Hi-LAB
Language Aptitude Profile

Participant ID: byu2001
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FOR MORE INFORMATION
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Hi-LAB Language Aptitude Profile

ABILITY SUMMARY
for #byu2001

The chart below shows scores for the abilities that were measured during aptitude testing; the percentiles are calculated in reference to a comparable population. For example, scores at the 50th percentile are at the median score for this reference group. Details on this reference population are available on request. Abilities that are in the top third (as shown below on the graph) are considered to be excellent, and may indicate strengths for the individual. Abilities that are in the bottom third may indicate weaknesses for the individual. However, in most cases the reference population for the percentiles is already a select group, and is not a “general” population in any sense. Thus “weaknesses” should be taken as relative or potential weaknesses, not necessarily as true problems for the learner. Below we comment on the three highest and lowest percentile scores for this individual.

This individual’s potential strengths include:

Implicit Pattern Learning represents the ability to pick up on patterns without thinking about them consciously. This individual will be better at picking up subtle linguistic patterns than most people are.

Processing Speed 1 represents the ability to respond quickly to incoming input, as measured during the SRT task.

Implicit Meaning Association represents the ability to build meaning associations among words in an unconscious way. This individual is expected to be more efficient when associating vocabulary with related concepts.

This individual’s potential weaknesses include:

Tone Discrimination represents the ability to hear differences between tones in a tone language. This individual may have difficulty learning to hear linguistic tones, and may need additional training or alternative strategies when learning tone languages.

Processing Speed 2 represents the ability to respond quickly to incoming input, as measured during the Task-Switching task.

Rote Memory represents the ability to memorize information. This individual may struggle with memorizing foreign language vocabulary and other tasks involving rote memory.

SCORE DETAILS

<table>
<thead>
<tr>
<th>Active Memory and Processing</th>
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</thead>
<tbody>
<tr>
<td>Cognitive Inhibition Control</td>
</tr>
<tr>
<td>Processing Speed 1</td>
</tr>
<tr>
<td>Processing Speed 2</td>
</tr>
<tr>
<td>Task Switching</td>
</tr>
<tr>
<td>Working Memory Capacity</td>
</tr>
<tr>
<td>Working Memory Updating</td>
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<tr>
<td></td>
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<tr>
<td>Foreign Sounds</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Speech Sound Discrimination</td>
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<tr>
<td>Tone Discrimination</td>
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<tr>
<td></td>
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<tr>
<td>Implicit Learning</td>
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<tr>
<td>Implicit Pattern Learning</td>
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<td>Implicit Meaning Association</td>
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<td>Explicit Learning</td>
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<tr>
<td>Explicit Inductive Reasoning</td>
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<tr>
<td>Rote Memory</td>
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</tbody>
</table>

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LEARNING PROFILE SUMMARY

For #byu2001

The individual sub-tests of CASL’s Hi-LAB battery have been combined into various composite scores, in order to provide information on a range of dimensions of language learning. All language learning involves processing rich and varied input from the target language, interaction of the learner with other speakers and with a variety of tasks in the language, and the processing of feedback in order to refine language proficiency to be more target-like. In this profile, we focus on several aspects of these components of language learning, and describe what the Hi-LAB results indicate for this individual.

Please note that the recommendations here are based on ongoing evidence-based research, and are suggested as guidelines only.

INPUT

Variability
Authenticity
Pattern Learning
Meaning Association
Phonological Perception

Interactivity

INTERACTION

Attention Switching
Scaffolding

FEEDBACK

Recasts
Explanations

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PEDAGOGICAL RECOMMENDATIONS

INPUT: Variability

Variability in the type of language input plays an important role in language learning. For example, it is important to hear spoken language from a variety of speakers and to be exposed to different kinds of dialects or accents. However, the rate at which it is useful to expose learners to variability differs, in part dependent on their cognitive aptitudes. The Hi-LAB measures of Cognitive Inhibition Control, Speech Sound Discrimination, and Tone Discrimination are used to compute the score on this scale.

Constrained
For individuals at this end of the continuum, variability in the input should be carefully controlled during training. When choosing materials to listen to, learners should focus initially on materials with a small number of different speakers, and/or speakers that are highly similar, before adding variety systematically, such as the variety in authentic materials.

Unconstrained
For individuals at this end of the continuum, greater variability early on should lead to faster and better learning. Hearing many different speakers producing the target language, for example, will help this type of learner to generalize learning more quickly. Not providing varied input could slow progress for this type of individual.

INPUT: Authenticity

All learners need exposure to authentic materials, i.e., materials written by native speakers for native speakers. However, often in language learning, authentic materials are accommodated in certain ways to make them more comprehensible. The degree to which materials or activities should be accommodated can depend in part on learners’ cognitive aptitudes. The Hi-LAB measures of Working Memory (Capacity and Updating), Implicit Pattern Learning, and Implicit Meaning Association are used to compute the score for this scale.

