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**SECTION III:**

**CURRICULUM ISSUES**

**FOR STUDENTS IN**

**GENERAL ASSESSMENT**

## CURRICULUM ISSUES FOR STUDENTS IN GENERAL ASSESSMENT

Students participating in the general assessment are expected to address the Louisiana Content Standards and be provided the necessary supports and accommodations to reach these challenging standards. The purpose of this section is to provide a process that will promote access to and success within the general curriculum for students participating in LEAP. This process will provide an opportunity for the IEP Team to

- be knowledgeable about the general curriculum,
- be knowledgeable about how the student learns, and
- meet the student's needs resulting from his disability to enable him to be involved in and progress in the general curriculum.

To understand the proposed process, the users of this section **must** have an understanding of the concept *information processing*. Information processing is a construct that is now consistently present in definitions of learning theory nationally. Information processing theory has been evolving in the research literature since 1958. It has recently been successfully adopted by many states as a model for developing statewide assessment measures and for developing a student's individualized education program (IEP).

In the past, the IEP process has focused on the product of the student's evaluation and/or the current level of performance. While it is important to know a student's standardized test score in a content area when planning the IEP, it is even more important to know **how** that student learns and his profile of strengths and difficulties within a reliable model of information processing.

Using an information processing model, the teacher must analyze why a student has reacted to assessment probes in a given manner rather than emphasize the standardized score. Innovative strategies are necessary to obtain descriptive information about the student in order to plan an individualized program and to design effective teaching strategies. In this way, the dynamic interactions of the child's ability to process information, the curriculum, and the teaching strategies can be integrated for the educational benefit of the student.

Information processing is a research-based concept that has been borrowed from communications theory to look at the temporal and spatial characteristics of the human mind. The basic premise is that information is operated on by various mental structures and processes whose functions are to acquire, manipulate, organize, store, retrieve, and express information. The information processing model is a way to explain behavior by describing the mental structures and processes that influence the way a student collects, stores, modifies, and interprets environmental information or information already stored internally.

The information processing model offers three dynamic stages of processing:

- sensory input (intake through senses),
- integration (attachment to existing concepts), and
- output (communication of information).

Information processing occurs internally, but is affected by occurrences and experiences in the community, home, and school of the student. Of course, memory underlies all the processing of information.

The following six dynamic, interactive, overlapping, and complex components of information processing are frequently identified: acquisition, manipulation, organization, storage, retrieval, and expression.

A student with a disability may have difficulty with one or more of the six information processing components. Once identified, that student's difficulty may be addressed with creative accommodations and effective teaching/learning strategies.

The advantages of the information processing model are significant in that

- the focus is on the processing of information in solving a task,
- the emphasis is teaching the student how to learn along with what to learn,
- the concept is that the student is an active processor of information,
- the student's needs are targeted for specific teaching strategies, and
- there is coordination possible with performance-based models of assessment.

The following chart provides a simplified visualization of the attributes of the six components of information processing.

<b>SENSORY INPUT</b>	<b>INTEGRATION</b>	<b>OUTPUT</b>
<b>Acquisition</b>	<b>Manipulation</b> <b>Organization</b> <b>Storage</b> <b>Retrieval</b>	<b>Expression</b>

This section of the *Guide* contains the following components:

- *Information Processing Profile Forms*, which includes the following forms to gather data on how the student processes information:
  - Teacher questionnaire
  - Observation
  - Student Questionnaire/Interview
  - Home/Family Questionnaire
  - Information Processing Profile Summary Sheet
- Recommendations of teaching/learning strategies and student accommodations to support the strengths and weaknesses noted on the Processing Profile
- *LEAP 21 Student Planning Matrix*. (A matrix has been provided for every standard for each content area at each grade level cluster.)
- Samples of the processing profile forms, summary sheet, matrix, and IEP instructional page.

### **Additional Educational Needs**

There may be some students whose needs go beyond that of the general curriculum. IDEA states that the content of the IEP must also meet each of the student=s needs that result from the student=s disability.

