Putting the Learner First: Connecting Visible Learning and Guided Inquiry

By Dr Carol A. Gordon

John Hattie caught the attention of educators when he explored the questions: 'What works in the classroom? What are the tried and true teaching methods that consistently produce results?'. You are probably familiar with John Hattie whose work in New Zealand and Australia resulted in 'Visible Learning'. He conducted over 800 meta-analyses of 50,000 individual research studies that included 250 million students. From this work a database of successful educational practices continues to grow.

Hattie's evidence-based approach applied these practices in his books, *Visible Learning* (2009) and *Visible Learning for Teachers* (2012). Hattie matched the instructional practices to three phases of learning: surface learning, deep understanding, and transfer of what is learned to new situations. A perfect example of research-to-practice! This article explores the links between Visible Learning, as well as mastery and competency-based learning principles, and Guided Inquiry to demonstrate how teacher-librarians can connect their evidence-based work with the best practices of classroom teachers.

How are Visible Learning and Guided Inquiry similiar?

Guided Inquiry (GI) is:

> *. . . carefully planned, closely supervised targeted intervention of an instructional team of school librarians and teachers to guide students through curriculum based inquiry units that build deep knowledge and deep understanding of a curriculum topic, and gradually lead towards independent learning* (CISSL 2016).

GI is based on the idea that learners need help when they struggle to use information to build new knowledge. Like Visible Learning, it is evidence-based. Vygotsky's (1978) Zone of Proximal Development, a foundational theory of GI, posits that learners enter this zone when they can no longer move forward without help. Kuhlthau (1983) identified this as a Zone of Intervention when teacher-librarians can provide support to learners as they move through the six stages of the Information Search Process shown in Table 1.

Table 1: The Information Search Process

STAGES	1.Task Initiation	2.Topic Selection	3.Exploration	4.Focus Formulation	5.Information Collection	6.Presentation
Feelings	**Uncertainty**	**Optimism**	**Confusion** **Frustration** **Doubt**	**Clarity**	**Sense of direction; confidence**	**Satisfaction or disappointment**
Thoughts	**Vague**	→		**Focused**		**Increased self-interest** **Increased Interest**
Actions	**Seeking relevant information** **Exploring**	→	→		**Seeking pertinent information** **Documenting**	

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(Adapated from Kuhlthau, 1983)

This staged, information processing model applies to learners as they work independently or in groups to work on an information task that requires the use of resources and technology. The goal is for every learner to transform the found information into new knowledge. What is unique about Kuhlthau's work is that it is evidence-based, i.e., it is the only model of information processing that has been validated through empirical research that demonstrates the ISP model applies to information users of all ages in a variety of library settings.

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This is important because a research-based model is predictive. The ISP addresses the feelings, thoughts, and actions of all learners as they progress through the ISP model. If learners receive the help they need within each of the ISP states their feelings will progress from uncertainty to confidence as their thoughts move from vague to focused and their exploratory actions result in documentation.

The ISP model, or Guided Inquiry, is linked to Hattie's work through interventions that teacher-librarians and classroom teachers use to support and assess learners' progress. For example, Hattie's model of Visible Learning looks at learning outcomes in contexts such as literacy with an eye toward specific goals such as building vocabulary. The ISP may look at vocabulary as a marker for understanding as the learner builds a concept map of what s/he has learned.

Despite the differences in focus, both approaches rely on the concept of authentic, or performance-based assessment that uses tools such as visualisation, journaling, double-entry journaling, peer review, concept mapping, brainstorming, collaborative analysis of visuals, and various digital tools (e.g., WordSift, blogging, and Pixton) to supply evidence of learner progress.

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Visible Learning and Guided Inquiry share the following characteristics:

- **Formative assessments**. Authentic, or performance-based assessment, makes the learning, or lack of it, visible to the educator who notices what works and what doesn't. This is critical to teachers and teacher-librarians who react to the evidence to revise their work, and in so doing offer learners opportunities to revise their work. This is how learners get to Hattie's Zone of Desired Effects. Hattie's quantitative measure of effect size is a barometer for charting the influence of any given instructional practice in the database compiled from meta-analysis of researched instructional practices. This measure objectifies educators' decisions about whether the learner has experienced Reverse Effects, Developmental Effects, or the Zone of Desired Effects. The ISP offers a context for applying Hattie's system, and it also provides a qualitative assessment through the learning outcomes, or Presentations generated in the fifth ISP stage, as well as the formative assessments accumulated in every ISP stage that track progress. This kind of personalised learning, rather than a one-size-fits-all approach, through the Guided Inquiry and Visible Learning ensures that no learner is abandoned at any stage of his or her learning.
- **Self-assessment**. Teacher-librarians ask students to self-assess prior to completing their work for grading. One method is the use of sticky notes, for example, in the Information Collection stage of the ISP in order to 'mark' text in their information resources as a way of questioning the author. Hattie offers a tool, shown in Table 2 that helps students understand success criteria so that they can assess their own progress. For example, they may use sticky notes to identify the following choices they may make about their understanding:

