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A Naturalistic Approach to the Validation of Facilitated Communication[1]

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By manipulating the facilitator's knowledge of a student's just-completed activity, facilitated communication ability and the extent of guiding were assessed. Seven students diagnosed with mental retardation and their facilitators participated in the study. All 7 students were purported at the start of the study to be communicating via facilitation at levels far above what was previously thought possible given their level of intellectual ability. A large degree of facilitator guiding was revealed for each of the 4 facilitators. Minimal evidence of facilitation was found for 4 of the 7 students. One of the 7 students demonstrated validated facilitated communication on two trials.

Facilitated communication (FC) is a technique involving a trained facilitator who provides hands-on support to an individual, while that individual communicates through pointing to letters or pictures or by typing. FC was originally developed in Australia by Crossley (Cummins & Prior, 1992) and has since been implemented in the United States, most notably by Biklen (1990) and his associates (Biklen et al., 1991; Biklen & Schubert, 1991). These initial reports of FC with people who were diagnosed with autism and/or mental retardation have claimed that students were communicating at a level previously thought to be beyond their intellectual ability. As a result, the use of FC has become widespread (Green, 1992).

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A major controversy that has developed pertains to the role of the facilitator in the communicative process. Detractors of FC have stated that it is actually the facilitator who is unknowingly guiding selections in a "Ouija board" fashion (Wolfensberger, 1992). Controlled research to date has overwhelmingly supported the presence of guiding in FC and has failed to find instances of valid communication. Using a validation procedure in which the same or different pictures were simultaneously presented to the individual and the facilitator (Wheeler, Jacobson, Paglieri, & Schwartz, 1993), it was found that when both people saw different pictures, individuals were able to label pictures shown to the facilitator but not label their own pictures. Since participants were blocked from seeing the other person's picture by a barrier, it was concluded that the facilitators were determining what was being typed. Two other studies (Hudson, Melita, & Arnold, 1993; Moore, Donovan, Hudson, Dykstra, & Lawrence, 1993) manipulated the participant's knowledge through the use of headphones. Results from both studies revealed the presence of guiding and found no evidence for individually authored communication. In a follow-up study (Moore, Donovan, & Hudson, 1993), five people were assessed for facilitated communication by engaging individuals in conversation with their direct-care worker about predetermined topics. The facilitator was unable to hear the conversation nor had knowledge of the specific topic. Again, no evidence of self-authored communication was found.

A criticism of current validation studies is that artificial conditions are imposed on the FC process (Kurtz, 1992). Biklen (1992) has also stated that true FC competency will not be evidenced when the testing situation involves procedures that differ from the naturalistic setting of FC or imposes artificial constraints on the FC process. The present study is designed to assess the FC abilities of seven students who were identified as using FC to communicate at levels previously thought to be beyond their intellectual abilities. The study assesses the student's FC competence and the facilitators propensity to guide. Assessment takes place in a naturalistic setting with no impingement on the FC process. This is accomplished by having a student experience familiar everyday events while manipulating the facilitator's knowledge of these events.

METHOD

Subjects

Seven students identified as communicating via facilitation at levels previously thought to be above their intellectual ability and who had

purportedly produced FC at conversational levels participated in the study. None of the students evidenced independent typing skills that resulted in discernible English. All students attended an approved private school for students with special education needs. Each student was paired with a familiar facilitator with whom FC had been successfully accomplished on an ongoing basis. All facilitators were employees of the school. A description of each student is presented below:

Student 1. This person is a 13-year-old male living with his mother. Diagnoses include profound sensorineural bilateral hearing loss and severe mental retardation. Previous assessments indicated no expressive verbal skills with a signing vocabulary of 25 manual signs. Receptive language skills include the ability to understand basic signed classroom directions. FC commenced 5 months prior to the initiation of this study and involved either a typewriter facsimile board or an electric typewriter. FC was accomplished through support at the level of the palm or wrist. The facilitator identified as most familiar with this student participated in the study.

Student 2. This person is a 16-year-old male living at home with his parents. Diagnoses include profound sensorineural bilateral hearing loss, moderate mental retardation, attention deficit disorder with hyperactivity, and pervasive developmental disorder. Previous assessments indicated no expressive verbal skills. Expressive language abilities consist of more than 50 single signs. Receptive language abilities include identification of common objects signed to him and following signed directions. FC commenced 13 months prior to the study and involved the use of an electric typewriter, Apple IIe computer, and a keyboard facsimile. FC was accomplished through support at the level of the palm or wrist. This student had multiple facilitators including his family members. For the purpose of this study the facilitator most familiar with him participated.