## STEPS IN DEVELOPING AN INFORMATION PROCESSING PROFILE

Teachers are encouraged to collaborate in completing the forms and developing the learning profile. The teacher with IEP authority will coordinate this process and will be ultimately responsible for assuring the steps below are followed.

1. Read and be knowledgeable about the purpose and definition of information processing as well as the forms to be completed.
2. Perform systematic observation(s).
3. Choose and administer appropriate questionnaires, such as the Teacher, Home/Family, and Student Questionnaires.
4. Examine and evaluate all sources of data for evidence of information processing strengths and weaknesses.
5. Verify results of data collection on information processing from a variety of sources and in a variety of classes.
6. Determine whether further information is needed to develop the learning profile and the IEP.
7. Summarize the student's information processing strengths and weaknesses using the *Information Processing Profile Summary Sheet*.
8. Determine supports needed for the student using the *LEAP 21 Student Planning Matrix* and *Recommendations for Teaching/Learning Strategies and Student Accommodations*.

**NOTE:** An [accommodation](#) is any technique that alters the academic setting or environment to help a student access the general curriculum and validly demonstrate learning. An accommodation generally does not change the information, amount of information learned, or performance criteria.

A [modification](#) is any technique that alters the work required in some way that makes it different from the work required of other students in the class. Modifications include changes in instructional level, content, and performance criteria. A modification does change the work format or amount of work required of a student.

## INFORMATION PROCESSING PROFILE

### PURPOSE

The purpose is to develop an information processing profile to determine what supports are needed for a student to access and make progress in the general curriculum. The literature is rich describing information processing models. We have chosen, with permission, to adapt the terms and process described by the Minnesota Department of Children, Families, and Learning for the state of Louisiana.

### DEFINITIONS

*Information processing* is the act of receiving, recalling, and using information to function in an environment. The components of information processing include the following:

- Acquisition            accurately gaining, receiving and/or perceiving information
- Manipulation        the process of applying, using, or altering information
- Organization        structuring information: i.e., categorizing, sequencing
- Storage              adding information to existing information
- Retrieval            locating or recalling stored information
- Expression          communicating information

Information processing components are as follows:

- observable
- noticeable in a variety of settings
- identified with sensory input (auditory visual, tactile, or kinesthetic) integration, or output (spoken, written, gestural, or motoric)
- overlapping
- interactive in the sense that one may impact another
- complex and dynamic

**The following pages contain attributes of each component of information processing and examples of information processing difficulties.**

<b>ACQUISITION</b> Accurately gaining, receiving and/or perceiving information	
<b>Attribute of Components</b>	<b>Examples of Difficulties</b>
<ul style="list-style-type: none"> <li>• Perceiving</li> <li>• Developing</li> <li>• Receiving</li> <li>• Absorbing</li> <li>• Encoding</li> <li>• Comprehending</li> <li>• Linking</li> <li>• Gaining</li> </ul>	<ul style="list-style-type: none"> <li>• Focusing on print</li> <li>• Tracking as reading</li> <li>• Developing vocabulary</li> <li>• Learning the alphabet</li> <li>• Absorbing information read</li> <li>• Perceiving literal meaning</li> <li>• Identifying significant details</li> <li>• Paying attention</li> <li>• Discriminating likeness and differences in oral language</li> <li>• Adequately understanding language</li> <li>• Talking</li> <li>• Tracing and copying forms from paper, text, board</li> <li>• Recognizing numeration (counting, adding, subtracting)</li> <li>• Reading numerals/symbols</li> <li>• Perceiving temporal/spatial sequences</li> <li>• Reasoning</li> <li>• Judging</li> </ul>

