



Texas School for the Blind & Visually Impaired Outreach Programs

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Assessment of Biobehavioral States and Analysis of Related Influences

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Biobehavioral states are levels of arousal ranging from asleep to agitated. Students with profound disabilities may not respond to the stimulation and interactions around them because they have difficulty establishing and maintaining alert arousal states. They, like any other student, are available for learning only when they are alert. The primary task of teachers serving this population is to become skillful at using environmental management to create conditions that facilitate establishment and maintenance of alert states. Once students are alert, appropriate learning materials and social interactions must then be provided in order for learning to occur.

Many external as well as internal factors influence arousal states. All significant factors must be considered in determining the best way to facilitate alert states with any given student. For that reason, biobehavioral state assessment is crucial before interventions occur. Under no circumstances should it be assumed that a student is nonresponsive under all conditions before biobehavioral assessment and subsequent intervention has been provided.

Two of the most well-known biobehavioral assessments that have come from the research and literature developed during the last twenty-five years are the Carolina Record of Individual Behavior (CRIB) and the Analyzing Behavior State and Learning Environments Profile (ABLE). Each of these tools has strengths, but cost and accessibility limit their use for some teachers. The informal, teacher-made assessment tool which follows this article attempts to assist teachers in their efforts to identify factors influencing their students' arousal states. Teachers are encouraged to change this tool as needed to meet the unique needs of an individual student. Teachers are also encouraged to read the resource material listed and to take advantage of training opportunities related to these tools as they arise.

The success of this type of assessment is highly dependent upon the sharing of information. Parents and staff members who will be recording states and other information should plan the assessment together. All assessors must agree on the characteristics of each state for the

student they are assessing. Using a video tape of the student to practice recognition of states before the actual assessment takes place is very helpful.

Resources

- Guess, D., Mulligan-Ault, M., Roberts, S., Struth, J., Siegal-Causey, E., Thompson, B., Bronicki, G.J., & Guy, G. (1988). Implications of biobehavioral states for the education and treatment of students with the most handicapping conditions. *JASH*, 13 (3), 163-174.
- Guy, B., Ault, M., & Guess, D. (1993). *Project ABLE manual: Analyzing behavior state and learning environments profile*. Lawrence: University of Kansas Department of Special Education.
- Rainforth, B. (1982). Biobehavioral state and orienting: Implications for education of profoundly retarded students. *TASH Journal*, Volume 6, Winter, 33-37.
- Simeonsson, R.J., Huntington, G.S., Short, R. J., & Ware, W. B. (1988). *The Carolina record of individual behavior (CRIB): Characteristics of handicapped infants and children*. Chapel Hill: Frank Porter Graham Child Development Center, University of North Carolina at Chapel Hill.
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Sample: Assessment of Biobehavioral States and Analysis of Related Influences

Student's Name: Catherine Date of Assessment: 3/5/95

Name(s) of Assessor(s): M. Smith, P. Castro (mother), N. Jones

Assessment Period

The total assessment period should be at least one school day.

School day starts at: 8:15 a.m School Day ends at: 3:30 p.m.

Non-school Environments

Assessment of the student in non-school environments on the same day would be extremely helpful.

Place: Home

From: 4:00 p.m. To: 8:30 p.m.

Part I - Recording Schedule

Provide the information called for in the grids for the 24 hours preceding the beginning of the assessment and throughout the assessment period. Under "Comment" indicate any significant factor that comes to mind and be sure to note when the recorded information is a departure from the student's typical routine. If there are significant departures or if the student is ill on the day of assessment, postpone the assessment.

Note: This is an informal teacher-made assessment based on the Carolina Record of Individual Behavior (CRIB), by R. J. Simeonsson et al. and the Project ABLE Manual: Analyzing Behavior State and Learning Environments Profile by B. Guy et al.

Food and Liquid Information

Each time the student eats something, drinks something, or is tube fed, enter the following information on the grid:

Type	Time Start	Time Stop	Amount	Comment
Ensure	8:20	8:40	16 oz.	Taken through g-tube
Water	8:40	8:45	6 oz.	Taken through g-tube
Ensure	12:30	1:20	16 oz.	Taken through g-tube
Water	1:10	1:15	6 oz.	Taken through g-tube
Ensure	4:30	4:50	16 oz.	Taken through g-tube
Water	4:50	5:00	6 oz.	Taken through g-tube
Ensure	8:00	8:20	16 oz.	Taken through g-tube
Water	8:20	8:25	6 oz.	Taken through g-tube

Medication Information

Each time the student takes a prescription or over the counter medication enter the following information on the grid:

Type	Time	Amount	Comment
Tegretol Suspension	8:20 a.m.	200 mg	for seizures
Dimetap Elixir	8:20 a.m.	10 cc	for congestion
Dimetap Elixir	12:30 p.m.	10 cc	
Tegretol Suspension	4:30 p.m.	200 mg	
Dimetap Elixir	4:30 p.m.	10 cc	