Student 3. This person is a 14-year-old female living with her mother. Diagnoses include attention deficit hyperactivity disorder, pervasive developmental disorder, severe to profound sensorineural hearing loss, and unspecified mental retardation. Previous assessments indicated no verbal expressive abilities. Expressive language skills include the ability to use gestures and multiple-word (two to three) signed utterances. Receptive language skills include the ability to follow signed directions and to identify objects in response to "What" questions. FC commenced 6 months prior to the initiation of this study and involved the use of an electric typewriter, Apple IIe computer, and keyboard facsimile. FC was accomplished through support provided at the level of the palm or wrist. The facilitator identified as most familiar with this student participated in this study.

Student 4. This person is a 14-year-old male living at home with his mother. Diagnoses include moderate mental retardation and mild low-frequency conductive hearing loss in the right ear. Previous assessments indicated verbal expressive abilities at the level of rote phrases with a signing vocabulary of 25 signs. Receptive language skills include the ability to follow simple directions and identify common nouns and verbs. FC was initiated 6 months prior to the start of the study and involved the use of an electric typewriter and an Apple IIe computer. FC was accomplished through support provided at the level of the palm. The facilitator most familiar with this student initially participated. After eight trials the facilitator was changed due to an injury and a second facilitator familiar with this student completed the remaining trials.

Student 5. This person is a 16-year-old male living at a private residential facility. Diagnoses include autism and moderate mental retardation. Previous assessments indicated that expressive language skills include the ability to formulate simple "Wh" questions, speak in simple sentences with spontaneous speech often perseverative. Receptive language ability includes comprehension of simple questions and directions. FC started 13 months prior to the initiation of this study and involved an electric typewriter, Apple IIe computer, a spell board arranged in alphabetical order and a *Crestalk* (Crestwood Co., 1993), an augmentative communication device. FC was accomplished through support at the level of the palm. The facilitator identified as most familiar with this student participated.

Student 6. This person is a 14-year-old female living at a private residential facility. Diagnoses include conduct disorder, pervasive developmental disorder, and severe mental retardation. Previous assessments indicated verbal expressive language skills at a level of two- to three-word sentences that are perserverative in nature. Receptive language included the ability to follow two-step directions, point to objects and action pictures, and respond appropriately to prepositions. FC was initiated 6 months prior to the start of the study and involved an electric typewriter and an Apple IIe computer. FC was accomplished through support at the level of the palm. The facilitator most familiar with this student started and completed six trials. A second facilitator familiar with the student completed the remaining trials.

Student 7. This person is a 13-year-old male living at home with his mother. Diagnoses include attention deficit hyperactive disorder and moderate mental retardation. Previous assessments indicated that he is essentially nonverbal but is able to produce some approximations of single words with poor intelligibility. Expressive communication includes a signing vocabulary of at least 25 words and the ability to point to pictures on a topic board (picture augmentative aid specific to an activity). Receptive language skills include the ability to understand simple directions presented in total

communication (speech and signs). FC commenced 6 months prior to the initiation of this study and involved the use of an electric typewriter or keyboard facsimile. This student had multiple facilitators including family members. For this study, the facilitator most familiar with him participated. FC was accomplished by holding his long-sleeved shirt cuff. However, when long sleeves were not worn, support was at the level of the palm.

Procedure

All participants were informed that a study designed to validate FC and assess the presence or absence of guiding was being undertaken. In the initial stages of developing a validation study of FC, the facilitators voiced concern that they did not wish to include the artificial procedures that were included in many previous studies. To conduct this investigation in as naturalistic an environment as possible, a list of activities and places in the school setting was developed. This list included domestic and leisure activities that are typical of school curricula for these students. Examples of these activities are vacuuming in a living skills area, buying an item from a vending machine, reading a book at the library, painting wood in a project center, and playing ball in the gymnasium. A total of 21 "agendas" including both activity and location were developed. Each agenda was written on an index card and placed in a manila envelope. Participants were informed that during the study the facilitator may or may not be aware of the true agenda. Consent was obtained from the participants and from the parent or legal guardian of the students.