<b>MANIPULATION</b> The process of applying, using, or altering information	
<b>Attribute of Components</b>	<b>Examples of Difficulties</b>
<ul style="list-style-type: none"> <li>• Imagining</li> <li>• Judging</li> <li>• Reasoning</li> <li>• Summarizing</li> <li>• Integrating</li> <li>• Problem solving</li> <li>• Preparing</li> <li>• Paraphrasing</li> <li>• Transforming</li> <li>• Separating</li> <li>• Calculating/tabulating</li> <li>• Applying</li> <li>• Evaluating</li> <li>• Assessing</li> <li>• Generalizing</li> <li>• Inferring</li> <li>• Translating</li> <li>• Grouping</li> <li>• Critiquing</li> <li>• Formulating</li> <li>• Interpreting</li> <li>• Planning</li> <li>• Analyzing</li> <li>• Altering</li> </ul>	<ul style="list-style-type: none"> <li>• Associating sounds with written symbols</li> <li>• Blending sounds into meaningful units</li> <li>• Inferring meaning</li> <li>• Paraphrasing information read</li> <li>• Interpreting notes taken</li> <li>• Integrating information heard with past experience</li> <li>• Associating meaning with spoken word</li> <li>• Interpreting meaning</li> <li>• Grouping words into sentences</li> <li>• Arranging meaningful sentences</li> <li>• Participating in discussion</li> <li>• Changing word forms</li> <li>• Using computer, calculator</li> <li>• Writing meaningful sentences</li> <li>• Using information in various forms</li> <li>• Choosing accurate descriptive language</li> <li>• Matching, sorting, classifying</li> <li>• Associating numeral/symbol with concept/process</li> <li>• Calculating</li> <li>• Solving word problems</li> <li>• Applying concepts</li> <li>• Interpreting graphs</li> <li>• Problem-solving options</li> </ul>

<b>ORGANIZATION</b> Structuring information	
<b>Attribute of Components</b>	<b>Examples of Difficulties</b>
<ul style="list-style-type: none"> <li>• Differentiating</li> <li>• Ordering</li> <li>• Sequencing</li> <li>• Categorizing</li> <li>• Clustering</li> <li>• Time managing</li> <li>• Planning</li> <li>• Associating</li> <li>• Mapping</li> <li>• Labeling</li> <li>• Following directions</li> <li>• Webbing</li> <li>• Prioritizing</li> <li>• Arranging</li> </ul>	<ul style="list-style-type: none"> <li>• Differentiating between letters and words</li> <li>• Sequencing letters/words</li> <li>• Reading left to right</li> <li>• Deriving main topics from facts</li> <li>• Organizing facts sequentially, chronologically</li> <li>• Discriminating between likeness and differences</li> <li>• Integrating current information with past experience</li> <li>• Following oral directions</li> <li>• Taking meaningful notes</li> <li>• Retrieving needed words</li> <li>• Sequencing meaningful sentences</li> <li>• Spatially placing problems on a page</li> <li>• Writing from left to right</li> <li>• Writing letters in correct order to make words</li> <li>• Supporting main idea</li> <li>• Sequencing paragraphs</li> <li>• Taking meaningful notes</li> <li>• Applying concepts (place value, regrouping)</li> <li>• Completing problems systematically</li> <li>• Prioritizing problem solving steps</li> <li>• Sequencing numbers</li> <li>• Associating coins with value</li> </ul>

<b>STORAGE</b> Adding information to existing information	
<b>Attribute of Components</b>	<b>Examples of Difficulties</b>
<ul style="list-style-type: none"> <li>• Long-term memory</li> <li>• Short-term memory</li> <li>• Memory tracing</li> <li>• Rehearsing</li> <li>• Mnemonics</li> <li>• Relating</li> <li>• Chunking</li> <li>• Clustering</li> <li>• Coding</li> </ul>	<ul style="list-style-type: none"> <li>• Repeating/recalling letters, sounds and/or words</li> <li>• Reciting facts</li> <li>• Identify details</li> <li>• Recognize logic</li> <li>• Remembering details given orally</li> <li>• Recalling meaning of terms spoken</li> <li>• Imitating sounds and words</li> <li>• Remembering words</li> <li>• Remembering motor patterns</li> <li>• Maintaining vocabulary</li> <li>• Remembering grammar rules</li> <li>• Recalling numeration skills</li> <li>• Remembering temporal/spatial</li> <li>• Remembering sequences and relationships</li> <li>• Repeating terminology</li> </ul>