  Table 2: Tracking Understanding

I do not yet understand I need coaching	I am starting to understand I need coaching but want to try some on my own
I understand I make a few mistakes so I'm working through these	I understand very well I can explain this to others without telling them the answers

(Fisher, Frey & Hattie, 2016, p. 31)

> In both cases learners are interacting with the content of learning as they confront and document their understanding.

- **ISP Stages and Surface, Deep, and Transfer Learning**. The ISP stages correspond to Hattie's distinction among surface learning, deep understanding, and transfer of new knowledge. In the early ISP stages learners are activating their prior knowledge and experience (1.Task Initiation), 2. Topic Selection, and 3. Exploration of the topic. In these early ISP stages learners are struggling with facts. They enter the phase of deep understanding when they begin 4. Focus Formulation: they begin to recognize a problem or challenge and hypothesise about methods or solutions. In this decision-making stage learners begin to appreciate the complexity of their topics. In 5. Information Collection learners begin to collect information, which includes data should they wish to use experimental methods. In this stage they may confront conflicting knowledge as they make decisions about information that is relevant and useful. The depth of understanding grows as they not only collect, but begin to assess and evaluate information. Learners of all ages can be successful in using qualitative and quantitative methods of analysis to draw conclusions, construct an argument, or resolve contradictions in the evidence. This ISP stage sows the seeds for transfer of knowledge to new situations as learners enter the creative stage of 6. Presentation where they use what they have learned to create to express their new knowledge in a format of their choice. These learning outcomes are the object of summative assessment whereby educators determine how well learners have attained the goals of instruction, or desired result.
- **Mind Frames for Teachers**. Hattie summarizes research findings for 'what works' for classroom teaching in ten mind frames for teachers that will sound familiar to teacher-librarians.

I co-operate with other teachers;
I use dialogue, not monologue;
I set the challenge;
I talk about learning, not teaching;
I inform all about the language of learning;
I see learning as hard work;
Assessment is feedback to me about me;
I am a change agent:
I am an evaluator;
I develop positive relationships. (Fisher, Frey & Hattie, 2016, page 18)

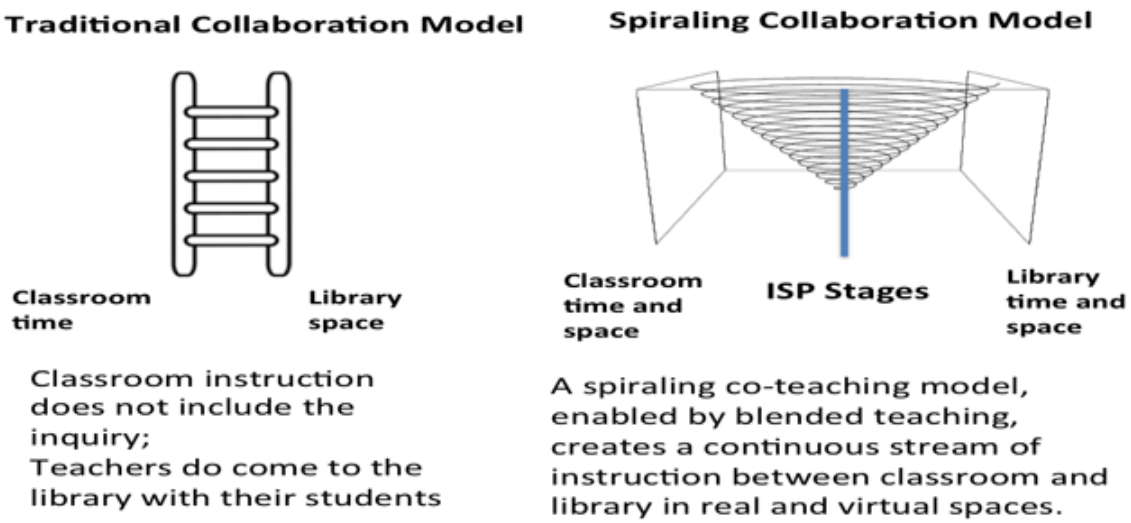
- **Teacher-Learner Relationships**. The methods of Visible Learning and Guided Inquiry are built on relationships that grow from teacher creditability and high levels of trust among learners for all, not some learners, through interaction and communication. Teacher-librarians know these relationships are basic to defining and developing their role in schools. The challenge is for them to work with large numbers of students in diverse contexts that include individual interactions, small groups, and classes. Rarely can teacher-librarians, despite their best efforts, claim that there is equity of library services and instruction for all students in their schools. The spiraling collaboration model that places the teacher in the library and the teacher-librarian in the classroom, in response to learner needs, ensures equity for all learners to attain the competencies they need. Hattie's Restorative Conferencing provides protocols for building positive relationships with students that will also sound familiar to teacher-librarians.