Accommodating
While authentic materials are important for language learning, unmodified authentic materials may present too many challenges for learners at a particular stage of learning. Input that is carefully designed or selected to accommodate learners is a common pedagogical technique. Learners at this end of the continuum are expected to benefit more from accommodated input, such as text elaboration, or additional background information, and may need to spend more time with such tasks before moving on to more authentic input.

Authentic
Learners on this end of the continuum are expected to be able to handle authentic materials sooner. They are still likely to require accommodated input, especially early on, but the sooner they can be exposed to unmodified authentic materials, the better. For example, learners on this end of the continuum could consider complementing accommodated materials in the classroom with concentrated exposure to more authentic texts.
**INPUT: Pattern Learning**

Language learning involves extracting patterns from the input and generalizing those patterns to new contexts, for example, when learning grammatical constructions. Pattern learning may occur either through explicit processes such as conscious noticing and induction processes, or through implicit, unconscious processes. The Hi-LAB measures of Explicit Inductive Reasoning and Implicit Pattern Learning are used to compute the score on this scale. Note that this scale provides a measure of the relative balance between these abilities. Both types of learning may be helpful, but this measure informs what types of input will be more helpful for this individual.

**Explicit**

Learners on this end of the continuum are stronger in their explicit processing of patterns. These learners may still be able to “pick up” patterns without conscious effort, but they will typically be more successful in learning a pattern if they are able to notice it explicitly.

**Implicit**

Learners on this end of the continuum may be more effective at “picking up” language patterns without conscious effort. These learners may find that explicit focus on patterns is distracting and less effective than merely getting a lot of input, from which they will be able to quickly extract the patterns. This input may need to be carefully structured in order to enable implicit pattern learning, but this may lead to better long-term learning than explicit focus on patterns for these learners.

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**INPUT: Meaning Association**

All language learning requires associating form to meaning, for example, when learning vocabulary. Efficient association of form and meaning is critical to achieving practical proficiency. Some forms of learning engage more explicit processes, such as rote memory, and other forms of learning require more implicit processes. The Hi-LAB measures of Rote Memory and Implicit Meaning Association are used to compute the score on this scale. Note that this scale provides a measure of the relative balance between these abilities. Both types of learning may be helpful, but this measure should help inform what types of input will be more helpful for this individual.

**Explicit**

Learners on this end of the continuum are more able to use rote memory to form connections between forms and meaning. This involves using conscious effort to recall words and forms and associate them with the appropriate meanings (e.g., using flashcards or word lists). This type of learning may not be sufficient for all purposes, for example, learning nuances of connotation and contextual use. However, these learners will generally get more out of explicit, conscious memorization whenever it may be appropriate.

**Implicit**

On this end of the continuum, learners should focus more on content-related tasks in the target language than on tasks that require conscious association between forms and meanings. These learners may be more capable of making unconscious, implicit connections between form and meaning. For example, these learners may find it hard to learn a new word by trying to consciously associate it with a particular translation or meaning, but may be able to learn the meaning better by simply seeing the new word in many and varied contexts in which the meaning is made apparent by the context.
**INPUT: Phonological Perception**

normal [ ] high

At a very basic level, understanding spoken speech requires successful processing of the sounds of the target language. Knowing about the perceptual abilities of a learner can help identify particular areas that the learner should focus on. This can be especially helpful since it is often difficult to diagnose whether a learner is having difficulty because of perceptual problems, or because of some other issue. The Hi-LAB measures of Speech Sound Discrimination and Tone Discrimination are used to compute the score on this scale.

**Normal**
Difficulty with perceiving foreign sounds is a normal phenomenon. Acquiring a native language usually involves “losing” perceptual distinctions in order to sharpen perception of the native sound categories. Individuals at this end of the continuum may need special focus on sound perception, or other compensatory strategies, in order to effectively process input from the foreign language.

**High**
High perceptual ability indicates that the learner is able to hear foreign sound distinctions that are not present in their native language. Such learners may still benefit from training that helps them realize what the proper sounds distinctions are, and they may still encounter difficulty with accurate production of these sounds, but it is expected that they will be more able to perceive sound differences if given proper input.

**INTERACTION: Attention Switching**

infrequent [ ] frequent

Speaking a second language requires constant cognitive control. This can manifest in many ways, including dealing with the demands of switching back and forth between languages, inhibiting other known languages, and switching attention between different aspects of the language you are speaking (e.g., switching between focus on vocabulary vs. structure, or switching between modalities). These processes induce significant cognitive burden, and the cost of this burden may be related to learner aptitudes. The Hi-LAB measures of Task Switching and Inhibition Control are used to compute the score for this continuum.

