DOCUMENT RESUME

ED 366 134 EC 302 728

AUTHOR Logan, Kent R.; And Others
TITLE Skills, Activities, Matrixing System: Project SAMS. A Curriculum Process for Students with Profound Disabilities. Final Report.
INSTITUTION Georgia State Univ., Atlanta. Dept. of Special Education.
SPONS AGENCY Office of Special Education and Rehabilitative Services (ED), Washington, DC.
PUB DATE Aug 93
CONTRACT H086090001
NOTE 190p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC08 Plus Postage.
DESCRIPTORS *Basic Skills; *Curriculum Development; Developmental Programs; Elementary School Students; Elementary Secondary Education; Experiential Learning; Family Involvement; Individualized Education Programs; *Integrated Curriculum; Learning Activities; Secondary School Students; *Severe Disabilities; *Severe Mental Retardation; Social Integration; Student Educational Objectives

ABSTRACT

Project SAMS (Skills, Activities, Matrixing System) was designed to develop and validate a curriculum process for educating students with profound disabilities. Central to the 3-year curriculum process was matrixing, or integrating, basic developmental skills across multiple functional, age-appropriate, and integrated activities. Components included the following: (1) assessing families to determine valued activities and routines for instruction; (2) assessing school and community environments for the selection of activities needed for functioning in current and future integrated environments; (3) assessing activities for the selection of basic developmental skills or skill steps in a chained task of instruction; (4) developing instructional objectives based on a concept of partial participation; (5) scheduling activities throughout the whole instructional day; (6) writing Individualized Education Programs; and (7) developing data collection and analysis procedures. The process was developed and evaluated with 14 teachers and 45 students with profound disabilities. The curriculum process was rated highly positive by both teachers and parents. The staff development course was rated very highly by teachers and administrators. Student progress data indicated greater learning and generalization than in previous years. Teacher maintenance of the process was high. Much of the document consists of the SAMS curriculum process guide and appendices that provide detailed behavioral objectives and other project material. (DB)

Skills, Activities, Matrixing System
Project SAMS

A Curriculum Process for Students with Profound Disabilities

FINAL REPORT

Office of Special Education and Rehabilitation
U.S. Department of Education
Project Number: 84086P
Grant Number: H086090001

Kent R. Logan, Ph.D.
Co-Project Director
Paul A. Alberto, Ph.D.
Co-Project Director
Thomas Kana, M.Ed.
Project Assistant
Toni Waylor-Bowen, M.Ed.
Project Assistant

Department of Special Education
Georgia State University
Atlanta, Georgia 30303
(404) 641-2310

August, 1993

ABSTRACT

Skills, Activities, Matrixing, System
(Project SAMS)

A Curriculum Process for Students with Profound Disabilities

Office of Special Education and Rehabilitation
Severely Handicapped Branch Project

Kent Logan, Ph.D., Co-Director, Paul Alberto, Ph.D., Co-Director
Tom Kana, M.Ed. and Toni Waylor-Bowen, M.Ed., Project Assistants

Project SAMS was designed to develop and validate a curriculum process for educating students with profound disabilities. The basis for the curriculum process was the matrixing, or integrating, of basic developmental skills across multiple functional, age-appropriate, and integrated activities. The curriculum process includes the following components: assessing families to determine valued activities and routines for instruction; assessing school and community environments for the selection of activities needed for functioning in current and future integrated environments; assessing the activities for the selection of basic developmental skills or skill steps in a chained task for instruction; developing instructional objectives based on an expanded concept of partial participation; scheduling activities throughout the whole instructional day; writing IEP's and instructional programs; and developing data collection and analysis procedures.

This curriculum process was developed over a three year period through project staff interaction on a daily basis with 14 teachers who taught 45 students with profound disabilities. The curriculum process was field tested and validated by the teachers, project staff, and families. A variety of measures were used for this validation: A family interview process; a school and community assessment procedure; parental satisfaction measures; teacher satisfaction measures; student IEP's; student performance data collected by teachers and analyzed by project staff and teachers; and observational measures which included indicators of quality instruction such as location for instruction, activities used for the instruction of basic developmental skills, instruction technology, and instructional groupings of students. The observational measures, satisfaction measures, and family interview forms were developed by project staff. A 55 hour staff development course was developed to teach other teachers the full SAMS process.

Results Project SAMS were very positive. The curriculum process was rated very highly by teachers and parents. The staff development course was rated very highly by teachers and administrators. The SAMS curriculum process was easily implemented by teachers. Student progress as rated through mastery levels on IEP's and supporting student performance data

indicated greater learning and generalization during the year the SAMS process was implemented than in previous years. Teacher maintenance of the curriculum and instruction process was high. Observational pre and post data on the teachers indicated high levels of implementation of SAMS components, a large shift in the direction of teaching functional activities, decreased logistical time, more instructional time, more systematic instruction, and more group instruction by teachers.

The complete curriculum process and supporting validation data are contained in the final report.

For further information contact:

Kent Logan at: Gwinnett County Public Schools, 950 McElvaney Lane, Lawrenceville, Georgia 30244, (404) 513-6800.

Paul Alberto at: Department of Special Education, Georgia State University, Atlanta, Georgia 30303, (404) 651-2310

Skills, Activities, Matrixing System
Project SAMS

A Curriculum Process for Students with Profound Disabilities

FINAL REPORT

Office of Special Education and Rehabilitation
U.S. Department of Education
Project Number: 84086P
Grant Number: H086090001

Kent R. Logan, Ph.D.
Co-Project Director
Paul A. Alberto, Ph.D.
Co-Project Director
Thomas Kana, M.Ed.
Project Assistant
Toni Waylor-Bowen, M.Ed.
Project Assistant

Department of Special Education
Georgia State University
Atlanta, Georgia 30303
(404) 641-2310

August, 1993

ABSTRACT

Skills, Activities, Matrixing, System
(Project SAMS)

A Curriculum Process for Students with Profound Disabilities

Office of Special Education and Rehabilitation
Severely Handicapped Branch Project

Kent Logan, Ph.D., Co-Director, Paul Alberto, Ph.D., Co-Director
Tom Kana, M.Ed. and Toni Waylor-Bowen, M.Ed., Project Assistants

Project SAMS was designed to develop and validate a curriculum process for educating students with profound disabilities. The basis for the curriculum process was the matrixing, or integrating, of basic developmental skills across multiple functional, age-appropriate, and integrated activities. The curriculum process includes the following components: assessing families to determine valued activities and routines for instruction; assessing school and community environments for the selection of activities needed for functioning in current and future integrated environments; assessing the activities for the selection of basic developmental skills or skill steps in a chained task for instruction; developing instructional objectives based on an expanded concept of partial participation; scheduling activities throughout the whole instructional day; writing IEP's and instructional programs; and developing data collection and analysis procedures.

This curriculum process was developed over a three year period through project staff interaction on a daily basis with 14 teachers who taught 45 students with profound disabilities. The curriculum process was field tested and validated by the teachers, project staff, and families. A variety of measures were used for this validation: A family interview process; a school and community assessment procedure; parental satisfaction measures; teacher satisfaction measures; student IEP's; student performance data collected by teachers and analyzed by project staff and teachers; and observational measures which included indicators of quality instruction such as location for instruction, activities used for the instruction of basic developmental skills, instruction technology, and instructional groupings of students. The observational measures, satisfaction measures, and family interview forms were developed by project staff. A 55 hour staff development course was developed to teach other teachers the full SAMS process.

Results Project SAMS were very positive. The curriculum process was rated very highly by teachers and parents. The staff development course was rated very highly by teachers and administrators. The SAMS curriculum process was easily implemented by teachers. Student progress as rated through mastery levels on IEP's and supporting student performance data

indicated greater learning and generalization during the year the SAMS process was implemented than in previous years. Teacher maintenance of the curriculum and instruction process was high. Observational pre and post data on the teachers indicated high levels of implementation of SAMS components, a large shift in the direction of teaching functional activities, decreased logistical time, more instructional time, more systematic instruction, and more group instruction by teachers.

The complete curriculum process and supporting validation data are contained in the final report.

For further information contact:

Kent Logan at: Gwinnett County Public Schools, 950 McElvaney Lane, Lawrenceville, Georgia 30244, (404) 513-6800.

Paul Alberto at: Department of Special Education, Georgia State University, Atlanta, Georgia 30303, (404) 651-2310

Table of Contents

SECTION 1: GOALS AND OBJECTIVES OF THE PROJECT

Goal 1: Utilizing an activity-based curriculum model for the education of students with profound disabilities, develop and validate a curriculum process through implementing that process in local school districts in various classroom models (elementary and secondary, and homogeneous or heterogeneous) with various teachers (experienced or inexperienced).

Objective 1: Through utilization of current best practices, organize and validate a coherent curriculum process for instruction of students with profound disabilities employing a transdisciplinary team.

1.1 To develop protocols for the identification of valued activities and social routines through ecological assessment and value based ethnographic interview procedures.

1.2 To develop and adapt protocols and observational procedures for assessing student current level of basic skill functioning within valued activities and social routines.

1.3 To apply systematic instructional technology to basic skills within the context of activities and routines.

1.4 To develop a process and protocols to monitor student acquisition of basic skills.

1.5 To develop a process and protocols for ongoing assessment of student progress in the application of basic skills within activities and across environments.

1.6 To develop a process and protocols to conduct program evaluation based on increased levels of student partial participation in and/or mastery and generalization of basic developmental skills and skill steps in activities and routines.

1.7 To develop a process for scheduling the school day around the assessed activities and routines in classroom, school, community, and home environments.

1.8 To develop an IEP framework which demonstrates planning for the acquisition and generalized mastery of skills within activities and routines in school and non-school environments.

Objective 2: To implement the curriculum framework in selected local school districts representing elementary and secondary classes, homogeneous and heterogeneous groupings, and with experienced and inexperienced teachers.

2.1 Implement, monitor, and refine the model in elementary and secondary classes.

2.2 Implement, monitor, and refine the model in homogeneous and heterogeneous classes

2.3 Implement, monitor, and refine the model with experienced and inexperienced teachers

2.4 Conduct interviews with families of students and refine interview format

Goal 2: To develop inservice training sessions and implement inservice training statewide for replication.

Objective 3: To prepare inservice training modules for each component of the curriculum/instructional process.

3.1 Develop an approved Staff Development Course to be taught by project staff on a statewide basis.

3.2 Provide training and consultation to special and regular education administrators on the curriculum process, which includes considerations for educating students in the least restrictive environment and integrating students with profound disabilities from special to regular schools.

Objective 4: To provide for dissemination of the products and information resulting from this project through existing staff development organizations in Georgia, and at state and national conferences.

4.1 Teach an approved staff development course in four districts of the Georgia Learning Resource System (GLRS).

4.2 Provide consultation and training to the Georgia Bureau for Students with Severe Handicaps (which provides statewide in-class technical assistance), to conduct in-class follow-up technical assistance with teachers of students with profound disabilities in GLRS districts that received the staff development course.

4.3 To provide workshops to the state department sponsored regional consortia of teachers of students with severe/profound handicaps.

4.4 To distribute the curriculum process to the 17 regional GLRS libraries.

4.5 To present project results at national, state, and local conferences, meetings, and technical assistance activities.

SECTION 2: CONCEPTUAL FRAMEWORK FOR THE PROJECT

The underlying conceptual framework for Project SAMS was the efficacy of an activity-based curriculum model for students with profound disabilities. Even though students with profound disabilities are typically learning basic developmental skills or simple steps within the activities, they should be learning those skills within the context of activities that are valued by their families and peers without disabilities. Due to multiple cognitive, physical, sensory, and health impairments, students with profound disabilities will be dependent on care givers and friends both as children, and adults. The first critical dimension for instruction is that these students should learn basic developmental skills that will increase their social interaction, communication, and choice making skills with care-givers and friends. The second critical dimension is that these students should learn skills that will increase their level of independence and decrease the amount of care giving time that they require.

The curriculum dilemma is how to provide appropriate instruction on these basic developmental skills within the context of functional, age-appropriate, integrated activities that are valued by care-givers and friends. Previous studies which documented the effectiveness of learning within the activity-based model, did not provide a total framework for developing curriculum to meet the demands of a six hour instructional day. They did not provide guidelines for assessing which basic developmental skills should be selected for instruction. In addition, they did not provide guidelines which would guide teachers and parents in selecting the activities which form the basis for the activity-based curriculum. Project SAMS was designed to bridge the gap from research to full curriculum implementation of an activity-based curriculum in full day classrooms for students with profound disabilities.

SECTION 3: DESCRIPTION OF THE TEACHERS AND STUDENTS

The description of the full SAMS curriculum process is contained in Section 10. Due to the length of the document, it was decided to have this section on the model description at the end of the final report.

Over a three year period, 14 teachers participated in the project. Each teacher was provided one full day per week of in-class consultation by one of the project staff. Three of these teachers taught in special schools which contained only students with severe and profound disabilities. Eleven teachers taught self-contained classes on age-appropriate campuses. Three teachers taught classes that contained only students with profound disabilities. Three taught classes that contained students with moderate, severe, and profound disabilities, and

eight taught classes which contained students with severe and profound disabilities. These are typical class groupings in Georgia. Four teachers had never taught students with severe disabilities prior to the year they worked with the SAMS project. Eleven teachers had taught students with profound disabilities the year before they worked with the SAMS project. Teacher attitude toward implementing the SAMS curriculum process was generally positive. However, five of the 14 teachers did not consistently implement the SAMS curriculum process in spite of weekly consultations and demonstration teaching by project staff. Attitudes for lack of implementation were not studied or discussed with the teachers. All five teachers stated that they really liked the help and the curriculum framework, but they did not follow through consistently on staff recommendations.

Over the three year period, project staff and teacher taught 45 students with profound disabilities. These students reflected the typical distribution of students labelled profoundly disabled. A description of these characteristics is contained in Appendix 1.

SECTION 4: DESCRIPTION OF VALIDATION MEASURES AND RESULTS OF VALIDATION STUDIES

The validation process for Project SAMS consisted of five measures: Observational codes which documented teacher implementation of SAMS components and noted pre-post changes in location for instruction, types of activities taught, number of students worked with, and quality of instruction; a teacher satisfaction measure; a family interview process; a family satisfaction measure; an IEP evaluation; and student learning of instructional objectives as documented by IEP mastery levels and supporting student performance data collected by teachers. For each measure, the following reporting format will be used: Description of the measure; a data summary; a data interpretation; and limitations of the data.

Teacher Satisfaction Measure

Description of the Measure: A thirty-two question, four point Liekert scale with four additional open ended questions were given to the teachers on two occasions. The first was in the fall prior to implementation of the SAMS curriculum process and the second was in the spring after teachers had fully implemented the curriculum process. Teachers were asked to rate each item by answering the question, "How satisfied were you with:" that item. A rating of "1" meant they were very unhappy, and a rating of "4" meant they were very happy. A copy of the Teacher Satisfaction Measure is contained in Appendix 2. The questionnaire was given to all 14 teachers. Of the 14 teachers, nine completed usable pre and post questionnaires. Four teachers had never worked with students with profound disabilities so pre post scores could not

be computed for those teachers. One teacher did not return either the pre or post questionnaire.

Data Summary:

	Pre	Post	Diff
I. Curriculum and Instruction			
1. The curriculum approach you used this year with your students.	1.88	3.11	+1.23
2. The assessment process by which you selected activities and educational objectives for instruction.	1.88	3.56	+1 .68
3. The level of your instructional skills in teaching this population of students with profound disabilities.	2.33	3.56	+1.11
4. The processes you used to collect and analyze student performance data.	1.67	3.33	+1.66
5. The number of instructional environments in which you taught:			
A. Your classroom	2.56	3.44	+.88
B. Other school environments	2.00	2.89	+.89
C. Community sites	1.56	3.22	+1.66
6. How satisfied were you with the amount of time engaged in the following:			
A. Non-instructional lunch	2.10	3.44	+1.34
B. Routine medical procedures	3.00	3.56	+.56
C. Emergency medical procedures	3.33	3.78	+.45
D. Positioning/physical management	2.22	2.67	+.45
E. Toileting/diaper changing	2.44	3.11	+.67
F. Transitions between activities	1.78	3.11	+1.33
7. The way your schedule helped you structure your instructional day	2.0	3.56	+1.56
8. The way your paraprofessional did his or her job	3.10	3.89	+.88

9. The manner in which your trans-disciplinary team assisted you in choosing and teaching instructional objectives:			
A. Speech and language	1.57	2.86	+1.29
B. Physical therapist	2.00	2.22	+.22
C. Occupational therapist	2.75	3.38	+.63
D. Other support staff	2.20	2.60	+.40
10. The number and variety of integrated school activities your students participated in	1.83	2.50	+.67
11. The amount and quality of social contact that occurred between your students and their non-disabled peers at school	1.50	2.67	+1.17
II. Student Learning			
12. The new skills your students learned at school	2.0	3.67	+1.67
13. The way your students used those skills:			
A. At home	1.20	2.44	+1.24
B. In the community	1.30	2.33	+1.33
13. Decreases in inappropriate and maladaptive behavior	1.78	3.11	+1.33
14. Increases in your student's alertness and reaction to stimulation from:			
A. Other people	1.78	3.11	+1.33
B. Objects and materials	1.56	3.00	+1.44
15. Increases in your students initiations or interactions with:			
A. Other people	1.67	2.56	+.89
B. Objects and materials	1.44	2.78	+1.34

III. Parental Interactions

16. The input you received from parents in designing your student's instructional programs	1.33	2.67	+1.34
17. How well the parents kept you informed of your student's progress in home and community settings	1.67	2.56	+.89
18. How well parents listened to and followed through on your feedback and ideas during the year.	1.67	2.89	+1.22

Teachers were also asked to respond to four open ended questions. General comments are summarized under each question. The number of teachers who made the response is indicated in the parenthesis following the comment. Comments made by only one teacher are not included.

1. What do you feel were the best/strongest parts of the SAMS curriculum process?

Focus on functional activities as the place to teach developmental skills. (3)
Community based instruction. (5)
Interaction with non-disabled peers. (5)
Provides structure for scheduling. (4)
Makes working with parents easier. (4)
Improves motivation and alertness. (3)
Planned for and saw generalization when not expected. (2)

2. What do you feel were the worst/weakest parts of the SAMS curriculum process?

Taking heterogeneous groups of students with moderate to profound disabilities on community skills meant I had to spend more time with the students with profound disabilities and did not teach enough to the higher level students. (2)
The data collection process is difficult. (2)

3. What things would you like to change about your curriculum and instruction for next year?

More interaction with non-disabled students. (2)
More support from administration. (3)
More Community Instruction. (5)

4. What could SAMS staff have better assisted you in teaching?

Very supportive.(3)
Nothing, great job all hear. (6)

Data Interpretation: Overall, teacher support and satisfaction with the SAMS curriculum process was very high. Increases of over one point (out of four possible points) were seen across a majority of (18 of 32) of the indicators. Teachers especially liked the assessment process, data collection process, increased teaching and learning in the community, the increased learning and alertness in general of their students, and the scheduling process. The teachers indicated increased satisfaction with the curriculum process and how it improved communication with parents. Low scores in the area of transdisciplinary team probably reflect the fact that occupational and physical therapist are in short supply with the county systems with which we worked.

Data Limitations: The measure was developed by project staff and no reliability or validity studies were conducted on the measure. A limitation would also be the fact that only nine of 14 teachers returned the questionnaire. In addition, project staff routinely discussed the fact that five of the teachers did not routinely follow through on project staff recommendations for implementing the SAMS curriculum process. In discussing this low implementation level with these five teachers, project staff consistently noted the teachers "said" they really liked the process, they just didn't do it. Reasons for their failure to implement the process are unknown. Project staff believe that it was because the SAMS process demanded more planning and teaching time than these teachers were willing to give. These teachers seemed more comfortable seeing their role as "child care providers" rather than as "teachers". The nine teachers who fully implemented the SAMS process all said it was "more work" than any other model they had tried. However, these nine teachers said that the improvement in student performance was "worth the extra work". Four of these five teachers had never worked with students with profound disabilities so pre-post satisfaction from these teachers is not reflected in the results. They may have been less satisfied with the SAMS process as reflected in their observed lack of implementation of project staff recommendations. The other teacher who did not return the questionnaires was also observed to inconsistently implement project staff recommendations and the SAMS process. She too, may have been less satisfied with the process.

IEP Rating Scale Measure

Description of the Measure: The IEP Rating Scale developed by Hunt, Goetz, and Anderson (1986) was used to evaluate the quality of the IEP's written before SAMS implementation and those written at the end of the year of SAMS implementation. This scale contains seven indicators reflecting best practices in the education of students with severe disabilities. Each IEP objective is rated across each of the seven indicators. If the IEP objective reflects that indicator, one point is scored. If

it does not reflect the indicator, a zero is scored. The total number of points for each indicator across all IEP objectives is calculated. Percentage of the IEP objectives reflecting each indicator are calculated. The IEP data summarized below reflect ratings from 40 IEP's. The project worked with 45 students over the three year project period. There were five students from whom either "pre" IEP's were not available or the student moved before the end of the year so no "post" IEP was written. Complete ratings on those five students could not be computed. A copy of the IEP rating scale is contained in Appendix 3.

Data Summary:

Indicators of Best Practices	Percent Pre	Percent Post	Difference
1. Age Appropriate Materials	83.3	96.9	+13.6
2. Age Appropriate Task	82.8	96.6	+14.0
3. Basic Skill	88.4	96.8	+8.4
4. Critical Activity	87.0	98.6	+11.6
5. Interaction Activity (With non-disabled peer)	2.2	10.8	+8.6
6. Taught across settings and Materials	26.8	74.8	+40.0
7. Taught in natural setting	7.4	47.5	+40.05
Total: Percent points from total points possible	54.5	73.8	+19.3

Data Interpretation: The following conclusions can tentatively be made: (a.) The only large differences in ratings were in the areas of generalization and teaching in the natural setting. The SAMS curriculum process clearly increases these critical dimensions of the instructional planning process. (b.) Medium size differences were noted in the areas of age appropriate materials and task. (c.) Small differences were noted in the areas of basic skills and critical activities. Most teachers were already writing IEP's that reflected the importance of basic skills and critical activities. (d.) Low initial pre and post ratings in the area of interaction activity were also noted. This was disheartening, given the emphasis project staff made on developing instructional objectives in the area of social interactions with non-disabled peers. This may be an artifact of the fact that 10 of the 45 students (22%) were educated in a segregated school. It should be noted in this context that a number of parents (5), and a number of teachers (5), indicated

that they believed one of the major positive areas in the SAMS process was the emphasis on interactions with non-disabled persons. The IEP's do not reflect this importance as stated by parents and staff. Project staff did note that in the 11 classes that were on age-appropriate regular school campuses, there were observable increases in interactions between non-disabled students and the students with profound disabilities. Even though increased social interaction was noted, the instructional planning process as reflected in the IEP did not reflect this change. (e.) Staff consistently rated the pre "IEP's of "higher functioning" students better than those of "lower functioning" students. There were no overall differences in post IEP's based on the functioning level of the student. It would appear that teachers did gain a better understanding of writing a "good" IEP after the SAMS curriculum process.

Data Limitations: There are several limitations with these data which make them very hard to interpret. First, the IEP's were rated by project staff as a group process rather than independently. The ratings reflect "group consensus" rather than reliable, independent ratings. The IEP's were so inconsistently written across the different school systems' that project staff could not develop consistent rating definitions that could be used across all the different systems formats in a reliable fashion. Project staff were all familiar with the students and found it very difficult to reliably rate the IEP's given that they knew the quality of instruction in each classroom. This quality of instruction was often in direct opposition to the surface quality of the IEP. Independent raters of the IEP were not trained due to constraints of the project itself.

Second, only five of the forty IEP's were written by the same teacher for both pre and post ratings. Different teachers wrote the IEP's for the other 35 students. Differences in the IEP could therefore be simply a function of a different teacher having written the objectives. It should be noted that each of the four school systems with which we worked appeared to have a "set format" for writing the IEP. The pre ratings on the IEP's reflect this "set format". This format did change as the teachers completed the SAMS curriculum process. Each teacher verbally indicated to project staff that they would have written the IEP in the same format as they received if they had not learned the SAMS curriculum process. From an anecdotal perspective it can be said that changes in the IEP ratings are reflective of the SAMS curriculum process.

Third, the quality of the IEP as reflected in the ratings did not correlate with the quality of instruction observed in the classrooms. A teacher could have poor implementation of the SAMS curriculum process, have no set activities or schedule, and be teaching in a very non-systematic fashion (or not teaching at all) but have an IEP for a student that was rated very high. The

opposite was also consistently observed: A teacher would have full implementation of the SAMS process and score highly in the areas of functional curriculum and systematic instruction and have written an IEP that was poorly rated. In general, project staff found the IEP rating scale to be a very poor indicator of quality instructional programming.

Student Mastery of IEP Objectives by IEP and Student Performance Data Measure

Description of the Measure: The student's IEP and supporting student performance data as collected by teachers served as the data source for recording this level of student mastery. Each IEP was reviewed by project staff and the level of student mastery noted for each IEP. IEP's were reviewed at the end of the project year by the teachers and student mastery levels noted. As noted above, each school system had a different format for writing IEP's. In general, all IEP's had a place to note student mastery level at the end of the year. All student performance data which supported the level of mastery as reflected in the IEP were reviewed by project staff. These data were collected at different intervals for different objectives for different students by different teachers.

Data Summary: Student performance data and mastery levels as reflected on the IEP were collected by project staff on 40 of the 45 students in project classes over the three year period. These data were compared to student performance data and IEP mastery levels from the previous year. In all cases, the data from the year SAMS was implemented reflected that more learning and generalization had occurred than during the previous year when a non-activity based curriculum and teaching process were in place.

Data Interpretation: This consistent improvement in all 40 students would appear to strongly suggest that an activity-based curriculum as reflected in the SAMS process, is a powerful instructional process for student learning. Combined with the teacher and parental satisfaction data, we believe that the SAMS curriculum process is a viable and validated curriculum process for students with profound disabilities.

Project staff and the 14 teachers with whom we worked, believed that the consistency of increases in student learning with the SAMS curriculum process in place is efficacious, case study data. These data clearly document that students learn more, are more actively engaged in the teaching-learning process, are more alert for longer periods of the day, show improved adaptive and social behaviors, and generalize learning to new locations and materials when the SAMS curriculum process is in place. This statement held true even when the SAMS curriculum process was not fully implemented, as was the case with five of

the 14 teachers (see data summary under section on observation data measures).

Data Limitations: The primary focus of the validation process for SAMS was on teacher implementation. Previous research had indicated that an activity-based curriculum did lead to increased student learning. Project staff did not conduct any "functional effect" research on student learning as that was not a primary objective of the project. Student learning can only be described based on teacher recorded student performance data collected as a routine part of the instructional process. While project staff did review the data and discuss student progress with the teachers, no attempt was made to collect "agreement" data on student performance. It should be clearly noted that only five of the 45 students with whom we worked were taught by the same teacher in the same classroom in both "before SAMS" and "during SAMS" conditions. Changes in student learning may only reflect a change in teacher or a change in the student make up of the class and not the SAMS curriculum process. Statements about student progress are only "anecdotal" in nature.

Even given these limitations, all project staff and teachers would like to note that the IEP is routinely used by teachers and administrators for admission to special education programs, to review student progress on a yearly basis, and to justify changes in placement. Given this strong and routine use of the IEP as an outcome measure, we believe that improved learning as reflected in the IEP is a viable outcome measure to validate the effectiveness of the SAMS curriculum process. Overall quality of the IEP as rated using the Hunt, et. al. (1986) scale indicates that the IEP's were well written and reflected age-appropriate, functional, critical activities.

