English Learners and Academic Achievement:

A developmental perspective on instructional challenges.

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Academic Attainment and Instructional Practices for English Language Learners

Although many effective instructional practices are similar for both ELLs and non ELLs why does instruction tend to be less effective for ELLs?

Because ELLs face the double challenge of learning academic content and the language of instruction simultaneously.

Stages of Language Acquisition

Pre-Production/Comprehension (no BICS)
Sometimes called the silent period, where the individual concentrates completely on figuring out what the new language means, without worrying about production skills. Children typically may delay speech in L2 from one to six weeks or longer.

- listen, point, match, draw, move, choose, mime, act out

Early Production (early BICS)
Speech begins to emerge naturally but the primary process continues to be the development of listening comprehension. Early speech will contain many errors. Typical examples of progression are:

- yes/no questions, lists of words, one word answers, two word strings, short phrases

Speech Emergence (intermediate BICS)
Given sufficient input, speech production will continue to improve. Sentences will become longer, more complex, with a wider vocabulary range. Numbers of errors will slowly decrease.

- three words and short phrases, dialogue, longer phrases
- extended discourse, complete sentences where appropriate, narration

Intermediate Fluency (advanced BICS/emerging CALP)
With continued exposure to adequate language models and opportunities to interact with fluent speakers of the second language, second language learners will develop excellent comprehension and their speech will contain even fewer grammatical errors. Opportunities to use the second language for varied purposes will broaden the individual’s ability to use the language more fully.

- give opinions, analyze, defend, create, debate, evaluate, justify, examine

Language Proficiency vs. Language Development in ELLs

![Graph showing the comparison between Phonological Processing and Vocabulary development over age.]


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What is Developmental Language Proficiency?

- Example

<table>
<thead>
<tr>
<th></th>
<th>CALP Level</th>
<th>RPI</th>
<th>SS</th>
<th>PR</th>
<th>CALP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter Word ID</td>
<td>100/90</td>
<td>128</td>
<td>97</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dictation</td>
<td>94/90</td>
<td>104</td>
<td>59</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Picture Vocabulary</td>
<td>2/90</td>
<td>47</td>
<td>&lt;.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Reading-Writing v. advanced</td>
<td>100/90</td>
<td>123</td>
<td>94</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Writing</td>
<td>fluent</td>
<td>104</td>
<td>61</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Broad English Ability</td>
<td>fluent</td>
<td>104</td>
<td>59</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Oral Language limited</td>
<td>27/90</td>
<td>65</td>
<td>1</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Verbal IQ</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perf. IQ</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSIQ-4</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

verbal “thinking” skills continue to lag in development
What is Developmental Language Proficiency?

• Example
  – Can read the following words:
    • Great, become, might, shown, explain, question, special, capture, swallow
  – Cannot name the following pictures:
    • Cat, sock, toothbrush, drum, flashlight, rocking chair
  – Can understand simple grammatical associations:
    • Him is to her, as ___ is to she
  – Cannot express abstract verbal similarities:
    • Red-Blue: “an apple”
    • Circle-Square: “it’s a robot”
    • Plane-Bus: “the plane is white and the bus is orange”
    • Shirt-Jacket: “the shirt is for the people put and the jacket is for the people don’t get cold”
Developmental Language Proficiency and IQ in ELLs

Understanding First and Second Language Acquisition

**Basic Interpersonal Communication Skills (BICS)**
- ability to communicate basic needs and wants, and ability to carry on basic interpersonal conversations
- takes 1 - 3 years to develop and is insufficient to facilitate academic success

**Cognitive Academic Language Proficiency (CALP)**
- ability to communicate thoughts and ideas with clarity and efficiency
- ability to carry on advanced interpersonal conversations
- takes at least 5-7 years to develop, possibly longer and is required for academic success

**Cummins’ Developmental Interdependence Hypothesis (“Iceberg Model”)**
- BICS is the small visible, surface level of language, CALP is the larger, hidden, deeper structure of language
- each language has a unique and Separate Underlying Proficiency (SUP)
- proficiency in L1 is required to develop proficiency in L2,
- Common Underlying Proficiency (CUP) facilitates transfer of cognitive skills


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If a second language (L2) is introduced prior to the development of CALP in the native language (L1), and if the L2 effectively replaces the L1 and its role in fostering CALP, academic problems will result. However, the language of instruction, parental education, continued opportunities for L1 development, and the age at which the second language is introduced, are factors that can affect development of the second language and expectations of academic progress in a positive way.