The basic procedure was for the student and an escort (a familiar staff person from the student's classroom) to engage in the agenda in the manila envelope, return to their classroom, and then for the student to describe the experience through FC. FC was performed by the student's facilitator in the same manner as was most common prior to the study. The facilitator was free to use any available means of expressive communication (speech, signs, written text, etc.) to elicit the location and activity from the student through FC. Present in the classroom during FC were the student, the facilitator, other classmates, and an experimenter who noted verbalizations. The escort was not present in the room during FC to eliminate possible cuing. The manila envelopes given to the students and their escorts included photographs of the target location and the activity, the name of the activity and the location written in large print on separate cards, and the agenda written on a single card. Verbal, signed, and written input regarding the agendas were given to the students by the escorts. The visual aids and varied input were provided to the student to ensure that each agenda was communicated as thoroughly as possible to each student.

Students initially completed an unscored agenda (go outside and pick flowers) known to the facilitators in order to familiarize all participants with the procedure. Following this practice trial, six of the seven students participated in two scored agendas, one in the morning and one in the afternoon for 8 school days (on the eighth day students only completed one agenda) for a total of 15 agendas. Student 1 completed three agendas on the 7th day due to schedule conflicts; each agenda was separated by 2 hours. For a specific student the order of and the specific 15 agendas were randomly determined.

At the start of each session the facilitator was also given a manila envelope. That envelope contained nothing (naive facilitator), or the same agenda as the student (informed facilitator), or an agenda different than the student completed (misguided facilitator). These three conditions were randomly distributed across the 15 trials, 5 trials in each condition. The 5 remaining agendas served as false agendas for each facilitator and were never experienced by that particular student during the course of the study. Facilitators were unaware as to which agendas were true or false. It is important to note that from the student's perspective all 15 trials were run identically.

A transcript of each student's FC output was given to two independent judges familiar with reading FC text and naive to the conditions of the study. Each judge was instructed to independently score each trial's FC output for the presence of the agenda's location and activity. In the misguided facilitator condition each trial's output was scored twice, once for the actual agenda experienced by the student and once for the false agenda given to the facilitator. Scoring consisted of 0 (absence of place and activity), 1 (presence of either place or activity), and 2 (presence of both place and activity). If the judges disagreed, the average of the two scores was used. Judges were instructed to be liberal in scoring and to give credit for related or associated responses. For example, if the text included "sofa" and the targeted place was "living room," one point was scored for correct place.

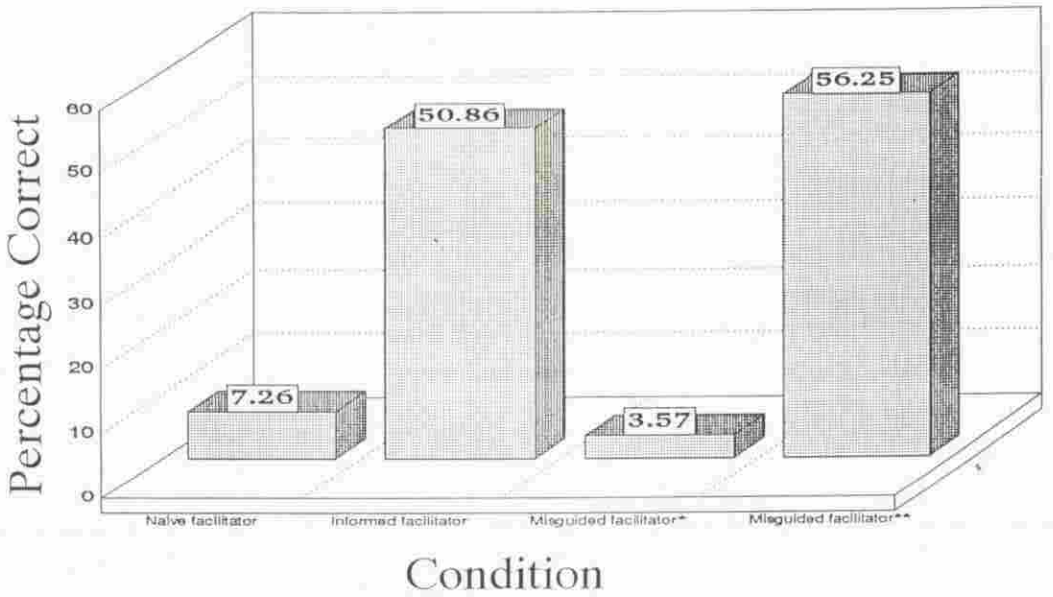
RESULTS

To assess scoring reliability, the two judges' scores for each trial were correlated. This resulted in a correlation coefficient of .982; of 115 scoring opportunities the judges disagreed on three occasions. Six of the seven students participated in all 15 trials. Student 5 had eight trials discarded from scoring, due to verbalizations on his part that informed the facilitator of his agenda. Student 6 chose not to continue after the completion of six trials.

