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<th>RESEARCH AREA &amp; SOURCES</th>
<th>DESCRIPTION &amp; MAIN FINDINGS/ARGUMENTS</th>
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| **Brain Research - Science Daily Oct. 16, 2001** | Mental Math Dependant on Language, Researchers Find  
  Jyotsna Vaid of Texas A & M University investigated variables that affect language preference for performing mental arithmetic and for thinking to oneself. The study was conducted with 500 bilingual (Spanish-English) college students and the variables investigated were: language of elementary school instruction, length of residence in the United States, age of second language acquisition and degree of proficiency in the second language.  
  **Main Findings:**  
  * Although capable of performing mathematical computations in either language, 95 percent of participants reported a single language preference. Their strong preference was for the language in which they first learned math skills.  
  * All variables except for age of second language acquisition predicted language preference for thinking to oneself, though the strongest predictor was amount of exposure to the language (length of time in the U.S.). |
  These researchers conducted a meta-analysis of 123 studies into writing interventions with students from Grades 4 – 12. For each study a weighted effect size (on the quality of student writing based on a holistic measure) was calculated related to the treatment variable (the particular instructional intervention). 14 different instructional strategies were covered by the studies. The effect sizes for each of these strategies were compared.  
  **Main Findings:**  
  The following strategies were recommended as being empirically proven to improve the quality of student writing. They are listed in order of magnitude of the effect size and the effect sizes are listed in parentheses. (Generally, an effect size of 0.20 is considered small, 0.50 is medium and 0.80 is large)  
  * Teach strategies for planning, revising and editing writing (0.82). (The effect was even larger when students were taught to self-regulate the use of these strategies.)  
  * Teach strategies and procedures for summarizing material (0.82) |
• Have students collaborate to plan, draft, revise and edit their writing. (0.75)
• Set clear and specific goals for what students are to accomplish with their writing (0.70)
• Make it possible for students to use word processing tools (rather than writing by hand) (0.55)
• Teach students how to join clauses to make increasingly complex sentences (0.50)
• Provide teachers with PD in how to implement a process writing approach (0.46) Without PD this strategy had an overall effect of only 0.03.
• Involve students in activities designed to sharpen their inquiry skills (0.32)
• Use activities that help students gather and organize ideas prior to writing (0.32)
• Provide and jointly analyze good models of writing (0.25)

The effect of the following strategies on the quality of student writing was unclear, often due to circumstances related to the original studies or to the small number of studies conducted relating to that strategy.

• The teaching of the structure of various text types
• Providing extra opportunities to write
• Giving feedback on writing
• Providing guides, prompts or heuristics to guide student writing

One strategy was shown to have no positive effect on the quality of student writing:

• Direct instruction of grammar

# Note: Direct grammar instruction did not have a positive effect in any of the studies included in the analysis. The researchers warn that these results should be interpreted with caution. There is some evidence emerging that teaching functional rather than traditional grammar may have a positive effect.

Only experimental and quasi-experimental studies were included in the meta-analysis and only those which specifically examined the effect on
the overall quality of student writing. This led to some strategies not being included in the analysis, such as:

- Teaching spelling, handwriting, punctuation and vocabulary
- Conferencing student writing
- Procedures to boost student motivation

The studies included in the analysis provide no guidance on how much of the recommended activities is needed, or on how these activities could be combined effectively.

### Assessment - Language

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<th>Teachers College Record Vol. 108, No. 11, pp. 2304 - 2328</th>
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Previous research had noted that learners from non-English speaking backgrounds were overrepresented in special education programs in US schools. The authors of this study linked this result to the practice of testing the language proficiency of these learners in their native languages using tests they believed were inappropriate. The study compared the results of 145 students on commonly used assessment of Spanish language proficiency (LAS-O Espagnol & IPT Spanish) with a natural language sample collected from students interacting with a native speaker and telling a story using a picture book with no text. The transcripts were coded for morphological error rate. The basis for decision about errors was the norms of the child’s speech community rather than an idealized version of language.

