A Crosswalk: Visible Learning and Strategic Instruction Model (SIM™)

Purpose

The University of Kansas Center for Research on Learning (KUCRL) has developed this crosswalk to assist educators in understanding the relationship between the John Hattie's Visible Learning meta-analysis of influences on student achievement and the elements and processes used when implementing the Strategic Instruction Model (SIM™). These comparisons demonstrate how SIM can empower all teachers with evidence-based instructional tools and interventions which embed the influences shown by research to improve achievement for all students. Visible learning and the instructional process built into SIM have complimentary and related research foundations showing effectiveness to improve outcomes for students.

Background on Visible Learning

John Hattie, Director of the Melbourne Educational Research Institute at the University of Melbourne, Australia since March 2011, presented his groundbreaking meta-analyses study in his first book *Visible Learning for Teachers* (2009) and continued his meta-analysis in *Visible Learning: The Sequel* (2023). The Visible Learning research synthesizes findings from 1,500 meta-analyses of 90,000 studies involving 300 million students into what works best in education with the meta-analysis updated regularly on the Visible Learning Meta-X website. The British Times Educational Supplement (TES) organization described Hattie's educational research as the "holy grail of education". Hattie compared effect sizes of many aspects that influence learning outcomes and recommended educators identify which ones had the greatest impact on learning rather than use the influences as a checklist. The Visible Learning research identified an effect size of 0.40 as a *hinge point* for an influence demonstrating a year of academic growth by students after a year of learning in the classroom; however, Hattie cautions educators to determine what constitutes a year of academic growth for their students in order to allow teachers and students clarity in learning goals. In *Visible Learning for Literacy*, Doug Fisher and Nancy Frey state, "Every student deserves a great teacher, not by chance, but by design" (Douglas Fisher, Nancy Frey, & John Hattie 2016). Learning influences at and above the 0.40 hinge point are by instructional design not chance and are illustrated as high impact on the Visible Learning barometers and thermometer graphics. For more information, visit https://www.visiblelearningmetax.com/influences or https://visible-learning.org/.

Background on SIM

The Strategic Instruction Model is a comprehensive approach to adolescent literacy, including an evidence-based set of instructional tools and interventions that empower teachers and enable students to better succeed in school and beyond. Strategic schools and teachers select instructional tools and interventions to meet their student needs, and strategic students have options for matching an approach to a task. Since 1978, researchers from KUCRL have partnered with classroom teachers to design SIM instructional tools, materials, and interventions. The research-based components of these tools have been tested and approved by teachers to become evidence-based practices shown to be effective in varied school and classroom contexts. SIM includes two arms that work together to improve literacy: Learning Strategies (LS) and Content Enhancement Routines (CER). LS use explicit and systematic instructional procedures. CER implementation is supported by the SMARTER Instructional Cycle, an instructional planning cycle that promotes effective teaching and learning of critical content. Schools and teachers may implement a combination of LS and/or CER. SIM also includes two comprehensive reading programs, designed based on the science of reading: Fusion Reading (FR) and Xtreme Reading (XR). For more information, visit www.sim.ku.edu.

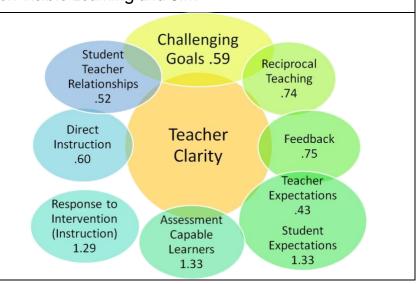| Overarching Connection Between Visible Learning and SIM	
Teacher Clarity (0.75) Important for the teacher to communicate the intention of the lesson and the notion of what success means for these intentions "a measure of the clarity of communication between teachers and students in both directions" (Fendick, 1990, p. 10) Two-way communication ● clarity of organization ● clarity of explanation ● clarity of examples and guided practice ● clarity of assessment of student learning	