Seizure Information

Each time a seizure occurs, enter the following information on the grid:

Start Time	Stop Time	Description	Comment
8:30 AM	3:30 PM	None observed	Information supplied by home nurse
3:30 PM	3:50 PM	Mild 3 observed	Stopped interaction briefly and was drowsy after 3 rd seizure. Medication given at 4 PM
4:00 PM	8:30 PM	None observed	Observation by consultant ended

Sleep Information

Each time the student sleeps for more than five minutes, enter the following information on the grid. If the student's sleep is interrupted for longer than three minutes, enter a stop time and begin a new sleep episode on the next line:

Start Time	Stop Time	Location	Comments
9:00 AM	12:00 PM	Bedroom	Cried to request in bed change in position
12:15 PM	3:20 AM	Bedroom	Cried to request in bed change in position
3:28 AM	6:15 AM	Bedroom	Playing quietly in bed when checked at 6:15
4:30 PM	6:45 PM	Bedroom	Cried to request in bed change in position

Part II States Observation – Instructions

Indicate the length of the interval between recordings in Part II. Intervals should be no shorter than one minute and no longer than 15 minutes. The intervals should be consistent throughout the assessment period. Part II information will be recorded every 15 minutes.

Time

Record the clock time for every third interval recorded. This will help show the continuity of the assessment.

State

Record the state at the moment of observation, not the prevalent state for the entire interval.

Position

Indicate the position the student is in at the moment of observation (e.g., sitting, side-lying, prone, supine, standing).

Specific External Stimuli Available

Describe the specific external stimuli available to the student at the moment of observation (e.g., music, vibrator, swing, water, food, Little Room, mobile). If no material is available, enter a zero.

Ambient Conditions

Describe the characteristics of the surrounding (e.g., room temperature, noise level, conspicuous smells, lighting) for the first state recorded and whenever conditions change. When no change occurs, put ditto marks in the column.

Social Conditions

Record the name of the person interacting with the student at the moment of observation. The person must be talking to the student, touching the student, and/or co-actively manipulating an object with the student. The passive presence of another person should not be recorded. If no person is interacting with the student, enter zero.

State Key to Part II Assessment

- SZ = Seizure;
- S = Sleep;
- D = Drowsiness;
- QA = Quiet Awake;
- AA = Active Awake;
- FA = Fussy Awake;
- MA = Mild Agitation;
- UA = Uncontrollable Agitation

Example of Activity During School Hours

Time	Activity	State	Position	Specific External Stimuli Available	Ambient Conditions	Social Conditions
8:15 AM	Arrival	QA	Seated	Bus chairlift	Outdoors cold, windy, noisy chairlift in bus	Greeted by TA Linda and teacher Sue
8:30 AM	Breakfast	D	Supine	G-tube, on wedge	Normal temperature and lighting	Nurse nearby occasionally checking
8:45 AM	Tooth-brushing	MA	Seated	Toothbrush, toothpaste, water, towel	Noisy bathroom, very bright lighting	Hand-over-hand manipulation; Linda
9:00 AM	Hair Drying	QA	Seated	Hairdryer, mousse, brush	Normal temperature and lighting	Talking; Linda
9:15 AM	Hair Brushing	QA	Seated	Hairdryer, mousse, brush	Normal temperature and lighting	Talking; Linda
9:30 AM	Drama Class	AA	Seated	Papier-mâché material	Dark stage area, echoes	Surrounded by peers
10:00 AM	Changing	AA	Supine	Cold wipes, talcum powder	Normal temperature and lighting	Patting, talking; Linda
10:15 AM	Mail Delivery	AA	Rolling while prone in stander	Variety visual & auditory stimuli available	Many changes; different noise levels	Interaction with 6 different adults
Remainder of day not shown						

Part III - Summary

Typical duration of alert states: 15 to 20 minutes

(Note: If the student is typically alert less than one minute, a different type of biobehavioral assessment will be necessary. Consider assessing one activity at 30 second intervals. The purpose of this assessment would be to try to determine what influences cause state changes and to provide modifications associated with changes to more alert states.)

Positions during alert states: Seated, standing (in prone stander)

Specific external stimuli available during alert states: Movement; tactual materials (e.g., paper, hairbrush); auditory, especially human voice

Ambient conditions during alert states: Normal lighting, temperature, low noise level

Social conditions during alert states: Talking and touching

Less than alert states typically occurred when: There was no social interaction

Agitated states typically occurred when: There was too much noise or strong smells and just before feeding

If you have concerns about food and liquid intake or medications, talk with parents and other team members about getting more information.

Do you have concerns about food and liquid intake being adequate for maintenance of alert states:

Yes ✓

No

Do you have concerns about medication and/or medication schedules facilitating alert states at optimum programming times:

Yes ✓

No