Group performance was examined for percentage of correct communications. Figure 1 presents the performance of all individuals for each condition. As can be seen from the figure, group performance is greatly enhanced when the facilitator is aware of the agenda. Comparing the naive facilitator condition to the informed facilitator condition results in an increase in performance from 7.26% correct to 50.86% correct. This increase could only be due to the knowledge of the agenda by the facilitator. The misguided facilitator condition was scored twice; once for the presence of the actually experienced agenda and once for the false agenda. As can also be seen from Figure 1, students typed predominantly what was in the facilitator's envelope and not what was actually experienced. Since the content of the facilitators' envelopes was unknown to the students, a large amount of facilitator guiding and influence on student communication is substantiated. True communication is also present. In both the naive and misguided conditions, students typed correct information.

Table I presents the performance for each student in each condition. Scores were higher for information known only to the facilitator than for information known only to the student (comparing the naive and informed conditions). Scores were also higher for information known only to the facilitator than for agendas just experienced by the student (a comparison of the two scores for the misguided condition). Three students demonstrated no FC for information unknown to the facilitator (zero correct in both the naive and misguided [actual agenda] conditions).

Four of the seven students did communicate information unknown to the facilitator. Student 3 typed "same" in response to a question regarding place from the facilitator. This was scored as correct by one judge and incorrect by the other judge. This student also typed "sofa and chairs" to indicate the place where she went. Since she went to a life skills center where these items were present, both judges scored this as correct. Student 4 typed "ate" after experiencing an activity in which he made and ate a sandwich. Student 5 typed "MRSKRBOOK" after experiencing an activity during which he went to the student library. Student 7 typed "wentkitchen" after experiencing an activity during which he put dishes into a dishwasher in a kitchen area of the life skills center. This same student typed "weatvendingmachineslletmepoutdollarinlotoforidlfldl" and "foritos" after experiencing an activity during which he went to the vending machine, put a dollar in the machine, and purchased Fritos.



* Actual agenda scored as correct

** False agenda scored as correct

Fig. 1. Total percentage of correct information communicated in each condition for seven students.

Table I. Individual Performance at Each Condition (Actual/Possible)

	Facilitator			
Student	Naive	Informed	Misguided[a]	Misguided[b]
1	0/10	8/10	0/10	8/10
2	0/10	6/10	0/10	9.5/10
3	0.5/10	5.5/10	1/10	4/10
4	0/10	0/10	1/10	2/10
5	1/8	2/4	0/2	2/2
6	0/4	0/4	0/4	2/4
7	3/10	8/10	0/10	4/10

[a] Actual agenda scored as correct.
[b] False agenda scored as correct.

At the conclusion of the study each facilitator was individually presented the results for each condition for the students with whom they participated. Group data were also presented to each facilitator. In these meetings the facilitators were surprised at the amount of guiding that was present in the results. Facilitators also evidenced concern that the students did not demonstrate a larger degree of self-authorship. Two facilitators stated that they themselves had questioned prior to the study if they were in fact guiding. One facilitator indicated that in certain instructional situations she would physically prompt the student to the correct letter as a teaching strategy.

DISCUSSION

The purpose of this study was to quantitatively assess valid student FC authorship and the presence of facilitator guiding through as naturalistic a procedure as possible. The results reveal a large degree of guiding by each facilitator. For some students there is evidence of authorship for information unknown to the facilitator.

The large guiding factor evidenced in the study is in agreement with previous researchers (Moore et al., 1993; Wheeler, Jacobson, Paglieri, & Schwartz, 1993). Given the facilitator's reactions to the results, there is no reason to believe that the guiding was intentional.

The evidence for student-authored communication of information unknown to the facilitator is in marked contrast to other scientific investigations of FC. The reason for this finding may be the naturalistic and familiar nature of the testing procedure. One could argue that since there were a finite number of places and activities that could serve as agendas in this school setting, it is possible that some of the communications that appear self-authored may be due to "educated guiding" on the part of the facilitators. The facilitators were very familiar with the activities and places that could be experienced in the overall school setting. We feel that the validated communications of Students 4, 5, and 7 argue against this possibility, given the close match between the typed information and the actually experienced agenda (naive and misguided [actual agenda] conditions).