<b>RETRIEVAL</b> Locating or recalling stored information	
<b>Attribute of Components</b>	<b>Examples of Difficulties</b>
<ul style="list-style-type: none"> <li>• Remembering</li> <li>• Accessing</li> <li>• Associating</li> <li>• Locating</li> <li>• Recalling</li> <li>• Working memory</li> <li>• Cueing</li> <li>• Imagining</li> <li>• Selecting</li> <li>• Recognizing</li> <li>• Scanning</li> <li>• Processing speed</li> <li>• Self-talking</li> <li>• Formulating</li> <li>• Searching</li> </ul>	<ul style="list-style-type: none"> <li>• Labeling letters</li> <li>• Recognizing whole words</li> <li>• Decoding</li> <li>• Skimming</li> <li>• Identifying significant details</li> <li>• Locating</li> <li>• Remembering what was heard</li> <li>• Associating what was heard with previously stored information</li> <li>• Accessing desired information</li> <li>• Associating sounds with letters</li> <li>• Processing words as needed</li> <li>• Self-talking</li> <li>• Reproducing correct letter forms</li> <li>• Spelling whole words automatically</li> <li>• Using correct capitalization, punctuation</li> <li>• Automatically producing forms</li> <li>• Labeling numbers, signs</li> <li>• Applying computational skills</li> <li>• Formulating a hypothesis</li> <li>• Recognizing when to add, subtract, multiply, divide</li> </ul>

<b>EXPRESSION</b> Communicating information	
<b>Attribute of Components</b>	<b>Examples of Difficulties</b>
<ul style="list-style-type: none"> <li>• Reconstructing</li> <li>• Reading</li> <li>• Handwriting</li> <li>• Acting</li> <li>• Copying</li> <li>• Reciting</li> <li>• Tracing</li> <li>• Illustrating</li> <li>• Showing</li> <li>• Speaking</li> <li>• Testing</li> <li>• Sharing</li> <li>• Naming</li> <li>• Using</li> <li>• Demonstrating</li> <li>• Gesturing</li> <li>• Pointing</li> <li>• Stating</li> <li>• Creating</li> <li>• Drawing</li> <li>• Typing</li> </ul>	<ul style="list-style-type: none"> <li>• Reciting letter names and sounds</li> <li>• Decoding words and sentences</li> <li>• Identifying detail/main idea</li> <li>• Reconstructing information read with the rate of fluency</li> <li>• Following directions</li> <li>• Speaking with oral fluency</li> <li>• Stating ideas</li> <li>• Responding/ask questions</li> <li>• Producing different formats</li> <li>• Documenting information</li> <li>• Writing numerals, symbols with appropriate concept/process</li> <li>• Measuring distance, weights, area, volume</li> <li>• Telling time, temperature</li> <li>• Counting money</li> </ul>

# INFORMATION PROCESSING PROFILE AND LEAP 21: STUDENT PLANNING MATRIX

TEACHER QUESTIONNAIRE  
OBSERVATION  
HOME/FAMILY QUESTIONNAIRE/INTERVIEW  
STUDENT QUESTIONNAIRE/INTERVIEW  
INFORMATION PROCESSING PROFILE SUMMARY SHEET  
LEAP 21: STUDENT PLANNING MATRIX

LIST OF RECOMMENDATIONS FOR  
TEACHING AND LEARNING STRATEGIES  
AND  
CLASSROOM ACCOMMODATIONS

CASE STUDIES OF STUDENTS  
IN  
ELEMENTARY, MIDDLE, AND  
HIGH SCHOOL LEVELS