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Student-Teacher Relationships (0.52)	The quality of the relationship between the teacher and student, and in many cases also the relationships developed by the teacher between the students.	Foundational to all stages of instruction for SIM Learning Strategies is a strong and positive relationship between students and the teacher as well as effective relationships between students. Students with learning challenges engaged in strategic and intensive interventions need a trustful working relationship with the teacher.	Through the Cue-Do-Review instructional sequence, teachers establish structured and meaningful learning situations for students which support an environment where students trust the teacher who provides them with targeted learning goals and collaborative opportunities to work with other students.
Challenging Goals (0.59) Expectations for Learning ● Teacher Expectations (0.43) ● Student Expectations (1.33)	Designing appropriately challenging goals provides for student engagement and the development of intrinsic motivation. Students thrive most when teachers clearly describe the learning goals of instruction, and when they formulate such goals to be challenging but achievable. The Goldilocks's principle of challenge is not too hard, not too easy, and not too boring. *Teacher:* The expectations about performance held by teachers. These can be accurate, affected	In Learning Strategy instruction, students begin deliberate practice at their instructional reading level, and their challenging goal is to master grade level content at their enrolled grade level. Therefore, a student who is currently reading at the fifth grade level when he or she is at the ninth grade level in school must master progressively more challenging goals until he or she demonstrates 80% mastery of content at the ninth grade level.	Teachers in academic content classes set challenging goals for all students when using the Content Enhancement Routines which requires students to use critical thinking skills to learn and understand complex and often abstract grade level vocabulary and concepts. For example, a student in an algebra class will learn not only to apply math skills but to demonstrate conceptual knowledge of mathematics. Each CER guides students through the higher order thinking skills of

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	by biases (social background, gender, culture), but more often teachers hold either low, medium or high expectations for all their students. *Student:* Students have expectations of their performance and outcomes, and this helps determine how they intend to invest in an activity. *Teachers communicating high expectations of students directly impacts the students' expectations for their own learning.		Bloom's Taxonomy to reach challenging goals across the content areas.
Direct Instruction (0.60)	Active learning in class. Seven steps include: Define learning intentions; aware of and know success criteria of performance; building commitment and engagement in the learning task; presentation of the lesson; guided practice (work is marked and corrective work); closure; and independent practice. Students' work is marked in class, and they may do corrective work.	The stages of instruction for teaching LS use elements of direct instruction: Pretest and Make Commitments, Describe, Model, Verbal Practice, Controlled Practice with Feedback, Advanced Practice with Feedback, Post-test and Make Commitments to Generalize, and Generalization. Within each stage, teachers also use an advance organizer for learning intentions and prompt students to set goals and track progress, prompt	The Cue-Do-Review instructional sequence for each CER is a form of direct instruction. The teacher "cues" the learning intentions and behavioral expectations for learning. "Do" is when teachers co-construct the visual device / graphic organizer for the routine (e.g., the Concept Diagram). The teacher "reviews" the learning process and content. "I do, we do, you do" approach can be

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		frequent and varied student responses, frequent affirmative and corrective feedback, and deliberate activities for guided and independent work.	used to move the CER use from whole class construction to independent student strategy use.
Reciprocal Teaching (0.74)	Teaching cognitive strategies intended to lead to improved learning outcomes. Emphasis on teachers enabling students to learn and use strategies such as summarizing, questioning, clarifying, and predicting. Dialogue between teacher and students around text. Students take turns as teacher and lead dialogue to bring meaning to written word with assistance to learn to monitor their own learning and thinking.	An "I do, we do, you do" process is used throughout stages/lessons. *Controlled and Advance Practice Stages* involve students using the strategy with increasingly difficult tasks. During Controlled Practice, strategy use practice can be teacher-facilitated or student-led in partners or small groups. Students use Cue Cards during assignments to remind them of strategy steps as needed.	The Cue-Do-Review instructional sequence is used with all CER. "Do" supports co-constructed, collaborative learning with active participation by all students. During co-construction by small groups within the larger class, flexible grouping can be used to increase student to student dialogue while using the routine with text.
Feedback (0.75)	Diagnosing what students find difficult and getting students to fix it; improving performance on an assessment (feed forward)	Mixed-ability groups and partners can be used during controlled practice and generalization practice with LS, and are used during paired practice with XR and partner work with FR.	The co-construction process for each CER allows teachers to adjust instruction, clear up misconceptions immediately, and provide positive reinforcement during the learning process.