### Developmental Implications of Second Language Acquisition

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="L1" /></td>
<td><img src="image2" alt="L2" /></td>
</tr>
<tr>
<td><img src="image3" alt="L1" /></td>
<td><img src="image4" alt="L2" /></td>
</tr>
<tr>
<td><img src="image5" alt="L1" /></td>
<td><img src="image6" alt="L2" /></td>
</tr>
<tr>
<td><img src="image7" alt="L1" /></td>
<td><img src="image8" alt="L2" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HIGH L1 (CALP)</th>
<th>LOW L1 (BICS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGH L2 (CALP)</strong></td>
<td></td>
</tr>
<tr>
<td>Type 1. Equal Proficiency &quot;true bilingual&quot;</td>
<td></td>
</tr>
<tr>
<td>Type 3. Atypical 2nd Language Learner &quot;acceptable bilingual&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>LOW L2 (BICS)</strong></td>
<td></td>
</tr>
<tr>
<td>Type 2. Typical 2nd Language Learner &quot;high potential&quot;</td>
<td></td>
</tr>
<tr>
<td>Type 4. At-risk 2nd Language Learner &quot;difference vs. disorder&quot;</td>
<td></td>
</tr>
</tbody>
</table>

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## Dimensions of Bilingualism and Relationship to Generations

<table>
<thead>
<tr>
<th>Type</th>
<th>Stage</th>
<th>Language Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRST GENERATION – FOREIGN BORN</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Newly Arrived</td>
<td>Understands little English. Learns a few words and phrases.</td>
</tr>
<tr>
<td>Ab</td>
<td>After several years of residence – Type 1</td>
<td>Understands enough English to take care of essential everyday needs. Speaks enough English to make self understood.</td>
</tr>
<tr>
<td>Ab</td>
<td>Type 2</td>
<td>Is able to function capably in the work domain where English is required. May still experience frustration in expressing self fully in English. Uses immigrant language in all other contexts where English is not needed.</td>
</tr>
<tr>
<td><strong>SECOND GENERATION – U.S. BORN</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ab</td>
<td>Preschool Age</td>
<td>Acquires immigrant language first. May be spoken to in English by relatives or friends. Will normally be exposed to English-language TV.</td>
</tr>
<tr>
<td>Ab</td>
<td>School Age</td>
<td>Acquires English. Uses it increasingly to talk to peers and siblings. Views English-language TV extensively. May be literate only in English if schooled exclusively in this language.</td>
</tr>
<tr>
<td>AB</td>
<td>Adulthood – Type 1</td>
<td>At work (in the community) uses language to suit proficiency of other speakers. Senses greater functional ease in his first language in spite of frequent use of second.</td>
</tr>
<tr>
<td>AB</td>
<td>Adulthood – Type 2</td>
<td>Uses English for most everyday activities. Uses immigrant language to interact with parents or others who do not speak English. Is aware of vocabulary gaps in his first language.</td>
</tr>
<tr>
<td><strong>THIRD GENERATION – U.S. BORN</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB</td>
<td>Preschool Age</td>
<td>Acquires both English and immigrant language simultaneously. Hears both in the home although English tends to predominate.</td>
</tr>
<tr>
<td>aB</td>
<td>School Age</td>
<td>Uses English almost exclusively. Is aware of limitation in the immigrant language. Uses it only when forced to do so by circumstances. Is literate only in English.</td>
</tr>
<tr>
<td>aB</td>
<td>Adulthood</td>
<td>Uses English almost exclusively. Has few opportunities for speaking immigrant language. Retains good receptive competence in this language.</td>
</tr>
<tr>
<td><strong>FOURTH GENERATION – U.S. BORN</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ba</td>
<td>Preschool Age</td>
<td>Is spoken to only in English. May hear immigrant language spoken by grandparents and other relatives. Is not expected to understand immigrant language.</td>
</tr>
<tr>
<td>Ba</td>
<td>School Age</td>
<td>Uses English exclusively. May have picked up some of the immigrant language from peers. Has limited receptive competence in this language.</td>
</tr>
<tr>
<td>B</td>
<td>Adulthood</td>
<td>Is almost totally English monolingual. May retain some receptive competence in some domains.</td>
</tr>
</tbody>
</table>


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Parallel Processes in Development: Education follows Maturation

LANGUAGE ACQUISITION

- Preproduction
- Early Production
- Emergent Speech
- Beginning Fluent
- Intermediate Fluent
- Advanced Fluent

COGNITIVE DEVELOPMENT

- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation

ACADEMIC INSTRUCTION

- Pre-Readiness Training
- Readiness Training
- Basic Skills Training
- Early Conceptual Development
- Advanced Conceptual Development

Appropriate Instruction/Assessment

CULTURAL CONTEXT
The 30 Million Word Gap

- according to research by Betty Hart and Todd Risley (2003), children from privileged (high SES) families have heard 30 million more words than children from underprivileged (low SES) families by the age of 3.
- in addition, “follow-up data indicated that the 3-year old measures of accomplishment predicted third grade school achievement.”

Developmental Implications of Early Language Differences: When do ELLs “catch up?”