**Main Findings:**

- On the LAS-O test only 26% of the students were rated as fluent native speakers, 35% as limited speakers and 39% as non-speakers. On the IPT test only 10% were rated as fluent, 78% as limited and 12 % as non-speakers.
- In contrast, using the natural language sample, 97% of students made less than 10% errors (the rate which is considered to be normal for developing mature speakers)

**Suggested Solutions from the Researchers**

- The authors suggest that the routine testing of first language skills be abandoned and that it only be used if there is a serious suspicion that a language disability exists.
- They further suggest that natural language sampling, rather than commercial tests, be the basis for decisions about native language ability though they admit that the coding procedures used in the study would be time-consuming.
- The authors also distinguish between assessing a language and assessing in a language and suggest that in determining a student’s ability on nonlinguistic constructs, assessments should be made in the language the student is more comfortable with.

### Assessment - Language

This study examined the effect of formative assessment on proficiency growth with foreign language learners. The subjects were eight cohorts of students (2215 in total) participating in a 320 hour, four-semester English for Academic Purposes course. The first four cohorts were assessed with mainly conventional end of term summative assessments and tests. The subsequent four cohorts participated in formative assessments including self-assessment, peer assessment, on-going portfolios and cooperative learning projects as well as more traditional summative assessments. Comparisons were made based on both student grade point averages over the four semesters and three TOEFL tests in reading and listening administered prior to entry into the program, at the end of the first academic year and again at the end of the second academic year.

**Main Findings:**

- Grades calculated with the inclusion of formative assessments were no less reliable than grades calculated using purely teacher-assessed summative tasks.
- In the summative group, learners whose initial proficiency levels in both reading and listening were high showed the most improvement. In contrast, formative assessment seems to have neutralized some of the causal influence of initial proficiency on future achievement and (particularly with regard to listening) those who began with lower proficiency either progressed at the same or a greater rate than those who began with higher proficiency.
- The formative cohorts demonstrated a rate of growth in proficiency that was 36% faster than the summative cohorts for listening and 3.2% faster for reading.
- In reading the formative cohorts showed a higher gain in proficiency (as measured on the TOEFL test) at the end of the first academic year. This had tapered off by the end of the second academic year so that there was little difference between the groups.
- In listening the formative cohorts showed a significantly higher gain in proficiency to the summative cohorts and this difference increased further by the end of the second year.
- In general the researchers conclude that formative assessment has a substantive impact on proficiency growth, but that this seems to be domain-dependent. They speculate that proficiency growth in reading may be more associated with cross-referencing of reading materials in mainstream subject area courses.


A study conducted in Germany as a result of German students’ poor performance on the 2002 PISA tests. The hypothesized that optimum reading instruction needed to include strategy instruction, acquisition of knowledge and skills necessary to make choices about appropriate reading strategies for varying purposes and in varying contexts and activities which would help maximize motivation so that students would be inclined to employ the strategies learned. The study therefore included a control group, a group receiving only strategy instruction, a group deceiving instruction in strategies and self-regulation of the use of strategies and a group included instruction in all the aspects, strategies, self-regulation (asking which strategy would be appropriate for what reading goal and checking whether the strategy helped achieve the goal) and motivational aspects (such as realistic goal-setting and motivationally beneficial attribution). The time was constant for all three groups, so that the group which only had strategy instruction in effect had much more time to learn and practice the strategies taught.
**Main Findings:**
- Immediately after the intervention all three treatment groups outperformed the control group on measures of reading comprehension and strategy use.
- Differences between the three treatment groups were small in the immediate post-test.
- On a post-test conducted at the end of the school year in which the treatments took place (close to one year after treatment) only the group receiving the complete program (including strategies, self-regulation and motivation) outperformed the control group.
- Long term effects for this group exceeded those ascertained immediately after the program.

The researchers conclude that becoming a strategic reader is a long-term process. As the number of lessons was held constant for all three treatments groups, the researchers conclude that the findings are anything but trivial.

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This article covers two studies of vocabulary acquisition with students from Kindergarten to grade 2. 50% of the population of students in the classes studied were learners from non-English speaking backgrounds. The method involved the teacher reading stories to children. Conditions where words were explained were compared with a no explanation condition. Only brief word explanations were given. Conditions with two and four readings were compared where different vocabulary items were explained at each reading. In the second study a review of the words explained was added at the end of each day as well as a final review day where words were reviewed using different context from those in the story. Study 2 also contained a no intervention group. The format was pre-test / post-test.