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Response to Instruction/Intervention (1.29)	Response to Intervention is a multi-tier approach to the early identification and support of students with learning and behavior needs. The RtI process begins with high-quality instruction and universal screening of all children in the general education classroom (Tier 1). Learners not meeting proficiency expectations are provided with interventions as a response to Tier 1 instruction with increasing levels of intensity to accelerate their rate of learning in Tier 2 (small groups or individualized intensive instruction to target skill deficits in Tier 3).	Too often educators focus on the Intervention part of RtI, but it's important to remember that the *I* is actually how students respond to Instruction. For Hattie and the Visible Learning researchers, RtI consists of teachers evaluating the impact of their instruction with formative assessment of students to allow them to respond with feedback and responsive instruction to meet the student's needs. In Learning Strategies instruction, teachers guide students through independent practice and their individual progress charts gives the teachers instructional feedback to monitor student learning as they work for mastery. This practice and feedback cycle can occur at Tiers 1-3.	During CER instruction, a content teacher actively co-constructs a device or organizer with students, releasing them for independent practice to allow them to internalize their understanding of the content. The teacher monitors the independent work to respond with responsive instruction based on observations of the learning.
Assessment Capable Learners (1.33)

Student Expectations of Self: Self Reported Grades (1.44) | Hattie describes an "assessment-capable learner" as a student who understands assessment results and can use that information to determine what they need to do next. They can take ownership of | *Controlled and Advance Practice Stages* involve students using the strategy with increasingly difficult tasks. Progress is monitored throughout instruction. Progress charts and classroom management charts | The Planning and Leading Learning strand of CERs include students monitoring their own progress within the Course, Unit, and Lesson. For example, the Unit Schedule on the Unit |

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	their learning because they have the time and knowledge to develop their assessment capabilities. Developing assessment capable learners prepares them to be lifelong learners. Students knowledgeable about their chance of success; awareness of what they know about a subject and how they will likely perform.	serve as assessment communication tools with students, other teachers, and families. A *Feedback Loop* is used to provide positive and corrective feedback including additional modeling, student practice, student paraphrasing feedback, goal setting, and communicating high expectations and informs teacher of the instructional needs of students which fosters partnership learning.	Organizer prompts students to record either their score for major assignments and projects or to check off their completion. The Course Progress Graph on the Course Organizer prompts students to record their unit scores. The Performance Learning Options on the Course Organizer show students when they can select when and how they will learn and perform best.

<table>
<tr><td colspan="4" align="center">Selected Additional Visible Learning Influences Related to SIM</td></tr>
<tr><td colspan="4">While teacher clarity is foundational for the greatest impact on learning, there are also three phases of student learning: surface, deep, and transfer (Frey et al 2016). Considering the phases of student learning after a pre-assessment of their current knowledge and skills allows a teacher to design instruction with the right approach at the right time. During surface learning, students are acquiring knowledge and skills and then consolidating the content learned in order to move into deep learning. In deeper learning, students apply and use the knowledge and skills from their newly acquired content. Metacognitive strategies and close reading are complex tasks that require students to deepen their understanding. Finally, in the transfer phase students focus on self-regulation of their learning so they can accelerate their own learning. However, the phases aren't linear, and teachers will create instruction matching students' needs depending on data from frequent formative assessments. In comparison, the SIM instructional tools maneuver students between all three learning phases as part of the evidence based instructional design. Shown below some influences align strongly with either LS or CER*, and others align strongly with both LS and CER.</td></tr>
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Mnemonics (0.76)	A practice by which students learn a significant amount of information for long-term recall by memory. There are five classes of mnemonics: linguistic, spatial, visual, physical, and verbal	Each LS has an acronym as a mnemonic to represent the cognitive and metacognitive steps used to perform the skill. As one example, the "RAP" steps help a reader to paraphrase the most important information. LS instruction includes students using Cue Cards as mnemonics. Certain LS include creating mnemonics for remembering content (e.g., LINCS, Paired Associates).	Each CER has an acronym as a mnemonic for the cognitive and metacognitive steps to build a visual device (i.e., graphic organizer). The visual device itself is also a mnemonic. As one example, the "FRAME" steps help a learner to break down the main idea and details for a key topic in a visual way on a Frame (visual device).
Integrating Prior Knowledge (0.93)	Students establish connections between a text with new information and their prior knowledge to produce models or cognitive maps aimed to improve comprehension and recall through schemas.	LS instruction begins with a Pre-Test to bring awareness for both teachers and students about prior knowledge to perform skills and strategy use. This information is used to set goals for learning on each student's progress chart. Additionally, during the Describe Stage, teachers facilitate conversation with students to connect the current LS with prior and future strategy use matched to a task in varied settings. The LS is then presented as a mnemonic of the steps,	All CER begin by eliciting student prior knowledge on a concept, key topic, or skills. Within the cognitive strategy steps (i.e., linking steps), the first step prompts teachers to brainstorm what they already know or to examine key vocabulary related to a bigger idea. Each CER includes a visual device or graphic organizer that allows students to "map" schemas and document comprehension of text or discussion points.