Family Satisfaction Measure

Description of the Measure: Project staff met with the families as a group at the beginning of the school year to explain the project objectives and to ask parents for their support in completing the family interview and other questionnaires to be sent to them. Approximately 40% of parents attended the meeting.

The family satisfaction questionnaire was an eight question, four point Liekert Scale measure with four additional, open ended questions. The survey was sent to the families of the 45 students with whom we worked. The pre questionnaire was sent in the fall before SAMS implementation to reflect parents satisfaction with their child's program last school year. The post questionnaire was sent in the spring at the conclusion of the SAMS curriculum process. Each parent was mailed the survey with an introductory letter. A self-addressed, stamped envelope was enclosed for them to return the questionnaire to project staff. Each questionnaire was coded so that project staff would

be able to match pre and post questionnaires from the same families. The survey's were anonymous. Sixteen usable, matched pre and post measures were available for summarization. The parents responded to each statement by rating: "How satisfied have you been this year with: A rating of "1" meant the family was very unhappy, and a rating of "4" meant the family was very happy. A copy of the Family Satisfaction Questionnaire is contained in Appendix 4.

Data Summary

Descriptor:	Last Year	This Year	Diff
1. The way your suggestions were included in your son's or daughter's instructional program? (IEP)	2.73	2.75	+.02
2. How well the school kept you informed of your child's progress.	3.00	2.94	-.06
3. How well the school listened to and followed through on your feedback and ideas.	2.50	2.88	+.38
4. The new skills your child was taught at school.	2.44	3.25	+.81
5. The way your son or daughter is using those new skills:			
At home:	2.44	3.19	+.75
In the community:	2.44	3.19	+.75
6. How happy your child seemed to be at school.	2.69	3.44	+.75
7. The amount of community based instruction your child received.	2.00	3.44	+1.44
8. The amount and quality of social contact that occurred between your child and other non-handicapped students at school.	1.89	2.33	+.44

In addition, the following questions were asked. Multiple comments are summarized below each question. Single comments that were not duplicated by other parents are not listed. The number in parentheses indicates the number of parents who made the comment.

1. What do you feel have been the best/strongest parts of your child's program during the year when we implemented the new curriculum.

Increased contact with other disabled and non-disabled peers(3)
More independence in self-feeding (4)
More independence in self-help (3)
Decrease in inappropriate behaviors (4)
Better understanding of the reasons for a curriculum (7)
More physical activities (3)
Better parent conferences (2)
More practice provided on the skills being taught (3)
Increased non-classroom activities (2)
Increased community based instruction (7)
Use of peer tutors (2)
Increased use of play skills and social interaction skills (3)
Better communication with parents (4)

2. What do you feel were the worst/weakest parts of your child's program during the year we implemented the new curriculum.

Less physical therapy (3)
Communication with parents (2)
No contact with non-disabled peers (3)
Still not enough community based instruction (4)

3. What things would you like to see changed in your child's program for next year?

Cement progress made this year (4)
More contact with non-disabled peers (4)
More community based instruction (9)
More physical therapy, occupational therapy, and nurses (5)
More active teaching (3)
More focus on social skills (3)
Continue activity-based curriculum (3)
Keep heterogeneous groupings (2)

4. Do you have any ideas that would help the teacher do a better job?

Teachers need more help from specialists (physical/occupational therapy, nurses)(3)
More home visits to find out what parents want and like (5)
Be firmer on discipline (2)

Data Interpretation: Overall, parents expressed increased satisfaction with the activity-based curriculum framework reflected in the SAMS curriculum process. The largest increases were in the areas of their child learning and applying new skills in home and community settings, their child's happiness at school, and the increased amount of community based instruction their child was receiving.

As can be seen the largest number of written positive comments were directed toward keeping and expanding community skills, understanding the connection between curriculum and independent functioning in the home, and increasing social contacts with non-disabled peers. The only real concern expressed by parents was that they did not believe that related services personnel were adequate to meet the needs of their child.

Data Limitations: The measure was developed by project staff and no reliability or validity studies were conducted on the measure itself. There was a low return rate and it is unknown whether the parents who did not return both surveys in usable form were more or less satisfied with the SAMS curriculum process. Project staff also noted that parents consistently spoke well of "last years program" even when project staff would have rated that program very poorly. This may reflect parental uncertainty as to what a good program is. How this hypothesized attitude might have affected survey results is completely unknown.

Family Interview Measure

Description of the Measure: The SAMS family interview contains two parts. The first is a structured interview that notes the beginning and ending of all activities which occur on a daily basis in the home. The second is a general interview which seeks to elicit additional information about the student's likes, dislikes, behaviors, and etc. A copy of the family interview is contained in Appendix 5.

Over the three year project period, project staff and teachers conducted in depth family interviews with 34 of the 45 families of the students with whom we worked. The primary purpose of the interview was to select valued activities and social routines for instructional purposes. Project staff believed that the basic developmental skills or skill steps selected for instruction should always be taught within the context of activities that the family thought were important. Staff developed an interview framework for these family discussions. The family interviews could be considered a "field test" of the interview format.

Data Summary: The following information reflects summaries from 34 interviews. Activities and routines engaged in by the

student, subenvironments where these students interact with other people, routines of the primary care-givers, siblings, and fathers are only listed if more than half of the participants mentioned them.

Activities and routines engaged in by the student: Eating, toileting, hand washing, teeth brushing, bathing, dressing, watching TV/Video, listening to records and tapes, riding in the car, and playing with age-inappropriate toys.

Subenvironments where the students engaged in the multiple activities: Bedroom, kitchen, bathroom, living/family room, car, school, school bus, yard, family and friends homes, restaurants, stores/malls, and public or private swimming pools.

Routines of the primary care-giver (mother): Cooking, watching TV/video, shopping/errands, housecleaning, laundry, visiting family and friends, direct care of child, supervision of non-disabled siblings, and working outside the home.

Routines of siblings: Going to school, watching TV/video, doing homework, playing with friends, shopping, and engaging in health and hygiene routines. About one-quarter of the siblings had some level of direct care/baby sitting for the child with profound disabilities. This was restricted to older siblings.

Routines of fathers: Watching TV/video, doing yard work, doing home maintenance, and working outside the home. Fathers engaged in very limited direct care of the child and primarily viewed direct care as "baby sitting" for the mother when she had something else to do.

Data Interpretation: Overall, this information indicates that these children with profound disabilities have a full and varied life. They go many places with their families and are not restricted to only certain locations in the house. They engage in many activities with their family members.

Family members all suggested many activities and routines for instruction at school. The majority of these activities and routines centered around health and hygiene and recreation and leisure activities. After conducting the interviews project staff and teachers were able to suggest additional activities for instruction that were not mentioned by families and which went beyond the categories suggested.

Given the high levels of teacher and parent satisfaction with the process, and the activities selected for instruction, project staff concluded that the SAMS Family Interview was a viable process and resulted in the selection of valued activities for instruction.

Data Limitations: The interview format was developed by project staff and no reliability or validity studies were conducted on the measure. The measure was patterned after several family interview formats from persons working with families of pre-schoolers and infants.

Even after conducting the interviews, project staff and teachers still needed to conduct additional school, community, and classroom analyses to find enough activities to completely schedule the full school day. Families are valuable sources of information, but they can not provide all the information needed by teachers. The additional analyses for school and community are discussed in the SAMS Curriculum Document (section 10).

Teacher Observational Data

Description of Measure: A 20 variable observational coding system divided into four categories was used to monitor teacher implementation of the SAMS curriculum and to note changes pre and post implementation across the variables. The coding system was developed by project staff. The major categories and descriptors were: Location for instruction - classroom, non-classroom school, and community; Activity for instruction - functional, non-functional, not interacting with students, non-instructional bathroom time, logistics, routine medical procedures, emergency medical procedures, directing aide, consulting with support staff, break, and engaging in a behavior reduction program; Number of students being taught in the activity - one-to-one, group, and not with students; and Quality of Instruction - non-systematic, systematic, and no instruction occurring. A complete list and definition of the observational codes are in Appendix 6.

Teachers were observed before SAMS implementation and again in the spring after implementing the curriculum process. Observational coding was done from video tapes taken of each teacher. The average length of each video tape for both pre and post data collection sessions was five hours and 22 minutes. The range was three hours 36 minutes to six hours 16 minutes. A one minute observational period was used. The coder observed for the full minute then recorded during the second minute. For each of the five categories, the coder decided which variable under each category was occurring for the majority of the minute. If the coder was not clear as to which descriptor occurred for the majority of the minute, she re-ran the tape for that minute and noted by the tape counter (which noted seconds elapsed), which variable most accurately described the minute. This is a much longer interval than most data collectors use. However, project staff believed that instructional variables changed slowly and that this one minute observational period faithfully captured the flow of the classrooms. This was decided following two processes. The first was several hours of tape viewing and discussion among project staff and teachers about when certain

variables changed. The second was comparing several different intervals ranging from 15 seconds through two minutes. Comparison of data indicated that the one minute interval provided the same data as two 15 second observational periods followed by two 15 second recording periods, and that agreement averaging 90% could still be obtained at that one minute interval.

A coder was trained by Kent Logan, Co-Project Director. This person was a doctoral student in the are of severe disabilities at Georgia State University. This coder coded all teachers, both pre and post, over the three years of the project. Kent Logan served as the agreement coder. He and the primary coder independently viewed the video tapes and recorded every 60 seconds. Agreement checks were done on 19.20 % of the video tapes. The range was zero minutes to 120 minutes with a mean of 60.13 minutes per teacher. One teacher was coded without agreement due to an error on the part of Kent Logan. Agreement checks on the other 17 teachers averaged 10.00% through 30.30% of the video tape time for each teacher.

An agreement was scored if the coder and the agreement checker scored all four categories the same. A disagreement was scored if any of the four categories were scored differently. Overall agreement was 89.74% with a range of 70 - 100%.

Fourteen teachers participated as "intervention" teachers over the three year project. One teacher refused to cooperate with "post" video taping so data from only 13 intervention teachers were summarized. Six teachers (two per year) served as control teachers. Due to technical difficulties on the post video tape for one of the control teachers, data for only five control teachers were available for summarization.

Data Limitations For Control Teachers: The control data is not viable for several reasons. BH taught in the same segregated school as intervention teachers MR and BG. She was therefore constantly observing the implementation of the SAMS curriculum process. She noted positive changes in students and listened to comments by intervention teachers in those classes and independently implemented significant portions of the process on her own. Teacher JG had such poor pre data (independently observed by her supervisor) that she received technical assistance from her supervisor to improve her instruction. This technical assistance was similar to components of the SAMS process. Teacher PD was an experienced teacher who, after an initial difficult start with her class, instituted activity-based curriculum (the foundation for the SAMS process) on her own based on previous experience with the model with students with moderate disabilities. Teachers EC and LR (third year control teachers) taught at the same special school for students with severe and profound disabilities and participated in inservice over the year

at the school which was focused on instituting major components of the SAMS process. These two teachers taught in one of the systems where project SAMS was instituted during year two of the project and results of the project were already being disseminated throughout the system. The reality is that all five teachers instituted major components of the SAMS process independent of project staff.

There are no "pure" control classes where no parts of the SAMS curriculum process were implemented. Given this nature of the control data, no comparisons can be made between pure SAMS implementation classes and pure non-SAMS implementation classes. Summarized data from the five control teacher are presented to illustrate that even when portions of the SAMS process are implemented, positive changes occur in the classrooms across the relevant categories: Instruction moves from classroom to non-classroom and community environments. There is an increase in the teaching of functional activities and some decrease in logistical activities. There are small increases in 1:1 instruction and small decreases in group instruction. There are increases in systematic instruction and decreases in no-instruction occurring.

Data Summary: Tables summarizing the data follow this page. Summary data for each teacher are in Appendix 7. Table 1 is intervention classes; Table 2 is Homogeneous classes (Homo); Table 3 is Heterogeneous Severe-Profound classes (Hetero-SP); Table 4 is Heterogeneous Moderate-Severe-Profound classes (Hetero-M); Table 5 is classes where teachers engaged in some activity-based curriculum prior to implementing the SAMS process; Table 6 is classes where teachers were not utilizing an activity-based curriculum prior to SAMS implementation; Table 7 is teachers who had six months experience working with students with profound disabilities even if they were not teaching using an activity-based format; Table 8 is teachers who had never taught students with severe disabilities; Table 9 is teachers who fully implemented (80% of indicators) the SAMS process based on project staff rating (Implementation check list is contained in Appendix 8); Table 10 is teachers who did not fully implement the SAMS process; Table 11 is summary data from the five control teachers (see limitations above).

Data Interpretation: These data are very difficult to interpret for four reasons. First, the teachers were sorted into categories for data analyses which overlap each other in ways that make it hard to determine the functional effect of the SAMS curriculum process on teachers according to any single teacher category. For example teacher AS was "experienced", not doing activity-based instruction, and she had a homogeneous class. However, she did not fully implement the SAMS process. Since the process was not fully implemented, her data on the category of "experienced" is confounded by this lack of implementation. It

is therefore not possible to average her data in meaningful ways with other teachers in the "experienced" category who were not doing activity-based curriculum and who had homogeneous classes but who did fully implement the SAMS process. There is no "clean" category of teachers which can be used to determine the functional effect of the SAMS process on teacher behaviors as reflected in the variables in the coding system.

Second, there are very small numbers of teachers for some of the categories. For example there were only three homogeneous classes and three prior activity-based classes. The teachers who taught those classes varied across the other categories. There are simply not enough teachers within any category who are similar across the other category labels to draw conclusions as to the functional effect of the SAMS process on any particular category of teacher.

Third, there is no known or agreed upon "effect size" for any category under discussion. No previous research was found which had in any way attempted to assess the multiple variables in classes for students with severe disabilities. We have no agreed upon standard as to where teachers should be teaching, what kind of tasks they should be using for instruction of basic skills, how they should group students for instruction, and how much and what quality of instruction are optimal and possible for teaching students with severe disabilities. We know nothing about how classrooms for students with severe disabilities, including those with profound disabilities actually "function". We can't answer questions such as: How much should teachers teach in the community or in non-classroom locations in the school? What is a "significant" or "important" change in the ratios of where instruction occurs? How much of the instructional day is it possible to teach functional activities? How much of an increase in instructional time in functional activities is good? How much leads to better student learning? How much activity-based instruction can occur in groups rather than in 1:1 instruction? Given the inevitable disruptions to teaching when students must be moved in wheelchairs or routinely positioned in a number of positions, how much instruction is possible? How much of that instruction can be systematic and how much non-systematic? What is a good ratio for quality of instruction? These things are simply not known. Increases or decreases in the data for each variable can not be "quantitatively" evaluated against previous research or descriptive data.

Fourth, the range in scores is very broad. Ranges frequently go from -29% to + 35%. This range indicates a great deal of variability. Clearly, many other variables influence the implementation of a broad curriculum process like SAMS and its effect on teacher instruction.

These observational data, can only be interpreted in combination with the previously described increases in student performance (learning) and teacher and family satisfaction with the SAMS process.

Given the average 6 hour instructional day, one hour equals approximately 15% in the data summaries. For example, a decrease of 19% in instruction in classroom settings reflects a decrease of approximately 68 minutes. Increases in functional tasks of 7.23% reflect an increase of 26 minutes per day.

Given these difficulties, the summarized data by category are very hard to analyze. In spite of these multiple problems certain conclusions can be drawn from the data. These data must also be interpreted in a "qualitative" fashion as well as a "quantitative" fashion. The following interpretation is very "soft" given that the data were not collected nor fully analyzed using formal qualitative procedures. This interpretation is "after the fact" as project staff tried to "make sense" of the data given our inability to use the data in a strictly quantitative way due to the confounding factors described above. We caution readers to take these conclusions conservatively. As project staff we believe our conclusions accurately reflect our experience with the SAMS process. These conclusions were all discussed with the teachers, their supervisors, with 34 sets of parents, and with the data coder. The conclusions presented below reflect statements which all four sets of people agreed on completely.

1.) Implementation of SAMS leads to an average decrease of over an hour per day in classroom based instruction and an equal increase in non-classroom school and community instruction.

2.) There is an increase in the use of functional tasks to teach basic developmental skills. Inexperienced teachers and teachers who were not doing activity-based instruction showed the greatest increases of up to two hours per day. All three teachers who were already doing activity-based curriculum showed decreases in the use of functional activities for instruction of up to 18%. At first, this may appear to be information that reflects poor teaching from a group of experienced and activity-based curriculum teachers. Project staff and these three teachers noted that they increased their time in the community extensively, which involved increases of 9.28% in logistics. This logistical time was riding on the bus, which is not a functional task. It would appear that increases in activity-based curriculum combined with increases of an hour in community based instruction lead to increased logistical time which is not functional. Non-activity based teachers who increased community instruction by an hour, did not show this decrease in the use of functional activities. Apparently, they were doing so little functional activity instruction before SAMS implementation and

added so much functional activity instruction during SAMS implementation that, in spite of increases in bus riding to accommodate increases in community instruction, they still increased functional activity instruction approximately 45 minutes per day.

3.) There was a decrease in the amount of time teachers engaged in logistical activities. The range was -19.19 % (69 minutes per day) to +17.54 (63 minutes per day). The average decrease was 33.4 minutes per day. This is a large decrease, given that 76.36% of this logistical time was non-instructional time.

The increases in logistical time were noted for teachers who started out activity-based and increased the activity-based instruction to community environments and thereby increased bus riding time to get to community sites. The other group where increases were noted were in the Hetero-M teachers. Two of those three teachers were also activity-based to begin with, which probably accounted for the increase in the Hetero-M category. In these two categories (activity-based and hetero-M) total functional activity instruction occurred 55.16% of the day and logistical time occurred 35.14% of the day. These two activities account for a total of 90.30% of the day. This is at least as high a functional instruction level, and at least as low a logistical level, as any other category of teacher studied. Overall, "post" averages for intervention teachers indicated that functional instruction occurred 52.33% of the time and logistical time averaged 33.64% of the day.

Activity-based instruction and teaching in non-classroom school and community environments clearly is a time intensive curricum which involves high levels of logistical time for teachers of students with profound disabilities. The SAMS curriculum process increased functional instruction and decreased logistical time for most teachers. Organizing an activity-based curriculum where none previously existed, decreased logistical time even when additional bus riding time (which was coded logistical activity) was added into the total equation. Activity-based teachers increased their amount of logistical time when implementing the SAMS curriculum. Under either circumstance, high levels of logistical time remain. Since this is primarily non-instructional time, this high level of logistical time remains problematical for teachers.

It would appear, given the quality of instruction of several teachers, and the consistency of logistical time across all teachers (about one-third of the day) that students with profound disabilities required teachers to engage in this high level of logistical activity due to (a.) the nature of the students (they have physical and sensory and health disabilities), and (b.) the fact that non-classroom instruction requires time to get between

locations in the school and in the community.

3.) Teachers engaged in surprising little non-instruction bathroom, medical, consulting with aides and related services personnel, and behavior reduction programs. This was true for both pre and post measures across all teachers or on any particular category of teacher. This is surprising given the multiply disabled characteristics of these students in the area of health and due to the fact that almost all these students wear diapers and none are independent in toileting. All teachers, including control teachers, apparently treated toileting and diaper changing as an instructional activity. These behaviors were coded as "functional activities" if instruction occurred during them. It was also noted by project staff that these teachers were very fast at changing diapers. Therefore, three or four diaper changes per day at only a minute or two per change, was simply not much time. Medical procedures were also apparently all conducted quickly and efficiently.

4.) The SAMS curriculum process appeared to increase 1:1 instructional time. Increases were noted for all teachers (intervention and control) and across all categories studied. The range was 5.05% (18 minutes per day) to 14.16% (51 minutes per day). The amount of group instruction decreased with a range of -16.58% (-60 minutes per day) to -5.10% (-18 minutes). This was a totally unexpected change given that project staff focused on the need to do group instruction.

Several factors could account for this unexpected change. First, many non-activity based classes prior to intervention were engaging in non-functional tasks such as circle time, singing songs, listening to stories, watching movies, and etc. These were all done as "groups" with students being primarily passive. As teachers moved to teaching functional tasks, many of the tasks required a lot of hand over hand prompting, which was coded as 1:1 grouping if it occurred for more than three or four consecutive minutes per student (our definition for 1:1 instruction). Project staff noted a great deal of "parallel" instruction where the teacher would prompt one student hand over hand for four or five minutes so they could complete the activity component, then they worked with the next student in the group and so on until they had prompted all two to four students in the group through the task. These students were all in proximity to the teacher, they just were "waiting" their turn. Project staff did not believe that this was true group instruction. The majority of instruction occurred using this format, which is, in reality a hybrid cross between group and 1:1 instruction. Project staff trained teachers to prompt the student completely through the activity component before working with another student. This intense level of hand over hand instruction combined with prompting through the entire chain, did lead to a great deal of "wait" time for other students. However, the

"wait" time was less than in a non-activity based format where students typically laid around on a mat or were "positioned correctly" for long periods of time waiting their turn with no instructor in proximity.

Second, there was an increase in teaching during toileting and hygiene activities. These were all intensive 1:1 activities which are practically impossible to do in a group format. What is not reflected in the data is that during this 1:1 instruction time, teachers routinely had non-disabled peer helpers in the room working with the other students so that they were engaged in some type of peer tutoring or recreation and leisure instruction with the peers. These intense hygiene time were also typically times when the other students in the class were in "integrated" activities in regular education classrooms. In addition, paraprofessionals were trained in Project SAMS to do more instruction of other students so that while the teacher was working with only the one student, the paraprofessional was typically working with a small group.

Third, there were large increases in community instruction for 10 of the 13 teachers. Unless the teacher had a Hetero-M class or a Hetero-SP class with high level students, she could only take one student with profound disabilities into the community at a time. This increased the level of 1:1 instruction also. As with toileting and hygiene activities, major efforts were made to have non-disabled peers in the classroom, or students with disabilities in regular education classrooms.

It is unknown how this instructional format using peer tutors and the paraprofessional by the teachers affected the actual instruction time of the students. The project did not collect time engaged in instruction for the students. Anecdotally, students were more engaged, primarily due to the use of peer tutors and integration activities, even though the data reflect increases in 1:1 instruction and decreases in group instruction by the teachers.

This discussion reflects how difficult it was for project staff to capture the ebb and flow of the instructional day due to the multiple variables involved. These anecdotal comments about the use of peer tutors and the role of the paraprofessional and how it "covers" instructional time when the teacher is working 1:1 with a student are not reflected in the data. Yet it appears to be a very significant variable which increased the engagement levels of the students with profound disabilities. Documentation of it's positive impact remains only at the anecdotal level.

5.) The overall changes in quality of instruction are also not encouraging. Teachers reflected little change from non-systematic to systematic instruction. There was a decrease in the level of no instruction for all categories except teachers

who were previously activity-based and teachers who taught Hetero-M classes. The range was -11.56 % (42 minutes per day) for inexperienced teachers, to -0.16% for experienced teachers. Increases for previously activity-based and hetero-M teachers could be explained by increases in their logistical activities, which is typically non-instructional time. If all incidences of "no instruction" are analyzed separately, 78.63% of no instruction is when teachers were engaged in logistical activities (range 65.96 - 91.67).

While it may appear that there is a high level of no-instruction occurring, almost all of it is accounted for due to the very high levels of logistical time inherent in teaching students with profound disabilities through the activity-based curriculum process. It was noted across all intervention teachers, and within all categories of teachers except homogeneous classes and teachers who only partially implemented the SAMS process, that no instruction occurred approximately one-third of the instructional day. This amount correlated very closely to the amount of logistical time for each teacher.

Project SAMS focused primarily on instituting an activity-based curriculum and all the assessment and monitoring protocols that went with it. While project staff did discuss systematic instruction with the teachers, it was not a primary focus of the project. Experienced teachers tended to maintain a positive balance in favor of systematic instruction. Inexperienced teachers did learn some better instructional skills. However, the amount of time it took to implement the SAMS process with teachers who were inexperienced and/or non-activity based, and who had never engaged in community based instruction was intensive. Project staff discussed among themselves and with other professionals across the country, the fact that most teachers of students with severe disabilities basically do not know <u>how</u> to teach. These teachers rarely have had a class in systematic instruction.

6. The SAMS curriculum process can effectively be implemented in any type of classroom (Hetero-M, Hetero-SP, or Homo) and in any setting (segregated or integrated). The prccess can be adequately implemented by experienced or inexperienced teachers. Even if only partially implemented, positive gains across all indicators except group instruction were recorded.

7.) These data provide the first description of activity-based classes for students with profound disabilities. On the average, it appears that these teachers balanced their instructional day to teach in classroom (39% of the day), non-classroom school (39% of the day), and community environments (20% of the day). These teachers engaged in teaching through functional tasks over half the day, and engaged in logistical activities about one-third of the day. They engaged in little medical, toileting, consulting,

or behavior management time outside the context of the functional activities they were teaching. They engaged in group instruction a little over half the time, in 1:1 instruction about one-third of the time, and were not interacting with students about eight to ten percent of the time. All of this "not with students time" was during logistical activities when teachers were setting up materials or adjusting adaptive equipment. Four teachers engaged in very high levels of systematic instruction (70% of the instructional day). All four had had specific university based training in systematic instruction and were highly motivated professionals. Their non-systematic instructional time was almost all during transition/logistical time (approximately 30% of the day). Nine teachers engaged in systematic instruction only about 30% of the time. Four of these teachers had had a class in systematic instruction. It is not known why they did not teach as they had been taught. How these figures compare to a classroom that is non-activity based is unknown.

Data Limitations: The observational coding system was developed by project staff and no validity or reliability studies were completed. As discussed above, the number of teachers per category is too small to make confident statements about the functional effect on teacher behaviors of the SAMS process. The number of confounding variables per category is too high to adequately document the functional effect of the SAMS curriculum process on any given category of teacher. The range of scores for any one variable across the 13 intervention teachers is very large, indicating a great deal of unaccounted for variance.

As a totally non-data based comment, project staff firmly believe that the unaccounted variance is simply "teacher attitude". If teachers want to work hard and implement SAMS, and if they want to do a "good" job, then the process is implemented and teachers score well across the important variables.

SECTION 5: DESCRIPTION OF THE STAFF DEVELOPMENT COURSE AND PARTICIPANTS

An outline of the sections of the staff development course is contained in Appendix 9. This course was taught four times, in four different rural areas of Georgia, over the final two years of the project. Fifty-three teachers took the course. The course involved 30 hours or staff contact time with the participants. The course format was a combination of lecture, question-answer, discussion, slides, and video tapes. Teachers were given all relevant protocols to implement the SAMS process. Four of these teachers received follow-up assistance in implementing the SAMS process from staff from the Bureau for Students with Severe Handicaps, at Georgia State University. This follow-up averaged nine hours per teacher. In addition, Kent Logan, Co-Director provided technical assistance to five

additional teachers in the SAMS process. This process involved presenting the SAMS course in a tutorial fashion, which still took approximately 30 hours of contact time per teacher. He then provided approximately 10 hours of in class follow-up to each of the five teachers. All nine of those teachers fully implemented the SAMS process with in-class follow-up and feedback. All nine verbally stated their satisfaction with the process. It is unknown if any of these teachers would have fully implemented the SAMS process without in-class support from project staff. It is also unknown if any teachers who received only the staff development course fully implemented the SAMS process. Control teachers did implement portions of the process without in class support. These teachers reflected gains in positive teacher behaviors. The effect on their students of their partial implementation of the SAMS process was not monitored. Partial implementation of the SAMS process my be enough to lead to positive student outcomes.