**Main Findings:**

**Pre-study**
- Students in were distracted and annoyed if word explanation interrupted the initial reading of a book but not on subsequent readings so explanations were only included in subsequent readings in the studies.

**Study 1**
- Overall students acquired 12% of unexplained vocabulary items and 22% of explained items meaning that adding explanations resulted in a gain of 10%.
- There was no significant difference between reading a book two times or reading it four times in grade one and two, but for Kindergartners the extra readings resulted in a 6% increase in vocabulary learned.

**Study 2**
- With reviews added vocabulary acquisition increased to 41%.
- There was little difference in accuracy between testing words using old or new context sentences.
- Scores on a delayed post-test were higher than on the immediate post-test, indicating that perhaps the story readings had sensitized students to the vocabulary so that they could continue learning for 4 weeks after the study.
- The no intervention group gained only 6% of word meanings.
The authors quote statistics which suggest that by the end of Grade 2 average children have acquired 600 root word meanings, but the gap between the highest (8,000) and lowest (4,000) groups at this point is significant and most primary school classrooms do not systematically teach enough vocabulary to lower this gap, leading to a potential ‘slump’ in reading comprehension around Grade 4. At the end of the article the authors do their sums to determine whether this method would lead to a significant enough increase in vocabulary to make it worth implementing and conclude that from K-2 an additional 1,000 -1,500 word meaning could be added making the strategy worthwhile, since it would account for a meaningful proportion of the 2,000 root word difference between the lowest quartile and the average student at the end or Grade 2.

In this study the language demands of secondary school history assessment tasks were examined. The results of the examination were used as the basis of a 6 day professional development workshop with history teachers. A language specialist then worked with the history teachers to plan and implement work in a team teaching situation over a school term so that students were being explicitly taught (a) the generic structures necessary to write successfully in history and (b) the grammar and lexis necessary to successfully write in history.
The intervention involved a teaching-learning cycle with the following phases: deconstruction phase (using model texts), joint construction phase (where teacher and students jointly constructed a text) and independent construction phase. Texts used in the deconstruction phase also served to build historical knowledge relevant to the unit.

Main Findings:
- As students progress through the secondary years in history, the writing tasks demanded of them move from being predominantly recording genres though to explaining genres and finally more arguing genres.
- Initially teachers were concerned that valuable time needed for teaching content would be lost if they focused on language as well, but by the end of the study there was increased recognition that attention to language and writing is integral to attaining the objectives of the history curriculum.
- A significant shift in teacher use of language was observed, with teachers focusing much more explicitly on the language system itself.
- There was a marked improvement in the organizational features of student texts as a result of the intervention.
- Students who were previously only able to copy work were able by the end of the intervention to recontextualize the information in a meaningful way.
- Improvement at the grammatical level was less evident, though this may have been due to the length of the intervention and / or to the fact that teachers themselves were also less confident in this area.
- The involvement of a language specialist proved vital for the achievements made by students and teachers as part of the project.

Researchers in the US examined the effect of using models and rubrics on student writing. The test treatment involved: (1) reading a model piece of writing and discussing its strengths and weaknesses, followed by generating a list of qualities of effective writing; (2) giving students a written rubric for the writing task; and (3) using the rubric to self-assess a first draft. Learners in a comparison group also generated a list of qualities of effective writing, but without the support of a model and without receiving a rubric or engaging in self-assessment. Prior rubric use, previous achievement in language and gender were examined for the effect they might have on results. The rubric used to assess writing was
based on the 6 + 1 Writing Traits (traits include: ideas, organization, paragraphs, voice, words, sentences and conventions).

**Main Findings:**
- Prior rubric use did not significantly affect writing scores (possibly because though most learners had been given rubrics in previous classes, they had not used them to self-assess).
- Girls achieved slightly better writing scores than boys, but the difference was not significant.
- Previous achievement in language was positively related to writing scores.
- The treatment group’s writing scores were significantly higher than those of the comparison group on all of the writing traits assessed except for ‘sentences’ and ‘conventions’. This was true even when controlling for previous achievement in language. The average grade for the treatment group was a low B and for the comparison group a high C.

