



# Supporting Reading Comprehension For English Learners Through Inquiry-Based, Language-Focused Instruction

Link to [IES Grant Project Description](#)<sup>1</sup>

## Overview of the K.L.I. Intervention (DRAFTv4\_January 2022)

### What is the *Building Knowledge and Language through Inquiry* (abbreviated K.L.I.) intervention?

K.L.I. is a multi-component reading comprehension intervention intended for small-group instruction with English learners (ELs) facilitated by specialist teachers (e.g., ESL teachers, literacy specialists, and classroom teachers with expertise in working with multilingual students). When fully implemented, students will receive 45 minutes of supplemental small-group (3-4 children) instruction three times a week. As indicated in its name, K.L.I. has two distinct features that make it particularly suited for English learners in the upper-elementary grades. First, the intervention is *language-focused*. It explicitly targets the areas of language proficiency that are needed for successful text comprehension in ELs, including vocabulary, morphology, syntax, and text structure. Second, the instruction provided during K.L.I. is *knowledge- and inquiry-focused*. This means the intervention components are organized around compelling content-area questions that students answer as they engage in structured reading and language activities. This approach provides opportunities for readers to be experts and creators of new knowledge through their engagement with interesting texts and topics.

### Content Area Topics

Each K.L.I. module focuses on a different topic. The five topics used in the current implementation of K.L.I. are: *Robots*, *Space Pollution*, *A New Home (Immigrant Experiences)*, *Voting in a Democracy*, and *Animal Communication*. Each module begins with open-ended inquiry questions (e.g., *how have humans solved challenges by advancing robotic technology?*)

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that serve as a catalyst for student thinking as they read and work as a group to collect new ideas in a digital inquiry space, which they synthesize at the end of the module into a brief informal presentation to share with peers and teachers.

### **K.L.I. Components**

The K.L.I. intervention consists of five evidence-based components. Each component is an instructional practice that teachers implement using books, texts, and other materials provided as part of the intervention training.

- **Discovery Reading (DR):** Students read portions of an authentic text and engage in a structured discussion, framed around a question/purpose that helps students build a mental model of the text. They also closely examine high-leverage words that are essential for understanding the text.
- **Confident Reading (CR):** Students practice fluency by repeatedly reading a series of short expository texts on the inquiry topic, each increasing in complexity, with teacher modeling and feedback.
- **Uncover the Structure (UtS):** Using a short text that was previously read and discussed during Confident Reading, the teacher guides the students in a discussion of the structure/organization of the author's ideas.
- **Breaking Words (BW):** Students engage in a structured word analysis routine using multisyllabic academic words that relate to inquiry topics.
- **Sentence Workshop (SW):** Students use word cards to build, rearrange, and discuss the structure of complex sentences related to the inquiry topic.

### **Inquiry Space**

While engaging in the five components above, students identify new ideas and concepts that address their inquiry question and add these to the Inquiry Space at the end of each lesson. The Inquiry Space provides teachers and students with a centralized place to record, collect, and synthesize new knowledge. This space is designed to be a resource for students to refer back to on regular maintenance days scheduled throughout each module and at the end of the module as they prepare for their final presentations.

### **Structure of a Typical Lesson**

A typical K.L.I. lesson (defined as one small-group meeting lasting around 45 minutes) consists of three components:

- 15-20 minutes: Discovery Reading
- 10-15 minutes: Confident Reading or Uncover the Structure; and
- 10-15 minutes: Breaking Words or Sentence Workshop

For example, in lesson 1, a group that is studying the robot topic would start with Discovery Reading using a few pages of an authentic text, followed by Confident Reading using a short text on their topic with controlled vocabulary and structure, and finish with Breaking Words using morphologically complex words from their reading. On other days, they would engage in the Uncover the Structure and Sentence Workshop routines, as shown here:

Day 0	Intro/Preview		
Day 1	DR Lesson A	CR Lesson A	BW Lesson A
Day 2	DR Lesson B	CR Lesson B	SW Lesson A
Day 3	DR Lesson C	CR Lesson C	BW Lesson B
Day 4	DR Lesson D	UTS Lesson A	SW Lesson B
Day 5	Inquiry Space	Catch-up	
Day 6	DR Lesson E	CR Lesson D	BW Lesson C
Day 7	DR Lesson F	CR Lesson E	SW Lesson C
Day 8	DR Lesson G	CR Lesson F	BW Lesson D
Day 9	DR Lesson H	UTS Lesson B	SW Lesson D
Day 10	Inquiry Space	Catch-up	
Day 11	DR Lesson I	CR Lesson G	BW Lesson E
Day 12	DR Lesson J	CR Lesson H	SW Lesson E
Day 13	DR Lesson K	CR Lesson I	BW Lesson F
Day 14	DR Lesson L	UTS Lesson C	SW Lesson F
Day 15	Inquiry Space	Catch-Up	
Day 16	Share and celebrate new knowledge		

When this schedule is followed, a full module consists of approximately 17 45-minute meetings, with the frequency of each component being as follows:

Discovery Reading	DR	12 sessions
Confident Reading	CR	9 sessions
Breaking Words	BW	6 sessions
Sentence Workshop	SW	6 sessions
Uncover the Structure	UTS	3 sessions
Inquiry Space	IS	3 sessions

[Note: In future work, the K.L.I. routines could be used adaptively by teachers. For example, students could be grouped so that those who primarily need help in a specific area could receive intensive help using a smaller number of the K.L.I. components. Although interdependent, the components can be used separately or in different combinations. However, in the current four-

year study, we are keeping the lesson design relatively uniform in order to appropriately test the intervention as a whole in the pilot study.]

