



From Literacy to Inquiry: A Holistic Approach to Literacy Development in Selected Australian Schools

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Meeting:

114 — Beyond the United Nations Decade of Literacy: what libraries can do — Literacy and Reading Section with National Libraries

Abstract:

This paper presents an inquiry-based approach to literacy development in Australian schools, funded through the Australian Government Quality Teacher Program in 2008-10. It provides a brief overview of research focusing on school libraries and reading and literacy development, and describes an holistic approach to literacy development based on Kuhlthau's Information Search Process as a research-based and validated instructional framework. According to Kuhlthau's research, the Information Search Process has been found to occur in seven stages: Initiation, Selection, Exploration, Formulation, Collection, Presentation, and Assessment. These stages provide the basis for developing a range of literacies, including resource-based competencies, thinking-based competencies, knowledge-based competencies, reading-to-learn competencies, personal and interpersonal competencies, and learning management competencies.

Background and Literature Review

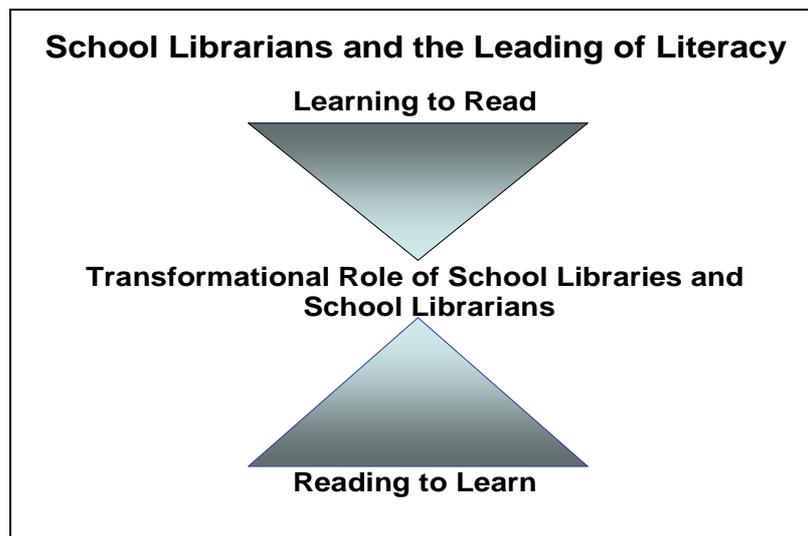
The IFLA /UNESCO School Library Manifesto posits that the fundamental mission of school libraries is for students to “achieve higher levels of literacy, reading, learning, problem-solving and information and communication technology skills”. Historically school libraries have fostered literacy development by focusing on reading enrichment programs, and developing a set of explicit information skills, under the umbrella of information literacy. A comprehensive body of research, for example as documented in *School Libraries Work!* (Scholastic, 2008; Haycock 2003; Lonsdale 2003) provide extensive and diverse evidence that school libraries play a significant role in realizing that mission.

However, there are many definitions of literacy, and what it means to be considered "literate," varies from country to country and from educational system to educational system. A common assumption underpinning most definitions is that a person has to be able to cope with some reading and/or writing tasks. Hertrich, of the Ofsted Inspectorate for children and

learners in England takes this further, and claims that literacy is the capacity to recognize, reproduce and manipulate the conventions of text shared by a given community” (National Literacy Trust, 2006, p. 1). In other words, literacy goes beyond merely acquiring reading and writing techniques; rather, it is the transformation, communication and dissemination of text and the development of meaning and understanding. Similarly, Freire (1973) claims: "To acquire literacy is more than to psychologically and mechanically dominate reading and writing techniques. It is to dominate those techniques in terms of consciousness; to understand what one reads and to write what one understands: it is to communicate graphically. Acquiring literacy does not involve memorizing sentences, words or syllables - lifeless objects unconnected to an existential universe - but rather an attitude of creation and re-creation, a self-transformation producing a stance of intervention in one's context."

Against this backdrop, school libraries and school librarians are critical in the reading-literacy-knowledge life cycle, because they are the transformational link, the bridge between children learning to read, and children continuing to read, to know and to understand, as shown in Figure 1.