Display student work;
Share class achievements;
Speak to the accomplishments of all students;
Be sincere in their pride in their students and make sure that pride is based on evidence, not generalized comments;
Look for opportunities for students to be proud of themselves and of other students or groups of students;
Develop parental pride in student accomplishments;
Develop pride in improvement in addition to pride in excellence. (Fisher, Frey & Hattie, 2016, page 14)

A New Way of Looking at Collaboration Between School Library and Classroom

Why is Hattie's work important for the instructional practice of teacher-librarians since his research and teaching methods are oriented to teaching in the classroom? It is critical for teachers and teacher-librarians to find common ground for linking their instruction through a reciprocal collaboration that spirals between classroom and library. (Stubeck, 2015) The model, shown in Fig. 1, used the Information Search Process (ISP) as the backbone for a revolving collaborative model in which classroom and library space, real and virtual, supports the flow of expertise of teachers and teacher-librarians to share and deliver instruction as needed. Note that this model is independent of school scheduling and the traditional collaboration model whereby the teacher and teacher-librarian function in parallel, dividing and limiting their teaching to knowledge in the classroom and information skills in the library.

Figure 1: Reciprocal Spiraling Collaboration Model



(Gordon, C.A., 2015)

While neither teacher-librarians nor teachers are expected to have the same level of expertise in their specialist areas, they can support learners as they build knowledge and skills building in either venue. For example, the teacher-librarian may introduce Task Initiation in the school library for one lesson and the teacher may continue to support learners in the classroom as they use print and digital resources to activate their prior knowledge and prepare for Topic Selection. While it makes sense for the Exploration stage to take place in the school library, it can easily be extended to the classroom or home by using a digital library of resources that the teacher-librarian makes accessible on the library/project website. Each ISP stage can be extended in time and space to allow more time on task and more intervention as needed.

It is no longer enough for teacher-librarians to supplement classroom teachers in an alternating, side-by-side model of traditional collaboration. Instead, new pedagogies, can take place in classrooms and in school libraries. The following best practices of Visible Learning, as well as mastery/competency-based learning can take place in either venue.

- Personalised, hands-on learning;
- High expectations for all learners;
- Assessment of progress as well as achievement;
- Development of learners' reflection, self-assessment and revision;
- Content creation in maker spaces;
- Open access digital resources and tools;
- Integration of digital technology as learning environment with traditional learning spaces;
- Deep understanding of content;
- Transfer and application of what is learned to new situations;
- Strong focus on print and multimedia literacies that develop comprehension and interpretation.

Such practices require a more intensive and integrated collaborative model in which teachers and teacher-librarians are comfortable with each other's pedagogy as the commonalities between classroom and library practices outnumber the differences. Teachers need to know the ISP stages, the role of information processing in learning, and the interventions that help learners become more proficient information users. Teacher-librarians need to know about best classroom practices, such as Visible Learning and mastery/competency-based learning. If information literacy is going to have a place

at the table of 21st century education learning in the school library will become continuous and ongoing, rather than episodic, for ALL learners. The partnership between teachers and teacher-librarians can evolve from a focus on mutual intent to a commitment to mutual implementation of school library and classroom best practices. Rather than being the guide on the side, or the partner who lives next door, teacher-librarians and teachers can move out of their silos to inhabit common ground where they build a shared technical culture of educational methods, tools, desired outcomes.

How are Visible Learning and Guided Inquiry Linked to Literacy?