There are no modules available for this course. This is discussed in the next section.

SECTION 6: METHODOLOGICAL AND LOGISTICAL PROBLEMS AND SOLUTIONS

There was one major departure from the original scope of the project. Project staff did not develop inservice training modules as originally planned. This was Objective Three, in the original proposal. Project staff had no idea how much time that objective would involve. Nor did project staff consider how much time it would take to implement and refine the SAMS model and develop the protocols. Project staff simply ran out of time. The staff development course unfortunately remains in outline form and dependent on project staff to teach it.

The original Objective Three also contained an activity to develop a teacher assessment instrument to parallel the Georgia Teacher Evaluation Instrument. This latter instrument was dropped by the state department and is not currently used to evaluate teachers. Project staff did not develop an independent instrument.

No training modules were developed for administrators or parents. These were also parts of Objective Three. Kent Logan, author, and Paul Alberto, co-author of the original proposal, were simply overly optimistic in designing the original proposal.

The only major methodological problems were with the observational coding system. The whole concept of control teachers was poorly conceived, poorly implemented, and poorly monitored. Given the teacher satisfaction and teacher discussion of how well the SAMS model was working, and the fact that teachers within a system talk with each other and help develop inservice training for other teachers, it was not possible to get

good control classes that could remain unchanged for comparison purposes. Theoretically, project staff could have travelled to more rural school systems, but that was not functionally possible give the time constraints of the project. This was a serious flaw in this grant as no viable comparison data between pure SAMS classes and pure non-SAMS classes was possible. The impact of the SAMS curriculum process on teachers and students must therefore remain at the descriptive level. No functional effect can be demonstrated between increased teacher quality indicators and the SAMS process. Likewise, no functional effect can be demonstrated between improved student learning and the SAMS process.

The original project objective of documenting the impact on teachers of implementing the SAMS process was poorly conceived from the perspective of documenting a functional connection between the SAMS process and the variables and categories under discussion. The number of teachers with whom we worked, and the number of variables planned for data collection and study were simply incompatible. We would have needed over a hundred teachers and well operationalized definitions of each variable and category to have adequately analyzed the data. It was simply impossible to collect that type of data given project resources and the time it took to implement and refine the SAMS process.

Project staff have tremendous confidence in the descriptive data and in the SAMS process. This confidence is based on teacher and parental satisfaction and consistent improvements in student learning as the SAMS curriculum process was implemented.

A final documentation of the overall functional effect of an activity-based curriculum such as SAMS on teacher behaviors, must await a tighter longitudinal study. Given the multiple variables, and the difficulties in defining them, in typical classrooms in terms of student characteristics, teacher ability and attitude, quality and role of the paraprofessional and the relationship between the parapro and the teacher, and the type and level of administrative support, this type of study will probably never be completed.

The research literature contains no overall study or series of studies which document the functional effects of the "functional, age-appropriate, critical activity" curriculum on teacher behaviors or student learning. The descriptive data accumulated through multiple replications appears to be adequate to validate that curriculum. Project SAMS staff would suggest that the descriptive data presented in this final report provide the same level of descriptive support for the activity-based curriculum model for students with profound disabilities, as previous descriptive data has for the "functional" curriculum.

SECTION 7: PROJECT IMPACT AND DISSEMINATION

Impact of the project has been at the local, state, and national level.

Local Impact: At the local level five large suburban systems have adopted the basic framework for the SAMS curriculum process. One suburban system closed their school for students with severe and profound disabilities at the end of the second project year. This school had served 33 students with severe and profound disabilities. This closing had been in the planning stage prior to implementation of Project SAMS. Project staff did work closely with the system's administrators in planning the closing. A second suburban system also initially educated all students with profound disabilities on a special school campus. Four classes serving 15 students with profound disabilities were moved to regular, age appropriate campuses during project implementation activities. No technical assistance was provided to the special campus.

State Impact: State-wide, two project staff independently consulted with four additional rural or smaller city school systems to implement the SAMS curriculum process. The full curriculum document will be distributed to 17 regional technical assistance agencies in the state of Georgia. This will provide access to the curriculum process to all teachers of students with profound disabilities in the state. Through direct intervention, approximately 300 students with profound disabilities have been directly impacted by Project SAMS activities.

National Impact: The curriculum document has been requested by 29 other individuals or agencies. A listing of these persons and agencies is contained in Appendix 10.

The basic components of the curriculum process and a description of the process for elementary age students will appear in the following book in 1994: Individuals With Profound Disabilities: Assistive And Instructional Strategies, Less Sternberg (Ed.) ProEd: Austin Texas.

Presentations of the curriculum document were made in 1991 at the 18th Annual TASH Conference in Washington D.C. Data based results on characteristics of students with profound disabilities (Appendix 1) were presented at a poster session. An overview of the curriculum document (Section 10) was presented at a session.

More comprehensive, six hour presentations of the curriculum process were presented at the following state conferences sponsored by the State Departments of Education: Iowa and Arkansas (1990); Georgia, 1992 and 1993; Tennessee 1993,. Similar presentations were presented at the Texas School for the

Blind and Visually Impaired state-wide conferences in 1991, 1992, and 1993. Multiple three hour sessions over a two or three day period were presented at the following summer institutes: University of Louisiana, 1992 and 1993; Oklahoma, 1993; Tennessee, 1993; Kentucky, 1991; Georgia, 1992. The total number of persons attending these summer institutes and presentations was approximately 630 teachers, administrators, and parents.

On-site one day consultations were provided to the following school systems: Corpus Christi, Texas, 1992 and 1993; Fort Worth, Texas, 1993; and seven local school districts in Georgia, 1992 - 1993. These consultations included individual classroom based technical assistance to one teacher per consultation. Approximately 100 students with profound disabilities were directly affected by those consultations.

The curriculum document as updated at the time of any of the dissemination activities was distributed to the coordinator of the consultation or presentation. An unknown number of duplications of the material were made. Duplications were well over 1,000 as all conference participants received an initial copy of the curriculum process.

According to data collected on this project, approximately 28% of students with profound disabilities have visual impairments, 8% have hearing impairments, and 6% have both visual and hearing impairments, the impact on students with sensory impairments, including deaf-blindness would also be significant. Each consultation, presentation, or summer institute addressed this population with concrete illustrations of applying the SAMS process to students with sensory impairments, including deaf-blindness. Three of the 34 students on Project SAMS were deaf and blind, nine were visually impaired, and two were hearing impaired.

SECTION 8: INFORMATION ON LOCATING ADDITIONAL INFORMATION

The curriculum document and final report can be obtained by writing the ERIC Clearinghouse on the Handicapped and Gifted:

ERIC/OSEP Special Project
ERIC Clearing \House on Handicapped and Gifted Children
Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091

Additional information and the final report and curriculum document can also be obtained for duplicating costs from either Kent R. Logan, Ph.D., 443 Sterling Street N.E., Atlanta, Georgia 30307; or Paul A. Alberto, Ph.D., Department Educational Psychology and Special Education, Georgia State University, Atlanta, Georgia 30303.

SECTION 9: ASSURANCE STATEMENT

This section assures that Kent R. Logan, Ph.D. currently with Gwinnett County Schools, 950 McElvaney Lane, Lawrenceville, Georgia 30244, telephone - 404-513-6805 has sent the final report to ERIC, to Ms. Constance Tynes, Office of Grants and Contracts, U.S. Department of Education, and to Dr. Anne Smith, Project Officer, Office of Special Education Programs, OSERS, Washington, D.C. Copies of the final report will also remain with Dr. Kent R. Logan, and Dr. Paul A. Alberto at the addresses listed in Section 8, above.

SECTION 10: SAMS CURRICULUM PROCESS DOCUMENT

This document includes the following, which are enclosed beginning on the following page. References for research supporting the activity-based model, as well as a general list of articles, books, and book chapters related to the education of students with profound disabilities can be found in the bibliography, in Appendix 11.

A. Curriculum Development and Instructional Design for Students with profound disabilities

B. SAMS Basic Developmental Skills List and Definitions

C. SAMS Basic Skills Assessment Recording Sheet

D. SAMS Family Interview Protocol

E. Sample SAMS Format IEP's

This chapter outlines a process for designing appropriate curriculum, conducting educational assessments, and developing instructional objectives for students with profound disabilities. It also specifies an instructional framework that one may use to assist students to acquire those objectives. Four major areas will be described which impact the design process and instructional framework:

The cognitive and physical characteristics of students which affect curriculum planning;

Activity-based curricula and adaptations for use with students with profound disabilities;

Assessment procedures for selecting appropriate activities for instruction; and

Assessment procedures for developing appropriate instructional objectives and writing instructional objectives.

Characteristics of Students With Profound Disabilities

As described in Chapter One, students with profound disabilities are a heterogeneous group. This group includes a range of students, from those who are minimally responsive to external stimuli and who have no voluntary control over their extremities, to those who are ambulatory and have cognitive skills such as matching, sorting, and symbolic communication. Regardless of the level of their skills, however, students with profound disabilities will always need caregivers to attend to

their basic health, hygiene, and safety needs. These students will never function independently. Educational outcomes for these students will be increased levels of partial participation rather than independent performance of a given activity (Ferguson & Baumgart, 1991).

According to Logan, Alberto, Kana, and Waylor (1992) appropriate educational planning must take into consideration the multiple cognitive, physical, behavioral, alertness, sensory, medical, mobility, and age characteristics of the students. These nine characteristics affect how the student may partially participate in any given activity. Table 8-1 displays three functioning levels for each characteristic. The three levels for age, mobility status, vision, hearing, and physical disabilities should be self-explanatory. The levels for cognitive functioning, behavior interference with instruction, alertness, and health need additional explanation.

Insert Table 8-1 About Here

In defining minimal and functional cognitive responses to the environment, students with profound disabilities are described as not following traditional stimulus control instructional procedures. In essence, there is a lack of response to these instructional procedures (Guess et al., 1988; Haywood, Meyer, and Switzky, 1982; Landesman-Dwyer and Sacket, 1976). At the instructional prompting level, these students have

inconsistent responses to stimulus control procedures such as time delay (Collins, Gast, Wolery, Holcombe, & Leatherby, 1991). In addition, these students may show preferences, make choices, or activate switches to obtain preferred stimulus events. These preferences, however, do not function consistently as generalized reinforcers (Reid, Phillips, & Green, 1991). For example, a student may activate a switch to turn on a radio, but access to the radio does not serve as a consistent reinforcer for picking up or looking at one of two objects to indicate a choice between stimulus items.

Levels of behavioral interference with instruction and health status are operationalized based on the amount of time the teacher spends managing a student's behavior or health care needs. As these descriptions are based on educational considerations, the amount of time a teacher engages in management of the behavior is a more relevant descriptor than the actual severity of the behavior or health care need itself. Under alertness to environmental stimuli, students are described as being in one of the three alertness levels if they were in that level more than 50% of their school day.

Characteristics Which Affect Instructional Planning

The primary characteristics most relevant to instructional planning are levels of cognitive functioning and physical disability. Although other characteristics have been described, they do not impact instructional planning within the conceptual framework we are discussing. They may, however, affect other aspects

of educational planning. For example, chronological age determines the age-appropriateness of the activity and materials. Health status may affect environments in which the student can safely function or length of time engaged in activities. Student mobility may affect how long it takes a teacher to move students from one location to another or the number of students s/he may involve in community-based instruction. Vision and hearing impairments affect how stimuli are presented to students, as well as safety concerns in various environments. Behavioral interference with instruction may affect grouping arrangements, staffing ratios, and selection of certain activities and/or environments which occasion these challenging behaviors. Alertness levels may affect time of day for instruction, length of the instructional session, and scheduling of instruction based on student receptivity to learning.

Cognitive functioning characteristics are important because they determine students' responses to traditional stimulus control instructional procedures and reinforcement strategies. Problems with responses are probably due to developmental ceilings on cognitive development stemming from organic dysfunctions (see Chapter 2). As indicated previously, responses of students with profound handicaps are often inconsistent, thereby making the teaching process extremely challenging. The presence of a physical disability is important because it affects how students can interact motorically with materials. This, in turn, impacts their level of independent participation in

functional activities.

Both cognitive functioning and physical disability characteristics affect the development of adaptations and alternative performance strategies (Baumgart et al., 1982). Based on these two characteristics, seven characteristics clusters emerge as relevant to educational planning for students with profound disabilities. These clusters and a description of one student representing each cluster are contained in Table 8-2.

Insert Table 8-2 About Here

Activity-Based Curricula and Adaptations for Students with Profound Disabilites

The activity-based model was first described for students with severe disabilities as the Individualized Curriculum Sequencing model (ICS; Sailor & Guess, 1983). In this curriculum model all instructional objectives for the student are taught within the context of a functional activity rather than in isolation. This instructional format makes use of effective instructional strategies such as distributed practice (Mulligan, Lacy, & Guess, 1982), planning for generalization (Horner, McDonnell, & Bellamy, 1986), and natural cues, corrections, and reinforcers (Ford & Mirenda, 1984). For example, and in application to those with profound disabilities, a student might be taught a basic motor response, such as reach and grasp, within the context of shopping, snack preparation, or switch activation

rather than in drill format sitting around a table in the classroom.

This model has been extended for use with many students with profound disabilities and validated through a series of research studies and classroom implementations (Gee, Graham, Sailor, & Goetz, in press; Snell, Lewis, & Houghton, 1989; Sailor, Gee, Goetz, & Graham, 1988; Green, Canipe, Way, & Reid, 1986). This extension of activity-based curriculum especially applies to students in Characteristics Clusters 1 - 6. These students comprise the vast majority of those classified as profoundly disabled. Students in Characteristics Cluster 7 appear to comprise between 8% and 12% of the population (Logan et al., 1992). An alternative curriculum model and educational outcome measures for this latter cluster of students will be proposed later in this chapter.

The extension of the activity-based model includes some reconceptualization of how students with profound disabilities partially participate in functional, integrated activities. However, the basic format of activity-based instruction is retained. Instructional objectives are taught within the context of functional, age-appropriate activities in integrated settings.

Conceptual Format For Partial Participation in Activities

Curriculum development for students with profound handicaps has as its primary goal identifying and developing skills to increase partial participation in functional activities in home, school, and community environments. Partial participation af-

firms that students with profound disabilities can learn critical skills within the context of a wide variety of functional activities that occur in integrated settings. This learning of critical skills occurs even though the student may not be able to learn enough skills in the activity to perform it independently. A full discussion of partial participation is contained in Baumgart et al. (1982).

The reconceptualization of activity-based instruction for students with profound disabilities necessitates defining partial participation across three levels within the activity. These three levels are: (a) tasks within the activity; (b) steps within each task; and (c) basic developmental skills which comprise each step. Table 8-3 illustrates this framework for the activity of "doing the laundry". Table 8-4 illustrates this framework for the activity of "hygiene".

Insert Tables 8-3 and 8-4 About Here

For students with profound disabilities, there may be organic and developmental limitations to the level of their partial participation, but some type of active partial participation in meaningful activities is always possible. These activities provide not only the vehicle for instruction, but also the context for social relationships. It is these relationships which provide meaning and quality of life not only for these students, but also for their caregivers and others who interact

with them (Dunst, Cushing, & Vance, 1985; Evans & Scotti, 1989).

Activities are the global routines that a person engages in during the day in various environments (e.g., doing the laundry, hygiene). Activities are composed of multiple tasks. Different people may describe the tasks which make up an activity in slightly different ways. Whatever description is used, the task selected for instruction is typically broken down into steps for instruction. This series of steps is called a task analysis. Steps in the task analysis are typically broken down based on motor actions (action verbs). Teaching through the use of task anlyses has proven to be a powerful instructional tool (Snell & Zirpoli, 1988). As with task selection and breakdown, the number of steps in the task analysis may vary from person to person, but the conceptual framework remains the same.

At a more refined level of analysis, each step in the task can be described as being made up of basic developmental skills. These basic developmental skills are skills which typically emerge in children during the first two years of normal development. These developmental skills are usually specified by developmental domain: fine-motor, gross-motor, vision and hearing, communication, social, and play. Within the fine-motor domain, examples include reach, pincer grasp, hold, twist, and turn. Vision includes focus, fixate, scan, and track (Sternberg, Ritchey, Pegnatore, Wills, & Hill, 1986). As a rule, it takes completion of two or more basic developmental skills to complete a step in a task analysis.

Partial participation at any of these three levels may need to be facilitated through adaptations and alternative performance strategies. If these are needed, persons without disabilities must often make them. These include adaptations to the environment, social attitudes, materials, rules, or the child (see Baumgart et al., 1982 for a complete discussion of appropriate adaptations). Table 8-5 specifies the level of partial participation that would be expected of students in different characteristics clusters.

Insert Table 8-5 About Here

Partial Participation At The Task Level

Some students with profound disabilities will be able to learn tasks within an activity. These students are typically found in Characteristics Cluster Six and have functional use of their arms and hands and higher cognitive skills. For example, a student may learn to collect dirty laundry and carry it to the laundry room. Another student may learn to wash her hands.

Rationale for Approach. By teaching students a complete task, they are able to be independent in that task. This reduces the burden of caregiving on part of the parent or friend. For many students with profound disabilities, adaptations will have to be made in the task to allow for independent completion. For example, the handles on the laundry basket may need to be expanded or padded. The first step in the task analysis may have to be

prompted (e.g., when to collect the laundry). In this case, students may not be 100% independent in that they may not know when to do the laundry. But once told, they can then collect the laundry from clothes hampers in the house and carry it to the laundry area. The caregiver must still load, set, and turn on the washing machine. As can be seen, this level of partial participation allows the student to work cooperatively with the parent, thus allowing for social interactions.

Partial Participation At The Step Level.

As indicated above, steps in a task analysis are composed of motor actions. Opening the lid to a washing machine involves muscle action. Placing clothes in the machine also is a motor behavior. Completing these motor actions implies that the functional effect of the step is attained. That is, the washing machine lid is open rather tnan closed; and the clothes are in the machine rather than still in the basket. In general, students will need some level of voluntary arm and hand control to complete these motor steps. This type of partial participation, therefore, is typical for students in Characteristics Cluster Four, although some students in Characteristics Cluster Two will partially participate in this manner.

Learning one or more steps in the task analysis can be further described in three ways: (a) learning only one step; (b) learning two or more non-sequential steps; and (c) learning two or more sequential steps. At the most basic level, some students may only learn one step in the task. For example, a student may

learn to roll the dice in a board game, open the washing machine lid, lift a glass to his/her lips, turn on the tape player, or push a bowling ball down an adapted ramp.

Other students may learn several steps in the task, but they are not steps that occur in a row. For example, in handwashing the student may learn to turn the water on, and then after the adult has washed his/her hands, s/he may turn the water off. A student may learn to pick up the toothbrush, and then put it in his/her mouth after the teacher has put toothpaste on it.

Many students with profound disabilities have adequate motor skills, and can complete steps in the chain independently. However, they must be prompted to complete a step after they have independently performed the preceding step (Alberto & Sharpton, 1988). For example, a student may be able to open the microwave door, take the container out of the microwave, close the door, and carry the container to the table. The student, however, may open the door and then stop. Once verbally or gesturally prompted, s/he then takes the container out, but again stops. If prompted, s/he then closes the door. If prompted again, s/he carries the container to the table. For these students the ability to complete sequential steps in the task analysis becomes the primary objective. Teaching the student to complete two or more of these steps without prompts would be an appropriate target for instruction.

Rationale for Approach. Students who have the motor ability to complete a step in the task analysis no longer need to rely on

the caregiver or friend to do that step for them. Students who can pull their pants up no longer need the caregiver to stoop down and do it for them. Students who can scoop and bring food to their mouths no longer need one-to-one feeding assistance. Students who can turn on the radio can access a leisure skill by themselves without having to wait passively for another person to pay attention to them. The more steps students can do, the more actively they can participate in and control their own lives. Completing even a single step also provides behaviors which lead to positive interactions with and positive reinforcement from other people.

Partial Participation At The Basic Developmental Skill Level

At the most basic level, instruction focuses on teaching the student a basic developmental skill within the context of a specific step in the task (Gee et al., in press). These skills are both the developmental building blocks for higher level skills and skills that can have a functional effect on their own right (Sternberg et al., 1986). This level of partial participation is applicable to students in Characteristics Clusters One, Three, and Five and most students in Characteristics Cluster Two, even though they have the motor ability to participate at the step level.

These basic developmental skills (BDS) are the core of the curriculum process for the majority of students with profound disabilities. A listing of core BDS is in contained in Table 8-6. This list was developed through extensive literature review

and classroom intervention and instruction (Logan et al., 1992).

Insert Table 8-6 About Here

The distinction between mastering a step or steps in the chain and mastering a basic developmental motor skill within the given step can be confusing. In general, it takes motor ability to complete a step in the task analysis. Completing a step leads to obtaining the functional effect of the step. For example, during a dressing task, at the BDS level, a student might be taught to reach, grasp, and hold his pants. He might not, however, be able to pull them up. The teacher would then provide hand-over-hand assistance to complete the step. But at the step level, the student would be taught to actually pull up his pants, thereby achieving the functional effect of the step. Using washing hands as another example, the student might may be taught to reach and grasp the soap at the BDS. At the step level, the student would be taught to actually pick up the soap.

Rationale for Approach. The BDS targeted for instruction are selected for five reasons. First, their mastery should lead to increased sensory, motor, social, cognitive, and communicative participation in the activities. This increased partial participation provides the student with choice and control over the environment, increases motor and sensory functioning, and provides access to social interaction with others. These increases have also been documented to have positive effects on

caregivers, who then provide more opportunity to their children (Dunst et al., 1986). For example, a student might learn to activate a switch to turn on a favorite toy at school. The parents then could set up switches for the student at home to activate the radio, TV, or blender. Another student may learn to hold onto a grocery cart during community-based instruction, and the mother then could take the student shopping with her.

A second reason for targeting certain basic developmental skills is that mastery of these skills decreases the amount of time or effort caregivers must spend in caregiving activities. If a child learns to hold his/her mouth open during toothbrushing, the parent can more easily and thoroughly brush the child's teeth. If a child learns to hold his/her head at midline, then the father can more efficiently hold the cup for the child to drink.

Third, instruction on these BDS increases the alertness levels of students and facilitates increased interaction with other people and objects in the environment (Green, Canipe, Gardner, & Reid, 1990; Belfliore, 1990). This increased alertness and participation in interactions improves the quality of life outcomes for students with profound disabilities (Borthwick-Duffy, 1990).

Fourth, mastery of these BDS may enable the student to move into higher levels of partial participation, as these skills are the building blocks for completing steps in the chain. In many cases, however, learning and generalizing the BDS are the primary

objectives for students with severe motoric impairments.

Fifth, these BDS occur across most activities in which students typically engage. Reach and grasp is a basic component of almost all motor skills. Scanning from one item to another is the basic component in visual exploration of the environment and choice-making. The teaching of the same BDS across multiple activities is also the foundation in training for generalization (Horner et al., 1986).

Defining Type of Partial Participation Within the Basic Developmental Skill Level

Most students with profound disabilities partially participate in activities at the basic developmental skill level using skills from one or more sensory, motor, cognitive, communicative, or social domains (Gee et al., in press). These areas typically follow the developmental domains from birth through 24 months (Sternberg et al., 1986). There is considerable overlap among the skills from these different domains and boundaries between them may not always be clear. One person may describe an objective as social participation, while another may describe it as communicative. Therefore, the definitions of the types of partial participation which follow are given only as a general conceptual framework.

Sensory Participation

In this type of partial participation, students learn to use their eyes and ears within the context of the activity. This participation can vary by degree. At a basic degree, students

may only open their eyes when spoken to. At more advanced degrees, students may look at another person and smile or use their eyes to look from item to item in order to make a choice.

Motor Participation

In this type of partial participation, students learn to use their bodies to manipulate objects and people in the environment. At a basic degree, students may reach in the direction of an object. At more advanced degrees, students may grasp an item and move it for play purposes or to obtain the functional effect of the item (e.g. holding a toothbrush while brushing teeth).

Mobility Participation

In this type of partial participation, students learn to move from one location to another independently. At a basic degree, students may learn to roll over to access desired objects or be close to another person. At more advanced degrees, students may learn to use a walker to get to the bathroom or move their wheelchairs up to the table.

Cognitive Participation

In this type of partial participation, students learn that their motor participation has an effect on objects in the environment. At a basic degree, students may may learn to open their mouth when the the caregiver touches their lip with a spoon full of food. At higher degrees, students may learn to activate a switch to turn on the radio. At the most advanced degree, students can learn relationships among objects such as one-to-one correspondence or matching.

Communicative Participation

In this type of partial participation, students learn that their sensory or motor participation has an effect on other people. At a basic degree, students learn that smiling leads to continued interaction with another person, or that raising their arm tells another person they want an activity to continue. At a more advanced degree, students learn that focusing on or pointing to an object tells another person they want the object.

Social Participation

In this type of partial participation, students learn to engage in sensory, motor, mobility, or communicative behaviors which indicate the desire for, or continued pleasure in, interacting with another person. At a basic degree, students learn that eye contact with another person keeps that person communicating to them. At more advanced degrees, students may learn to activate a loop tape to ask another person for conversation.

Summary

In the activity-based model, teaching of instructional objectives always occurs within the context of an activity. The focus for the instructional objective can be at any of the three levels discussed above. The students may learn to complete a hygiene task such as washing their hands, while needing assistance in brushing teeth and hair. Alternatively, students with partially restricted use of their hands may only complete the steps of rubbing their hands together after the soap has been

placed on them, and rinsing their hands while the caregiver returns the soap to the soap tray and turns the water off. Students with restricted use of their hands and limited vision may only be learning the basic developmental skills of focusing on and reaching and grasping the soap while needing assistance in applying the soap to their hands. Students with minimal cognitive responses may only learn to look in the direction of the towel (anticipation) while the teacher reaches and grasps the towel and dries their hands.

Assessment for Selecting Activities for Instruction

The first step in designing appropriate curriculum is to select the activities for instruction. The specification of activities come from family interviews and ecological assessments of the school and the community. Family interviews are necessary because the family has primary caregiving responsibilities for the student in the current environment. Given the long term dependency needs of the child, the family also has primary responsibility for the student in most future environments. School ecological assessments are important because school is the current location for most of the six hours of instruction the student receives. Selecting specific environments ir the community is important because it highlights environments for instruction deemed important by the family, and for future environments in which students will participate in post school settings.

Determining Valued Activities, Tasks, and Environments Through Family Assessment

Activities are clusters of tasks which result in functional outcomes. Value of an activity is a subjective judgement made by the student's family. This determination is often based upon the necessity or regularity of the activity, the enjoyment or reinforcement received by the family member, or enjoyment demonstrated by the student or attributed to the student by a family member. The expected outcomes from a family interview would include:

(1) A specificaton of current family activities in which the student is included.

(2) A description of the extent of the student's participation in the activities.

(3) A delineation of the family members with whom the student interacts in each activity.

(4) The number and variety of environments in which the student participates.

(5) A specification of the future activites and environments in which the family would value the student's participation.

(6) A description of activities in which other family members participate that could be adapted to include the student.

The family interview should be conducted using a two-stage process. First, a list of family members should be developed. All questions for the interview should be provided on a written form and be reviewed with these individuals. Family members

would be expected to fill out the form following private family discussion and evaluation. Second, after the written responses are returned, a staff member should arrange a follow-up interview during which time responses can be expanded and more fully described.