Figure 1: From *Learning to Read* To *Reading to Learn*



Reading is the Key to Understanding

The school library as a transformational bridge in the reading-literacy-knowledge life cycle is well documented in a considerable body of research dating from the 1930's that explores how dimensions of reading are enhanced when school librarians provide access to reading materials, promote reading, and integrate literacy with their instruction. The importance of access to reading materials is demonstrated by Cleary's study (1939) which reported that students in a school with no school library averaged 3.8 books read over a four-week period while students from a school with a library averaged 7.6 books. Gaver (1958, 1963) found that students with access to school libraries read more than those who only had access to centralized book collections without librarians, and read more than children who only had access to classroom collections. Her findings showed a strong correlation between the size of the library collection and the amount the students reported reading. This finding is supported by Lowe (1984) who found that students in schools with libraries read and enjoy reading more than students in schools without centralized libraries. Research by Allington (2002), Gottfried, Fleming & Gottfried (1998), McQuillan, (2001), and Pack (2000) provide further

evidence that ample access to books and magazines predicts higher reading achievement. Collective evidence suggests that the number of books per student in a school library is a significant predictor of reading achievement. In addition, students who read more have more books available at home (Morrow, 1983; Neuman 1986; Greaney & Hegarty, 1987). In recent years, important reading research has been undertaken by Krashen (1985, 1988, 1989, 1993, 1995, 1997, 2001). Collectively these studies explicate further the contextual and instructional dimensions of reading development fostered by the school library. The evidence indicates that students get a large portion of their reading materials from libraries. Students read more when they have a quiet, comfortable place to read. In addition, the free voluntary reading promoted by access to reading materials has a positive impact on reading comprehension, vocabulary, spelling ability, grammar usage and writing style. In turn, access to books and magazines predicts higher reading achievement. An ample supply of books is key to the fostering of independent and engaged readers, particularly English Language Learners (Elley, 1992). Students who read more typically have higher literacy development, as well as overall higher student achievement. Rutter's study of high-achieving schools in London (1979) found that such schools invested substantial budget and effort to ensure libraries were open after school as well as during the day, a finding later supported by Alexander (1992).

Ample access to books fosters more borrowing of reading materials, and is particularly enhanced with the presence of a school librarian to guide the choice and to encourage motivation and enjoyment of reading. Von Sprecken, Kim & Krashen, (1998) found that explicit attention from a librarian or other helper can get students interested in books and help them to discover a "home run" book. According to Didier (1982), the intervention by a professional school librarian increased use of newspapers and access to the library and achievement in reading by elementary school students. Thorne (1967) found that augmented library services, with attention to reading literacy programs, resulted in greater gains in reading comprehension, with boys gaining most. In addition, the school librarian supports reading for entertainment and personal growth by championing free choice (Lu & Gordon, 2008), and validating the reading of alternative media such as magazines and websites (Lu & Gordon, 2008). This is a critical element in reading engagement. Programs that promote reading throughout the school year, as well as during the summer, are critical to maintaining reading levels. Research reports that students who do not read during the summer typically lose one to three months on standardized reading tests scores from June to September. The cumulative effect of reading loss causes an achievement gap as children from lower socio-economic backgrounds experience the greatest reading losses. Researchers conclude that the achievement gap in our schools is a summer reading gap (Cooper, 2003). The role of the librarian in providing free choice and reader's advisory beyond the scope of curriculum is especially critical for low-achievers and struggling readers. These students are seeking reading experiences that are relevant to their own lives and that provide emotional and psychological benefits (Lu & Gordon, 2008). This points to the need to provide materials and structures that help students grow, not only cognitively, but psychologically, emotionally, and socially, through their reading experiences (Lu & Gordon, 2007).