**Instructional Strategies – ESL / Science**


This author of this article has examined middle school Science textbook and extracted the typical features which present difficulty for learners, particularly second language learners. The article concludes with suggestions for classroom activities to help students overcome these difficulties.

**Main Findings / Arguments**

- Somewhere around Grade 4 the language used in school texts moves away from the concrete language everyday language of the world and begins to become more abstract and specialized. Unfortunately, it is also at this point that we reduce the amount of direct instruction in reading.
- Current instructional strategies for reading at the secondary level tend to focus on:
  - (a) Fluency-oriented strategies - repeated reading, chunking, prosody, monitoring.
- While these strategies are important, Fang argues that they do nothing to help the student overcome the difficulties presented to students by the particular linguistic devices which each discipline uses to construe meaning.

**Particular language difficulties encountered in Science texts**

- Technical vocabulary
- Everyday words with different meanings of usages in Science
- Connective devices
- Ellipsis
- Nominalization
- Expansion of nominal groups
- Subordinate and embedded clauses creating complex sentences
- Passive voice

**Strategies for helping students understand how these devices work**

- Vocabulary Building - use the Latin and Greek roots, prefixes and suffixes
- Noun expansion - analyze noun phrases with students and give them opportunities to expand and elaborate nominal groups. Also, sentence completion exercises where students must synthesize information occurring previously in the text into a nominalization which can be made the subject of a subsequent clause.
- Complex sentences - use sentence stripping to explore the ways in which clauses are combined to form sentences in Scientific text
- Connectives - explicitly teach the connectives used in Science and how they are used as these form the signposts to understanding the logic of a scientific argument.
- Paraphrasing - having students translate back and forth between the Language of Science and Everyday Language can help them understand many of the features of Scientific language.

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<tr>
<td><strong>Review of Educational Research Vol, 78, No. 4, pp. 1010 - 1038</strong></td>
<td>The author reviews multiple articles related to teaching English language learners within mainstream content classes in the areas of: History, Math, English and Science. Some articles reviewed are empirical studies, some are analyses of the language needs of text within the 4 subject areas and some are articles with recommendations for teachers which may or may not be based on empirical studies.</td>
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<td><strong>Main Findings / Arguments:</strong></td>
<td><strong>History</strong></td>
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<td>• History texts are characterized by high lexical density (the number of content words per clause) and extensive nominalization and these features make unique demands on the reader.</td>
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<td>• Nussbaum (2002) found that the use of graphic organizers to scaffold the writing of historical arguments led to students writing more complete arguments.</td>
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<td>• Reppen (1995) found that explicit modeling and teaching of the structure and language features of specific genres (narrative, description, argument and discussion) led to positive change in student content knowledge and writing proficiency. There was also a positive impact on attitudes to social studies learning.</td>
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<td>• Short(2002) found that in sheltered social studies classes for ELLs, teachers were more likely to discuss content and task than language, a finding she considered problematic.</td>
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<td>• Studies based on Systemic Functional Linguistics seem to present the most compelling perspective on teaching language within the content area.</td>
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<td>• Many sources recommend teaching techniques designed to foster active processing of content such as: using guiding questions, brainstorming, using graphic organizers, group work. Many also recommend the use of the students’ first language to help with content processing where appropriate.</td>
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<td><strong>Math</strong></td>
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<td>• The language of Math is characterized by technical vocabulary including specialized meanings for words, complex noun phrases, use of more than one semiotic system.</td>
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<td>• Math language is used to express concepts that are often not necessary or important in everyday usage and so ELLs’ exposure to them may be limited to the classroom.</td>
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<td>• Researchers stress techniques that will assist students in connecting everyday language with the language of math.</td>
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<td>• Lager (2006) investigated the linguistic challenges of algebra problems and found that some of the words which cause difficulty were not this generally considered to be part of the language of math.</td>
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<td>• Gutierrez (2002) found that teachers who were successful at getting their students to take higher math classes shared some characteristics. They; (1) were careful observers of students; (2) were able to identify students needs and backgrounds without relying on stereotypes; (3) didn’t require the students to speak English at all times; (4) had the students work in cooperative groups and ; (5) gave students opportunities to explore ideas through discussion.</td>
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<td>• Khisty (1991) found that in math classrooms with a significant portion of ELLs, teachers used little actual mathematical terminology, focused most of the lessons on procedures for problem-solving, did not allow for the kind of discussion that would allow students to grasp mathematical concepts, and presented material that was largely decontextualized.</td>
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| | • Many sources recommend that teachers: (1) give students opportunities to talk their way through problems and verbally explain their
reasoning (2) use students' knowledge or interests to make connections to the math curriculum; (3) use a variety of grouping practices and (4) make sure assessments clearly distinguish between knowledge of math and knowledge of language.