Following is a list of suggested questions for which responses would be necessary.

List Each Actitivity or Task in Which the Student is Currently Engaged. Ask family members to list, in order, each activity in which the youngster is engaged from the time they awake until the time they go to sleep. It will be most helpful to have this information provided for each day of the week. However, asking them to provide this information for weekdays in general, and separately for the weekend, will suffice as their initial response. For weekdays, information should be provided such as the regularly occurring morning activity for preparing to go to school, meal times, after school leisure activities, evening activities such as television watching and playing with parents and siblings, and going to bed. For weekends, information should be provided about family activities in which the student is included when most or all family members are at home. These may include going to church and Sunday school, eating meals out, and visits to extended family members. As the staff begins looking at a broader scope of content, a similar analysis should focus on summer activities. Activities such as going to a pool, lake, beach, sporting events, picnics and camping trips might be

included.

List Who is Engaged in Each Activity/Task With the Student. Request that the person(s) engaged in each activity with the student be identified. Be sure to include those who are not members of the immediate family, such as extended relatives, babysitters, neighbors, and neighborhood children. During the follow-up, ask family members to describe what they do and what the youngster does in each activity. In addition, it is important to ask the following questions:

Why is this person engaged in the activity with the student?

What does this person enjoy about doing this activity with the student?

Who initiates the activity? Does the student initiate any? If s/he does, how do you know s/he is initiating it?

Answers to these questions will provide information concerning what it is the person finds reinforcing about doing the activity with the youngster and the extent of the student's current social network. These answers will also allow for a discussion and evaluation with the family of who else can become socially involved with the student.

List the Environments and Subenvironments in Which the Activity/Task Takes Place. Write down the rooms or other locations (yard, car, neighbor or extended family homes, community) where the activities take place. The interviewer should note whether the activities are being brought to the student or the student taken to the place of occurrence. This

provides an indication of the number of environments in which the student is involved. Identifying these environments will allow for an analysis of natural cues and consequences available for instruction.

List the Materials Being Used in Each Activity. For each activity in which the student is engaged, ask the family to list the materials involved. The interviewer should note how much contact or participation with the material the student has versus an adult or sibling. This information will allow for determination of the natural materials which should be included within school instruction. In addition, it permits an assessment and discussion of age-appropriateness and adaptations currently in use, or which could be developed, to increase student participation with the materials.

List Time Parameters. List the approximate time an activity begins and ends. Family members, not the interviewer, should provide and set time blocks. The interviewer should try to obtain responses to the following questions, which will assist staff in targeting instructional objectives:

Is an activity, due to lack of training, taking too long and, therefore, causing resentment or other problems with the flow of the family schedule?

Are certain activities taking so long as to have the effect of isolating the parent from other family activities, family members, or personal hobbies?

Are there long periods of down time in a student's

schedule which could potentially cause behavior problems?

List the Activities/Tasks in Which Other Family Members are Engaged at These Times and Where They Occur. This question seeks to determine those activities in which the student is not included and that may be targeted for his/her future inclusion. For example, if the student is playing on the floor with stuffed toys while the sibling is playing video games, it may be possible to teach the student to partially participate in playing a video game with the sibling. This partial participation extends the student's range of social interactions and activities.

Identify Those Parts of Activities/Tasks in Which the Student Does Not Participate That, If Participation Were Possible, Would Be Helpful to the Family Member(s). This information provides an indication about the student's current level of partial participation, and possible instructional objectives to increase that level of partial participation in critical activities. The interviewer should ask questions such as:

What is very difficult for you to accomplish with your youngster now (e.g. bathing, dressing, physical health procedures, eating)?

What could your youngster learn to do during that activity that would make it easier for you to complete the activity?

What could your youngster learn to do in any given activity that would make your or your other children's day easier to manage?

Identify Activities/Tasks That the Student Does Not Engage in Within Which the Family Would Like Him/Her to be Included. This will provide information about objectives which goes beyond current functioning. It assists in determining where the family wants instruction to go from here, how instruction can help the family provide more opportunities for the child, how instruction can expand student inclusion into current activities, and how the student's involvement in the family social network can be enhanced. These activities often include environments within the community and can, therefore, be used as critical components for community-based instructional programs. At this juncture, the interviewer should be trying to determine additional information such as:

What are the student's strengths?

Which of these strengths can be expanded into additional activities?

What does the student do that the family members view as "good" (i.e., fun, skilful)?

What activities does the student seem to enjoy doing?

How does the family determine that the student is enjoying an activity?

What times during the day do parents need additional assistance (e.g., when cooking, after dinner)?

Conducting an Ecological Analysis of The School and Community

At the same time that the family interview process is taking place, a further analysis should be made of the school and

community environment. The process is called an ecological analysis, and first involves the identification of relevant environments (Snell & Grigg, 1988). Relevant environments are those locations in which students currently function and those in which they may be expected to function in the future. In relation to school, these include both current and future school locations (i.e., elementary, junior or senior high school). In the later grades, when the child is an adolescent, future environments are determined by the student's transition committee as they target those locations in which s/he will live and recreate following graduation (see Chapter 12). In community settings, these environments include places the family currently takes the student, and those they would like to take him/her if certain changes in the student's behavior were to come about. These would include the grocery and convenience stores, clothing stores, restaurants, swimming pools, and parks.

Environments selected should be those which have importance to the student's current and future quality of life. For these students, these locations would be ones which provide the student with the opportunity to learn to function and live in integrated locations, and to extend their social networks. Therefore, environments selected should provide opportunities for interaction with nondisabled individuals, especially nondisabled peers. This means increasing the number of locations within the regular school campus in which these students participate, and the number of locations in the community in which family members

are willing and comfortable to take them.

The second step in an ecological analysis is to divide environments into subenvironments. In the school, there are a variety of subenvironments in which teachers have traditionally taken students. These include the cafeteria, library, playground, office, bathrooms (integrated and segregated), home living suite, clinic, teachers lounge, school building and grounds, and the immediate neighborhood. In addition, there are other subenvironments in which we should make efforts to integrate students in order to provide increased contact with nondisabled peers and to conduct functiona instruction. These include the gym, home economics lab, shop classes, and regular education classes. In the community, typical subenvironments would include aisles of grocery or clothing stores, cashier locations, tables/booths at restaurants, seating areas at bowling alleys, and swing sets or picnic tables at parks.

The third step is to determine what activities within these subenvironments can currently be used or developed for use for functional student involvement. It is important to determine if there is a match between the student's assessed instructional needs and these current or future planned activities within the environment. Identification of appropriate activities takes observation and creativity. This process for community settings has been discussed extensively by Falvey (1988). Unfortunately, the ecological assessment process for the school has not been as extensively discussed. Therefore, an example of a school

activity selection process is described in Table 8-7.

Insert Table 8-7 About Here

Assessment For Developing Instructional Objectives

The next major step in designing an appropriate curriculum is to assess student functioning within selected activities. This includes the assessment of the level and type of partial participation. In addition, instructional objectives based on this assessment must be integrated (matrixed) across the activities.

Rationale for Assessment of Level and Type of Partial Participation for Instructional Objectives

Assessment of instructional objectives always occurs within the context of the activities selected. This is done for three reasons. First, the activities are the avenue for participation with persons without disabilities. Second, teaching the same basic developmental skills or similar steps in a task across multiple activities promotes generalization. Third, students with profound disabilities often demonstate inconsistent responding to reinforcers. Therefore, motivation for participation must typically be intrinsic to the activity, materials, or persons engaging in the activity with the student.

Assessment can occur across any of the three levels of partial participation discussed above: assessment to decide which task(s) to teach; assessment to decide which step(s) to

teach; and assessment to decide which basic developmental skill(s) to teach. If assessment occurs at the BDS level, the teacher must also assess which type of partial participation to emphasize within each activity: sensory, motor, mobility, cognitive, communicative, or social.

Assessment for Determining Basic Developmental Skills for Instruction

Most students with profound disabilities partially participate at the basic developmental skill level. This is primarily due to the presence of a physical disability and/or cognitive deficit. Students from Characteristics Clusters One, Two, Three, and Five are typical candidates for this level of partial participation. The purpose of assessment is to target basic developmental skills which will increase students' (a) competence in motor, cognitive, or sensory components of the task; (b) ability to control their environment and make choices; (c) levels of communicative or social interaction with other persons engaging in the task; and (d) enjoyment in participating in the activity.

Assessment to determine the level or type of partial participation comprises seven steps:

(1) Observe the student in targeted activities and record performance.

(2) Discuss the student's performance with caregivers, family members, previous teachers, related services personnel, non-disabled peers, and adults at school and,

if necessary, revise your conclusions if necessary.

(3) Develop and prioritize instructional objectives from your observations, and write instructional objectives.

(4) Develop an instructional matrix integrating the instructional objectives and the activities.

(5) Select an instructional strategy to teach the objectives.

(6) Develop a data collection process to monitor student performance.

Observe the Student

Student's with profound disabilities have inconsistent responses to objects and people, both within and across activities. Therefore, the teacher must teach and observe the student across materials, people, environments, and times of the day. This teaching and observation typically takes two to three weeks. The teacher should systematically prompt the student through the steps in the activity.

Table 8-8 illustrates an assessment sheet for 23 BDS. Using this type of device, the teacher would record the student's response on each basic developmental skill for the steps in the task. This assessment is not done step-by-step for each task as that would be too time-consuming. Rather, the teacher would review the student's general responses across the steps in the task for each activity. In this case, the type of response would be specified in the "Response" column of the assessment form and would be based on the definitions that follow.

Insert Table 8-8 About Here

Generalized (G). If the BDS is performed independently (with no teacher prompts) across two or more tasks about 80% of the time, the teacher records a "G". Independent performance is also credited if an adaptation has been made. In the comments section, the teacher should note in which tasks the student performs the skill.

Specific (S). If the skill is performed independently in only one task about 80% of the time, the teacher records an "S". In the space provided for comments, the teacher should record for which task the student performs the skill.

Inconsistent (I). If the skill is independently performed less than 80% of the time, the teacher should record an "I". The teacher should also note whether the skill is inconsistenly performed across two or more tasks (IG) or only one task (IS). Again, the teacher should note the level of inconsistency and in which task or tasks the skill is inconsistently performed.

Prompted (P). If the student will perform the skill across two or more tasks if given a prompt less than hand-over-hand, (i.e., verbal, gestural, model, etc.), then the teacher should record a "P". If the student performs the skill with the prompt in only one task, a "PS" should be recorded. The teacher should note what prompt occasions the skill and in

which tasks the skill is performed.

Full Physical Guidance (F). The teacher should mark an "F" if she must provide hand-over-hand assistance for the student to perform the skill. The teacher should also note if s/he must provide full physical guidance in all tasks (FG) or only in a specific task (FS). If a specific task, s/he should record which task requires the full guidance. The teacher should also note if more physical control is necessary in some tasks rather than others. The use of more control may indicate that the student is "protesting" participation in that task. Some BDS, such as focusing, are difficult if not impossible to prompt with full physical guidance.

Not applicable (N). If staff believe that the student does not have the motoric or sensory abilities to learn the skill, then the teacher should record an "N". This should be used with caution and restricted to the motor and sensory domains. It should also be based on medical or well-documented experiential evidence.

Discuss the Student's Response With Others

As described above, students with profound disabilities perform skills inconsistently. It may be that the student consistently or inconsistently displays a BDS for various steps in a chain for a parent or peer but not for the teacher. The teacher should review observational data with parents, siblings, previous teachers, non-disabled peers, related services personnel, and any other adults with whom the student has contact. It

across multiple people, materials, or locations), or maintenance (can the student continue to do the skill over time). Criteria may also include decreases in level of prompt needed, latency between cue and prompt, or independent performance. Objectives are typically written to reflect the performance of the BDS across multiple functional activities. Illustrations of sample objectives where only basic developmental skills are stressed can be seen for Student A in Table 8-10.

Insert Table 8-10 About Here

Develop an Instructional Matrix

The objectives written after assessment typically cover more than one developmental domain, are taught across multiple activities, and also reflect functional domains. For example, during a snack activity, the student may have a cognitive or communicative objective (choose which food to eat), a visual objective (focus on the spoon), a motor objective (reach and grasp the spoon), an eating objective (chewing with rotary action), and a social objective (waiting his/her turn for the pudding). During a laundry activity, the student may have some of the same objectives: a cognitive or communicative objective (choose to do the wash or the dry), a visual objective (focus on the item to be picked up), and a motor objective (reach and grasp the laundry item). S/he may also have some different objectives from the same developmental domains: a social objective (smile when s/he

gives the laundry item to a less disabled peer who then puts the item in the washer or dryer).

Given that students are typically instructed in multiple objectives across multiple activities throughout the day, it is important to provide some systematic organization to these efforts. This is done through the use of a matrix. In the matrix, the activities are usually listed across the top. The objectives are listed on the left side of the scheduling form. For each activity, it is noted in the corresponding space which objectives are targeted for instruction within that activity. The instructional matrix for Student A is contained in Table 8-11.

Insert Table 8-11 About Here

The matrix serves as both a schedule and a visual reminder of the objectives targeted for instruction. If the space is used to record the student's performance, it can also serve as a data collection sheet. Clarity on which skills are targeted for which steps and in which activities is crucial. Without this clarity, teachers run the risk of just putting students through the activities with limited or no instructional focus.

Select an Instructional Strategy

For each objective, the teacher must select an instructional strategy. These strategies include both prompting and reinforcment procedures (Alberto & Sharpton, 1988).

Select a Data Collection Form

Although the matrix can also function as a data collection sheet, teachers may prefer to use a separate data collection sheet for each activity or objective. A sample data sheet for Student A is provided in Figure 8-1.

Insert Figure 8-1 About Here

Assessment for Determining The Step or Steps for Instruction

Many students with profound disabilities have adequate motor skills to learn to independently perform a complete step or steps in the task. These students typically have adequate use of their arms and hands and can interact motorically with objects. These students are primarily from Characteristics Cluster Four with a few from Characteristics Clusters Two and Six. They usually have generalized responses across all or most basic developmental skills when assessed at the BDS Level. If an inconsistent motor response is found, it usually is a function of motivation or lack of generalization rather than ability. Students may also have mastered the BDS for a given step, but they fail to appropriately sequence and perform those skills within a given step.

The purpose of assessment at the step level is threefold: to target specific skill steps, which if mastered, will increase the student's level of independent functioning in completing or engaging in the task; to provide information on how to decrease the amount of caregiving time that will be necessary; and develop ideas on how to increase the student's interactions with non-

disabled peers.

Through the assessment process, the teacher can target a single step, non-sequential steps in the chain, or two or more sequential steps in the chain for instruction. This process is basically the same as a "discrepancy analysis" (Ford & Mirenda, 1984) used with students with severe disabilities. An operational sequence similar to the one suggested for specifiying basic developmental skills should be used in this assessment process.

Observe the Student

The teacher should write or use an existing general task analysis for each task. In observing and prompting a student through the steps in the chain, the teacher should record the students response for each step using the following descriptions.

Independent Performance (I). If the step is performed independently (with no teacher prompts) about 80% of the time, the teacher records an "I". Independent performance is also credited if an adaptation has been made.

Inconsistent Independent Performance (IN). If the step is independently performed less than approximately 80% of the time, the teacher should record an "IN". The teacher should note whether the inconsistency varies by time of day, day to day, or is correlated with other medication or alertness variability.

Prompted (P). If the student will perform the step if given a prompt less than full physical guidance (hand-over-hand),

the teacher should record a "P". The teacher should note which prompt enables the student to complete the step. S/he should also note an "PIN" if the prompt inconsistently enables the student to perform the step.

Full Physical Guidance (F). The teacher should mark an "F" if s/he must provide hand-over-hand assistance for the student to complete the step. The teacher should also note if s/he must provide more physical control on this step than other steps used in other tasks. The use of more control may indicate that the student is "protesting" participation in that step.

Between Step Prompt (SP). The teacher should also note if the student can complete the step once a prompt is given for the student to initiate the step. It was noted above that many students with profound disabilities do not perform steps in a row for a given task even though they have the motor ability to do so. Finding sequential steps that the student can independently perform is a high priority for instruction.

Discuss the Student's Performance with Others.

The teacher should review his/her discrepancy analysis with the caregivers, previous teachers, related services personnel, and non-disabled persons in the school. These informants should report the student's performance for each step across the five performance levels (I, IN, P, F, SP). Differences in the informants' reports of the student's performance, as compared to the teachers, should be noted as this gives valuable information as

to acquisition and generalization of the steps in the task analysis. As with BDS assessment, each informant's report should be considered reliable.

Prioritize Steps or Sequences of Steps

The step(s) targeted for instruction are typically specific to each task since they are based on different task analyses. Prioritizing step(s) targeted for instruction within each activity should be based on nine criteria (see Table 8-12). As with the priority criteria for establishing BDS, these criteria are not necessarily hierarchial. We suggest targeting from three to eight steps per task. Examples of prioritized step objectives for Student B are contained in Table 8-13.

Insert Tables 8-12 and 8-13 About Here

Write Instructional Objectives

For students at the step level, instructional objectives are typically written more like objectives for students with severe disabilities. The difference is that the objective is written to indicate mastery of some, but not all of the steps in the task. Even though these students display higher level motor skills, it is still not anticipated that they will independently perform all the steps in the task. Objectives can be written to reflect acquisition, fluency, generalization, or maintenance of the step. In addition, criteria may reflect a less intrusive prompt or reduced latency in performing the step. An example of a combina-

tion of one step and one basic developmental skill objective for Student B can be found in Table 8-10 (see section below on "Students With Objectives From Both BDS and Step(s) Levels").

The objectives to master steps in a task are not typically matrixed as with BDS because they are specific to certain tasks. However, the activity schedule for the day is still used to structure the instructional flow according to natural sequences.

Select an Instructional Strategy

For each step targeted for instruction, the teacher should select an appropriate instructional strategy. These strategies include both prompting and reinforcement procedures (Alberto & Sharpton, 1988).

Select a Data Collection Form

As with all instruction, teachers should record student performance data. For each task within a scheduled activity for which the student has objectives, the teacher has a separate data sheet noting the steps targeted for instruction. An example of a data sheet reflecting targeted step(s) for instruction for Student B is provided in Figure 8-2.

Insert Figure 8-2 About Here

Students With Objectives From Both BDS and Step(s) Levels

Many students with profound disabilities will have objectives at both the BDS and step levels. In these cases, a matrix should be developed for objectives from the BDS level and sepa-

rate task analytic data sheets for the targeted step(s). This dual level of partial participation often occurs with students who have skill steps targeted for instruction in eating and hygiene tasks, such as scooping or flushing a toilet, which do not occur across multiple activities. However, they still have basic developmental skills, such as reach and grasp or focus, which occur not only during those eating and hygiene routines, but also across other activities. These students most typically are in Characteristics Clusters Two and Four and have functional use of their arms and hands.

Assessment for Determining Tasks Within Activities for Instruction

All students in Characteristics Cluster Six and some students in Characteristics Cluster Four may be able to learn a complete task within an activity. For example, these students may learn to wash their hands, not just the steps of turning on the water and soaping their hands. They may learn to put on their pants, not just pull them up. It may be necessary to make adaptations in how these students complete the task independently. For example, they may be independent in putting on sweat pants, but not in putting on jeans due to the difficulty of hooking the belt. They may be able to pour juice from a container into a glass, but only when using a certain type of container.

The important point to remember is that these students may learn to complete all the steps in the task if adaptations are made. Therefore, all steps in the task are targeted for

instruction and/or adaptation. For these students, task selection following a standard ecological assessment (Snell & Grigg, 1988) is the critical dimension of the curriculum process.

Conduct an Ecological Inventory

This inventory should be completed based on procedures developed for use with students with severe disabilities. This involves delineating environments, sub-environments, and activities within each subenvironment.

Prioritize Tasks

Once the activities are selected, tasks within them should be listed. Teachers and parents should then prioritize tasks for instruction based on nine criteria (Table 8-14). Once again, these criteria are not hierarchial. Prioritized tasks for Student C are contained in Table 8-13.

Insert Table 8-14 About Here

Conduct a Discrepancy Analysis

The purpose of this analysis is to target the steps in the task that need instruction so that the student can complete the task. This analysis sets the stage for a decision-making process in which one determines whether to teach a step or make an adaptation in the step. For each step, the teacher should record the students response using the same abbreviations as described under the section on assessment for selecting steps for instruction. As with assessment for the BDS and step levels, the teacher

should discuss the student's response with others and note any differences in student performance for the steps in the task analysis.

Make Adaptations and Develop Alternative Performance Strategies

Many students with profound disabilities can be task independent if adaptations are made. Since the outcome is for the student to be independent, adaptations should always be considered and implemented. If appropriate, they can be faded later. Most adaptations for students with profound disabilities, however, are permanent. One way to tell if an adaptation is needed is to analyze student performance data. If the student is making no progress on a step while s/he is making progress on others, then that step should be considered for an adaptation. Based on previous experience, caregivers or previous teachers may know that a similar step on other tasks had never been mastered. In that case, an adaptation should also be considered. If the student has a documented physical or sensory disability which would prevent mastery of the step, an adaptation should also be made.

Write Instructional Objectives

Objectives for these students are written across functional domains, reflect mastery of the task, and are similar to objectives for students with severe disabilities. Generalization is addresed by specifying where and when the activity takes place. The activity schedule for the day is still used to structure the instructional flow. For each scheduled activity the student will

have a task targeted for instruction (refer to Table 8-10 for a description a sample objective written at the task level for Student C).

Select an Instructional Strategy

For each task targeted for instruction, the teacher should select an appropriate instructional strategy. This includes both prompting and reinforcement strategies (Alberto & Sharpton, 1988).

Select a Data Collection Form

Once again, teachers should record student performance data. An example of a data sheet reflecting anticipation of task mastery for Student C is provided in Figure 8-3.

Insert Figure 8-3 About Here

Students With Objectives From Both Step and Task Levels

A few students with profound disabilities will have objectives at the step and task levels. If that is the case, a task analytic sheet targeting the step(s) for instruction will be used for the step objectives and a complete task analytic data sheet will be used for the task level objectives.

Characteristics Cluster Seven: Students for Whom Activity-Based Curriculum and Instruction is Problematical

Within the category of students with profound disabilities, there appears to be some for whom the downward extension of functional, activity-based curriculum is problematical (Logan et

al., 1992). Appropriateness of a functional curriculum for some students with profound disabilities has also been questioned by Guess (1989). These students can all be described as having minimal cognitive responses; restricted use of their extremities in combination with either asleep or agitated alertness levels (see Chapter 4); and/or chronic or routine health care needs (see Chapter 5). In addition to this combination of multiple disabilities, several behavioral descriptions can also be made about these students which can assist teachers in differentiating these students from other students with profound disabilities for whom activity-based curriculum is appropriate.

First, these are students whose alertness levels do not significantly improve with appropriate stimulation via systematic instruction within age-appropriate activities. Second, these students' partial participation in functional activities can only be achieved through intensive and continual hand-over-hand instruction. In spite of this intensive and systematic full guidance, these students demonstrate little or no change in affect which would indicate enjoyment in the task or awareness that they are partially participating. Third, their acquisition of basic developmental skills within the activity-based curriculum appears to be minimal or non-existent. Fourth, these students require high levels of teacher time for maintenance of their health care, nutritional, and structural positioning needs. Fifth, teachers have reported that these students require high levels of nurturing, calming, and touching/holding (Thompson & Guess, 1988).

Sixth, because these students typically have internal control over their alertness (Guess et al., 1990), their receptivity to instruction is determined by their internal schedule and not the teacher's activity schedule. Therefore, teachers must be alert and ready to provide contingent stimulation based on the child's alertness and receptivity rather than a pre-determined schedule.

This type of intensive, physical, emotional, and one-to-one instructional demand on the teacher leads to difficulties in implementing activity-based curriculum. It is difficult to provide instruction to these students in heterogeneous groups and engage them in community- and activity-based formats without such approaches adversely affecting the instructional time for other students in the group. Unfortunately, this usually results in a situation where a small, homogeneous class is established for students with complex and multiple disabilities. This classroom model is not considered optimal, but it appears to be a reality in many systems due to staffing restrictions, budgetary constraints, and health and safety considerations. Under no circumstances, however, should these classes be in segregated environments. These students still can profit from planned and continual social interactions with students without disabilities. It is our belief that a decision to include a student in Characteristics Cluster Seven and develop an alternative curriculum approach is made only after the student's inclusion in activity-based curriculum has failed to show positive student outcomes.

Establishing An Alternative Curriculum Framework

Even though these students have shown minimal or non-existent progress under an activity-based curriculum, the proposed, alternative curriculum structure should still have components of systematic instruction. First, the intervention should be active. In other words, the teacher should still expect some type of response from the student. Second, the intervention should be contingency-based. The teacher should try to teach students that their behaviors have an effect on other people and objects in the environment. Therefore, an instructional paradigm favoring active, contingency-based programming over passive, sensory stimulation programs is an absolute necessity (Utley, Duncun, Strain, & Scanlcn, 1983).

A third component of the alternative curriculum framework is a the use of interventions that are systematic and data-based. A data-based program should include not only the specific configuration of the student's response, but a specification of the following: the type of intervention attempted; the location, materials, people, or time of day; the frequency, duration, and intensity of the intervention; and the amount of systematic, contingency-based instruction provided. Anecdotal records should also be maintained. Without a correlation between teaching variables, situational variables, and student performance, interventions that do have an effect may not be noted.

Components of An Active, Contingency-Based Curriculum

The components of the alternative curriculum are built around the four primary needs of these students. These needs are

not necessarily hierarchial. Usually, the balance across these four needs will fluctuate daily.

Organic Health Care Needs. These students typically have a variety of nutritional, respiratory, gastro-intestinal, seizure and medication, cardiac, and body temperature control needs (see Chapter 5). Many of these are life-threatening, and most are time-consuming for teachers to monitor and attend to. Many of these needs, such as nutrition, suctioning, breathing treatments, and medication, can be scheduled as an integral part of the instructional day. As such, they should be used as opportunities to develop contingency awareness.

Structural Needs. These are centered around the positioning needs of these students. All of these students have postural dysfunctions. Their positions must be continually changed to prevent further bone, joint, muscle, and skin deterioration (see Chapter 5). These students must also be correctly positioned to facilitate both voluntary motor control and sensory input. As with organic health care needs, positioning needs can typically be met on a scheduled basis and contingent stimulation can be provided to the student in all positions. In addition, students can always be positioned in proximity to one another, to non-disabled peers, or other staff members.

Social/Emotional Needs. Many of these students appear to require large amounts of caregiving time from teachers. Some of this is related to the health needs of these students. Students who are in respiratory distress, having seizures or gastro-intes-

tinal disturbance, or apparently experiencing physical discomfort, elicit and typically require caregiving behaviors from teachers such as holding, rocking, touching, and calming vocalizations. Since these teacher responses are based on variable student behaviors, the time and duration of these teacher behaviors are also highly variable and may be looked upon as disruptive to scheduled instruction with students. However, by focusing on contingency awareness and contingency building activities during these interactions, positive outcomes may be achieved.