In addition to helping students read in traditional print environments, school librarians help them negotiate digital text. Library collections are no longer static and fixed, nor is it possible to mediate them. All students are eventually challenged by texts they retrieve from subscription databases, Internet web sites, and electronic books. Reading sources, whether informational or fictional, can no longer be leveled, labeled, and packaged for consumption by students. This is especially true of electronic resources. More than half of respondents to a

survey believe reading will be different in ten years (The Pew Internet & American Life Project, 2010). There will be a new fluidity in media creations, with visual representations and storytelling emerging as important to “screen” literacy. In addition, recent research indicates students read digital text differently. Rowlands & Nicholas (2008) report that young information searchers in digital environments skim, scan and squirrel, or hoard information, but do not read it. New “forms” of reading are emerging, such as ‘power browsing’ horizontally through titles, contents pages and abstracts. (Rowlands & Nicholas, 2008).

My own research, and that of Hay in Australia, on how school libraries help students learn leaves provides further evidence of the central place of the school library as a transformational bridge in the reading-literacy-knowledge life cycle of students. Table 1 below shows the findings from three studies: Student learning through Ohio School Libraries (Todd & Kuhlthau, 2005; Todd, Kuhlthau, & Tepe, 2004) which involved 13,123 students; Student learning through Australian School Libraries (Hay, 2005) which involved 6,718 students, and Student learning through Delaware School Libraries (Todd 2005) which involved 5,733 students.

How helpful the school library is to you with your general reading interests.	Place	Most helpful	Quite helpful	Some help	A little help	No help /Does not Apply
The school library has helped me find stories I like	Delaware	39.8	21.5	15.1	11.7	11.9
	Ohio	29.3	19.4	17.2	18.7	15.5
	Australia	36.4	24.3	15.5	12.8	10.9
The school library has helped me read more	Delaware	30.4	20.7	16.1	16.1	16.7
	Ohio	20.9	17.0	17.2	24.3	20.6
	Australia	29.2	21.8	17.0	17.1	15.0
The school library has helped me become a better reader	Delaware	29.4	19.5	16.2	16.2	18.8
	Ohio	18.2	15.2	15.8	25.2	25.6
	Australia	27.2	20.3	16.7	17.3	18.4
The school library has helped me enjoy reading more	Delaware	30.2	17.4	14.7	18.2	19.5
	Ohio	20.9	14.0	16.3	25.5	23.3
	Australia	27.6	19.0	16.8	18.4	18.1
The school library has helped me be a better writer	Delaware	22.3	20.8	17.9	17.7	21.3
	Ohio	15.5	16.9	17.9	24.7	25.1
	Australia	20.8	20.3	19.7	18.7	20.4

A more recent study of school libraries in New Jersey provides further insights. In this 2009 study involving 765 school librarians (Todd, Gordon & Lu, 2010), it was found that school librarians in New Jersey make an extensive and diverse contribution to reading and related activities in the school. The top 10 reading and related activities, with percentage of involvement, were:

- Literature displays (89.4%)
- Book talks to promote literature for recreational reading (77.5%)
- Encouraging any free voluntary reading outside of school (77.1%)
- Use databases and/or websites to encourage reading (75.7%)
- Any reading incentive program within the school (59.7%)
- Book talks to promote curriculum related reading (57.7%)
- Encouraging any voluntary reading activities, such as DEAR, inside of school (56.7%)

- Self-help information such as brochures, web links, or book lists (55.5%)
- Books or information to help students cope with challenges or sensitive topics (54.4%)
- Summer reading programs (43.8% (Todd, Gordon & Lu, 2010, 168-173).

The current reading and literacy challenge

It is of greatest importance that school libraries continue to work to develop and sustain a culture of reading. While these findings are encouraging, and show that school libraries do help students on a range of reading dimensions, they also clearly suggest challenges to be addressed. In the context of the definition of literacy, one of the key challenges centers on the reading as central dynamic in the transformation, communication and dissemination of text and the development of meaning and understanding. At the heart of reading is the development of meaning for students: knowledge and deep understanding of their curriculum topics, the world around them, and themselves. When reading is at risk, it is not just school libraries that are at risk; more critically, it is knowledge that is at risk. Alvin Toffler expressed it this way: “The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn” (Toffler, n.d., 6). This raises a fundamental question: the connection between literacy and reading development, and learning, and the role of school libraries in enabling that connection, not just in terms of how young people read transformatively to build deep knowledge and understanding, but how this engagement can be enabled through the school library