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		such as RAP, DISSECT, or MAPS (reading strategies).	
Process Skill: summarization (0.79)	The ability to summarize a text is often taken as a marker of reading comprehension, and for this reason many scholars have advocated explicit summarization training for students who struggle with comprehension. This can include delete unnecessary material, delete material that is redundant, substitute a subordinate term for a list of items or actions, select a topic sentence, and construct a topic if one is only implicitly suggested by the text.	Certain LS explicitly teach students summarization skills while reading and writing: The Paraphrasing Strategy, Fundamentals of Paraphrasing & Summarizing, the Paragraph Writing Strategy (i.e., writing topic sentences), Listening and Notetaking (auditory summarizing transferred to notes). The Inference Strategy prompts students to recognize big ideas present in text (e.g., main idea, theme) and answer inferential questions using textual evidence. KUCRL's two reading programs (Fusion Reading and Xtreme Reading) use a combination of reading strategies that support summarization skill building.	All CERs require students to summarize key learning on the visual devices. The cognitive steps built into each CER support students to develop summarizing statements. The Framing Routine and the Survey Routine are specially designed to support students to summarize the most important information while reading as well as support writing.
Self-Questioning (0.55)	Provides assistance in searching for needed information and increased understanding of the messages of the material to be learned. The internal dialogue of the learner is made verbal.	Overall, the cognitive steps within all reading LS support students to actively think while reading through self-questions. Specifically, the Self-Questioning Strategy helps students create their own motivation for reading. Students create questions in	The cognitive steps within all CER prompt students to analyze the content they are learning and support internal dialogue. For example, the *Question Exploration Routine* to help students understand a "critical

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		their minds, predict the answers to those questions, search for the answers to those questions as they read, and paraphrase the answers to themselves.	question" and to arrive at a main idea answer. Students learn to break apart a large question into smaller, more manageable questions, answer those questions, arrive at the main idea answer, apply the main idea to the subject area or related issue and generalize the idea.
Metacognitive Strategy Instruction (0.60)	Meta-cognition is thinking about thinking; include methods used to help students understand the way they learn.	An overarching goal of LS instruction is to develop strategic learners. The model stage within all LS prompts teachers to demonstrate overt and covert behaviors needed to perform the strategy. The verbal practice stage involves students memorizing the strategy steps and confirming their understanding of each step. A feedback loop includes teacher-student dialogue about strategy use. The generalization stage assists strategy transfer to other settings and tasks.	The Cue-Do-Review instructional sequence used with all CER supports co-constructed, collaborative learning of critical content and relationships among content. CER devices support students to express their metacognitive thinking in speaking and writing. Specifically, the Unit Organizer Routine draws attention to metacognition and how this connects to learning within the unit.
Concept Mapping (0.64)	The creation of graphic representations of course content with concepts can be arranged	*Alignment not as clear	SIM CER contains three specific devices to support student learning of content concepts or