Cognitive, Sensory, and Communication Development

In spite of the minimal cognitive responses displayed by these students and the consuming demands for their organic, structural, and social/emotional needs, these students should be provided with contingency-based interventions that attempt to increase their alertness to the environment, and their interaction with people and objects. These interactions should be planned to increase, generalize, or maintain the following: an understanding of cause and effect; the ability to express wants and needs, choice-making, and control over the environment; social responses such as eye contact and smiling in response to interactions with other people; and enjoyment in participation in activities (this includes avoidance of negative stimulation). A series of activities should be developed and scheduled to provide this contingent stimulation. The majority of these activities can be designed so that a minimum of two students are participating in the activity.

Activity Selection

If possible, activity selection should follow the parameters previously discussed with a focus on family interviews and school ecological assessment. However, many of these activities are not motivating or reinforcing to these students so teachers must be creative in developing simple, short activities that may not appear as functional as seen in other classrooms. These activities should be based on observed student preference; hypothetical student preference based on interviews and previous experience; or motor and sensory needs of the student.

Activities centered around switch operation for cause and effect are often selected for these students. If possible, the item activated should be multisensory. These would include the standard array of battery operated toys, vibrators, TVs, radios, tape recorders, and computer programs.

Movement-based activities are another option. These activities have two different purposes. The first is development of motor skills and includes range of motion exercises; vestibular stimulation; and proprioceptive, protective, and balance reactions. The second is acquisition of cause and effect behaviors and early communication (Sternberg, Pegnatore, & Hill, 1983). These include such behaviors as rocking, swinging, and bouncing.

Recreation and leisure activities with non-disabled peers should also be planned. This would involve encouraging the student's partial participation in activites in which the non-disabled peers are engaging, such as video game playing, wheel-

chair relay races, sand and water play, and art.

When possible, all activities except hygiene should be done with non-disabled peers, and in multiple environments including community and regular education settings. These locations and interactions should be determined by the student's health, physical state, and behavioral responses to those people and settings, rather than by preset teacher or staff beliefs.

Selecting Instructional Objectives

Educational outcomes for these students will be different from the simple acquisition of basic developmental skills or skill steps as described earlier. These outcomes include small degrees of change in basic developmental skills such as focusing, smiling, and behavior change when stimulated. Specific exemplars might be: (a) changing behavior when stimulated; (b) focusing on objects and people; (c) orienting to sounds; (d) indicating the desire for continuance of an activity (recurrence or more); (e) smiling in response to verbal interaction; (f) acknowledging the presence of another person; (g) developing cause and effect behaviors; and (h) making choices in reaction to stimulus input.

Additional educational outcomes for these students have been described by Evans and Scotti (1988). They include: changes in affect indicating enjoyment in partial participation; changes in alertness levels; increase in number of locations and activities where instruction occurs; increased variance of the types of materials and people with which and whom they are interacting; changes in opportunities provided by caregivers as a result of

improvements in alertness or contingency responses by students; increase in the amount of time engaged in contingent stimulation; increased functional effect of behaviors; and increased complexity of behaviors in which they are engaged. These types of changes, rather than student responses, are usually targeted for data collection as a matter of teacher routine.

Building an Integrated Curriculum Across the Needs of the Student

The four need areas described above are all theoretically equal and teachers should try to seek a balance across them. Given the health, structural, and social/emotional needs of these students, their need for cognitive/communicative/social development is easily overlooked. Teachers must carefully and consistently plan and implement contingency-based activities with their students and not become only physical and emotional care providers. The balance for these students across the four need areas is difficult to attain and easily interrupted by the health and social/emotional needs of the students. Nevertheless, teachers should plan for the balance. Table 8-15 presents examples of instructional objectives for Student D. The BDS and teacher monitoring objectives could be listed on a matrix similar to the one displayed in Table 8-11. These would then cut across the various activities that would be specified.

Insert Table 8-15 About Here

Combining Need Areas

Almost all interactions with the student can combine two or more of the areas described above. Examples of blending two areas include: health (feeding) and structural (side-lying); health (postural drainage) and cognitive (switch activation); and social-emotional (rocking) and structural (lap sitting); Examples of combinations of three areas would be: cognitive (more), social/emotional (rocking chair), and structural (lap sitting); structural (tumble form), cognitive (focus), and health (feeding); and health (postural drainage), structural (over a wedge), and cognitive (switch activation). Examples of combining all four areas are: health (postural drainage), structural (wedge), cognitive (switch activation) and social/emotional (patting on the back); health (tube), structural (side lying), cognitive (focus), and social/emotional (calming vocalizations); and cognitive (orient to sound), health (feeding), structural (tumble form), and social emotional (calming vocalizations).

Scheduling

All four curriculum areas must be addressed in the schedule. The following process is suggested.

Develop and Plan Activities for Cognitive Development

These activities should be as age-appropriate and contextual (functional) as possible. It is suggested that activities for cognitive development be done first as it is the most easily overlooked curriculum area for these students. These activities should be scheduled into 15 minute blocks. Some of these activities will be scheduled around times when related services person-

should also be considered.

Scheduling Time for Social and Emotional Support

Many of these needs cannot be scheduled. They typically arise from the health and structural needs of the students. All teachers, however, can plan a balance between active stimulation and less stressful, more caregiving times. Teachers should also plan to attend to the nurturing needs of their students during transition times by taking an extra moment or two to hold or touch a student in a reasurring manner. All teachers will learn the ebb and flow of their students emotional life. This will be of assistance in designing a plan for preventive caregiving.

Living with Schedule Breakdowns

By definition and self selection, these students set their own schedules. Various medical and organic dysfunctions, such as diarrhea or respiratory distress, do occur. Throughout the continual rearrangements of the schedule necessitated by the students, the teachers must keep alert to losing the curricular balance, and seek to regain the balance as quickly as possible.

Summary

These students provide the ultimate challenge to us as educators. Their apparent non-educational needs such as health care, structural, and social/emotional support often overshadow their needs in sensory, motoric, cognitive, and communicative development. These students' level of partial participation in activities; the teacher effort needed to provide the continual hand-over-hand instruction needed for that partial participation;

and the students' minimal response to that partial participation all challenge us to find activities that appear stimulating and motivating to them and which enhance their enjoyment of life.

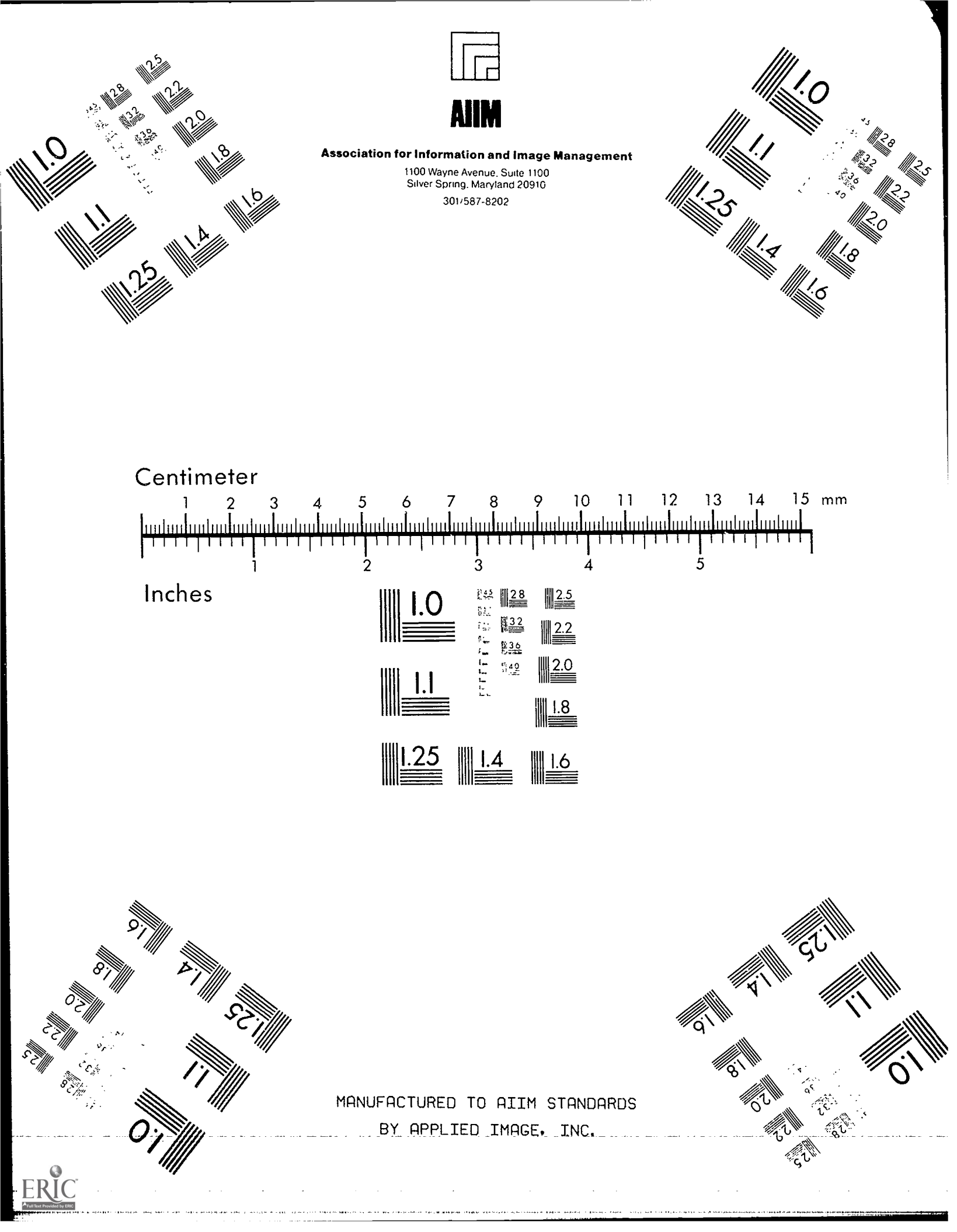
Conclusion

A comprehensive curriculum design for students with profound disabilities is a multi-step process that calls for creativity on the part of the teacher and a committment to including the family in the design. The curriculum model of choice for almost all students labelled profoundly disabled is an adaptation of an activity-based curriculum where the adaptations focus on refining how students can increase their partial participation in a more active manner.

Students with profound disabilities are a very heterogeneous group. Regardless of the severity of their multiple instructional needs, these students can learn critical skills which will improve their quality of life. These critical skills should always be taught within the context of integrated instructional environments where they can regularly interact with persons without disabilities. This interaction can improve not only the quality of life and educational outcomes for students with profound disabilities, but can also enrich the lives of persons without disabilities.

Table 1 Definitions of Characteristics of Students with Profound Disabilities

Cognitive Functioning	Physical Disability	Alertness to the Environment	Behavior Interference
Minimal Cognitive Responses Students are alert to the environment but do not show recognition of significant persons, do not use familiar stimuli except in a stereotypic manner, do not show anticipation of upcoming events or steps in a chain, and do not respond to traditional stimulus control instructional procedures. Includes students who do not orient to environmental stimuli, or respond at a purely reflexive level.	**Restricted Use of Extremities** Students demonstrate no functional use of arms or legs except the ability to activate a head, hand, arm, leg, or body switch when correctly positioned. Students may engage in gross arm movements, but exhibit no fine motor control.	**Asleep** Students are either asleep, or if they are awake, give no behavioral indications that they are visually, auditorily, or motorically attending to environmental stimuli. Includes the "biobehaviorial states" of asleep-inactive, asleep-active, drowsy, daze, chronic seizure (Guess, et al., 1991).	**Severe Interference** Students engage in challenging, stereotypic, or other undesirable behaviors regardless of the teacher engaging in systematic instruction within the context of a functional curriculum. Students require close teacher proximity and even physical control. Management and redirection of the behavior take ten or more minutes and require the teacher to stop teaching other students. Behaviors occur five or more times per day.
Functional Cognitive Responses Students do recognize significant person, do use familiar stimuli in a functional manner, and do anticipate events or upcoming steps in a chain. Students do not follow traditional stimulus control instructional procedures.	**Partial Use of Extremities** Students demonstrate functional use of arms and hands. This includes the ability to hold a spoon or cup, manipulate large and small items in a functional manner, and partially participate in dressing and hygiene tasks. These skills may be performed with adaptations.	**Agitated** Students engage in constant stereotypic, self-injurious, and/or crying behaviors which greatly restrict their attention to stimulus items. Includes the "biobehaviorial state" of awake-active/self-stimulatory and crying/agitated (Guess, et al., 1991).	**Moderate Interference** Students, if given systematic instruction within the context of a functional curriculum, do not require additional teacher proximity or physical control. Students engage in undesired behavior if the teacher fails to maintain appropriate instructional or curricular control. Management and redirection of the behavior take less than ten minutes. Teacher does not typically have to stop teaching other students. Behaviors occur less than five times per day.
Higher Cognitive Responses Students labelled profoundly disabled based on IQ test scores but who demonstrate or have emerging the following cognitive and communicative behaviors: matching, imitation, one-to-one correspondence, expressive symbolic communication systems of more than three symbols, and receptive comprehension as evidenced by symbolic instruction following behaviors. These students do follow traditional stimulus control instructional procedures.	**Unrestricted Use of Extremities** Students are ambulatory and engage in a range of gross and fine motor tasks.	**Awake** Students are awake and attending to environmental stimuli at one of the three levels described under cognitive functioning. Includes the "biobehavioral states" of awake active-alert and awake inactive-alert (Guess et al., 1991).	**Occasional Interference** Students engage in occasional undesired behaviors that require a few minutes of teacher verbal or physical intervention. Behaviors occur less than five times per day and the teacher rarely has to stop teaching other students. Includes students who have no undesired behaviors.


AIIM
Association for Information and Image Management
1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202
Centimeter
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 mm
Inches
1 2 3 4 5
MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE, INC.

Vision Impairment	Hearing Impairment	Mobility Level	Health Status	Chronological Age
Blind Students may detect light and dark or motion, but have no pattern or form discrimination, no evidence of eye/hand coordination, and no visual exploration of the environment.	Deaf Students neither startle in response to nor orient to sound.	Attendant Students must be pushed in wheelchairs, carried, or physically assisted by another person from location to location.	Chronic Students regularly require emergency medical care either through a nurse's intervention or emergency service, need nurse monitoring of their health because it is too complex for teachers to evaluate, and/or need more than one hour of adult physical health care on an individual basis during a school day. Tube feeding is not considered a medical procedure. Seizure activity must be medically monitored due to its life threatening nature. Student health care needs interrupt the teacher's schedule on a daily basis, taking her away from instruction of students for longer than ten minutes.	Elementary: Students are ages 5 through 12.
Impaired Students have functional vision as evidenced by eye/hand coordination and visual exploration of the environment. There is a visual impairment as diagnosed through a medical evaluation or functional evaluation resulting in a need to make adaptations to the instructional environment.	Impaired Students have functional hearing as evidenced by orientation to sound either with or without aids. There is a hearing impairment as diagnosed through a medical or audiological evaluation or through a functional evaluation resulting in a need to make adaptations to the instructional environment.	Limited Students push their own wheel chair, use a walker, or roll or scoot in school or home environments. They can not move self independently in community settings.	Routine Students require physical health care procedures such as postural drainage, suctioning, catheterization, and etc., but these needs can be accommodated as part of a teacher schedule and take less than one hour. Procedures do not interrupt other instructional activities on a daily basis. Seizures may occur several times per day, but they require only a few minutes of teacher monitoring and are not normally life threatening.	Middle: Students are ages 12 through 15.
Normal Students demonstrate no visual impairments as functionally identified by staff or testing by an eye care professional which require the teacher to make adaptations to the instructional environment.	Normal Students demonstrate no hearing impairments as diagnosed functionally by staff or through medical/ audiological evaluation which require the teacher to make adaptations to the instructional environment.	Self Students walk, use a walker independently, or move self in wheelchair not only in home and school environments, but also in the community.	Occasional: Students may require regular dispensing of medication. They may also have colds or intestinal dysfunctions occurring on widely scattered days. These students may also have occasional seizures which do not take more than a few moments of teacher time to monitor and evaluate and are not normally life threatening.	High: Students are ages 16 through 22.

Table 2
Characteristics Clusters of Students with Profound Disabilities

Cluster	Student Description
Cluster One - Students with minimal cognitive responses combined with restricted use of their extremities.	Calvin is an 11 year old, non-ambulatory student. Use of arms and legs is limited to gross motor movements which are slow and often accompanied by tremors. Head and trunk control is also difficult to maintain and he spends most of his time in his adapted wheelchair, in tumble form chairs, or a bean bag chair. He is often congested and drools. Although vision and hearing are thought to be normal, he does not respond to most sounds, including verbalization, and does not fixate on most items or look at people except while being fed. He does not demonstrate awareness of cause and effect and has little interaction with people or objects. Without appropriate stimulation he will sleep at least four hours a day, even though he is not given medication. He cries, turns his head, or falls asleep to protest participation in activities. He has no other communicative behaviors.
Cluster Two - Students with minimal cognitive responses with either partial or unrestricted use of their extremities.	Tom is a fourteen year old ambulatory student with functional use of his hands. He has no safety awareness and will wander away if not supervised. He seizures 12 - 18 times per day. He is awake during the day but is occasionally sleepy due to medication. He wears diapers. He feeds himself with a spoon and with his fingers and drinks from a cup. However, he does not grasp and hold other objects except to engage in stereotypic behaviors with them. He focuses only on food, but will make occasional eye contact with staff. He demonstrates no recognition of other people but will smile occasionally at his mother. He demonstrates no understanding of routines or anticipation of upcoming steps in a task.
Cluster Three - Students with functional cognitive responses combined with restricted use of their extremities.	Sally is a non-ambulatory 9 year old girl. She can move her right arm from midline to the edge of her lap tray. She focuses on people and smiles in response to verbalizations from them. She will look at objects but does not use her vision to make choices between objects. She does not look at one of two objects named by the teacher. She has lung congestion and must be placed over a wedge three times a day for postural drainage. A careful program of oral hygiene is also accomplished twice a day. She needs oral-motor facilitation prior to being fed and needs chin control for chewing and drinking from a cup. She is awake/alert all day and enjoys being with other people.
Cluster Four - Students with functional cognitive responses combined with partial or unrestricted use of their extremities.	Melanie is a 16 year old ambulatory student with functional use of her hands. She has visual impairments, but appears to see well directly to the front. This does not affect her ambulation and she can find small food items with ease. She can eat and dress herself with only minimal assistance. She is trip trained and has only occasional accidents. Melanie requires constant supervision since she will eat almost any object (pica). She engages in head banging and will suck her fingers when frustrated or not engaged in other activities. She prefers to sit and will at times complain through general vocal noises. She responds inconsistently to food reinforcement. While Melanie seems to have some recognition of familiar environments, she shows little evidence of discriminating between people. She does show some anticipation of succeeding steps when engaged in familiar activities.

Cluster Five - Students with higher cognitive responses combined with restricted use of their extremities.

Jerry is a 13 year old non-ambulatory student. He can move his right arm and hand enough to activate and release a pressure switch mounted on his lap tray. He uses his vision to make choices by looking at objects and pictures. He has a clear yes/no head shake and responds appropriately to questions. If asked if two items are the same, he can shake his head yes/no correctly. He uses his right hand to activate a loop tape with five messages on it. He is totally dependent on caregivers for eating, dressing, and toileting. He does not wear diapers and will answer yes/no when asked if he needs to go to the bathroom. He does indicate his need to use the bathroom by using a specific vocalization. He laughs appropriately and humorous events and enjoys being with people.

Cluster 6 - Students with higher cognitive responses combined with partial or unrestricted use of their extremities.

Rashad is a seven year old ambulatory student with functional use of his hands. He has no medical problems. He wears glasses (when he brings them to school). He is awake/alert throughout the school day. Though he still wears diapers, he is on an hourly toileting schedule. When told, he can go to the bathroom, pull down his pants and diaper. He partially assists in dressing. He indicates the need to go to the bathroom approximately three times per week. He understands simple commands and requests such as "come here", "go to", and "stop." His means of expressive communication consists of a few simple gestures and facial expressions. He can match five noun pictures to their objects and use them for communication in responding to questions. He can match socks by color (white, black, red). He feeds himself, given continuous verbal prompting, can complete each task in his hygiene routine (cannot judge water temperature). When on a tricycle or plastic skates he makes no attempt at movement without verbal and some physical prompting. He demonstrates no curiosity or interest in toys. He will listen to music on a taperecorder for up to fifteen minutes. He goes into the Kindergarten class three times per week during storytime. He sits among the children but makes no attempt at social interaction and ignores attempts by the kindergartners.

Cluster Seven - Students with minimal cognitive responses combined with both restricted use of their extremities and either asleep/agitated levels or chronic/routine health care needs.

Linda is an eight year old girl with no voluntary control over her body except for limited head turning. She is visually impaired but does focus occasionally on another person. She sleeps over half the day and has three to eight crying spells per day. She has irregular breathing, chronic respiratory distress, and requires oxygen intermittently. She has a severe scoliosis, an ulcerated gastro-intestinal tube opening, and sensitive skin which is subject to pressure sores and diaper rash.

Table 3: Activity Description for Doing the Laundry

Tasks: For doing laundry	Steps: For operating the machine	Basic Developmental Skills: Set amount of time for machine to run
Gather dirty clothes	Open the lid	Fixate on dial while completing other BDS
Sort clothes	Distribute heavy items in machine	Reach for dial
Operate washing machine	Distribute light items in machine	Grasp the dial
Operate dryer	Add detergent	Hold the dial
Fold clothes	Set amount of time for machine to run	Turn dial to setting
Hang clothes	Close lid	Release the dial
Put clothes away	Set water level	
	Set temperature level	
	Set appropriate cycle	
	Turn on machine	

Table 4: Activity Description for Hygiene

Tasks: For Hygiene Activity	Steps: For Washing Hands	Basic Developmental Skills: Turning on Water
Brush teeth	Approach sink	Anticipate need to turn on water
Wash hands	Turn on water	Focus on faucet
Brush hair	Adjust water temperature	Cause/effect that faucet turns on water
Take a bath	Pick up soap	Reach for faucet
Take a shower	Soap hands	Grasp faucet
Wash face	Put soap away	Hold faucet
Clean finger nails	Rub hands to clean	Turn faucet
Clip finger nails	Rinse hands	Release faucet
Put on deodorant	Turn off water	
Shave	Dry hands	
Menstrual care	Leave sink area	

Table 5: Student Characteristics Clusters Related to Level of Partial Participation

Characteristics Cluster	Level of Partial Participation
Cluster One	Basic Developmental Skills
Cluster Two	Basic Developmental Skills for most students
	Skill Step(s) for some students
Cluster Three	Basic Developmental Skills
Cluster Four	Skill Step(s) for most students
	Basic Developmental Skills for some students
Cluster Five	Basic Developmental Skills indicative of higher cognitive levels
Cluster Six	Tasks for most students
	Skill Step(s) for some students
Cluster Seven	Basic Developmental Skills with alternative educational outcomes

Table 6: Core Basic Developmental Skills Listed by Developmental Domain

SENSORY

Focus, fixate, accommodate, converge, track, shift gaze, scan, track, detect sound, orient to sound.

MOTOR

Head control, weight bearing, cooperative body movement, sitting, self position change in wheelchair, pull to stand, stand, endurance, reach, grasp, hold, placement, release, transfer, push, pull, twist, turn, roll, crawl, creep, cruise, walk, climb stairs, descend stairs, transfer in/out of wheelchair, self mobility in wheelchair.

SOCIAL

Accepts, calms, attends, acknowledge, show, interchange, initiate, explore, turn taking, share.

COGNITIVE

Behavior change when stimulated, attend, follow guided action, anticipation, cause/effect, discrimination, choice making, 1:1 correspondence, imitate, match, sort.

COMMUNICATION

Protest/reject, request attention to self, request object/action, request more, vocalization, movement cues, object cues, touch cues, gesture cues, communication board, manual sign, verbalization, direction following.

Table 7: Activity Analysis of School Subenvironments

Sub-Environment	What Peers Currently Do Which Students Could Do	Activities Others Do Which Students Could Do	Teacher Created Activities
Cafeteria	Eat with peers Clean cafeteria Bus Dishes	Prepare Trays Handout milk Collect lunch tickets Collect money Sell ice cream Wash and stack dishes	Passing out napkins Passing out silverware Pouring Wrapping silverware in napkins
Library	Storytime Checks out books, records, tapes, filmstrips Browse magazines Socialize	Shelve Books Dust books and shelves Arrange chairs Insert cards in books Magnetize and demagnetize books Stamp date Vacuum (carpet sweeper)	Watering plants Cleaning windows Cleaning TV screen
Playground	Play with peers Learn to use equipment	Trash pick up Rake	Plant flowers Collect equipment Pass out equipment
Office	Take messages to office staff Social interactions	Collect attendance sheets Collect lunch money Xerox Putting messages in box Collate Dust	Staple and collate Stuff envelopes Deliver mail to teachers from their boxes
Bathrooms	Wash hands Comb/fix hair Toileting	Fill paper towels Fill soap dispenser Replace toilet paper Mop Empty waste paper basket	Clean mirrors
Clinic	Take medication Socialize with nurse/volunteer	Clean Strip and make bed Wash linens Stock supplies	Rolling ace bandages

Sub-Environment	What Peers Currently Do Which Students Could Do	Activities Others Do Which Students Could Do	Teacher Created Activities
Building and Grounds		Raking Trash on grounds Clean windows Trash cans Planting Weeding	Collect pencils to sharpen Recycling (other class saves cans) Buying materials when on CBI
Home Economics/ Home Living	Cook Clean Laundry Socializing	Custodial cleaning Kitchen staff washing cafeteria laundry Load and unload dishwasher	Prepare snacks Prepare lunches for CBI outings or field-trips
Music Class/Band	Stack and carry instruments Play music	Clean music stands Arrange music stands	Pass out music folders Records back in jackets Cassette tapes in holders
Art Class	Paint Clay sculpture Draw Glue Cut	Pass out supplies Collect supplies Clean brushes Clean tables Sweep floor Arrange supplies on shelves	Hang things on bulletin boards Stir paint Fill paint, glue and water bottles
Gym	Sports Exercise/warm ups Aerobics Attend pep rally	Clean bleachers Sweep floor Clean equipment	Collect equipment Pass out equipment
Regular Education classroom	Unit activities Storytime Hands-on learning activities, e.g. nature Fieldtrips Assemblies Lunch Recreation/Leisure/Play Attend art, music, etx. Socialization		Peer tutoring Strategies for partial participation

103

Table 8: Assessment Form for Basic Developmental Skills

Student	Response	Comments/Notes
A. VISION		
1. Focus and fixate		
2. Accommodate/ converge		
3. Track		
4. Shift gaze		
5. Scan		
B. AUDITORY		
6. Detect		
7. Orient		
C. MOTOR BODY CONTROL		
8. Head control		
9. Weight bearing		
10. Cooperative body movement		
11. Sitting		
12. Self position change in Wheelchair		
13. Pull to stand		
14. Standing		
15. Endurance		
D. FINE MOTOR MANIPULATION		
16. Reach		
17. Grasp		
18 Hold		
19. Placement		
20. Release		
21. Transfer		
22. Push		
23. Pull		

Table 9: Prioritizing Basic Developmental Skills within A Step for Instruction

1. Motor skills which increase competence in motor steps of the task, which provide range of motion and stretching, and which prevent muscle and structural deterioration.

2. Skills which increase the student's social and communicative interactions with others (choice making, expressing preferences).

3. Skills which, if mastered would decrease the amount of time and effort caregivers spend in health, hygiene, transfer, and mobility tasks.

4. Skills which occur across multiple activities and environments, especially community environments.

5. Skills which, if mastered, would lead to increased participation in activities engaged in by family members or peers without disabilities in which the student does not presently participate.