**English**

- Carlo et al. (2004) found that explicit teaching of vocabulary in the context of a thematic unit improved both vocabulary knowledge and reading comprehension.
- Jimenez & Gamez (1996) found that when taught how to deal with unfamiliar vocabulary students developed a higher level of awareness of their cognitive behavior and a more positive attitude towards reading.
- Wright (1997) found that when taught several strategies including inferencing, previewing and guessing the meaning of unknown words, students improve their reading comprehension levels and became more confident readers.
- Saunders and Goldenberg (1999) found that the use of literature logs (where students record written responses to text) and instructional conversations (structured not to transmit knowledge but to support learners in arriving at complex understandings) were beneficial for ELLs.

**Science**

- Macken-Horarik (2002) found that working explicitly with the structure and language features of the explanation genre helped learners not only in the language side of Science, but also in developing students' scientific understanding of the content.
- Numerous authors recommend explicit teaching of the way in which texts are constructed to convey the meanings of Science.
- Lee and Fradd (1996) investigated classroom discourse patterns on various cultural groups and found that the style of English speakers was most compatible with the discourses of Science.
- Moje, Collazo, Carrillo & Marx (2001) found that the curriculum provided to teachers in the schools they studied focused on questions typical of the science classroom rather than those of actual scientists. They further found competing discourses in the science classrooms, such as an assessment task where students were asked to imagine what would happen if a factory opened in their neighborhood, leading students to produce creative texts that were not connected to the discourses of science.
- Researchers stress the importance of providing ELLs with opportunities to “do” science rather than simply to learn inert facts.
- Dong (2002), in a year-long case study of three biology teachers. Three common traits that proved beneficial to ELLs were: (1) high standards; (2) an approach to teaching ELLs that emphasized elaboration of concepts rather than simplification; and (3) attentiveness to student backgrounds and experience.
- Hampton & Rodriguez (2001) found that use of inquiry-based methods where students were involved in asking questions, gathering data and considering evidence increased students skills in both language and science knowledge.

**General Conclusions**

- The following themes stand out: (1) language is central in content teaching and in order for ELLs to succeed they need to be taught the features of genre and language use typical of discourses within a discipline; (2) opportunities to articulate thinking, share ideas in groups and think through new ideas verbally extend student understanding (the language of interaction does not always have to be English); (3) teachers need extended time for professional development related to the language of their discipline, how they can integrate language and content, and cultural diversity; (4) cultural discourses affect academic success and must be acknowledged and valued in teaching, though there is little agreement on how best to achieve this.

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<tr>
<th>Instructional Strategies – ESL / Literacy</th>
<th>O'Day, Jennifer (2009) Good instruction is good for everyone - or is it? English language learners in a balanced literacy approach</th>
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<tr>
<td>As part of a study on the implementation of literacy strategies in San Diego schools, this researcher compared the effects of on reading instruction strategies on the reading comprehension of native English language learners compared to proficient English speakers.</td>
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### Main Findings:

- The strategies found to be most effective with proficient English speakers were: (1) higher-level questioning / discussion about the meaning of text; (2) incorporation of writing instruction; and (3) accountable talk (including a focus on ideas rather than facts and recall, a press for evidence from the text to support arguments, student response to and elaboration on each other’s contributions - the teacher played a more facilitative than directive role in accountable talk.

- The effect of these three strategies on English language learners was still positive, but was substantially less than the effect on proficient English speakers and was not statistically significant. One possible explanation for this is that some of these activities were happening at a linguistic level that was beyond the ability of the ELs to comprehend.

- None of the specific strategies investigated had a statistically significant effect on the reading comprehension scores of ELs.