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	hierarchically, and that students learn best by arranging new information in relation to information they have already mastered. Key to concept mapping is that students themselves are taught to create the learning tool by which they then will master course material.		big ideas: Concept Mapping, Concept Comparison, and Concept Anchoring. However, critical to Hattie's definition of Concept Mapping is the students creating their own tools or maps to master the content. The ORDER Routine teaches students how to determine text genre and then to design a graphic organizer that is meaningful for their own learning.
Class Discussion: discourse (0.82)	A form of instruction in which students are invited to speak about the topic at hand. It involves much more than a teacher asking a class a question, then another, etc., but involves students discussing with each other, often prompted from an open and not closed set of questions.	Within each stage of LS instruction, teachers prompt frequent and varied student responses and teacher-student dialogue about strategy use. In the verbal practice stage, the purpose if for students to verbalize their understanding of the strategy steps and purpose. The LS manual provides a set of open-ended questions. Students explain the cognitive process through whole group and partner activities.	The "do" within the Cue-Do-Review instructional sequence means learning is co-constructed and collaborative. To include student voice on the CER device, teachers are skilled at eliciting input, question-asking, shaping responses, and all-student-response engagement techniques, including partner or group discussion.
Organizing Conceptual Knowledge	The practice of structuring and connecting ideas within a subject	*Alignment not as clear	

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(0.85)	area allows students to build a deep understanding of concepts by identifying relationships, patterns, and key principles, rather than just memorizing isolated facts; this often involves strategies like using analogies, comparing and contrasting concepts, and applying knowledge across different contexts to facilitate meaningful learning.		With CER instruction teachers identify content concepts and use the cognitive process of the linking steps to visually organize knowledge and to guide students to link academic content to other areas and to real world applications.
Identifying Similarities and Differences (1.32)	Students break a concept into its similar and dissimilar characteristics allowing students to understand and to solve complex problems by analyzing them in a more simple way. It involves four concepts: comparing, classifying, creating metaphors, and creating analogies.	*Alignment not as clear	The Concept Comparison Routine prompts students to first examine the characteristics of each separate concept to more deeply observe similarities and differences. Then, the routine prompts students to think abstractly about the categories of similarities and differences.

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Transfer strategies (0.86)	For learning to be effective, students must be able to make a spontaneous, unprompted, and appropriate transfer of a learning or problem-solving strategy from one context to another. This can be near transfer to new problems similar to the instruction, or far transfer to new situations and domains.	The *Generalization Stage* as part of LS instruction has four phases: orientation and activation of strategy use within and outside the class, adaptation to metacognitively similar tasks and how to integrate two or more learning strategies, and maintenance data collected on strategy use with practical tasks in varied settings to promote long-term use. The *Generalization Stage* includes goal setting for strategy use in varied settings. Generalization includes asking the general education teachers to prompt and expect the use of strategies that students have mastered.	Routine use of CER encourage generalization across time and settings. The cognitive linking steps within each CER also prompts students to transfer the routine to other situations, tasks, and context. As one example, the Extend Understanding step in Framing Routine prompts students to apply content on the Frame to a next step in their learning. The "Review" of the Cue-do-review instructional sequence also supports developing the routine as a personal use strategy.
Mastery learning (0.61)	Based on the premise that all students can eventually learn difficult material, although they will learn at different speeds, this practice calls for all students to learn material at equivalently high (or mastery) levels. It often involves providing formative tests and asking students to repeat	In Learning Strategies classrooms, students are given the goal of demonstrating 80% mastery of grade level material; however, students begin practice at their instructional reading level and practice is scaffolded until they score 80% mastery of content at their enrolled grade level.	Content teachers use CER to support students in mastering concepts through joint ownership of the visual devices which focus on the why for procedures and conceptual knowledge. For example, a Unit Organizer serves as a road map for students as they learn during a unit, and they then

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	lessons until they have mastered them.		demonstrate mastery of unit content with an assessment.
Explicit teaching strategies (0.57)	Explicit instruction is characterized by a series of supports or scaffolds, whereby students are guided through the learning process with clear statements about the purpose and rationale for learning the new skill, clear explanations and demonstrations of the instructional target, and supported practice with feedback until independent mastery has been achieved. Explicit teaching strategies typically involve instruction, guided practice, and teaching to mastery.	Stages of instruction use elements of explicit instruction delivery: clarity of language and purpose, reduction of cognitive load with scaffolded approach, frequent and varied student responses, frequent affirmative and corrective feedback, and deliberate activities for generalization of strategy to practical uses	Cue-Do-Review instructional sequence prompts a supportive learning experience for students; "I do, we do, you do" approach can be used to move CER use from whole class construction to independent student strategy use

References

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