6. Skills which are <u>inconsistently</u> (I) performed across materials, people, or environments. The inconsistent performance may indicate a difficulty with motivation, generalization, or maintenance rather than acquisition.

7. Skills which are performed with prompts less than full physical guidance (P). This prompted performance may indicate that the student is beginning to learn the skill.

8. Skills which may be functionally equivalent to undesired behaviors.

9. Skills which, if mastered, would increase the perception of competence by persons without disabilities.

11. Skills which afford sufficient time, materials and access to appropriate environments so that the skills can be taught.

Table 10: Sample Short Term Objectives

Student A: Each objective at a Basic Developmental Skills Level

Les will turn his head to the side at which a teacher or peer is talking 80% of the trials for five consecutive days.

Les will relax the part of his body the teacher touches and stay relaxed while she moves that body part to complete a task for four tasks for five consecutive days.

Les will fixate on the spoon being brought from the plate to his mouth during snack and lunch 80% of the opportunities given to him for five consecutive days.

During three activities (leisure time, snack preparation, can crushing) Les will move his arm to pull a switch when given the touch cue "pull" (teacher touching his elbow) for 80% of the trials for each activity for five consecutive days.

Student B: One objective at a Step Level and one at a Basic Developmental Skill Level

Given three situations on a daily basis (after morning snack, prior to lunch, after vocational cleaning) when the task of washing her hands is required, Cindy will, preform the steps of: "grasping" and turning on the water, "placing" hands under running water, "reaching" for a towel to dry her hands, all at the gestural prompt level, 4 of 5 opportunities for each step, over 5 consecutive days.

Given situations in the classroom and community when Cindy is moving away more than 5 feet from the appropriate place, she will respond by stopping and remaining in place to teacher/adult verbal directions of "stop", "wait", or "no" within a 5 second period for each command, 8 of 10 consecutive opportunities.

Student C: One objective at a Total Task Level

Given five opportunities per day, Frank will complete all steps in his dressing task analysis, with only verbal assistance, 75% of the opportunities given to him for three consecutive weeks.

Table 11: Instructional Matrix for Student A

Objectives	Activities: Arrival	Can Crushing	Snack Prep	Hygiene	CBI	Hygiene	Lunch	Leisure	Room Clean-up	Hygiene	Departure
Obj. 1 Focus on Object	X	X	X	X	X	X	X	X	X	X	X
Obj.2 Detect Sound	X	X	X	X	X	X	X	X	X	X	X
Obj. 3 Cooperative Body Movement	X		X	X		X	X			X	X
Obj. 4 Pull		X	X					X			
Obj. 5 Attend	X	X	X	X	X	X	X	X	X	X	X
Obj. 6 Make eye Contact	X	X	X	X	X	X	X	X	X	X	X
Obj. 7 Receptive Comm-Touch		X	X					X			
Obj. 8 Shape head Turn			X	X		X	X	X		X	

* "X" indicates that the objective is targeted for instruction within that activity

Table 13: Priority Objectives for Student B and Student C

Student B (At the independent level unless indicated otherwise.)

1. Hang coat on hook upon arrival in the morning with (gestural prompts.)

2. Push button to start a tape recorder and share music experience with a peer during leisure time.

3. Hold various objects for the duration of their functional use (brush, deodorant, chapstick, hand lotion, tissues).

4. Remain standing for the course of vocational and domestic activities (sweeping, wiping tables, can crushing, laundry, shopping).

5. Complete 3 steps in washing and drying hands before and after various activities (with verbal prompts).

6. Enter restroom, pull down pants, and sit on toilet.

7. Respond to one word teacher commands: "stop", "wait", "no".

8. Indicate anticipation by starting the next motor component of the tasks of making toast and mixing a drink for a snack.

Student C (At the independent level).

1. Dress self for art and after toileting.

2. Wash hands

3. Brush teeth

4. Feed Self

5. Ride tricycle

6. Roller skate

7. Select music and activate tape recorder

8. Make choice during snack, lunch, and art through use of picture cards.

Table 14: Prioritizing Tasks Within Activities for Instruction

1. Tasks selected as critical by the caregiver. Mastery of these tasks will typically lead to decreases in caregiving time.

2. Tasks deemed important by the teacher for functioning in current and future environments.

3. Tasks which will bring the student into interaction with non-disabled persons and are viewed as valuable by persons without disabilities. Mastery of those tasks will lead to the perception of increased competence.

4. Tasks which will serve as sources of positive reinforcement to replace undesired behaviors which presently secure reinforcement.

5. Tasks needed to function independently as an adult in normalized community environments.

6. Whether or not the staff have the time, materials, and access to appropriate environments to teach the task.

7. Tasks which are age-appropriate.

8. Student preference.

9. If independently completing the task involves safety concerns, then teachers must decide if the task can be taught to a criterion which insures that the student will not suffer an injury in performing the task.

Table 15: Instructional Objectives for Student D

Active Basic Developmental Skills

1. Orient to sound through head turn.
2. Focus on objects during multi-sensory activities.
3. Vocalize to signal "more".
4. Smile in response to social/auditory/visual/tactile input.
5. Activate a switch to obtain desired stimulation.

Teacher Monitoring Objectives

6. Chart changes in alertness levels in response to activity and time of day.
7. Maintain upright alignment in kneel position for 20 minutes per day.
8. Maintain range of motion program daily.
9. Maintain optimal positioning schedule throughout the day while engaged in activities (side-lying, prone over a wedge, wheelchair sitting, lap sitting, straddling over a bolster while supported by staff, sitting in tumble form).
10. Monitor respiratory levels.
11. Tube feed two times per day.

ıze 1: Sample Data Sheet for Student A

Name:

Date:

OBJECTIVE / ACTIVITY							
	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1
	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1
	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1	5 5 5 5 5 5 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 1 1

1 = Full physical guidance
2 = Partial physical guidance
3 = Gestural prompt
4 = Verbal Prompt
5 = Independent performance

Graph Interpretation:

On Monday, the teacher recorded a full physical guidance prompt once during arrival and once during departure for the basic developmental skill of 'relax when touched'. The teacher did not take data on that skill for the other activities. For the basic developmental skill of 'relax leg when touched' the teacher recorded full physical guidance for the third hygiene activity. She did not record data for that BDS for the other activities. For the BDS of 'relax mouth when touched' she recorded full physical guidance for the snack activity and partial physical guidance for lunch. The teacher recorded this data point for the first trial of the activity.

Figure 2: Sample Data Sheet for Student B

Student: _____

P L A C E & D A T E

OBJECTIVE:

STEPS:

	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F
	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F
	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F	I V G P F

F = Full physical guidance
P = Partial physical guidance
G = Gestural prompt
V = Verbal Prompt
I = Independent performance

M = Morning snack
L = Lunch
Vo = Vocational Activity

Graph Interpretation:

On 10/18 during morning snack, the teacher recorded a full physical guidance prompt for the step of 'grasp handle and turn on water'. On 10/19 during morning snack she recorded a partial physical guidance prompt for the same step for both morning snack and lunch. On 10/20 she recorded a gestural prompt for that step during lunch. On 10/21 she recorded a gestural prompt for that step during snack and the vocational activity.

Figure 3: Sample Data Sheet for Student C

Student: _____ Instructor: _____

Objective: _____

STEPS / DATES:															
15.															
14.															
13.															
12.															
11.															
10.															
9.															
8.															
7.															
6.															
5.															
4.															
3.															
2.															
1.															
DATES =															

F = Full physical guidance
P = Partial physical guidance
G = Gestural prompt
V = Verbal prompt
I = Independent performance

Graph Interpretation.

On 9/14 the teacher recorded the following prompts for the steps in the task analysis that were being taught. "Gestural" for bend and grasp pants top; "partial physical guidance" for stand up and pull pants to waist; "full physical guidance" for place shirt in pants; "full physical guidance" for zip; and "partial physical guidance" for buckle belt. Over time it can be seen that progress was made for the step of bend and grasp pants top and the student learned to independently perform that step. However, limited progress was made on step 3 (place shirt in pants) as only a few less intrusive prompts were given over the two month period.

B. SAMS: BASIC DEVELOPMENTAL SKILLS LIST AND DEFINITIONS

KENT R. LOGAN, PH.D
PAUL A. ALBERTO, PH.D.
TOM KANA, M.ED.
TONI WAYLOR-BOWEN, M.ED.

SAMS
Skills and Activities Matrix System
Curricular Skills Listing

A. VISION

1. Focus and fixate
2. Accommodate/converge
3. Track
4. Shift gaze
5. Scan

B. AUDITORY

6. Detect
7. Orient

C. MOTOR

Body Control

8. Head control
9. Weight bearing
10. Cooperative body movement
11. Sitting
12. Self position change in wheelchair
13. Pull to stand
14. Standing
15. Endurance

Fine Motor Manipulation

16. Reach
17. Grasp
18. Hold
19. Placement
20. Release
21. Transfer
22. Push
23. Pull
24. Twist
25. Turn

Mobility

26. Rolling
27. Crawling
28. Creeping
29. Cruising
30. Walking
31. Climbing
32. Descending
33. Into/out of wheelchair
34. Movement of wheelchair

D. SOCIAL

35. Accepts
36. Calms
37. Attend
38. Acknowledge
39. Show
40. Interchange
41. Initiates
42. Explores
43. Turn taking
44. Shares

E. COGNITIVE

45. Behavior change when stimulated
46. Attend
47. Follow guided action
48. Object permanence
49. Anticipation of upcoming event
50. Cause/effect
51. Discrimination
52. Choice
53. Operations
54. One:one correspondence
55. Imitate
56. Match/sort

F. COMMUNICATION

Intentional Communicative Behaviors

57. Protest/reject
58. Request attention to self
59. Request object/action
60. Request more
61. Vocalization

Receptive Communication

62. Movement
63. Object
64. Touch
65. Gesture
66. Communication board
67. Manual sign
68. Verbalization

Expressive Communication

69. Communicative signals
70. Gesture
71. Touch
72. Manual sign

73. Verbalization
74. Object
75. Communication

Direction Following

76. Action
77. Action on object/person
78. Multiple actions
79. Multiple actions of object/person
80. Multiple actions on multiple objects/people

G. ACTIVITIES WITH SPECIFIC SKILLS

Eating

81. Opens mouth
82. Accepts
83. Chew
84. Swallow
85. Finger feeding
86. Scoop

Drinking

87. Opens mouth
88. Accepts
89. Swallow
90. Cup use
91. Suck from straw

Play

92. Toy manipulation
93. Use of play materials
94. Joint toy manipulation
95. Cooperative use of play materials

Toileting

A. VISION

1. Focus and fixate
The ability to use the eye(s) to look at a person or object for longer than 3 seconds and, or, obtain a functional effect. This implies the student is able to do one or more of the following: look at an item long enough to discern relevant features, see an entire motor model provided by the teacher, coordinate motor/visual movement in order to obtain a functional effect.

Examples:
a. Student looks at bar of soap, reaches for and grabs it.
b. Student looks at toy and continues looking at it while lights on it flash.
c. Student looks at teacher and continues looking while the teacher activates the TV with a microswitch.

2. Accommodate/converge
The ability to use the eye(s) to maintain fixation on a person or object as it gets closer or farther away.

Examples:
a. Student continually focuses on the spoon while bringing it from plate to mouth.
b. Student watches toothbrush as she brings it from the sink to her mouth.
c. Student watches cup as it leaves his mouth and is placed in front of him.

3. Track
The ability to maintain fixation on a moving object. A student can track by moving his eyes or head.

Examples:
a. Student follows a ball with his eyes as it rolls across the floor.
b. Student watches teacher as she moves around the room.
c. Student watches teacher's hand as she picks up the juice can and pours the juice in a series of cups.

4. Shift gaze
The ability to use the eye(s) to fixate on one stimulus and then another (or several) in a sequence or array.

Examples:
a. Student looks at cup, then plate, then spoon during lunch.
b. Student looks at TV, then watches a classmate activate the TV with a switch, then looks back at the TV.
c. Student looks at her P.E. teacher, ball, and then a peer during a game.

5. Scan

The ability to look in different directions to visually inspect the environment and, or, objects/persons in the environment without stopping the movement to fixate on any one of them.

Examples:

a. Student looks quickly around the room searching for the teacher. She fixates on the teacher once she finds her.
b. Student looks across a shelf full of boxes before reaching for the cereal.

C. MOTOR

Body Control

8. Head control
The ability to hold the head steady in midline to the body (relative to the imaginary line drawn vertically through the body). Poor head control includes: "hanging" the head forward, backwards, and, or, to the side; or difficulty moving or maintaining the head into an upright position.

Examples:
a. While sitting and watching TV, the student's head is upright and centered.
b. Student has up and down and side to side control of her head as she watches a peer put clothes in a washing machine.

9. Weight bearing
The ability to give support against gravity by use of own muscles. The student is typically holds self up with the use of legs, arms, knees or elbows.

Examples:
a. Student uses a microswitch while lying over a wedge, putting weight on her elbows.
b. Student stands with assistance when transferred from wheelchair to the toilet.
c. Student in a prone stander activates a switch to turn on the TV.

10. Cooperative body movement
The ability to move and, or, relax a part of the body to allow for another to guide movement.

Examples:
a. The teacher moves the student's hand and arm to use a sponge to clean out the microwave.
b. Student relaxes his arm so the teacher can remove a sweater.
c. Student relaxes body, moves arms and legs to accommodating position for removal from wheelchair.

11. Sitting
The ability to support the body upon the buttocks, primarily in a vertical position. The student is able to maintain balance in this position without falling over. This can be done with or without an assistive device, however, the student must demonstrate body control.

Examples:
a. Student sits in a chair without falling over.
b. Student sits upright in a wheelchair.
c. Student sits Indian (Tailor) style with support on the floor.

12. Self position change in wheelchair
The ability to shift position/weight, without raising the body, pelvis and, or, trunk completely away from the wheelchair. Alternatively, this may also be the ability to raise body, pelvis and, or, trunk using hands and arms, then coming back down in a different position.

Examples:
a. Student pushes on wheelchair foot pads to move body against back of wheelchair.
b. Student shifts body in wheelchair to look at peer tutor entering the room.

13. Pull to stand
The ability to pull to an upright, standing position using support from an object or person. This is a transitional movement between activities.

Examples:
a. Student pulls up using windowsills in order to water plants.
b. Student pulls up using the teacher's body to transfer from wheelchair to toilet.

14. Standing
The ability to support the body in an upright position with the legs as the main or single means of support. The student may gain additional support or balance from an object, person and, or, adaptive device.

Examples:
a. Student stands at the sink unsupported to brush her teeth.
b. Student uses table for support as he cleans it with a rag.

15. Endurance
The ability to complete a motor pattern without fatiguing in order to obtain a functional effect. It is a component of every motor act and includes moving a limb or body part and, or, maintaining a position over time.

Examples:
a. Student reaches out, grasps and hold the cup and brings it to his mouth several times throughout lunch.
b. Student moves his wheelchair down the hall to the bathroom without stopping.
c. Student wipes tables in the restaurant for twenty minutes.

Fine Motor Manipulation

16. Reach
The ability to stretch out a body part toward a target.

Examples:
a. Student reaches with his arm towards the spoon.
b. Student reaches out with her leg towards the switch.
c. Student extends arm through coat sleeve while teacher assists in putting it on.

17. Grasp:
Bilateral grasp
The ability to close both hands (fingers) around an object.
Single grasp
The ability to close one hand (fingers) around an object.
Both bilateral and single grasps may be accomplished with adaptations made to objects.

Examples:
a. After reaching, the student grasps the cup by placing and closing both hands around it.
b. Student grasps a lunch tray using both hands.
c. Student closes her hand around a joy stick.

18. Hold:
Bilateral hold
The ability to maintain a grasp with both hands on an object for a functional amount of time.
Single hold
The ability to maintain a grasp with one hand on an object for a functional amount of time.

Examples:
a. After grasping the spoon, the student holds the spoon without dropping it as he moves it towards his mouth.
b. Student holds the laundry basket as he is wheeled from the classroom to the laundry area.
c. Student grasps his lunch tray using both hands and the carries it to his table without dropping it.

19. Placement
The ability to intentionally put a held object in a location.

Examples:
a. Student puts the glass down on the table.
b. Student puts the coin in the coke machine slot.

20. Release
The ability to intentionally let go of an object. This is demonstrated by the student releasing their grasp on an item by opening the hand.

Examples:
a. Student lets go of the spoon he is holding.
b. Student lets go of the grasp switch to turn off the radio.

21. Transfer
The ability to move objects held in one hand into the other. Alternatively, the student can also push items from one location to another using different limbs.

Examples:
a. Student moves a toy from one hand to the other to pick up another toy.
b. Student picks up a soda can with one hand then moves it to the other hand to give it to another student.
c. Student pushes soda can from one side of lap tray to the other using one arm and knocks it into container with the other.

22. Push:
Bilateral push
The ability to move an item (small or large) away from self in a vertical or horizontal plane through the use of more than one body part.
Single push
The ability to move an item (small or large) away from self in a vertical or horizontal plane through the use of a single body part.

Examples:
a. Student moves the toy away from himself when he is done playing with it (horizontal).
b. Student pushes with both arms to open door at the mall.
c. Student pushes a grocery cart through the store.
d. Student pushes a box up onto a shelf above her head (vertical).

23. Pull:
Bilateral pull
The ability to move an item towards self in a vertical or horizontal plane through the use of more than one body part.
Single pull
The ability to move an item towards self in a vertical or horizontal plane through the use of one body part.

Examples:
a. Student pulls up his pants after toileting (vertical).
b. Student pulls the bedspread towards her when making a bed.
c. Student pulls open the cabinet door (horizontal).
d. Student pulls the top off of a plastic container.

24. Twist
The ability to rotate something with the fingers to change it's position.

Examples:
a. Student twists the knob on the TV to change the station.
b. Student twists the toothpaste top to open it.

25. Turn
The ability to rotate something with the hand and wrists to change it's position.

Examples:
a. Student turns the doorknob to open the door.
b. Student turns the jar top of the peanut butter to get it open.
c. Student turns the pitcher to pour liquid into a cup.

Mobility

26. Rolling
The ability to turn from front to back and, or, back to front including turning independently or with assistance.

Examples:
a. Students rolls from the top to the bottom of a wedge as part of an adaptive physical education activity.
b. Student rolls across mat to reach a peer.

27. Crawling
The ability to pull or push self on stomach with arms and, or, legs. This may include an alternating movement pattern of arms and legs.

Examples:
a. Student moves to a radio during leisure time, pulling with hands, pushing with feet without raising her stomach.

28. Creeping:
Creeping
The ability to move across space on hands and knees with the stomach raised.
Creeping with device
The ability to move across space on hand and knees with the (partial) aid of an adaptive device.

Examples:
a. Student moves on hands and knees to get to a toy held by a classmate across the room.
b. Student uses a raised "scooter" board for stomach support to move across the hallway to the restroom.

29. Cruising
The ability to walk forward or sideways using furniture and, or, the wall for support.

Examples:
a. Student moves around the bathroom using the sinks and toilets for support.

30. Walking:
Walking
The ability to move in an upright position through (alternating) motion of legs and feet.
Walking with device
The ability to move in an upright position through (alternating) motion of the legs and feet with additional aid and support from adaptive equipment or another person.

Examples:
a. Student walks from refrigerator to table for snack.
b. Student walks from classroom to lunchroom with the aid of a walker.
c. Student walks down a store aisle with the teacher supporting her at the elbow.

31. Climbing (stairs and inclines)
The ability to move in an upright position up stairs and inclines, either alternating feet or bringing feet together on the same step. This may include support from adaptive equipment or another person.

Examples:
a. Student uses the stairs to get to the vocational wing of the high school.
b. Student walks up the wheelchair ramp to get to the public library.

32. Descending (stairs and inclines)
The ability to move in an upright position down stairs and inclines, either alternating feet or bringing feet together on the same step. This may include support from adaptive equipment or another person.

Examples:
a. Student uses the stairs to get from the door of the school to the street, with teacher giving support at the trunk.

33. Into/out of wheelchair
The ability to get in or out of a wheelchair, either independently and, or, with partial assistance.

Examples:
a. Student climbs into wheelchair using the teacher's arm for support.
b. Student independently moves from wheelchair to desk chair.

34. Movement of wheelchair

The ability to move a manual or electric wheelchair, either independently and, or, with partial assistance.

Examples:

a. Student places her hands on wheels and pushes forward with teacher assistance.
b. Student moves down hallway in wheelchair with occasional assistance, e.g., maintaining direction, making turns, continued forward movement.

D. SOCIAL

35. Accepts
Allows for being physically touched by persons or persons with objects without resistance.

Examples:
a. Student allows teacher to turn him while being changed in the restroom.
b. Student allows her hair to be brushed by a classmate.
c. Student keeps earphones on his head when placed there by the teacher.

36. Calms
Responding in one or a combination of the following during and, or, after an interaction: relaxes muscle tone, (may conform to placement), quiets, lessens body movement, lessens resistance. This excludes the transitional state prior to a student's falling asleep.

Examples:
a. Student lessens resistance in arms and legs during warm-ups for physical education.
b. Student becomes quiet and smiles when lunch comes.
c. Student stops thrashing and yelling when he is placed on his stomach and rubbed gently on the back.

37. Attend (See also #46)
Orienting toward and, or, focusing on a person or person with an object. This is done for the purpose of engaging the person in an interaction.

Examples:
a. Student turns head, and follows the teacher with his eyes while she walks across the floor during physical education.
b. Student relaxes muscle tone when a peer holds and turns on a radio.

38. Acknowledge
Responding with visual, motor and, or, vocal behavior in response to a person or person with an object.

Examples:
a. Student makes eye contact with peer as she speaks.
b. Student smiles and reaches for the teacher when in close proximity.
c. Student moves arms when attention is directed towards a new game.
d. Student laughs when a switch operated loop tape is turned on.

39. Show
Attempting to draw another person's attention to an object or action through motor, and, or, vocal behaviors.

Examples:
a. Student pushes cup to show teacher it is empty.
b. Student points to a television when it is off.
c. Student vocalizes to the teacher when he sees a peer.

40. Interchange
Engaging in a set of reciprocal interactions with another person. In response to another person, the student exhibits an intentional visual, motor, and, or, vocal behavior. The student's behavior elicits an additional response from that person. The student's behavior may occur before the initiating action is finished.

Examples:
a. The teacher touches the student on the arm, the student looks at the teacher, which causes the teacher to again touch the student's arm.
b. Following a vocalization by a classmate, the student extends her arm toward that peer, causing the classmate to again vocalize.
c. In response to a peer greeting, the student activates a loop tape and the peer responds to message on the tape.

41. Initiates
Activity or interchange begun by the student with a visual, motor, and, or, vocal behavior without prompting.

Examples:
a. Student looks at classmate when he enters the room to gain his attention.
b. Student reaches out in the direction of a pressure switch placed nearby during a leisure activity.
c. Student vocalizes to indicate desire to be moved.

42. Explores
Examining the environment visually, motorically, and, or, vocally.

Examples:
a. Student looks from peer tutor, to classmate, to teacher.
b. Student reaches for, finds, and grasps a favorite toy from a group of toys placed within reach.
c. A student with a visual disability calls out to find out if others are in the room.

43. Turn taking
Waiting to perform a visual, motor, and, or, vocal behavior in order to allow completion of action by another.

Examples:
a. Student watches the teacher interact with classmates, then looks at the teacher when the teacher turns toward her.
b. Student waits until peer's turn is completed before pushing the dice "popper" on the gameboard.
c. The student waits while the teacher pours juice with her classmates, then vocalizes when the teacher makes eye contact with her to indicate that she also wants juice.

44. Shares
Offering an object with or without an overt request by another person.

Examples:
a. Student passes a cassette tape to a classmate when he asks for it.
b. Student offers a cookie to a peer at lunchtime.

E. COGNITIVE

45. Behavior change when stimulated
Responding with a motor, vocal, and, or, visual behavior when touched and, or, spoken to by another person.

Examples:
a. Student moves when touched by a peer.
b. Student makes sounds when spoken to and is touched by the teacher.
c. Student opens eyes when moved from the mat to her wheelchair.

46. Attend (See also #37)
Orienting toward and, or, focusing on an object or person for the purpose of engaging in an activity.

Examples:
a. Parent gives direction to the student "Look at me", and the student looks at her face.
b. Student looks at microswitch.
c. When in the cafeteria for lunch the teacher says "look here", pointing at the bowl of food, the student orients to the bowl.

47. Follow guided action
Actively cooperating while focusing on and, or, orienting toward an object and, or person during physical guidance by another.

Examples:
a. Student watches spoon while being prompted to use it to scoop.
b. Student with visual disability turns body toward cereal box on lap tray as she is prompted to push it into a basket.

48. Object permanence
Locating by looking toward or searching for items or persons not within view.

Examples:
a. Student locates her spoon which she had covered with her napkin.
b. In a department store stockroom, the student open the sealed box when told by the teacher to get the shoes.
c. Student who is blind goes to the shelf to obtain her lunchbag before lunch.

49. Anticipation of upcoming event
Demonstrating an understanding of sequence by performing a visual, motor, and, or, vocal behavior or indicating knowledge of the next step of a sequence.

Examples:
a. Student smiles and looks at the barking dog toy when he see the teacher coming with a microswitch.
b. Student opens mouth when teacher raises spoon during lunch.
c. Student relaxes her body when told she is about to be lifted from her wheelchair.
d. Student looks at towel after teacher rinses his hands.

50. Cause/effect
Using a behavior that results in a change in the environment. Cause/effect behaviors may be interpersonal (communicative, refer to listing of communication skills) or object oriented.

Examples:
a. Student pushes ball to peer.
b. Student knocks can off laptray into recycling bin.
c. Student uses a microswitch to activate a radio.
d. During hygiene routine, student pushes down on a soap dispenser pump.

51. Discrimination:
Visual
Recognizing visually that one object/person is different from another. This does not imply that the student knows the labels for the item, or can match them.
Auditory
Recognizing that one sound is different from another. This does not imply that the student knows the labels for the sound or can match sounds to their source.
Tactile
Recognizing that one touch or texture is different from another. This does not imply that the student knows the label of the item touched or can match items by texture.

Examples:
a. Student looks at two items on the table and reaches for the one that she likes.
b. Student looks at the teacher and her mother and smiles at her mother.
c. Student hears the sound of the teacher's voice and music on the radio and reaches for the radio.
d. Student hears the teacher's voice and a stranger's voice and turns toward the teacher.
e. Student feels a ball and a toy car and keeps the ball.
f. Student with visual impairment finds her chair by feeling for sandpaper placed on the chair's back.

52. Choice
Selecting a preferred item from among an array of items.

Examples:
a. When given magazine and a radio, the student looks at the radio.
b. When given a choice between two types of cookies, the student takes his favorite type.

53. Operations
Using generalized motor behavior across a variety of materials.

Examples:
a. Student puts in and takes out a sandwich from his lunch bag and can pour a drink into a cup from out of a pitcher (concept of in/out).
b. Student puts plates on a table, and takes them off, and can turn on the lights and radio and turn off the lights and radio (concept of on/off).
c. Student opens and closes various types of containers, food packages, doors, her lunch box (concept of open/close).

54. One:one correspondence
Creating appropriate functional pairs of items.

Examples:
a. Student gives one cookie to each classmate around the table.
b. Student places one hanger in each shirt.
c. During a vocational assembly task, student places one item in each bag.