Cumulative Hours of Language Exposure in Thousands

**Native English Speaker (L1)**

<table>
<thead>
<tr>
<th>Age 0 to 5:</th>
<th>Awake</th>
<th>Asleep</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 days x 12 hrs. x 5 yrs.</td>
<td>21,900 hrs</td>
<td></td>
</tr>
<tr>
<td>Age 5 to 10+:</td>
<td>14 days x 14 hrs. x 5 yrs. = 25,550 hrs</td>
<td></td>
</tr>
</tbody>
</table>

**Limited English Speaker (L2)**

<table>
<thead>
<tr>
<th>Age 0 to 5:</th>
<th>Awake</th>
<th>Asleep</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 days x 2 hrs. x 5 yrs. = 3,650 hrs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 5 to 10+:</td>
<td>3 days x 11 hrs. x 5 yrs. = 20,075 hrs + 3,650 hrs = 23,725 hrs</td>
<td></td>
</tr>
</tbody>
</table>

Formal instruction begins at 5 years of instruction.

After 5 years of instruction, CALP is 47,450 hrs.

Age and Grade Level

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General Pattern of Bilingual Education Student Achievement on Standardized Tests in English

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Normal Curve Equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>61(70)* Two-way bilingual</td>
</tr>
<tr>
<td>5</td>
<td>52(54)* Late-exit bilingual and content ESL</td>
</tr>
<tr>
<td>4</td>
<td>40(32)* Early-exit bilingual and content ESL</td>
</tr>
<tr>
<td>3</td>
<td>34(22)* Content-based ESL</td>
</tr>
<tr>
<td>2</td>
<td>24(11)* ESL pullout traditional</td>
</tr>
</tbody>
</table>

*Note 1: Average performance of native-English speakers making one year’s progress in each grade. Scores in parentheses are percentile ranks converted from NCEs.

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Model Comparison of Percentage of "At-Risk" Second Language Students

BLUE LINE = Distribution of achievement scores for ESL students
RED LINE = Distribution of achievement scores for monolingual English students

Two way bilingual (dual immersion) – 6% At-Risk
Model Comparison of Percentage of "At-Risk" Second Language Students

Late exit bilingual and content based ESL – 11% At-Risk

BLUE LINE = Distribution of achievement scores for ESL students
RED LINE = Distribution of achievement scores for monolingual English students

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Model Comparison of Percentage of "At-Risk" Second Language Students

Early exit bilingual program with content ESL – \( 27\% \text{ At-Risk} \)

BLUE LINE = Distribution of achievement scores for ESL students
RED LINE = Distribution of achievement scores for monolingual English students

- BLUE LINE:
  - 27% At-Risk
  - 14% above 32
  - 14% above 50
  - 27% above 84

- RED LINE:
  - 2% below 2
  - 16% below 16
  - 32% below 32
  - 98% below 98
  - >99% below >99

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Model Comparison of Percentage of "At-Risk" Second Language Students

**BLUE LINE** = Distribution of achievement scores for ESL students

**RED LINE** = Distribution of achievement scores for monolingual English students

Content-based ESL support only – *41% At-Risk*
Model Comparison of Percentage of "At-Risk" Second Language Students

Traditional (non-content) ESL pullout support only – 60% At-Risk
The ELL Achievement Gap

“On the 2007 National Assessment of Educational Progress, fourth-grade ELLs scored 36 points below non-ELLs in reading and 25 points below non-ELLs in math. The gaps among eighth-graders were even larger—42 points in reading and 37 points in math.”

Developmental Implications of Early Language Differences

Results of NAEP Data on Reading Achievement for ELL vs. Non-ELL
Developmental Implications for ELLs: When does Egberto “catch up?”

**Example 2nd Grade Progress Monitoring Chart**

- **WRCPM =** Number of Words Read Correctly Per Minute
- **Classroom or Grade Level Aim Line**
- **6 week standard**
- **12 week standard**
- **Classroom/grade level expectations = 15 WRCPM progress over a 6 week period**
- **English learners often begin behind English speakers**
- **Egberto’s progress if he makes gains comparable to English speaking peers**
- **Egberto’s progress if he makes gains comparable to other ELLs**
- **Egberto’s progress if he doesn’t make gains comparable to other ELLs**

*Note: Name of “Egberto” used with apologies to Dan Reschley.*
Effective Instruction for ELLs: What the Research Says

Typical English Learners who begin school 30 NCE’s behind their native English speaking peers in achievement, are expected to learn at:

“…an average of about one-and-a-half years’ progress in the next six consecutive years (for a total of nine years’ progress in six years—a 30-NCE gain, from the 20th to the 50th NCE) to reach the same long-term performance level that a typical native-English speaker…staying at the 50th NCE) (p. 46).

In other words, they must make 15 months of academic progress in each 10 month school year for six straight years—they must learn \(1\frac{1}{2} \text{ times faster}\) than normal.

Effective Instruction for ELLs: What the Research Says

Of the five major, meta-analyses conducted on the education of ELLs, ALL five came to the very same conclusion:

“Teaching students to read in their first language promotes higher levels of reading achievement in English” (p. 14).

This is true largely because teaching in the native language does not interrupt or inhibit the development that students bring to school.