- During classroom observations, in addition to observing the specific strategies under study, teacher-student and student-student interaction patterns were coded.
  - "Telling" (where a teacher simply provided information rather than engaging students in the creation of that information) had a negative effect on the learning of proficient English speakers but a positive effect for ELs. The researchers hypothesize that ELs needed to be provided more directly with background information in order to access the texts they were trying to read.
  - The other interaction pattern affecting EL student's reading comprehension was the opportunity to participate in discussion / conversation. Participation in discussion had a greater positive effect for ELs than for proficient speakers. The researchers hypothesize that this is due to the opportunity to develop oral language proficiency (Prior research has indicated a relationship between oral language proficiency and literacy development). Interestingly, the positive effect of discussion compared with the negligible effect of accountable talk further supports the researcher's theory that in order to be of use, activities must take place at a level which is accessible for ELs.

- Qualitative data from interviews and observations suggest three implications of the findings:
  - Use of EL students’ native language - literacy in the native language can function as a bridge to success in English since many strategies transfer between languages
  - Differentiation - The program in San Diego had a substantial emphasis on differentiation, including using grouping strategies, specific scaffolding activities for individual learners etc. The findings suggest that in the case of ELs an emphasis in differentiation in general is insufficient. Teachers must:
    - Recognize that strategies need to be tailored for EL students
    - Know enough about texts to analyze potential barriers to comprehension for ELs
    - Know enough about literacy and second language acquisition to diagnose and monitor the particular needs of ELs
  - Attention to English Language Development – the smaller effect sizes for ELs suggest that it is important to build greater oral English proficiency at the same time as building literacy skills.

### Teaching Strategies – ESL


This article describes a pilot program conducted in disadvantaged urban schools where ESL teachers and mainstream classroom teachers were supported in developing a unit of work which was jointly planned and jointly taught.

### Main Arguments / Findings:

**Intellectual Quality**

- The teaching focused on a model of intellectual quality drawn from research and including the following elements: Deep knowledge; Deep understanding; Problematic knowledge; Higher-order thinking; Metalanguage; and Substantive communication

- Within the model, in relation to language, deep knowledge, deep understanding and metalanguage were developed through analysis
of the language demands of the teaching and learning strategies. This language knowledge was then clearly articulated to students and they were explicitly taught about the language choices available to them. *Higher-order thinking* was developed by having students to think about these language choices and opportunities for *substantive communication* were provided through guided reading and writing exercises.

**Support for Participating Teachers**
- It was found that teachers in general clearly recognized the importance of language and literacy learning but generally did not provide this for their students in a systematic way.
- In order to address this situation the following support was provided: demonstration lessons and planning support from the project coordinator; the provision of time for ESL teachers to meet, plan and work together with classroom teachers to identify and meet the needs of students; and working guidelines such as the requirement that students be given details of assessment procedures and criteria at the beginning of the unit and that these should be linked to explicit teaching; the provision of protocols with specific questions to support writing conferences.

**Project Results**
- For students: In general it was found that the learning in terms of language transferred to student work in subsequent units and teachers felt that student writing in general had been enhanced by the project.
- For teachers: The explicit teaching of language and literacy was a constant focus in teachers’ reflections about the unit. The unit was felt to have demonstrated “what teachers can do”, but to also have demonstrated the importance of ongoing support to achieve this.

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**ESL / Assessment**


This paper examines the situation in US schools with regard to entry and exit from ESL support programs. The validity of current practices is investigated and a model to improve the validity of classification is proposed and tested.

**Main Findings:**
- Commonly used English proficiency tests used to classification / placement of ESL learners vary widely with respect to purpose, theoretical foundation, test design, validity etc.
- Post NCLB, consortiums worked to create English proficiency tests aligned with state standards. These generally exhibit higher validity than tests previously used.
- Standardized achievement tests are also often used for classification if ESL learners, but these can be problematic as none are specifically designed to assess the content knowledge of these students and often contain unnecessary linguistic complexity.
- Research indicates that there is no specific indicator of which tests or which cutoff scores would indicate an acceptable level of English proficiency.
- Surveys filled out by parents with questions on nationality and languages spoken at home are also used for classification, but these can be unreliable as parents do not always give completely accurate answers for various reasons.
- Performance differences in one piece of research between learners classified as ESL and those classified as non-ESL on English Language Proficiency tests only explained between 3% and 9% of the variation in classification - not large enough to suggest a strong association between test scores and ESL / non-ESL classification.
- Performance differences between learners classified as ESL and those classified as non-ESL on Standardized Norm-Referenced Achievement tests only explained between 3.5% and 12% of the variation in classification.
- A valid classification system should be based on a theory of language acquisition and should clearly identify the level of academic language proficiency required to allow full participation in an English-only curriculum.
The paper proposes the use of multiple criteria in what they term an augmented-classification system:

