

RESEARCH AREA & SOURCE	DESCRIPTION & MAIN FINDINGS / ARGUMENTS
<p><b>Instructional Strategies - ESL</b></p> <p><i>Review of Educational Research Vol. 75, No. 4, pp. 491 - 530</i></p>	<p><b>Lee, O. (2005) Science education with English language learners: Synthesis and research agenda.</b></p> <p>The author reviews research conducted between 1982 and 2004 on science education with English language learners (ELLs).</p> <p><b>Main Findings:</b></p> <ul style="list-style-type: none"> <li>• Some research indicates that some cultural patterns of communication and interaction may be inconsistent with the expectations of school science (eg, children who are taught to respect the wisdom of their elders, may not be encouraged to question knowledge in ways that are consistent with a Western scientific worldview.)</li> <li>• Rosebery et al.(1992) examined the relationship between scientific practices and the everyday sense-making of children and found that even very young children draw on their everyday knowledge as a context for understanding scientific phenomena and as a “perspective through which to infer previously unnoticed aspects of a given phenomenon and to create possibilities for interpreting the phenomenon differently”.</li> <li>• Barba (1993) observed 57 randomly selected classrooms and found that the instructional materials used were not relevant to the language and culture of the non-Western students.</li> <li>• Fradd, Lee, Sutman and Saxton (2002) found that when materials were used which integrated inquiry-based science with students’ language and culture and with specific English language development, students from all ethno-linguistic groups showed significant gains in science knowledge and inquiry.</li> <li>• A number of studies suggest that it is critically important that teachers find ways to “establish spaces in which different discourses and knowledges - from science disciplines, the science classroom, and students’ lives – are brought together”.</li> <li>• Various studies also suggest that explicit instruction in the norms of classroom interaction in science within the context of meaningful tasks is useful for ELLs.</li> <li>• Rosebery et al. (1992) found that students with limited English proficiency were capable of conducting scientific inquiry and of reasoning scientifically after participating in instruction designed to promote collaborative scientific inquiry.</li> <li>• Merino &amp; Hammond (2001) found that writing about scientific concepts as part of a series of inquiry-based science lessons improved not only ELLs’ writing skills, but also their scientific understanding.</li> <li>• Rodriguez &amp; Bethel (1983) found that science inquiry lessons involving manipulation of objects, exploration, and interaction with peers improved ELLs’ skills in scientific classification and in oral communication.</li> <li>• Cleghorn (1992) found that the use of code-switching (between English and the students’ first language) in class made content more accessible.</li> </ul>

- August & Hakuta (1997) found that most teachers assume that ELLs need to acquire English before learning subject content.
- Lee et al. (2004) found that professional development can alter teachers' beliefs related to ELLs.

Overall

- Teachers must find ways to connect with students' experiences outside the classroom and to help students to articulate these experiences with the content and discourses of school science
- The use of first language can facilitate access to content
- ELLs are capable of learning English through Science content
- Hands-on inquiry methods, which also require small group interaction facilitate language acquisition in science

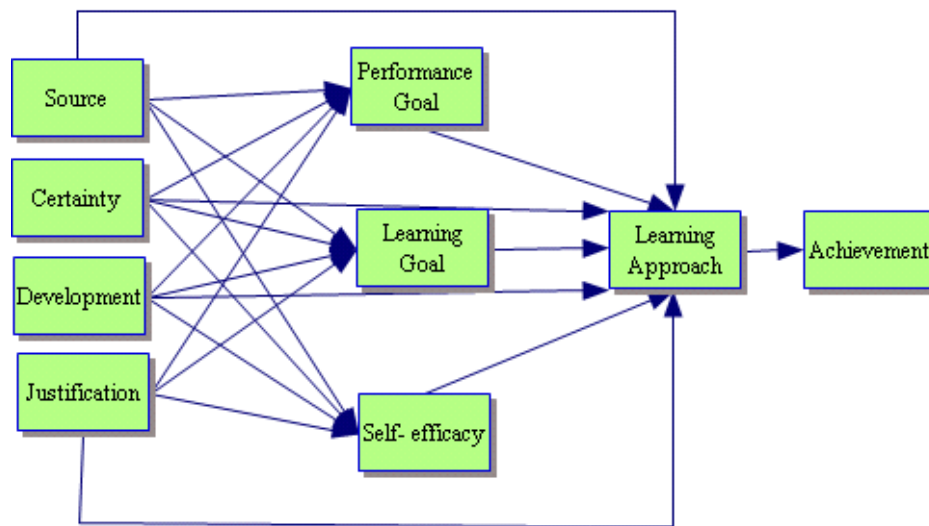
**Instructional Strategies / Learning Theory**

**Kizilgunes, B., Tekkaya, C. & Sungur, S. (2009) Modeling the relations among students' epistemological beliefs, motivation, learning approach and achievement.**

These researchers proposed a model to explain how epistemological beliefs, achievement motivation and learning approach related to achievement. They then conducted research to test the validity of the proposed model with 1041 6<sup>th</sup> Grade students in Turkish schools.

