Group In-service

All staff at the group home and day program attended a 2½ hour in-service prior to the communication assessments for Linda and the other clients. This in-service was conducted in a small group discussion involving 10 to 12 staff. A series of in-service sessions were held to accommodate all staff. The goals of the in-service were to: (a) provide general information about the services provided by the Augmentative Communication Service, (b) establish a positive working relationship with the staff through discussion and sharing of goals and intervention philosophies, (c) introduce the concept of a team approach to communication assessment and discuss the role of staff as participants in this team, and (d) provide information about the assessment and goal setting processes so as to encourage staff involvement in the assessment and intervention activities.

Following each in-service, staff who had attended were asked to complete an evaluation form, on which they assessed the quality and usefulness of the in-service. A review of these evaluation forms indicated that the staff thought that the material presented was of value, and had increased their interest in developing the communication skills of the clients.

Participation in the Assessment and Goal Setting Process

The participation of Linda's primary facilitators in all aspects of the assessment and goal setting processes ensured that they were informed and involved from the outset. The goal was that they see themselves as qualified and necessary participants in the communication program developed. Each facilitator contributed valuable background information regarding Linda's needs and skills, interacted with Linda in a variety of natural settings while the clinician observed, and assisted the clinician as he interacted with Linda within the various eliciting contexts (Table 2).

Following the assessment process, the team (i.e., the clinician and Linda's two primary facilitators) met to discuss her current status and to set goals for intervention. Videotapes of the assessment were reviewed as required by the team to ensure that Linda's current communication status was agreed upon. Linda demonstrated a number of communicative skills during the assessment which she rarely had the opportunity or support to utilize in her natural environment. The team agreed by informal consensus that "requesting an object/action within the immediate environment" should be targeted as one of the priorities for intervention since it would afford Linda more opportunity to participate actively within her environment and to have more control over her daily activities.

The team then identified opportunities for Linda to make use of the targeted communicative function within daily routines. (See Table 3 for a listing of the opportunities for Linda to request objects and activities.) These opportunities were documented on individualized goal sheets developed by Light et al. (1986). The objects to be used in each situation were also specified. The clinician emphasized that the opportunities identified should be thought of as a starting point, and that the facilitators should consider additional opportunities throughout the day for Linda to use the targeted functions to ensure that she generalized the skills across partners and environments.

The clinician and facilitators also discussed the support necessary for Linda to make use of the targeted functions. Because of Linda's limited comprehension of spoken language, it was recommended that staff use "augmented input," that is, speech augmented by other AAC components (Romski & Sevcik, 1988). Staff were instructed to use appropriate facial expression and gestures to clearly mark an opportunity for Linda to participate, and to always physically present or point to items that were offered to Linda as choices. The facilitator support strategies, including the prompting hierarchy for encouraging Linda's participation, were also recorded on the goal sheets to ensure appropriate and consistent expectations across facilitators and environments. (See Table 4 for the facilitator support strategies.)

TABLE 3: **Opportunities for Linda to Request Objects and Activities**

	Opportunities	Means of Communication	Vocabulary[a]
1.	Selecting preferred condiments at mealtime	Point and vocalize Sign	salt, pepper, ketchup more, finished
2.	Selecting free time activities	Point and vocalize Sign	walker, books, radio more, finished
3.	Selecting preferred clothing in the morning	Point and vocalize	various clothing items
4.	Selecting activities in gym, physiotherapy	Point and vocalize Sign	rocker, swings, more, finished
5.	Selecting tasks in food preparation activity	Point and vocalize Sign	various tasks (e.g., stirring, cutting) more. finished

[a] The vocabulary Items. "more" and "finished". are presented in sign language. Other items are indicated by Linda by pointing and vocalizing.

TABLE 4: **Facilitator Support for Providing Linda with Opportunities to Request Objects and Activities**

1.	Focus your attention on Linda and pause.
2.	If Linda vocalizes and points at what she wants, respond immediately by providing the desired item. Label the item clearly and model the sign, as appropriate.
3.	If she doesn't request an item or activity, ask Linda an open-ended question (e.g., "What do you want?"), using appropriate facial expression and body language.
4.	If Linda vocalizes and points, then respond as above.
5.	If Linda doesn't make a request, offer 2 options by pointing at and labeling two items in the immediate environment; pause.
6.	If Linda indicates a preference, respond as above. If Linda doesn't indicate a preference, repeat options.
7	If Linda still doesn't indicate a preference, prompt her by touching her arm, and pause.
9.	If Linda still doesn't indicate a preference, model "no" by shaking your head from side to side, and withdraw.

Note. In some situations. Linda may need to request attention before king given an opportunity to request an object or activity

The primary facilitators spent approximately 3 hours involved in the assessment and goal setting processes over three sessions (Table 2). Unfortunately, one of Linda's primary facilitators left during the initial implementation of the program. However, the communication program was easily transferred to Linda's new facilitator because adequate documentation and support were available.

Individual Facilitator Instruction

After establishing appropriate goals for Linda, the clinician then taught the primary facilitators to identify opportunities for communication and to provide the appropriate level of support required by Linda. The skills and needs of the facilitators were considered on an individual basis, and instruction was provided accordingly. As noted in Table 2, the two individual instructional sessions took a total of approximately 1½ hours and included the following activities:

1. The clinician reviewed the targeted goals for Linda with the facilitators.

2. The clinician interacted with Linda to demonstrate the levels of facilitator support required as the facilitators observed the interaction and asked questions to clarify recommendations.