### **Big Ideas that Inform the Intervention Design**

- Reading comprehension is defined in K.L.I. as the merging of text-communicated ideas (both explicit and implicit) with one’s own knowledge and experiences to construct a coherent mental model of the text, resulting in new knowledge and perspectives that can be applied elsewhere.
- Comprehension relies on the accumulation and orchestration of multiple competencies. The competencies most directly targeted in K.L.I. are: English language knowledge, reading fluency, content area knowledge, and comprehension processes.
- Skilled word reading is necessary for reading comprehension. However, K.L.I. does not include explicit instruction in phonics and word reading because most schools already have many options for evidenced-based interventions in these foundational areas. K.L.I. targets knowledge and skills that are crucial for comprehension development for which schools often have fewer intervention options.
- Comprehension strategies instruction is shown in many studies to be effective, but alone, strategies are insufficient unless readers have the requisite language and content knowledge to form mental models of the text.
- In K.L.I., comprehension strategies are conceptualized as metacognitive processes that help readers build a coherent mental model of the ideas in a text. The specific processes targeted are: comprehension monitoring, paraphrasing or thinking aloud, self-questioning, selectively attending to important ideas, and generating inferences.
- K.L.I. is organized in thematic modules to help students systematically activate and build new knowledge on the topics they are reading.
- Comprehension, especially for ELs, depends on language knowledge at multiple levels, including vocabulary, morphology, syntax, and organizational structures of texts.
- Instruction that supports English language development for ELs should be explicit and structured to maximize student learning, but it should not be linguistically prescriptive (telling students how they should speak) or subtractive (trying to replace home languages and dialects with academic language).
- By virtue of being multilingual, English learners have unique language assets that enable them to notice and reflect on English language structures in complex and interesting ways. For example, throughout K.L.I., there are multiple places where students can link new words they are learning to similar words in their home languages or to explain their learning to their peers in their own words, which for many, might involve home language use. Teachers, even those who may not speak students’ home languages, should encourage students to leverage their existing language assets.
- An instructional intervention is not just a treatment that is transmitted to students. Rather, the K.L.I. intervention is conceptualized as a system of activity—a configuration of

knowledge, experiences, training, lesson plans, materials, routines, and discussion norms that, as a system, create and sustain learning opportunities for children. The theory of change that informs K.L.I. (see below and in figure) specifies the four cultural practices in which English learners should have sustained engagement for growth in reading comprehension. These are: 1) Reflecting on language, 2) Purposeful and accurate reading, 3) Discussing texts to gain new knowledge, and 4) Explicating metacognitive processes.

- K.L.I. is intended to move students toward increased levels of independence in these cultural practices through repeated use of carefully scaffolded, fast-paced instruction during multi-component lessons.

### **Scaffolding Student Independence Over Time**

Across the lessons in a module, teachers implement K.L.I. components using a *gradual release of responsibility* (GRR) approach. In the beginning as students are learning the K.L.I. routines, or in the early days of a new module when students are just getting acquainted with the topic, high levels of teacher modeling and think-alouds are required. Over time, responsibility is gradually released to the students to lead the discussion and take turns with one another in practicing each routine.

In addition to GRR, another important concept that applies to K.L.I. is *proleptic teaching* (or in simpler terms, future-oriented teaching). This form of teaching is centered on an anticipation of the students' future competence--that is, an assumption that the student will know and be able to do something later that they cannot do in the present. Their future competence builds over time, as a result of having repeated and expertly scaffolded opportunities to participate to the best of their ability. In the present, not everyone will be able to participate in the same ways. Some students will already know some of the content and be able to engage easily in the conversation. Others will be less familiar with the content or less adept at using the language on the prompt card. They will require additional scaffolding to push their participation forward. This is okay and expected. Some will talk more and some will listen more. Different forms of participation are valuable. By allowing students to do what they can in the present, and by providing the right level of scaffolding that pushes them further one small bit at a time, students will become more competent in the future. These changes will happen little by little (imagine tiny layers of competence building up on top of each other over many small opportunities for participation).