The proposed model:

*Journal of Educational Research, Vol. 102, No. 4, pp. 243 - 255*



**Definitions within the model:**

*Epistemological Beliefs*

*Source* – The extent to which students believe knowledge resides in external authorities.

*Certainty* – The extent to which students believe there is a “right” answer

*Development* – The extent to which students believe knowledge is evolving and changing.

	<p><i>Justification</i> – The extent to which students believe knowledge is justified by repeated experimentation.</p> <p><i>Achievement Motivation</i></p> <p><i>Performance-goal orientation</i> – The extent to which students desire to achieve high grades and other rewards for performance</p> <p><i>Learning-goal orientation</i> – The extent to which students desire to learn for the sake of learning</p> <p><i>Self-efficacy</i> – The extent to which a student is confident in their ability to learn science.</p> <p><i>Learning Approach</i></p> <p>The extent to which a student tends to learn in a meaningful way by connecting knowledge at a conceptual level as opposed to learning facts and formulas by rote.</p> <p><i>Learning Approach</i></p> <p><b>Main Findings:</b></p> <ul style="list-style-type: none"> <li>• All of the causal pathways in the model were shown to be statistically significant except the path from certainty to self-efficacy, indicating that the model does explain the connected between the elements under study.</li> <li>• The strongest positive effect on learning approaches was from development beliefs.</li> <li>• Overall, students with higher levels of learning-goal approach and with beliefs that scientific knowledge develops from careful thought and analysis of ideas, evolves over time as new discoveries are made and does not come from authority were more likely to learn by forming relations among concepts and also had greater achievement in the unit.</li> <li>• Overall, epistemological beliefs were found to affect achievement through their effect on motivation and learning approach.</li> </ul>
<p><b>Assessment</b></p> <p><i>Theory into Practice, Vol. 48, No. 1, pp. 12 – 19</i></p>	<p><b>Andrade, H. &amp; Valtcheva, A. (2009) Promoting learning and achievement though self-assessment.</b></p> <p>The authors of this article propose a process of criteria-referenced self-assessment which is formative rather than summative. They describe the process and then summarize the research base supporting their proposal.</p> <p><b>Main Arguments / Findings:</b></p> <p><i>In order for effective self-assessment to occur, students need:</i></p> <ul style="list-style-type: none"> <li>• awareness of the value of self-assessment</li> <li>• access to clear criteria on which to base the assessment</li> <li>• a specific task or performance to assess</li> <li>• direct instruction in and assistance with self-assessment</li> <li>• practice</li> <li>• cues regarding when it is appropriate to self-assess, and</li> <li>• opportunities to revise and improve the task or performance</li> </ul> <p><i>Effective self-assessment involves the following three steps:</i></p>

	<ul style="list-style-type: none"> <li>• Articulate expectations - clear guidance on what counts and how quality is defined.</li> <li>• Self-assessment - students create a draft and then monitor their progress by comparing their performances-in-progress to the expectations.</li> <li>• Revision - opportunities to make improvements ( The authors state that this step is crucial and suggest that self-assessment should only be used as formative assessment, never as summative).</li> </ul> <p><i>Evidence from research</i></p> <ul style="list-style-type: none"> <li>• A positive relationship has been found between self-assessment and quality of writing</li> <li>• Self-assessment has been found to positively influence the more sophisticated traits of writing such as ideas and content, organization and voice.</li> <li>• Students with training in self-assessment have been found to outperform other students on mathematical word problems.</li> <li>• Students attitudes to self-assessment become more positive as they gain more experience with it</li> <li>• Students often found self-assessment to be mindless until they found that careful self-assessment could help them do better work and get better grades.</li> <li>• Transfer of self-assessment processes to other courses seems to be spotty.</li> <li>• There is sometimes a tension between teachers' expectations and students own standards of quality.</li> <li>• In one study where self-assessments were included as part of final grades, students attitudes to self-assessment became more negative during the course - the opposite of the general findings relating to attitudes to self-assessment.</li> </ul>
<p><b>Curriculum Implementation</b></p> <p><i>Educational Evaluation and Policy Analysis, Vol. 30, No. 4, pp. 368 - 388</i></p>	<p><b>Stein, M., Berends, M., Fuchs, D., McMaster, K., Sáenz, L., Yen, L., Fuchs, L., &amp; Compton, D. (2008) Scaling up an early reading program: Relationships among teacher support, fidelity of implementation, and students performance across different sites and years.</b></p> <p>The researchers investigated the implementation of Kindergarten Peer Assisted Learning Strategies in reading over two years and across three sites. They examined the relationships between the levels of support on-site, the level of teacher fidelity of implementation, and student achievement.</p> <p>Three levels of on-site support were investigated: (1) Teachers attended a day-long pre-implementation workshop; (2) In addition to the pre-implementation workshop, teachers attended two follow-up booster sessions designed to help them review the program, identify implementation issues and problem-solve; and (3) In addition to the workshops, teachers had a trained assistant in the classroom, who helped train students in the peer assisted strategies.</p> <p><b>Main Findings:</b></p> <ul style="list-style-type: none"> <li>• Students achievement gains on post-tests were mediated by the fidelity with which teachers implemented the program.</li> <li>• The fact that the program was highly structured and provided teachers with specific manuals and materials related to high</li> </ul>

levels of fidelity of implementation overall.