55. Imitate
Ability to perform an action demonstrated by another. Imitation is always taught within the context of a functional activity.

Example:
a. When playing in kindergarten class, the student "rocks" the baby doll after watching friends do it.
b. Student hands money to the cashier after watching a peer pay.
c. After watching her teacher wipe up a spill, the student wipes up a spill made by a peer.

56. Match/sort
Ability to put identical or similar objects together.

Examples:
a. When loading the dishwasher, the student puts spoons in one section, knives in a separate section.
b. Student puts red towels in one laundry basket, white towels in a separate laundry basket.

F. COMMUNICATION

Intentional Communicative Behaviors

Students communicate in a variety of ways. Students with profound disabilities do so in some ways that are often overlooked. The five items that follow are reasons the student may be communicating. These may be expressed through appropriate or inappropriate behaviors.

57. Protest/reject
A behavior showing one's disapproval of something.

Examples:
Appropriate
a. Student reaches for headphones when taken off.
b. Student closes mouth and turns face away when presented with undesired food item.
c. Student pushes vocational materials to corner of table.
d. Student puts head down softly when tired of an activity.

Inappropriate
a. Student screams/cries when headphones are taken off.
b. Student spits out undesired food when placed in mouth.
c. Student throws vocational materials off the table.
d. Student bites own hand when tired of an activity.

58. Request attention to self
Use of vocalization, body motion, and, or, mechanical device to gain another person's attention towards oneself.

Examples:
Appropriate
a. Student touches teacher on the arm to get her attention.
b. Student presses buzzer switch to get a peer to come closer to her.

Inappropriate
a. Student hits own head to get the teacher's attention.
b. Student screams to call peer to his wheelchair.

59. Request object/action
Using different behaviors to request particular objects or actions.

Examples:
Appropriate
a. Student touches the tape recorder for music.
b. Student waves arm back and forth upon seeing a desired toy.
c. Student indicated he wants a cookie by use of eye gaze across snack items.
d. Student moves body upon seeing rocking chair to request rocking.

Inappropriate
a. Student grabs for tapes and tape recorder for music.
b. Student strikes peer in order to obtain a desired toy.
c. Student screams when he sees a box of cookies.

60. Request more
Producing a behavior when an activity is stopped in an effort to have the activity reoccur.

Examples:
Appropriate
a. Student presses his back against adult when adult stops rocking them in a rocking chair.
b. Student gives empty juice cup to teacher.
c. Student touches the teacher with his leg when teacher stops tickling.

Inappropriate
a. Student cries when adult stops rocking them in a rocking chair.
b. Student throws empty juice cup on the floor.
c. Student bites herself on the hand when teacher stops tickling.

61. Vocalization
Using sounds for the purpose of communicating. Some students may use one sound to mean several things, others may use different sounds to mean different things.

Examples:
Appropriate
a. Student says "eeee" in the presence of food.
b. Student says "rrrr" to request the radio, and "coos" to have attention brought to self.

Inappropriate
a. Student screams in the presence of food.

Receptive Communication

The following are ways in which teacher give information to students. They are also the systems by which the student is being taught to communicate expressively. As listed below, no developmental or hierarchical order is implied. More than one system can be used with an individual student.

62. Movement
Teacher provides information by guiding student through an actual motion used in the activity.

Examples:
a. Teacher guides student, hand-over-hand, through a scooping movement, in response to which the student turns his head toward the lunchtray.
b. Prior to handwashing, teacher rubs student's hands together, in response to which the student extends her arms toward the sink.
c. During playtime, the teacher guides student through a "drumming" motion, in response to which the student moves towards the toy shelf.

63. Object
Teacher provides information by placing an object in the student's hand. This may be a whole, miniature, or part of the object.

Examples:
a. Teacher places a spoon in the student's hand, in response to which the student turns his head toward the lunchtray.
b. Teacher places hotel-size bar of soap in the student's hand, in response to which the student extends her arms toward the sink.
c. Teacher places drumstick in student's hand, in response to which the student moves towards the toy shelf.

64. Touch
Teacher provides information by touching the student on specific body locations.

Examples:
a. Teacher touches on the side of the mouth, in response to which the student turns his head toward the lunchtray.
b. Teacher touches student on the palm in response to which the student extends her arms toward the sink.
c. Teacher rubs student's upper arm, in response to which the student moves towards the toy shelf.

65. Gesture
Teacher provides information by performing a commonly recognizable movement without touching the student.

Examples:
a. Teacher makes scooping motion, in response to which the student turns his head toward the lunchtray.
b. Teacher makes ringing motion with his hands, in response to which the student extends her arms toward the sink.
c. Teacher points to the play area, in response to which the student moves towards the toy shelf.

66. Communication board
Teacher provides information to the student by touching the item on the student's board.

Examples:
a. Teacher points to cup in a shelf-type object board, in response to which the student turns his head toward the lunchtray.
b. Teacher points to the picture of washcloth and soap, in response to which the student extends her arms toward the sink.
c. Teacher pushes "play" symbol (board vocalizes "play"), in response to which the student moves towards the toy shelf.

67. Manual sign
Teacher provides information to the student by using the standard manual signing system.

Examples:
a. Teacher uses ASL sign for "eat", in response to which the student turns his head toward the lunchtray.
b. Teacher uses SEE sign for "water", in response to which the student extends her arms toward the sink.

68. Verbalization
Teacher provides information to the student by talking.

Examples:
a. Teacher says "time to eat", in response to which the student turns his head toward the lunchtray.
b. Teacher says "playtime", in response to which the student moves towards the toy shelf.

Expressive Communication

The following are means of communicating, taught to the student by the teacher. As listed below, no developmental or hierarchical order is implied. More than one system can be used by an individual student.

69. Communicative signals
A motor and, or, visual behavior which the student uses intentionally and consistently to communicate.

Examples:
a. When teacher brings the lunchtray to the table, the student opens her mouth.
b. When teacher looks at another student at the lunch table, the student touches the teacher arm to redirect attention.
c. During play time, the student looks at a toy that she wants.
d. On the playground, the student continues the swinging movement after he has stopped on the swing.

Several forms of communication are dependent on the student being able to move in particular ways. While the teacher is teaching specific movements, some students may only be able to make approximations of these. These would include gestures, touch, manual signs and verbalizations. Movements, which were discussed in the receptive section (see #62), at the expressive level become gestures.

70. Gesture
Student communicates by performing a commonly recognizable movement, or an approximation of that movement.

Examples:
a. Student makes scooping movement when she sees desired food items on the lunchtray.
b. Student makes "pump soap" downward motion with his hand to indicate that he would like to wash his hands.
c. Student makes "drumming" motion to indicate he would like to play with the drum.

71. Touch
Student communicates by touching self on specific body locations.

Examples:
a. Student touches side of mouth when she sees desired food items on the lunchtray.
b. Student points to the palm of one hand to indicate that he would like his hands dried.
c. Student rubs his upper arm to indicate that he would like to go to the toy shelf.

72. Manual sign
Student communicated by the use of a standard manual signing system, or an approximation of the signs.

Examples:
a. Student uses an ASL sign for "hungry" at lunchtime.
b. Students approximates an SEE sign for "play" when near the toy shelf.

73. Verbalization
Student communicates by using verbal language, or an approximation of words.

Examples:
a. Student says "eat" when she sees the teacher bring the lunchtray.
b. Student approximates the word "sink" (ssk) while washing his hands in front of the sink.

The following two systems, in order to be understandable, require specific movements. These include pointing to, looking at, or touching objects and, or, objects or pictures on a communication board.

74. Object
Student communicates by touching or placing an object in another's hand. This may be a whole, miniature, or part of the object.

Examples:
a. Student places a spoon in the teacher's hand, in response to which the teacher moves the lunchtray closer to the student.
b. Student touches hotel-size bar of soap after which the teacher helps her to wash her hands.
c. Student looks toward drum stick placed in an array of items when asked what he would like to play with.

75. Communication board
Student communicates by touching an item on the communication board.

Examples:
a. Student pushes "drink" symbol (board vocalized "drink") in the lunchroom.
b. Student points to the washcloth in a shelf-type object board when at the sink.
c. Student points to a picture of the toy shelf when in the play area.

Direction Following

The student responds appropriately when given a direction. Directions can be given in any receptive form understood by the student.

76. Action
Following a direction given to perform a single action or activity.

Examples:
a. Student sits down when given a touch cue on the shoulder.
b. Student stands up when told "stand up" by the teacher.
c. Student ceases an activity when told to "stop".

77. Action on object/person
Following a command to perform a single action with a single object or to a single person.

Examples:
a. Student gives a cookie to a peer when asked to "give a cookie to Bill".
b. Student activates the correct switch when asked to "play the tape recorder".

78. Multiple actions
Following a single command to perform multiple actions.

Examples:
a. Students moves to table and sits down when told to "go to the table and sit down".
b. Student goes to door of the room and stops when teacher signs "go to the room and stay".

79. Multiple actions of object/person
Following a single command to perform multiple actions with one object and, or, person.

Examples:
a. Student moves a chair and sits down by the teacher when told "over here".
b. Student folds the towel and puts it on the stack of towels when told to "finish the laundry".

80. Multiple actions on multiple objects/people
Following a single command to perform multiple actions with more than one object and, or, person.

Examples:
a. Student gives a cookie to one peer and then pours juice for another when told to "give Bill and Carol snack".
b. Student activates a pressure switch for one toy and a grasp switch for another toy when told to "play".

G. ACTIVITIES WITH SPECIFIC SKILLS

The four following activities have within them basic developmental skills which are unique to these activities. These, therefore, do not appear within the context of the prior list.

Eating

81. Opens mouth
Either the sight or smell of food signals the student to open his/her mouth.

82. Accepts
Allowing food to be placed within the mouth without resistance (may include eating utensil), and not spitting it out. Tongue thrust is not an acceptance problem, it is a reflex.

83. Chew
Up and down rotary movement of teeth.

84. Swallow
Movement of food from mouth to stomach. The teacher's function is to stimulate swallowing (gentle upwards stroking from the Adam's apple to the chin).

85. Finger feeding
Student uses the fingers to pick up and transport food to the mouth. Finger feeding applies to foods that students without disabilities eat with their fingers (crackers, fruit, chips, french fries), and, may include the use of an adaptive device such as an adaptive sandwich holder.

86. Scoop
Use of standard or adapted spoon to remove food from a bowl/plate and transport it to the mouth.

Drinking

87. Opens mouth
Either the sight or smell of drink signals the student to open his/her mouth.

88. Accepts
Allowing liquid to be placed within the mouth without resistance (may include cup), and not spitting it out or allowing it to dribble out.

89. Swallow
Movement of liquid from mouth to the stomach. The teacher's function is to stimulate swallowing.

90. Cup use
Student uses cup or adapted cup to drink.

91. Suck from straw
Student places lips around the straw and closes them sufficiently to allow for liquid to travel upwards to mouth.

Play

Play is appropriate to younger students (preschool and elementary age) with profound disabilities. Both activities and materials chosen for play should be "age appropriate", that is, engaged in and used by peers of the same age without disabilities.

92. Toy manipulation
Playing with toys in the manner in which they are intended.

Examples:
a. Student rocks baby doll and puts it to bed.
b. Student activates switch to run a toy train.
c. Student uses both hands and arms to squeeze and pull toy accordion.

93. Use of play materials
Playing with consumable materials in the manner in which they are intended.

Examples:
a. Student finger-paints on paper.
b. Student plays with modeling clay.
c. Student uses paint and paintbrush.

94. Joint toy manipulation
Playing with toys in the manner in which they are intended with another person.

Examples:
a. Student rolls ball back and forth with another student.
b. Student rolls dice during a group game with peers.
c. Student on roller skates "travels" on the playground with help of peer.

95. Cooperative use of play materials
Playing with consumable materials in the manner in which they were intended with another person.

Examples:
a. Student allows peer without disabilities to move his hands while finger painting.
b. Student and teacher build a sandcastle at the sand table.

Toileting

The basic toilet training goal for students with profound disabilities is "trip training". Students who are trip trained have predictable regularity to their times of elimination, and indicate by their behavior that they are able to go. Once a student has been trip trained, signaling the need to go to the bathroom should be an extension of this activity.

Following are the steps of trip training:

Identify the current pattern of accidents the student is having. For at least one week the teacher should collect data every thirty minutes in order to indicate if the student has eliminated (yes or no) and, when "yes", if it was urination and, or, bowel movement. Try to find a pattern to the times at which the student is naturally eliminating. If the student is consistently wet when checked, the time between scheduled checks should be reduced, for example, check every twenty-five minutes. A week's worth of data should indicate the times the student is most often eliminating. The objective is to place the student on the toilet when dry and approximately five minutes prior to an expected elimination.

Once the student is placed on the toilet, they should remain there for up to ten minutes. If they eliminate, reinforce the student, then complete the hygiene routine. If the time is up, and the student has not eliminated, complete the hygiene routine, then return to the toilet in five minutes and repeat the process.

Once eliminations have been stabilized so that accidents are no longer occurring, the student may gradually be moved to a schedule that conforms to the class schedule. These times should be naturally occurring, such as, just after arrival at school, before, and, or, after snack and lunch, before going into the community, and before going home.

If a student becomes trip trained, the teacher should watch for natural signals from the student which indicated the need to eliminate. Such natural signals may not be considered socially appropriate, for example, pulling at the crouch of the pants. These signals, however, are communicative and can be shaped into or paired with one that is more socially appropriate.

C. SAMS: BASIC DEVELOPMENTAL SKILLS ASSESSMENT RECORDING SHEET

TOM KANA, M.ED.
KENT R. LOGAN, PH.D.
PAUL A. ALBERTO, PH.D.
TONI WAYLOR-BOWEN, M.ED.

SAMS: BASIC SKILLS ASSESSMENT

This assessment instrument is designed to summarize information on the basic skills in the SAMS curriculum. It is to be completed by each classroom teacher. Information is gathered from a variety of sources (teacher observation and testing, school records, and family members) and in a variety of "natural" environments. It can include the level of support needed to obtain a consistent student response.

Most information gathered during assessment will go directly onto the assessment form. However, additional information may need to be included. For example, social skills may be accomplished through a) visual, b) motoric, and/or c) vocal means. As such, the corresponding letter, a, b, or c, may be put on the assessment form so that the information about those skills are complete. For additional skills, when more than one means of responding are available, that information should be included on this assessment form.

Student	Pre		Post
A. VISION	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
1. Focus and fixate			
2. Accomodate/ converge			
3. Track			
4. Shift gaze			
5. Scan			
B. AUDITORY	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
6. Detect			
7. Orient			
C. MOTOR	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
BODY CONTROL	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
8. Head control			
9. Weight bearing			
10. Cooperative body movement			
11. Sitting			
12. Self position change in Wheelchair			
13. Pull to stand			
14. Standing			
15. Endurance			
FINE MOTOR	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
MANIPULATION	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
16. Reach			
17. Grasp			
18. Hold			
19. Placement			
20. Release			
21. Transfer			
22. Push			
23. Pull			

	Pre			Post
24. Twist				
25. Turn				
MOBILITY	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX			
26. Rolling				
27. Crawling				
28. Creeping				
29. Cruising				
30. Walking				
31. Climbing				
32. Descending				
33. Into/out of Wheelchair				
34. Movement of Wheelchair				
D. SOCIAL	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX			
35. Accepts				
36. Calms				
37. Attend				
38. Acknowledge				
39. Show				
40. Interchange				
41. Initiates				
42. Explores				
43. Turn taking				
44. Shares				
E. COGNITIVE	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX			
45. Behavior change when stimulated				
46. Attend				
48. Follow guided action				

	Pre		Post
49. Anticipation of upcoming object			
50. Cause/effect			
51. Discrimination			
52. Choice			
53. Operations			
54. One:one correspondence			
55. Imitate			
56. Match/sort			
F. COMMUNICATION	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
INTENTIONAL COMMUNICATIVE BEHAVIORS	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
57. Protest/reject			
58. Request attention to self			
59. Request object/action			
60. Request more			
61. Vocalization			
RECEPTIVE COMMUNICATION	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
62. Movement			
63. Object			
64. Touch			
65. Gesture			
66. Communication board			
67. Manual sign			
68. Verbalization			
EXPRESSIVE COMMUNICATION	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
69. Communicative signals			

	Pre		Post
70. Gesture			
71. Touch			
72. Manual sign			
73. Verbalization			
74. Object			
75. Communication			
DIRECTION FOLLOWING	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
76. Action			
77. Action on object/person			
78. Multiple actions			
79. Multiple actions of object/person			
80. Multiple actions on multiple objects/people			
G. ACTIVITIES WITH SPECIFIC SKILLS	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
EATING	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
81. Opens mouth			
82. Accepts			
83. Chew			
84. Swallow			
85. Finger feeding			
86. Scoop			
DRINKING	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
87. Opens mouth			
88. Accepts			
89. Swallow			
90. Cup use			

	Pre		Post
91. Suck from straw			
PLAY	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
92. Toy manipulation			
93. Use of play materials			
94. Joint toy manipulation			
95. Cooperative use of play materials			
independent fasteners			
TOILETING	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		

LIST BASIC DEVELOPMENTAL SKILLS TARGETED FOR INSTRUCTION:

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

LIST SKILL STEPS TARGETED FOR INSTRUCTION:

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

SAMS-MAT.RX1

D. SAMS: FAMILY INTERVIEW PROTOCOL

TOM KANA, M.ED.
KENT R. LOGAN, PH.D.
PAUL A. ALBERTO, PH.D.
TONI WAYLOR-BOWEN, M.ED.

SAMS FAMILY INTERVIEW

The purpose of the SAMS parent interview is to help the teacher identify activities and social routines which the student's family typically performs. As such, it is a portion of the total assessment process. It will serve to aid in the identification of those activities and routines which hold value for the family. If possible, the interview with the parents and, or, caregivers, should be done at home and include both parents as well as siblings when appropriate.

The base for the interview is the development of weekday and weekend schedules. The weekday schedule should reflect the typical routines and activities of the student and other family members during non school hours, Monday to Friday. The weekend schedule reflects typical routines for both the student and family members in nonschool settings on Saturday and Sunday. Activities and routines that occur on a regular basis and those that differ from the weekday schedule are to be included. It is not necessary to repeat information.

The teacher should keep in mind and note the following during or after the interview:

How can the student and caregivers become more involved and included in routines and activities?

What portions of activities and routines can both the student and the caregivers become more involved in?

How can activities and routines be made easier and more comfortable for both the student and the caregiver?

Which activities and routines are especially important to both the student and the parent?

DETERMINING ACTIVITIES AND ROUTINES

1. List family members living in the home.

2. List each activity in which the student is currently engaged starting with when the student wakes up and ending when the student goes to bed.

3. Develop an activity sheet for weekdays, one for weekends, and one for holidays and vacations.

4. List who is engaged in each activity with the student. Find out why they are doing it and what they enjoy or don't enjoy about the activity.

5. List where the activity is occurring.

6. List materials being used the activity.

7. Note the time when the activity begins and ends for the student.

8. Ask what other family members are doing during each activity time for the student, and where they are doing their own activities.

ADDITIONAL QUESTIONS FOR DETERMINING ACTIVITIES AND ROUTINES

1. Who, besides the teacher, has routine/regular contact with the student and family?

2. Ask family members, when, during the day they feel a need for the student to be doing additional activities.

3. What activities and routines (or portions/parts of) would you want your son/daughter to be better (more proficient) at? (These may include activities/routines NOT on the typical weekday or weekend activity sheets.)

4. Ascertain from other family members if there are activities they are doing during the day which could include the "student".

ADDITIONAL GENERAL QUESTIONS

1. How does your son/daughter communicate:

   Needs?

   Pleasure (what he/she likes)?

   Displeasure and dislikes?

   Pain?

Are there any variations in these communication "patterns" with different persons and/or in different places?

2. What are the strengths in both behavior and skills exhibited by your son/daughter?

3. Does your son/daughter exhibit any behaviors that you think are not appropriate and that bother you or other family members?

   Are there any variations in these behaviors with different persons and/or in different settings?

4. What do you/others do when these behaviors occur?

5. How do you:

   A. Show approval to your son/daughter?

   B. Discipline your son/daughter?

   C. Calm and/or comfort your son/daughter?

6. What are your son/daughters favorite and least favorite:

   Foods?

   Activities/Routines?

   People?

   Things/objects?

   Places?

7. What places do you think your son/daughter may go when he/she is older, and in the future, where do you see your son/daughter living?

FAMILY ACTIVITY ANALYSIS [redacted] NAME: [redacted] DAY (S) [redacted]

ITIES RELATED TO THE STUDENT					ACTIVITIES OF OTHER FAMILY MEMBERS		
WHAT	WHO	WHERE	MATERIALS	WHEN	WHO	WHAT	WHERE

E. SAMS: SAMPLE IEP FORMAT

KENT R. LOGAN, PH.D.
TOM KANA, M.ED.

Student 1: Almost ambulatory, good hand use, middle school, functional cognitive responses

Fine Motor

X will perform three fine motor skills (placement, assemble/disassemble, twist-turn) within the context of 3 functional activities at school and community environments.

1. Given three activities (can-crushing, laundry, grocery shopping), X will "place" an object independently 80% of opportunities for five days for each of these activities.

2. Given 3 activities (bookbag, grocery put away, tape and tape deck) X will assemble/disassemble objects in the task independently 80% of opportunities for five days for each activity.

3. Given 3 activities (snack, locker time, cleaning supplies) X will twist/turn independently 80% of opportunities for five days for each of these activities.

Mobility

X will increase her level of independence by perfroming one motor behavior (walking) on each opportunity at school and in the community.

1. Given the verbal cue "Come here" X will independently walk unassisted for a distance of 10-15 meters four out of five opportunities over a one month period.

Social

X will perform the social behavior of "interchange" within the context of social interaction in school and community environments.

1. X will independently extend her arm out toward a peer/teacher following a verbal greeting by the other person in order to elicit an addition response (ie. shake hands) from the other person 80% of opportunities over a two week period.

Cognitive

X will perform two cognitive skills (choice, operations) within the context of three functional activities in school and community environments.

1. During lunch/snack, X will independently indicate a "choice" of either food or drink by touching a card to indicate desired choice 80% of opportunities over a five day period.

2. Given activities (microwave, refrigerator, switch, laundry) X will independently perform the motor "operations" to obtain the functional effect 80% of opportunities for each activity over a five day period.

Communication

X will indicate her wants within the context of functional activities in school and community environments.

1. Given 3 activities (snack, rec/leisure, vocational training) X will independently touch anywhere on a large green "want" card with either hand to indicate that she wants to engage in the activity 80% of opportunities over a 10 day period.

Student 2: Totally physically disabled, asleep alot of the time, minimal cognitive response level, chronic loose bowel movements, seizures and high level of medication, middle school.

Vision

X will track an object in response to verbal cues such as "look" within the context of 3 functional activities in school and community environments.

Given 3 activities (can crushing, grocery shopping, playing with a ball) and the verbal cue "look" from the teacher or a non-disabled peer, X will track an object 80% of the time over a five day period.

Social

X will perfrom the social behavior of acknowledge in response to a verbal cue or greeting within the context of social interaction in school and community environments.

1. Given 3 activities (shopping, eating lunch, playing with a peer during PE) and a verbal greeting, X will independently lift his head and turn toward the voice that is speaking to him 80% of opportunities over a 15 day period.

Fine Motor

X will perform 4 fine motor skills (reach, release, single grasp, single push) within the context of 3 activities in school and community environments.

Given 3 activities (dusting, switch activation, can crushing) X will reach for the object or switch to engage in the task with a partial physical prompt 80% of opportunities over a one month period.

Given 3 activities (can crushing, laundry, ball play) X will grasp the object with his right hand with partial physical assistance 80% of opportunities over a three week period for each activity.

Given 3 activities (can crushing, laundry, grocery shopping) X will push an object with his right hand with partial physical assistance from the elbow to complete the task 80% of opportunities for each activity over a three week period.

Cognitive

X will engage in cause and effect motor behaviors within the context of 3 functional activities in school and community environments.

1. When appropriately positioned and the switch is placed within his range of motion, X will independently use a pressure switch to turn on the object in 3 activities (tape recorder, blender, television) 80% of opportunities over a two week period.

Communication

X will perform the communicative behavior of giving an intentional signal within the context of 3 functional activities at school and in the community.

1. Given a tape recorder with a loop tape and an adaptive switch and a verbal cue or greeting, X will independently use the switch to activate a pre-recorded message 80% of opportunities over a five day period.

2. Given several types of "resonance" movement opportunities (on the mat and in a wheelchair) X will display one specific physical movement to reinitiate the movements for half the opportunities during twice weekly sessions over a one month period.

Student 3: Ambulatory, functional cognitive responses, no physical disabilities, highschool.

Motor

X will perform 4 motor behaviors at the verbal prompt level (open the door, bilateral hold and carry, bilateral push, walk over various surfaces) in school and community environments.

1. X will turn the door knob and push open the door 60% of opportunities over 10 consecutive days.

2. X will hold and carry functional items with two hands from location to location following a verbal cue for 80% of opporutnities for a two week period.

3. X will push functional items using both hands a distance of 20 feet with teacher providing partial physical guidance from the front of the item.

4. X will walk outside a distance of one-quarter mile on hard surfaces 80% of opportunities over a one month period.

5. X will walk on grass a distance of 10 feet 80% of opportunities over a one month period.

Cognitive

X will perform two cognitive skills (anticipation and sequential step tasks) within the context of 4 activities in school and community environments.

1. Through a motor movement in the direction of the next stop in a multi-step task, X will demonstrate anticipation of the next step 60% of opportunities over a 10 day period.

2. X will complete two steps in a rwo in a domestic, vocational, and hygiene task 80% of opportunities over a one month period.

Social/Communicative

X will perform 1 social behavior (appropriate greeting) throughout the day at school and in community environments.

1. When greeted by another perion, X will make eye contact and smile without inappropriate vocatlizations and drooling 80% of opportunities over a one month period.

Health and Hygiene

X will increase her level of independence in 3 tasks (wipe mouth, pull pants up, and handwashing).

1. X will wipe her mouth with partial physical guidance 80% of opportunities over a 2 week period.

2. At the verbal prompt level, X will pull her pants and underpants up over her hips 60% of opportunities over a 2 week period.

3. X will complete 5 steps in a handwashing routine at the verbal prompt level 80% of opportunities over a one month period.

Behavior

X will decrease the occurence of inappropriate vocalizations and sitting down and crawling in school and community settings.

1. X will decrease sitting and crawling on the ground to zero occurences for one month.

2. Between the time X finishes eating her lunch and leaves the cafeteria, X will sit without laughing four out of five days for one month.

Student 4: Ambulatory, functional cognitive responses (at low end of the continuum), weak grasp, but can do functional tasks, likes to sleep, makes continual inappropriate vocalizations, high school.

Motor

X will independently or with a verbal prompt perform 3 motor behaviors (hold and carry, bilateral push, grasp and hold) at school and in community environments.

1. X will independently hold and carry functional items from location to location 80% of opportunities over a 10 day period.

2. X will push functional items using both hands a distance of 20 feet at the verbal prompt level 80% of opportuniites over a two week period.

3. X will grasp functional items long enough to acheive the functional effect 80% of opportunities for a two week period.

Cognitive

X will perform two cognitive skills (anticipation and 2 step tasks) within the context of 5 functional activities in school and community environments.

1. Through motor movement in the direction of the next step in a sequence of a multi-step task, X will demonstrate anticipation of the next step in the sequence 80% of opportunities over a one month period.