The results of this study support the need for the validation of FC. Validation should become a routine part of the FC protocol. We are in agreement with Biklen (1993) that validation of FC should be naturalistic and unobtrusive. We disagree with him however, that such validation should not be quantitative (Biklen, 1992). It is felt that the validation procedure presented in this study, while being quantitative, meets the criteria for being unobtrusive and naturalistic while still maintaining a sufficient degree of scientific rigor.

Since the results of this study do indicate validated communication for some students and not others, future research investigating the variables that may predict which individuals are best suited to the FC approach is needed. Such variables not addressed in the current study include motor abilities, language comprehension, and reading comprehension skills. Although a student may evidence validated FC it does not necessarily follow that FC is the best or only means of communication for that individual. A full range of communicative forms and functions still needs to be considered on an individual basis for both diagnostic and instructional purposes.

As Wheeler et al. (1992, 1993) have previously suggested, the large degree of facilitator guiding raises serious concerns with regard to the human rights of individuals utilizing FC. Steps must be taken to ensure that communications are free from guiding and are in fact authored by the individual, as these communications can have a profound effect on the individual's life decisions. The large presence of guiding found in this study is particularly troublesome in the case of Student 7, as it appears that his communications may not only have been influenced but also inhibited. This student's worst performance was in the misguided (actual agenda) condition; the facilitator being aware of false information may have actually inhibited this student from communicating correct information. Research is desperately needed to develop techniques for training facilitators in ways to eliminate and avoid guiding.

As Biklen (1993) has stated, the ultimate validation for FC is total independence. We recommend that all FC programs include emphasis on independent skill development, with the individual's level of skill independence for each level of FC complexity achieved being routinely determined. Once it is determined that an individual is independent for a certain task, support would no longer be necessary for that task. Assumptions that the individual cannot perform some communicative tasks independently may not be correct. Research is needed that compares FC procedures that start with an assumption of independence and then introduces physical support as needed to FC procedures that start with some level of physical support which is then faded to independence.

REFERENCES

Biklen, D. (1990). Communication unbound: Autism and praxis. *Harvard Educational Review, 60,* 291-314.

Biklen, D. (1992). Typing to talk: Facilitated communication. *American Journal of Speech and Language Pathology, 2,* 15-17, 21-22.

Biklen, D. (1993). *Communication unbound.* New York: Teachers College Press.

Biklen, D., Morton, M. W., Saha, S. N., Duncan, J., Gold, D., Hardardottir, M., Karna, E., O'Connor, S., & Rao, S. (1991). "I AMN NOT A UTISTIVC OH THJE TYP" ("I'm not autistic on the typewriter"). *Disability, Handicap & Society, 6,* 161-180.

Biklen, D., & Schubert, A. (1991). New words: The communication of students with autism. *Remedial and Special Education, 12,* 46-57.

The Crestwood Company. (1993). *Crestalk.* Milwaukee, WI.

Cummins, R. A., & Prior, M. P. (1992). Autism and assisted communication: A response to Biklen. *Harvard Educational Review, 62,* 228-241.

Green, G. (1992, October). *Facilitated communication: Scientific and ethical issues.* Paper presented at the Shriver Center UAP Research Colloquium, Waltham, MA.

Hudson, A., Melita, B., & Arnold, N. (1993). Brief report: A case study assessing the validity of facilitated communication. *Journal of Autism and Developmental Disorders, 23,* 165-173.

Kurtz, A. (1992, March). Testing for validity. *New England Newsletter on Facilitated Communication, 1.*

Moore, S., Donovan, B., & Hudson, A. (1993). Brief report: Facilitator-suggested conversational evaluation of facilitated communication. *Journal of Autism and Developmental Disorders, 23,* 541-552.

Moore, S., Donovan, B., Hudson, A., Dykstra, J., & Lawrence, J. (1993). Brief report: Evaluation of eight case studies of facilitated communication. *Journal of Autism and Developmental Disorders, 23,* 531-539.

Wheeler, D. L., Jacobson, J. W., Paglieri, R. A., & Schwartz, A. A. (1992). *An experimental assessment of facilitated communication* (TR #92-TA1). Schenectady, NY: O. D. Heck/ER DDSO.

Wheeler, D. L., Jacobson, J. W., Paglieri, R. A., & Schwartz, A. A. (1993). An experimental assessment of facilitated communication. *Mental Retardation, 31,* 49-60.

Wolfensberger, W. (1992, August/October). The facilitated communication craze: The cold fusion of human services. *Training Institute Publication Series,* p. 39.