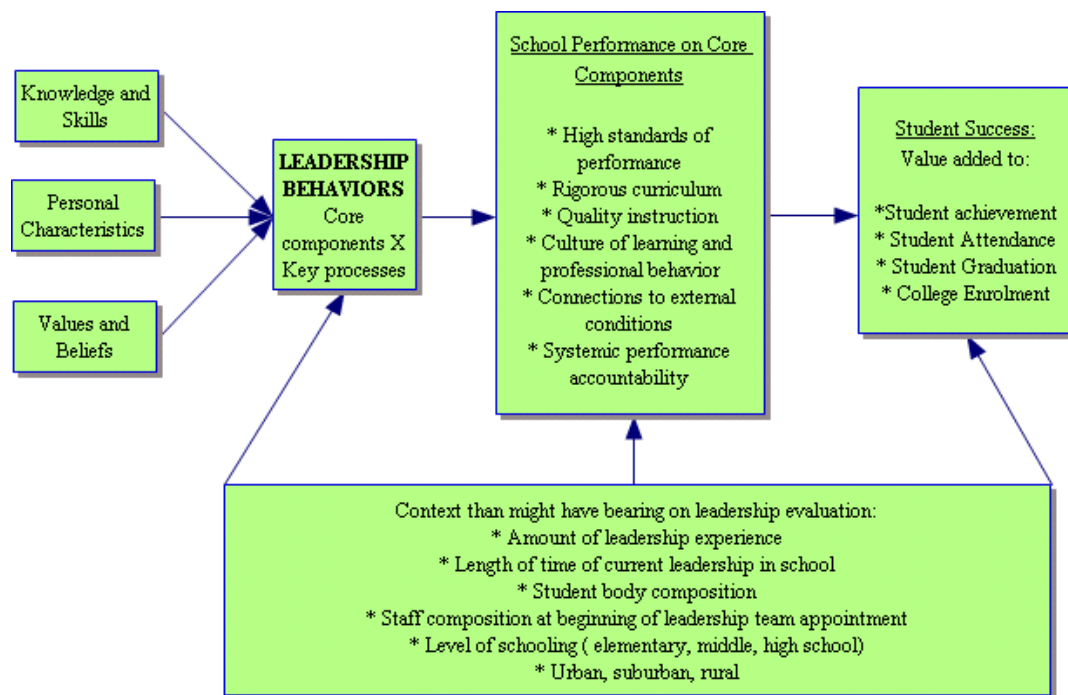
- Teachers who attended booster sessions had a higher level of implementation and their students achieved greater gains on the post-tests than teachers who only attended the workshop.
- Against expectations there was no increase in achievement gains in classrooms where the trained assistant was present over the booster condition. The researchers explain this as being perhaps due to the inconsistent quality of assistance (assistants were graduate students rather than professional teacher coaches).
- School characteristics such as instructional coherence, teacher community and principal leadership were not significantly related to fidelity of implementation. These site characteristics did, however, moderate the effects of the booster and helper conditions to some extent.
- Teacher experience, self-efficacy and perceptions of school climate were not significantly related to fidelity of implementation.

**Leadership**

*Leadership and Policy in Schools, Vol. 8, No. 1, pp. 1 - 36*

**Goldring, E., Porter, A., Murphy, J., Elliott, S. & Cravens, X. (2009) Assessing learning-centered leadership: Connections to research, professional standards, and current practices.**

The authors propose a research-based evaluation system for school leaders and leadership teams. The instrument is based on the following model of leadership:



**Main Arguments / Findings:**

- The leadership evaluation framework contains two key dimensions of leadership behaviors - core components and key processes. Core components refer to characteristics of schools that support student learning. Key processes are the leadership behaviors which bring about the core components in a school. The assessment of leaders and/or leadership teams measures the intersection of these two dimensions, in other words - it measures both 'what' and 'how' - what the leader is trying to accomplish and how they go about accomplishing it.
- The intersection of core components and key processes can be seen in this chart:

Key Processes						
Core Components	Planning	Implementing	Supporting	Advocating	Communicating	Monitoring
High standards for student learning						
Rigorous curriculum						
Quality instruction						
Culture of learning & professional behavior						
Connections to external communities						
Systemic performance accountability						

- The model posits that student achievement is affected indirectly by leadership behaviors via the effect the leadership has on the core components of the school that have been demonstrated by research to affect student achievement.
- The model recognizes that leadership evaluation should take into account the contextual factors which are likely to affect the leadership.

*Comparison with other leadership evaluation instruments*

The evaluation framework was compared with 66 other existing leadership evaluation tools:

- This framework privileges leadership for learning more than any of the existing tools.
- There seems to be little consensus among existing tools as to what should be assessed.
- Of the 66 instruments, 26 do not evaluate the principal at all regarding their engagement with curriculum and 25 make no mention of quality of instruction.
- Most of the instruments reviewed focused on the management of procedures and personnel policies rather than specifically focusing on leadership for learning.