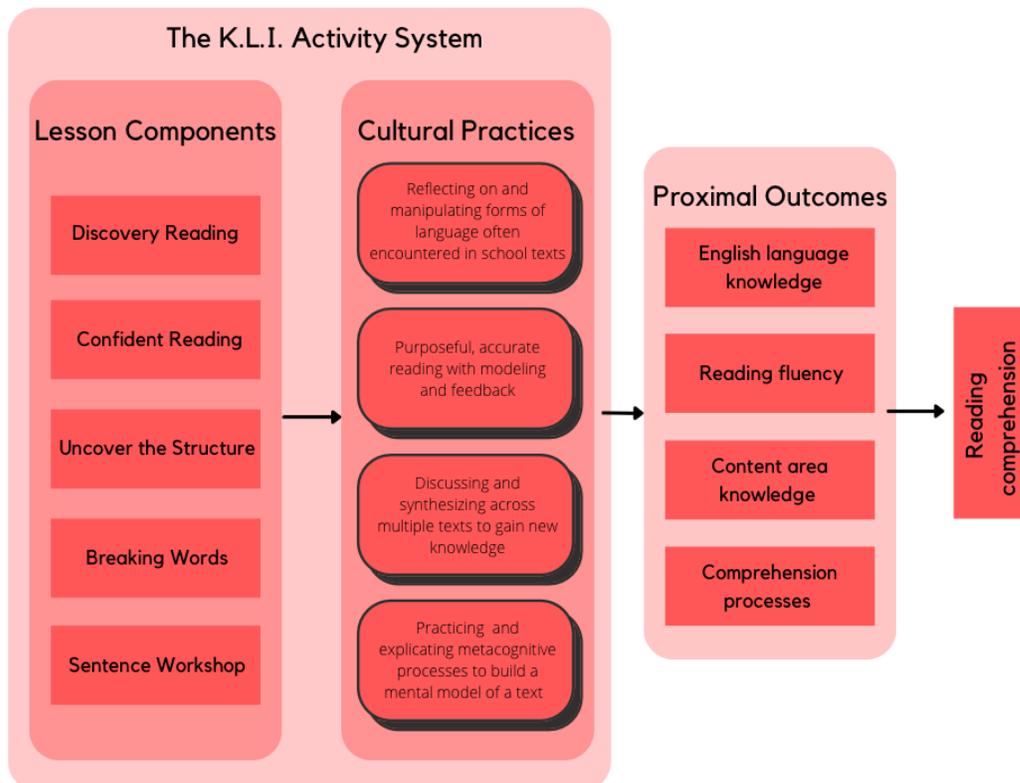
### **Maximizing Learning through Fast-Paced Routines**

The future-oriented way of thinking about student learning motivates the fast-paced nature of the K.L.I. intervention. By keeping the intervention moving quickly, students are given more opportunities to engage with text and language, distributed across multiple examples, to build up their competence over time. They do not need to understand everything at every stopping point within a component. In fact, when teachers try to elaborate on every possible challenge that students might encounter at each stopping point, they often end up over-scaffolding (providing too much support, which decreases student independence). This slows down the lesson, reducing the number of distributed opportunities that students will have to build their competence and independence.

## Theory of Change

When fully implemented, K.L.I. will positively affect reading comprehension in ELs through the following pathway (see Figure):

- When implemented with fidelity, K.L.I. will create sustained, repeated opportunities for ELs to engage in four key practices:
  - Reflecting on and manipulating forms of language often encountered in school texts (e.g., attending closely and explicitly to language structure and vocabulary);
  - Purposeful, accurate reading with teacher feedback and modeling;
  - Discussing and synthesizing across multiple texts to gain new knowledge;
  - Practicing and explicating metacognitive processes that help build a mental model of a text.
- These four practices directly affect the proposed underlying processes and competencies necessary for comprehension growth in this population: English language knowledge, reading fluency, content area knowledge, and comprehension processes.
- The effects of K.L.I. will be observable in proximal outcomes of language and reading processes, which will impact reading comprehension as measured on standardized instruments.



## Design-Based Approach to Building the K.L.I. Intervention

The components of the intervention were designed through repeated design-implement-observe-revise cycles, in collaboration with expert teachers, beginning with Version 0 (v0) of each component and ending with version 4 (v4). The research team will continue revising the improving the K.L.I. materials over the remainder of this project. This document and the accompanying teachers' manuals reflect the v4 materials that were developed as follows:

- ***Design/Review*** : The research team developed the v0 materials of all five components (three in Year 1; two in Year 2). Teachers reviewed the v0 materials and provided feedback and suggestions for improvement during teacher review interviews. The team revised and refined the v0 materials.
- ***Implement/Observe***: Teacher collaborators implemented v1, v2, and v3 of each component with small groups of students. They provided their feedback in teacher review interviews. Researchers also recorded/observed and rated the quality of the materials using observation checklists (implementation maps) aligned with the theory of change.
- ***Revise***: After each implementation, the team revised the materials based on teachers' recommendations and observations. After three iterations of design-implement-revise phases, the team completed v4 materials.