2. X will complete 2 sequential steps in a task analysis in a domestic, vocational, and hygiene task 80% of opportunities over a one month period.

Social/Communicative

X will perform 2 social/communicative behaviors (eye contact and shaking hands) in response to a verbal greeting from peers, teachers, and community persons at school and in the community.

1. X will make eye contact within 3 seconds in response to a verbal greeting from another person 80% of opportunities over a one month period.

2. X will extend his hand in the direction of another person who has greeted him within 5 seconds 80% of opportunities over a one month period.

Health and Hygiene

X will increase his level of independence in 2 tasks (pull pants up and handwashing).

1. At the verbal prompt level, X will pull his pants and underpants up over his hips 80% of opportunities over a 2 week period.

2. X will complete 5 steps in a handwashing routine at the verbal prompt level 80% of opportunities over a one month period.

Behavior

X will decrease the occurence of inappropriate vocalizations in and community settings.

1. X will reduce yelling to 5 occurences per day for a one month period.

Student 5: Functional cognitive responses, totally physically disabled, social and people oriented, will not attend to objects, high school, respiratory and allergy problems, vomits phlegm and mucus at least once per day, is difficult to feed due to gagging.

Motor

X will participate in 2 motor behaviors (voluntary head movement, and passive appropriate positioning) during 4 functional activities at school and in the community.

1. The PT and OT will assist the teacher with obtaining appropriate adaptive equipment and positioning X in adaptive equipment at needed to participate with other students in functional classroom and community activities.

2. When appropriately positioned and given a head switch, X will activate the head switch to turn on 4 functional items for himself, his classmate, or non-disabled peers 80% of opportunities for a two wek period.

Cognitive

X will perform 2 cognitive skills (choice making, attending to objects) within the context of 4 functional activities at school and in the community.

1. When presented with 2 items by a staff member or non-disabled peer, and given a verbal cue, X will indicate the item he wants by looking at the item for 3 - 5 seconds 80% of opportunities for a two week period.

2. X will stay awake during his sensory and motoric partial participation in non-preferred activities 60% of opportunities for a two week period.

Social/Communicative

X will perform 2 social/communicative behaviors with staff and non-disabled peers (yes/no and appropriate greeting) within the context of 4 activities and spontaneous social encounters at school and in the community.

1. X will smile to indicate "yes" in response to a question from staff or non-disabled peer 90% of opportunities over 2 consecutive weeks.

2. X will not smile to indicate "no" when asked by staff or non-disabled peer if he wants a non-preferred item/activity 60% of opportunities over 2 consecutive weeks.

3. X will make eye contact and smile when greeted by a familiar or unfamiliar person 80% of opportunities over a 2 consecutive week period.

Behavior

X will decrease the occurrence of one inappropriate behavior (forced vomiting) in school and community settings.

1. X will eat his food and drink liquids without vomiting 80% of the time over a one month period.

Stuent 6: Severe intellectual disability (but labelled profound) very restricted motor use although he can use one hand to activate a pressure switch, social, uses a urinal, middle school.

Motor

X will perform 4 motor skills (transfer, release, assemble/disassemble, operations) within the context of 3 functional activities at school or in the community.

1. During can crushing, laundry, and grocery shopping, X will independently transfer items from his right fisted hand to his left fisted hand 80% of opportunities for each activity for one week.

2. During can crushing, notebook onto desk, and grocery shopping, X will release the object onto the appropriate surface with partial physical assistance 80% of opportunities for each activity over a 10 day period.

3. During bookbag to desk, tape in tape recorder, sorting activity, X will assemble or disassemble the items independently 80% of opportunities for each activity over a 5 day period.

4. Given 4 activities (open/close doors on microwave, refrigerator, lunch box, and turn water on/off) X will adjust motor movement of right hand to obtain the functional effect 70% of opportunities over a one month period.

Mobility

X will increase his level of independence by moving his wheelchair in school and community environments.

1. Given a verbal cue, X will put both hands on the wheels of his wheelchair and roll it backward a distance of 8 feet on four of five opportunities over a one week period.

Social

X will perform the social behavior of sharing within the context of social interactions with staff and non-disabled persons in school and community environments.

1. During 3 group activities (snack, clean-up, vocational) and given the the verbal request to "share", X will push an item to the peer or adult 80% of opportunities over a 10 day period.

Cognitive

Through a head shake yes/no, X will perform 3 cognitive behaviors (match, sort, 1:1 correspondence) during 3 activities in school and community settings with staff and non-disabled peers.

1. When two samples are placed on the table and the teacher or peer shows X one of the two items and asked if it goes next to one sample or the other, X will shake his head yes or no and the non-disabled person will place the match next to the sample.

2. When an array of items are placed in a jig on the table and those items are shown to X and he is asked if if goes in this location or that location next to a similar or dissimilar item, X -will shake his head yes/no to indicate appropriate placement 80% of opportunities over a one month period.

3. During table setting and vocational assembly tasks, X will indicate through a head shake yes/no whether a designated item (such as a spoon) is needed to complete the set (finish setting the table) 80% of opportunities over a two week period.

Communication

X will increase his expressive communicative behavior within the context of 3 functional activities at school and in the community.

1. Given a tape recorder, a loop tape and an adaptive switch, X will independently use the switch to activate the appropriate pre-recorded message out of an array of three messages to express his wants, needs, requests, and comments to other staff and non-disabled peers and community persons 90% of opportunities over a one month period.

Student 7: Ambulatory, minimal cognitive responses, adequate motor skills for independence, non-compliant, physically on the move, high levels of physical resistance to instruction, highschool.

Motor

X will perform 3 motor behaviors (grasp and hold, walking a distance, bilateral push) at the verbal prompt level in school and community environments.

1. X will push a grocery cart with two hands a distance of 20 feet with the teacher steering the cart with her hands on the front of the cart 90% of opportunities over a two month period.

2. X will walk outside a distance of one-quarter mile on hard surfaces 90% of opportunities over a one month period.

3. X will grasp and hold non-preferred items long enough to obtain the functional effect of the item in domestic, voca tional, and recreation and leisure activities 70% of opportunities for each activity over a one month period.

Cognitive

X will perform two cognitive skills (anticipation and 2 step tasks) within the context of 3 functional activities at school and in community settings.

1. Through motor or visual movement in the direction of the next step in a multi-step sequence, X will demonstrate anticipation of the next step 60% of opportunities over a 10 day period.

2. At the gestural prompt level, X will complete two steps in a row in a domestic, vocational, and hygiene task 70% of opportunities over a 10 day period.

Social/Communicative

X will independently perform an appropriate social greeting throughout the day in school and community environments.

1. When greeted by another person, X will make eye contact and smile without grabbing the person 80% of opportunities over a one month period.

Health and Hygiene

X will increase her level of independence on 4 self-help tasks (handwashing, eating, toileting, dressing).

1. At the gestural prompt level, X will complete 3 steps in a handwashing routing 80% of opportunities over a two week period.

2. X will maintain keeping her fingers out of her food and her left hand in her lap while eating to no more than 2 times per meal for a one month period.

3. At the verbal prompt level, X will not grab food or drink from another person 80% of opportunities over a one month period.

4. X will sit on the toilet without scratching her thighs and groin area on all occasions for a one month period.

5. At the verbal prompt level, X will stand with her hands on the wall and her legs spread apart so that the teacher can put her diaper on and fasten it 90% of opportunities over a one month period.

Behavior

X will decrease the occurence of 3 inappropriate behaviors (vocalizing, hands in mouth, hands in pants, and grabbing items) in school and community settings.

1. X will decrease grabbing items in the community to zero occurence per month.

2. X will decrease inappropriate vocal play to 10 occurrence per day.

3. X will decrease putting her hands in her pants to 3 occurrences per month.

4. X will decrease playing with her tongue when engaged in activities and supervised by a staff member to 5 occurrences per day.

APPENDIX 9: PARAGRAPH OUTLINE OF SAMS STAFF DEVELOPMENT INSERVICE COURSE

PROJECT SAMS

STAFF DEVELOPMENT OUTLINE BY THREE HOUR SESSION

All sessions are in a lecture, question and answer, and discussion format. All concepts and procedures discussed are illustrated with slide and video tapes. All protocols teachers will need to implement the SAMS Curriculum Process are given to teachers with each session.

Session One: Characteristics

In this session we set the stage for the curriculum process by discussing the population, their multiple characteristics, and how those characteristics affect student learning and therefore curriculum and instructional planning. This session includes a framework for describing students with profound disabilities by seven different characteristics clusters. This clusters in turn relate, cluster by cluster, to the varying levels of partial participation and other curriculum concepts described in other sessions.

Session Two: Philosophy of Education for Students with Profound Disabilities

This session discusses appropriate educational objectives for all students and how they relate to students with profound disabilities. The focus is on the importance of a socially based curriculum which stresses the importance of communication within integrated school and non-school environments.

Session Three: Activity Assessment

This session focuses on how to complete assessments in four areas to determine which activities should be used to teach the basic developmental skills and skill steps which students with profound disabilities must learn. These areas are the family, the community, the school, and the classroom. The protocols for these assessment are reviewed with participants.

Session Four: Defining and Expanding the Principle of Partial Participation

This session outlines project staff definitions of and concepts related to the principle of partial participation and how they relate to students with profound disabilities. This concept includes targeting short chains of behaviors for instruction, selecting single or multiple steps in the chain for instruction, or focusing on basic developmental skills for instruction. All concepts are related to partial participation within the context of functional, age-appropriate, integrated activities in home, community, school, and classroom environments. Within this session we present various outcome measures for students with profound disabilities based on the

principle of partial participation. The SAMS list of basic developmental skills and their definitions are given out and reviewed with participants.

Session Five: Educational Assessment for Selecting Instructional Objectives

In this session we cover the assessment of basic developmental skills and skill steps within functional tasks. The protocols for assessment are reviewed with participants. The writing of IEP objectives and instructional programs is reviewed and IEP samples are distributed.

Session Six: Developing Group Instruction

Grouping students for instruction is primarily discussed, with a focus on the use of heterogeneous groups for instruction. This group instruction process draws heavily on the work of professionals from University of Kansas in the early 1980's and the University of Kentucky in the early 1990's.

Session Seven: Scheduling

The process for scheduling activities throughout the instructional day is presented. Within this context, the use of peer tutors, peer buddies, special friends, integration, and inclusion are discussed as ways to build an effective schedule. Sample schedules and blank schedule forms are distributed and reviewed. How to deal with schedule breakdowns is also discussed.

Session Eight: Instructional Strategies

This session discusses effective instructional strategies that have worked for project teachers. The session begins with a review of the cognitive disabilities of students with profound disabilities and how they probably affect instruction and the selection of certain instructional strategies. The session covers prompting systems, correction procedures, and reinforcement. Data collection forms which project teachers have found convenient to use are reviewed and blank forms distributed to participants.

Session Nine: Community-Based Instruction

This session discusses procedures for implementing community instruction for students with profound disabilities. Assessing which sites to access, site analyses, and instructional considerations in the community are discussed. Protocols for assessment and analyses are distributed.

Session Ten: Community-Based Vocational Instruction

This session presents an overview on the rationale for doing

vocational training with students with profound disabilities. The concepts of assessment and site analysis, building simulations for classroom practice, limitations, expectations, and confusions about vocational training are discussed.

Session Eleven: Communication

Non-symbolic communication is discussed during this session. Communication systems focusing on touch cues, movement cues, and gestures are presented. The teacher's role in building receptive communication through constant attention to the communicative intent of the student's behavior is continually stressed.

Session Twelve: Building Appropriate Play

This session focuses on developing play sessions that are social and communicative in nature. The primary focus is developing play with persons without disabilities. Incorporating the instruction of basic developmental skills within play activities is presented.

Session Thirteen: Students Who May Need An Alternative Curriculum Framework

This session focuses on the small percentage of students (8-12%) who don't seem to respond to an activity-based curriculum. These students typically are also seriously health impaired or asleep or otherwise not alert due to organic variables. The SAMS curriculum framework appears to be appropriate for most students with profound disabilities because they become more alert and learn more within the activity-based curriculum. A few students do not appear to become more alert, or their medical needs are so intense that they can not be sustained with an activity-based format. This session discusses a framework for curriculum which focuses on integrating the organic, structural, emotional, and cognitive needs of these students.

APPENDIX 11: REFERENCE LIST/BIBLIOGRAPHY FOR PROJECT SAMS

Kent: Control OI then 4
Control OG after first word

Bibliography from Project SAMS

This bibliography is by no means "comprehensive". These articles, books, and chapters were selected based on the following criteria: (1) They were all read by a staff member of Project SAMS and found to be helpful in our thinking and conceptualizing of curriculum for students with profound disabilities; (2) All were published - we included no unpublished work; (3) All appeared to include one or more students with profound disabilities as defined in Project SAMS - These were students who scored in the range of profound mental retardation (Grossman, 1983) and who did not demonstrate the following behaviors: match, sort, sequence, imitation, 1;1 correspondence, symbolic communication at the receptive or expressive levels, respond consistently to generalized reinforcers, and learn consistently following traditional stimulus control instructional procedures. There were however, a few articles that developed concepts such as partial participation, natural cues, choice making, or conception of the task analysis process that are applicable to students with profound disabilities eventhough those students are not specificially discussed in the article. Approximately 75% of the 135 students with whom we worked also had physical and sensory impairments. Approximately 10% also had signifant medical problems. We recognize that many people use the term "profound disabilities" in different ways. However, our experience has lead us to believe that the defining characteristics of (1) lack of consistent response to generalized reinforcers and (2) inconsistent responding to traditional stimulus control instructional strategies are the characterisitcs which most effect instruction. We therefore limited our bibliography to those students. Several articles are included for "historical" perspective. We consider anything prior to 1982 to be historical. These articles should not be considered to necessarily reflect "best practices".

Albin, J. B. (1977). Some variables influencing the maintenance of acquired self-feeding behavior in profoundly retarded children. Mental Retardation, October, 49-52.

Allen, L. D., & Bryant, M. C. (1985). A multielement analysis of contingent versus contingent-interrupted music. Applied Research in Mental Retardation, 6, 87-97.

Baumgart, D., Brown, L., Pumpian, I., Nisbet, J., Ford, A., Sweet, M., Messina, R., & Schroeder, J. (1982). Principle of partial participation and individualized adaptations in educational programs for severely handicapped students. Journal of The Association for Persons with Severe Handicaps, 7, 17-27.

Belfiore, P. (1990, December). The impact of setting on the behavior of persons with profound disabilities. Paper presented at the meeting of The Association for Persons with Severe Handicaps, Chicago, Ill.

Bell, J., & Richmond, G. (1984). Improving profoundly mentally retarded adults' performance on a position discrimination. American Journal of Mental Deficiency, 89, 180-186.

Berkson, G., & Landesman-Dwyer, S. (1977). Behavioral research on severe and profound mental retardation (1955-1974). American Journal of Mental Deficiency, 81, 428-454.

Borthwick-Duffy, S. A. (1990). Quality of life of persons with severe or profound mental retardation. In Robert L. Schalock & Michael J. Begab (Eds.). Quality of Life: Perspectives and Issues (pp.177-190). Washington, DC: American Association on Mental Retardation.

Brown, F., & Lehr, D. H. (Eds.) (1989). Persons with Profound Disabilities: Issues and Practices. Paul Brookes: Baltimore

Brown, F., Evans, I. M., Weed, K., & Owen, V. (1987). Delineating functional competencies: A component model. Journal of The Association for Persons with Severe Handicaps, 12, 117-124.

Collins, B. D., Gast, D. L., Wolery, M., Holcombe, A., & Leatherby, J. G. (In press). The effectiveness of a constant time delay procedure to teach chained self-feeding tasks to individuals with severe handicaps. Journal of Developmental and Physical Disabilities.

Correa, V. I., Poulson, C. L., & Salzberg, C. L. (1984). Training and generalization of reach-grasp behavior in blind, retarded young children. Journal of Applied Behavior Analysis, 94, 57-69.

Deiker, T. & Bruno, R. D. (1976). Sensory reinforcement of eyeblink rate in a decorticate human. American Journal of Mental Deficiency, 80, 665-667.

Dewson, M. R. J., & Whiteley, J. H. (1987). Sensory reinforcement of head turning with nonambulatory, profoundly mentally retarded persons. Research in Developmental Disabilities, 8, 413-426.

Diorio, M. S., & Konaraki, E. A. (1984). Evaluation of a method for teaching dressing skills to profoundly mentally retarded persons. American Journal of Mental Deficiency, 89, 307-309.

Downing, J. (1988). Active versus passive programming: A critique of IEP objectives for students with the most severe disabilities. Journal of The Association for Persons with Severe Handicaps, 13, 197-202.

Dunst, C., Cuising, C., & Vance, S. (1985). Response contingent learning in profoundly handicapped infants: A social system perspective. Analysis and Intervention in Developmental Disabilities, 5, 33-47.

Ellis, N. R., & Boyd, B. D. (1982). Visual novelty preference as a measure of recognition memory in moderately, severely, and profoundly retarded persons. Intelligence, 6, 387-397.

Ferguson, D. L., & Baumgart, D. (1991). Partial participation revisited. Journal of The Association for Persons with Severe Disabilities, 16, 218-227.

Ford, A., & Mirenda, P. (1984). Community instruction: A natural cues and correction decision model. Journal of The Association for Persons with Severe Handicaps, 9, 77-87.

Fox, L., & Westling, D. (1991). A preliminary evaluation of training parents to use facilitative strategies with their children with profound disabilities. Journal of The Association for Persons with Severe Handicaps, 16, 168-176.

Fuller, P. R. (1949). Operant conditioning of a vegetative human organism. The American Journal of Psychology, 62, 587-590.

Gee, K., Graham, N., Sailor, W., & Goetz, L. (In press). Use of integrated, regular school and community settings as primary contexts for skill instruction of students with severe, multiple disabilities. Journal of Behavior Modification.

Goetz, L., & Gee, K. (1987). Teaching visual attention in functional contexts: Acquisition and generalization of complex visual motor skills. Journal of Visual Impairment and Blindness, March, 115-117.

Green, C., Canipe, V., Gardner, S., & Reid, D. (1990, December). A behavior analysis of the (non)existence of biobehavioral states among persons with profound multiple handicaps. Paper presented at the meeting of The Association for Persons with Severe Handicaps, Chicago, Ill.

Green, C. W., Reid, D. H., White, L. K., Halford, R. C., Brittain, D. P., & Gardner, S. M. (1988). Identifying reinforcers for persons with profound handicaps: Staff opinion versus systematic assessment of preferences. Journal of Applied Behavior Analysis, 21, 31-43.

Green, C. W., Canipe, V. S., Way, P. J., & Reid, D. H. (1986). Improving the functional utility and effectiveness of classroom services for students with profound multiple handicaps. Journal of The Association for Persons with Severe Handicaps, 11, 62-170.

Guess, D., Siegel-Causey, E., Roberts, S., Rues, J., Thompson, B., & Siegel-Causey, D. (1990). Assessment and analysis of behavior state and related variables among students with profoundly handicapping conditions. Journal of The Association for Persons with Severe Handicaps, 15, 211-230.

Guess, D., Mulligan-Ault, M., Roberts, S., Struth, J., Siegel-Causey, E., Thompson, B., Bronicki, G. J., & Guy, B. (1988). Implications of biobehavioral states for the education and treatment of students with the most profoundly handicapping conditions. Journal of The Association for Persons with Severe Handicaps, 13, 163-175.

Guess, D., Benson, H. A., & Siegel-Causey, E. (1985). Concepts and issues related to choice-making and autonomy among persons with severe disabilities. Journal of The Association for Persons with Severe Handicaps, 10, 79-86.

Hasket, J., & Hollar, W. D. (1978). Sensory reinforcement and contigency awareness of profoundly retarded children. American Journal of Mental Deficiency, 83, 60-68.

Haywood, H. C., Meyers, C. E., & Switzky, H. N. (1982). Mental retardation. Annual Review in Psychology, 33. 309-342.

Hogg, J., Remington, R. E., & Foxen, T. H. (1979). Classical conditioning of profoundly retarded, multiply handicapped children. Developmental Medical Child Neurology, 21, 779-786.

Horn, E. M., & Warren, S. F. (1987). Facilitating the acquisition of sensorimotor behavior with a microcomputer-mediated teaching system: An experimental analysis. Journal of The Association for Persons with Severe Handicaps, 12, 205-215.

Houghton, J., Bronicki, G. J., & Guess, D. (1987). Opportunities to express preferences and make choices among students with severe disabilities in classroom settings> Journal of The Association for Persons with Severe Handicaps, 12, 18-27.

Izen, C. L., & Brown, F. (1991). Education and treatment needs of students with profound, multiply handicapping, and medically fragile conditions: A survey of teachers' perceptions. Journal of The Association for Persons with Severe Handicaps, 16, 94-103.

Kuharaki, T., Rues, J., Cook, D., & Guess, D. (1985). Effects of vestibular stimulation on sitting behaviors among preshoolers with severe handicaps. Journal of The Association for Persons with Severe Handicaps, 10, 137-145.

Landesman-Dwyer, S., & Sacket, G. P. (1976). Behavioral changes in non-ambulatory, profoundly mentally retarded individuals. In C. Meyers (Ed.), Quality of Life in Severely and Profoundly

Mentally Retarded People: Research Foundations for Improvement, (pp. 55-141). Washington, DC: American Association on Mental Deficiency.

Leatherby, J. G., Gast, D. L., Wolery, M., & Collins, B. C. (In press). Assessment of reinforcer preference in multi-handicapped students. Journal of Developmental and Physical Disabilities.

Lewkowicz, D. J., & Turkewitz, G. (1981). Intersensory interaction in Newborns: Modification of visual preferences following exposure to sound. Child Development, 52, 827-832.

Meador, D. M. (1984). Effects of color on visual discrimination of geometric symbols by severely and profoundly mentally retarded individuals. American Journal of Mental Deficiency, 89, 275-286.

McClure, J. T., Moss, R. A., McPeters, J. W., & Kirkpatrick, M. A. (1986). Reduction of hand mouthing by a boy with profound mental retardation. Mental Retardation, 24, 219-222.

Mulligan-Ault, M., Guess, D., Struth, L., & Thompson, B. (1988). The implementation of health-related procedures in classrooms for students with severe multiple impairments. Journal of The Association for Persons with Severe Handicaps, 13, 100-109.

Murphy, G. & Callias, M. (1985). Increasing simple toy play in profoundly mentally handicapped children: I. Training to play. Journal of Autism and Developmental Disorders, 15, 375-388.

Murphy, G., Carr, J., & Callias, M. (1986). Increasing simple toy play in profoundly mentally handicapped chilren: II. Designing special toys. Journal of Autism and Developmental Disorders, 16, 45-58.

Murphy, R. J., & Doughty, N. R. (1977). Establishment of controlled arm movement in profoundly retarded students using response contingent vibratory stimulation. American Journal of Mental Deficiency, 82, 212-216.

Orelove, F. P., & Sobsey, D. (Eds.) (1991). Educating Children with Multiple Disabilities, (2nd Ed.). Paul Brookes: Baltimore.

Orelove, F. P. (1991). Educating all students: The future is now. In L. H. Meyer, C. A. Peck, & L. Brown (Eds.). Critical Issues in the Lives of People with Severe Disabilities (pp. 67-88). Paul Brookes: Baltimore.

Pace, G. M., Ivancic, M. T., Edwards, G. L., Iwata, B. A., & Page, T. J. (1985). Assessment of stimulus preference and reinforcer value with profoundly retarded individuals. Journal of Applied Behavior Analysis, 18, 249-255.

Prechtl, H. F. R. (1974). The behavioural states of the newborn infanct (A review). Brain Research, 76, 185-212.

Rainforth, B. (1982). Biobehavioral state and orienting: Implications for educating profoundly retarded students. Journal of The Association for Persons with Severe Handicaps, 6, 33-37.

Reid, D. H., Phillips, J. F., & Green, C. W. (1991). Teaching persons with profound multiple handicaps: A review of the effects of behavioral research. Journal of Applied Behavior Analysis, 24, 319-336.

Remington, R. E., Foxen, T., & Hogg, J. (1977). Auditory reinforcement in profoundly retarded multiply handicapped children. American Journal of Mental Deficiency, 82, 299-304.

Realon, R. E., Favell, J. E., & Dayvault, K. A. (1988). Evaluating the use of adapted leisure materials on the engagement of persons who are profoundly, multiply handicapped. Education and Training in Mental Retardation, 23, 228-237.

Sailor, W., Gee, K., Goetz, L., & Graham, N. (1988). Progress in educating students with the most severe disabilities: Is there any? Journal of The Association for Persons with Severe Handicaps, 13, 87-99.

Sailor, W., & Guess, D. (1983). Severely Handicapped Students: An Instructional Design. Houghton Mifflin: Boston.

Saunders, R. R., & Spradlin, J. E. (1991). A supported routines approach to active treatment for enhancing independence, competence, and self-worth. Behavioral Residential Treatment, 6, 11-37.

Shepherd, P. A., & Fafan, J. F. (1981). Visual pattern detection and recognition memory in children with profound mental retardation. International Review of Research in Mental Retardation, 10, 31-60.

Shevin, M., & Klein, N. K. (1984). The importance of choice-making skills for students with severe disabilities. Journal of The Association for Persons with Severe Handicaps, 9, 159-166.

Snell, M. D., Lewis, A. P., & Houghton, A. (1989). Acquisition and maintenance of toothbrushing skills by students with cerebral palsy and mental retardation. Journal of The Association for Persons with Severe Handicaps, 14, 216-226.

Sobsey, R., & Orelove, F. P. (1984). Neurophysiological facilitation of eating skills in children with severe handicaps. Journal of The Association for Persons with Severe Handicaps, 9, 98-110.

Sternberg, L. (Ed.) (1988). Educating Students with Severe or Profound Handicaps, (2nd Ed.). Aspen: Rockville, Maryland.

Sternberg, L., McNerney, C. D., & Pegnatore, L. (1987). Developing primitive signally behavior of students with profound mental retardation. Mental Retardation, 25, 13-20.

Sternberg, L., McNerney, C. D., & Pegnatore, L. (1985). Developing co-active imitative behaviors with profoundly mentally handicapped students. Education and Training of the Mentally Retarded, 20, 260-267.

Sternberg, L., Pegnatore, L., & Hill, C. (1983). Establishing interactive communication behaviors with profoundly mentally handicapped students. Journal of The Association for Persons with Severe Handicaps, 8, 39-46.

Switzky, H., Rotatori, A. F., Miller, T., & Freagon, S. (1979). The developmental model and its implications for assessment and instruction for the severely/profoundly handicapped. Mental Retardation, August, 167-170.

Utley, B., Duncan, D., Strain, P., & Scanlon, K. (1983). Effects of contingent and noncontingent vision stimulation on visual fixation in multiply handicapped children. Journal of The Association for Persons with Severe Handicaps, 8, 29-42.

Wacker, D. P., Berg, W., K., Wiggins, B., Muldoon, M., & Cavanaugh, J. (1985). Evaluation of reinforcer preferences for profoundly handicapped students. Journal of Applied Behavior Analysis, 18, 173-178.

Wacher, D. P., Wiggins, B., Fowler, M., & Berg, W. K. (1988). Training students with profound or multiple handicaps to make requests via microswitches. Journal of Applied Behavior Analysis, 21, 331-343.

Westing, D. L. (1985). Similarities and differences in instructional tactics used by teachers of TMR and PMR students. Education and Training of The Mentally Retarded, 21, 253-259.