3. The facilitators interacted with Linda and practiced the targeted strategies as the clinician observed these interactions and coached the facilitators as required.

The initial instruction took place in a quiet setting to permit the facilitators and Linda to focus on the communicative exchange without distractions. After several successful exchanges in a distraction-free environment, the facilitators, Linda, and the clinician returned to the typical program setting. Here, the clinician observed the facilitators offering Linda communication opportunities within the natural environment. The success of these communicative exchanges verified that the expectations for Linda were appropriate. Following the individual instructional sessions, the facilitators practiced and developed their skills with Linda as meaningful opportunities arose.

Following the assessment and intervention activities as described above, the clinician and facilitators worked cooperatively to implement the communication program outlined for Linda within her natural environment. The primary facilitators assumed responsibility for the program on a daily basis. Once the primary facilitators were confident of their abilities to support Linda's communicative development (approximately 3 weeks after the initial training), they assumed responsibility for sharing the goals and program with the other staff in the group home and day program, and for instructing other staff members in the appropriate support strategies. The developmental center and group home supervisor agreed to monitor the implementation of the program by the primary facilitators. The clinician took responsibility for monitoring Linda's progress through regular observation of Linda and her facilitators in naturally occurring contexts and informal discussion with staff on an incidental basis (approximately twice monthly). At these times the clinician observed Linda's progress and provided encouragement and suggestions to the facilitators as to how they could better support Linda's communicative development. It was recommended that

staff maintain weekly logs documenting opportunities for communication presented to Linda and her responses. Unfortunately, due to staffing shortages and demands, staff reported that although the program was implemented on a regular basis, data were collected only on an intermittent basis. Progress Reviews were scheduled annually to formally discuss all of Linda's goals in the different domains and to review her progress.

Follow-Up

Since there is some evidence to suggest that the maintenance of programs by facilitators may drop off several months after instruction (Halle et al., 1981) a follow-up facilitator instructional session was held for the staff at both the group home and the day program approximately 6 months after the initial assessment. This 2-hour instructional session reviewed the goals, opportunities, and facilitator support strategies required by a small group of clients within those settings, including Linda. Videotapes were used to document changes within the client's participation and communication, and to encourage staff to carry on with the programs. Staff reported that they were impressed by the observable changes in client behavior and that they were interested in continuing and developing the intervention program.

Approximately 18 months after the initial assessment, Linda's facilitators reported that Linda had met the targeted goals and that the staff working with Linda felt confident in their abilities to provide her with appropriate support. They therefore requested a follow-up assessment to establish new goals for client intervention and facilitator instruction. Because of staff turnover, Linda's primary facilitator had delayed a request for a follow-up assessment (and targeting of new goals) until such time as staff could familiarize themselves with Linda's existing program.

As a first step in the review process, the clinician observed and coded Linda's communicative interaction on several occasions within the ongoing daily routine. Observations suggested that Linda's facilitators were providing her with more opportunities to communicate and that Linda was assuming a more active role in her daily interactions. For example, during one of the contexts observed (a food preparation activity), Linda's primary facilitator was observed to offer Linda eight structured opportunities to request objects and activities within a lo-minute period; Linda participated by requesting an item (by reaching or pointing) on all eight occasions. It is interesting to note that, in a similar situation observed prior to intervention, Linda was offered no opportunities to request objects and activities and was not observed to initiate any requests (Table 5). Although these data suggest significant improvements in Linda's facilitators' skills and in Linda's participation in daily interactions, they should be interpreted with care. The data recorded were structured clinical observations and do not represent the results of a controlled research study.

TABLE 5: **Opportunities to Request Objects and Activities Observed in Natural Contexts Pre- and Postintervention**

	Preintervention	Postintervention
Opportunities provided by facilitator	0	8
Requests communicated by Linda	0	8

Note. Both observations were made for 10 minutes during a food preparation activity.

Future Directions

This case study describes a systematic approach for teaching staff to facilitate the communicative interaction skills of an adult with severe cognitive disabilities. Through the use of a variety of teaching formats, the facilitators developed the skills to provide Linda with access to communication opportunities and to provide her with the appropriate support to ensure her participation. Clinical observation contributed anecdotal evidence that, following the instructional activities provided for facilitators, Linda was provided with more opportunities to communicate and was participating more actively within her environment.

To date, few of the variables related to the successful implementation of AAC systems with adults with severe intellectual impairments have been identified (Romski &, Sevcik, 1988). However, the participation of facilitators as an integral part of the assessment and intervention team appears to provide an optimistic route for meeting the communication needs of individuals with severe cognitive disabilities. Although this case suggests the effectiveness of teaching front-line staff to facilitate the development of their client's communication skills, further research using a more rigorous design is required to explore the issues involved in providing instruction for facilitators. Specifically, research is required to address the following issues:

- the efficacy of instruction for facilitators as a means to facilitate client communication skills;
- the cost effectiveness and efficiency of a "facilitator" model of service delivery;
- the effect of various facilitator strategies (e.g., pausing, modeling) on client communicative behaviors;
- the generalization of strategies by facilitators and the maintenance of these strategies over time;
- the optimal approaches to teaching facilitators new skills (e.g., small group, individual instruction);
- the impact of facilitator variables (e.g., socioeconomic factors, education, experience) on the success of instructional approaches; and
- the problem of staff turnover inherent in the facilitator model of service delivery and potential solutions to this problem (e.g., documentation, providing instruction for "resource" staff).

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