**Infrequent**
For learners on this end of the continuum, switching attention frequently or rapidly may present a significant burden, and may actually hinder learning. Learners on this end of the continuum may find it more productive to avoid tasks that impose a great deal of attention switching. For example, it may be helpful to stay in the target language for longer stretches, or they may need additional support for tasks that require switching (e.g., translation tasks), so that the act of switching itself does not make the task too difficult. Learners at this end of the continuum may also experience more interference from other languages they have learned.

**Frequent**
Learners on this end of the continuum are not expected to struggle as much with tasks that require attention switching. For example, they may better handle producing the target language with less interference from other known languages, or they may do better in tasks in which switching attention plays a more prominent role, such as rapid translation. These learners may also be better at attending to multiple aspects of the language at once, such as monitoring both vocabulary choice and grammatical characteristics.
INTERACTION: Scaffolding

more scaffolding | | | | | | less scaffolding

Virtually all tasks in language learning involve multiple kinds of cognitive load. For example, listening and speaking require real-time processing, which imposes additional cognitive demands on the task. Learners’ aptitudes may play a role in what kinds of task demands may be too taxing. Such tasks may require additional scaffolding to enable them to manage the task in a way that supports language learning. The Hi-LAB measures of Working Memory (Capacity and Updating), Task Switching, and Processing Speed are used to compute the score for this scale.

More scaffolding
Learners at this end of the continuum may find it more difficult to juggle task demands with learning demands. There are many ways to accommodate such learners, under the broad heading of scaffolding. For example, if a production task involves a complex topic, learners may benefit from planning time to gather their thoughts on the topic, before trying to put together target language productions. Along similar lines, working with materials in which the topic or content substance is already familiar could also reduce the task demands.

Less scaffolding
On this end of the continuum, learners may benefit from having less scaffolding. If these learners engage in scaffolding-type exercises, such as brainstorming words they may need to perform the task, that could be helpful, but perhaps they would receive more benefit by engaging in the task directly without prior priming of lexical or grammatical knowledge. Excessive scaffolding exercises for learners on this end of the continuum may be unnecessary or even counter-productive. Scaffolding may still be necessary for these learners in some cases if the linguistic content is otherwise very challenging, but in general these learners should try to engage in tasks with as little scaffolding as possible.
Recasts, Error ID, and Corrections/Explanations represent three different types of feedback on error given to language learners, usually by an instructor. The wedge graph is designed to indicate the expected relative effectiveness of each type of feedback for this learner, given the observed Hi-LAB scores. Larger wedges represent more effective feedback types, and smaller wedges represent potentially less effective feedback types. Nonetheless, we recommend that learners be exposed to a variety of feedback types. The information here is provided to help guide decisions about which types to emphasize over others for this individual.

Recasts are a type of feedback in which the instructor or more proficient partner provides a subtle correction to a learner’s error by repeating back something the learner said, but with the correct target language (i.e., fixing the error). This can be effective not only for errors, but also for providing the learner with a more appropriate way of saying something. The learner needs to be able to hold both the original utterance and the recast in the mental workspace and still have some attentional resources available to notice the difference. The Hi-LAB measures for Working Memory (Capacity and Updating) and Implicit Pattern Learning are used to compute a score on this scale.

Another type of feedback is Error Identification, which involves pointing out the presence of an error, rather than providing an overt correction or correct example of some kind. Being able to make use of this feedback requires the learner to recall their utterance and figure out how to correct their error. The Hi-LAB measures of Working Memory (Capacity and Updating) and Explicit Inductive Reasoning are used to compute the score on this scale.

Another common type of feedback is an explicit, overt Correction and/or Explanation of an error. For example, this might involve pointing out an error specifically, and then providing a rule or other explanation for how to correct it or avoid the error in the future. Cognitive abilities that allow the learner to remember these rules and apply them will make this feedback more effective. The Hi-LAB measures of Rote Memory and Explicit Inductive Reasoning are used to compute the score on this scale.
Scoring composite details for #byu2001

INPUT

Variability

Cognitive Inhibition Control
Speech Sound Discrimination
Tone Discrimination

Authenticity

Working Memory Capacity
Working Memory Updating
Implicit Meaning Association
Implicit Pattern Learning

Pattern Learning

Explicit Inductive Reasoning
Implicit Pattern Learning

Meaning Association

Rote Memory
Implicit Meaning Association

Phonological Perception

Speech Sound Discrimination
Tone Discrimination

INTERACTION

Attention Switching

Cognitive Inhibition Control
Task Switching

Scaffolding

Task Switching
Working Memory Updating
Working Memory Capacity
Processing Speed 1
Processing Speed 2

FEEDBACK

Recasts

Working Memory Capacity
Working Memory Updating
Implicit Pattern Learning

Error ID

Working Memory Capacity
Working Memory Updating
Explicit Inductive Reasoning

Explanations

Explicit Inductive Reasoning
Rote Memory