Fraser and Frey collaborated with Hattie to write Visible Learning for Literacy (2016) to apply the principles of Visible Learning to Literacy. Likewise, the author of this article applied research-based reading strategies that help learners to develop comprehension to ISP stages (2010). The strategies are documented in Goudvis & Harvey (2007) who advocate for raising learners' consciousness of their comprehension when they are reading so that they can apply the strategies to fix their comprehension when it breaks down. These strategies, which align with ISP stages, fall into the following categories: Making connections, questioning, visualizing and inferring, determining importance, and synthesising information. For example, in the Task Initiative stage (Table 1) learners experience uncertainty as they try to orient to the inquiry task. The teacher-librarian provides learners with activities, such as working in groups to interpret photographs of U.S. Civil War scenes. They activate their prior knowledge and experience by sharing what they already know about the civil war that is the context for their inquiry tasks. This prepares learners to build knowledge based on what they already know. It is also a strategy that supports reading comprehension. Table 3 (Gordon, 2010) contains examples e reading comprehension strategies that can also serve as ISP interventions.

Table 3: ISP Stages and Reading for Understanding Strategies

ISP Stage	Reading Strategy	Print Interventions	Digital Interventions
Task Initiation	Activate prior knowledge Visualize	K-W-L Chart Visuals & Reflection Sheet	Wordsift Digital K-W-L
Exploration	Ask questions 'I wonder…?' 'What if…?'	Brainstorming	Blogging Twitter
Topic Selection	Distinguish between main/supporting ideas	Subject search in a subscription database	Wordle
Focus Formulation	Decide what's important Make connections Text-to-self Text-to-world Text-to-text	Relate focus to personal interests, family issues Making connections Customized K-W-L chart that helps students make connections between what they know and new text.	Social networking tools Websites relevant to the developing focus
Information Collection	Summarize Synthesize Make predictions	Graphic organizers Concept mapping Double-entry journal	Inspiration Kidspiration
Presentation	Make inferences Draw conclusions	Peer Review: Praise, Question, Polish	Edit a Wikipedia article

(Gordon, 2010)

The reading strategies may not be restricted to one ISP stage and they can support the development of information skills and/or critical thinking.

It is becoming increasingly apparent that information skills are reading skills and thinking skills. "Information use, built on the basic information skills of searching, retrieving, and evaluating information, cross the border into critical thinking skills where learners apply, analyse, evaluate, and synthesize, or create" (Gordon, 2010). This idea has broad implications for what teacher-librarians teach, how they collaborate with their colleagues, and how they re-define their role in schools.

Such a view positions school libraries at the nexus of information use, literacy, and learning.

Are we ready for the challenge?

References

Center for International Scholarship in School Libraries (CISSL) (2016) 'Guided Inquiry' Accessed 7 August 2016 at: http://cissl.rutgers.edu/joomla-license/guided-inquiry.

Fisher, D., Frey, N. & Hattie, J. (2016) *Visible Learning for Literacy: Implementing the Practices that Work Best to Accelerate Student Learning*, Thousand Oaks CA: Corwin.

Gordon, C. A. (2010) 'The Best of Both Worlds: Reading in Print and Digital Environments' in *Synergy* 8 (1). Accessed 1 August 2016 at: http://www.slav.vic.edu.au/synergy/volume-8-number-1-2010/research-into-practice/46-the-best-of-both-worlds-reading-in-print-and-digital-environments.html.

Gordon, C. A. (2015) 'Everybody Wins! School Libraries and Equitable Access for All Children', American Association of School Librarians Annual Conference, November 5-8, 2015, Columbus, OH.

Goudvis , A. & S. Harvey. (2007) *Strategies that Work: Teaching Comprehension for Understanding and Engagement*, 2nd edition. Portland, ME: Stenhouse Publishing.

Hattie, John (2009) *Visible Learning: A Syntheses of over 800 Meta-Analysis Realting to Achievement*, Routledge: United Kingdom.

Hattie, John (2012) *Visible Learning for Teachers: Maximising Impact on Learning*, Routledge: United Kingdom.

Kuhlthau, C. C. (1983) *The Library Research Process: Case Studies and Interventions with High School Seniors in Advanced Placement English Classes using Kelly's Theory of Constructs*, Rutgers, the State University of New Jersey.

Stubeck, C. J. (2015) 'Enabling Inquiry Learning in Fixed-Schedule Libraries: An Evidence-Based Approach' in *Knowledge Quest*, 43 (3), pp. 28-34.

Vygotsky, L. S. (1978) *Mind in Society: the Development of Higher Psychological Processes*, Cambridge, MA: Harvard University Press.

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