- A study showed that using this model improved the strength of association between ESL classification and the criteria used for classification (from 24.8% of variance explained to 41.1% of variance explained).

Main Findings:

- Only 3% of instructional time was devoted to reading comprehension.
- Teachers mainly used only a couple of strategies: asking literal questions and having students write summaries of text.
- Some teachers also used had students examine text structure.
- The National Reading Panel review of research on comprehension contained 8 research-based strategies, but of these only the three listed above were used in the classrooms observed.
- Three recommendations are made to remedy this situations: (1) Provide explicit PD for teachers (2) Create an inquiry-based...
**Main Findings:**

**Research question one** - How much time is needed for language minority students who are English language learners to reach and sustain on-grade-level achievement in their second language?
- Students who arrived between ages 8 and 11, who had received at least 2 – 5 years of schooling taught through their primary language (L1) in their home country, took 5 – 7 years.
- Students who arrived before age 8 took 7 – 10 years or longer - the critical difference between the two groups was that the younger children had received little or no schooling in their L1.
- The most powerful predictor of academic success in L2 was formal schooling in L1.
- The main reason it takes ESL learners so long to reach grade-level performance is that native speakers are not standing still. ESL learners must progress at a faster rate than their native peers in order to catch up.

**Research question two** - Which program & instructional variables strongly affect the long-term academic achievement of language minority students?
- **L1 instruction** - The more cognitively challenging work provided in L1, the higher the long term achievement of students. This factor meant that bilingual programs produced significantly better results than other types of programs. It appears that strong L1 cognitive and academic development for the first 6 – 7 years of schooling provides the basis needed for ESL learners to maintain academic success in English throughout the secondary years.
- Students being schooled all in English make dramatic gains in the early grades, but as they reach higher grades where the work becomes more cognitively demanding, their rate of progress on average drops to below that of their native-speaker peers.
- **Type of L2 instruction** - The most effective L2 instruction was delivered by ESL-certified teachers teaching language though academic content, with simultaneous language and content objectives. The difference between this and programs where ESL teaching focused on only the structure of English was very significant.
- **Teaching style** - Interactive teaching styles resulted in significantly higher achievement for ESL learners. Such teaching included cooperative learning, negotiation of meaning, connections to prior knowledge, performance and portfolio assessment, inquiry-based learning, process writing, learning strategies...
- **Sociocultural support** – Student academic achievement was highest when bilingual / ESL staff felt positive about the school environment and believed language minority learners were respected and valued and where their bilingual and bicultural experience were considered a knowledge base for teachers to build on. Essentially, the language programs of the school were seen as enrichment programs rather than remedial.
- **Integration with the curricular mainstream** – ESL learners need meaningful interaction with native-speaking peers.
- The schools with higher achievement had eliminated most forms of ability grouping and tracking and had found ways to provide access to the full curriculum and avoid dumming it down.
- Of all the variables above, L1 support explained the most variance in student achievement.
**Main Findings:**

- In the first case study a graduation event aimed at celebrating all cultures ended up highlighting the differences in practices, beliefs and values between norms in the home culture and those in the school culture. The result was a Muslim girl who had difficulty convincing her mother she should attend.
- In the second case study, a “Family Studies Unit” was intended to focus on all the cultures in the classroom, but some students were reluctant to share aspects of their home cultures, perhaps because these were seen to be “badges of difference”. The story suggests that it may be naïve to assume that all students want their home cultures to be focused on at school.
- In the third case study, a multi-cultural night was perceived by some students as really being a celebration of Chinese New Year, suggesting that well-intentioned activities may be perceived in complex ways depending on the relations of various ethnic groups within the school.