At times one hears of school librarians lamenting the fact that they see many meaningless forms of library research assignments, projects and reports, where students seem to undertake low-level learning activities that do not give much evidence of learning new knowledge, and where students seems to be engaged in the “transport” of text rather than the “transformation” of text into deep knowledge and understanding for themselves (Limberg, 1999). The transport of text is shown not only in cutting and pasting of text, but also in the stockpiling of facts without imposing any organizational or reflective structure on them, or without constructing both local and global coherence to ideas (Todd, 2006). While it might be seen as a failure on the part of teachers, it is also a challenge for the school librarian to position herself / himself as the information learning specialist – one who brings specialist knowledge of learning through information, and who is empowered to lead the school community in developing effective instructional interventions that guide students meaningfully through their information inquiries to develop deep knowledge and deep understanding of their topics. School libraries and school librarians as transformational agents are about enabling students to transform information into new knowledge, and this is a complex, carefully designed and guided process of reading and literacy development.

If the school library is to be integral to the reading-literacy-knowledge life cycle of our students, then primary focus has to move from “finding stuff”, from finding and stockpiling facts, to a focus on the construction of on deep knowledge and deep understanding. This means moving from low-level learning activities focusing on the transport of text to high-level activities focusing on the transformation of text. This challenges us to rethink our instructional involvement in the reading and information literacy. Research evidence suggests that the central focus of information literacy instruction is resource-based: finding, accessing and evaluating information sources, rather than knowledge-based, that is, engaging students in the transformative and constructive process of building knowledge from information (Todd, Gordon & Lu, 2010; Todd, 2006). This calls for a shift in instructional focus beyond finding and evaluating information sources, to guiding and empowering students to take found information and critically reflect on it, impose personal organizational

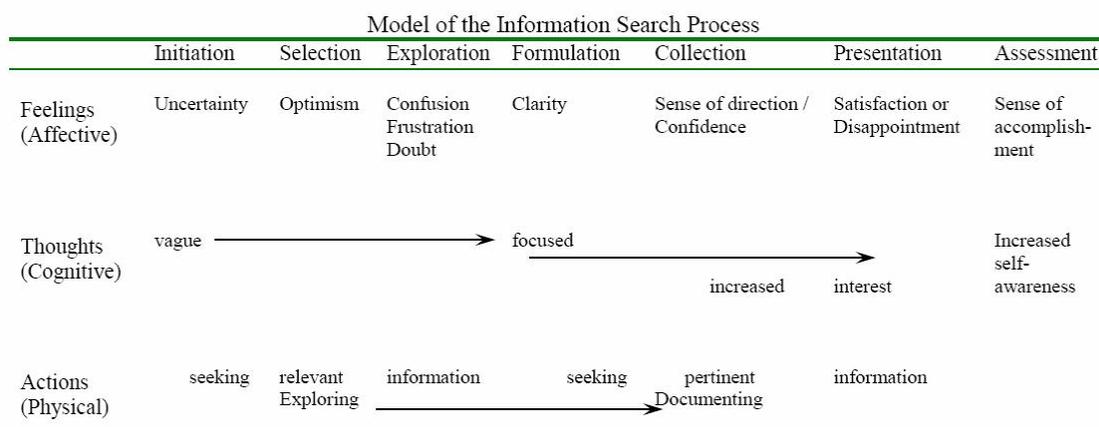
frameworks on it, establish and identify interrelationships, and to develop personal viewpoints, conclusions, and positions. This focus shifts students from the found information, to actively searching for and constructing meaning and understanding of the found information, and through it, encountering alternative perspectives and conflicting ideas and learning how to integrate this into existing knowledge and create new knowledge for themselves. This is at the heart of reading and literacy.

Instructional framework

The instructional approach proposed in this paper takes a more holistic approach to literacy development, situating it within the information- to- knowledge journey of students, and basing it on a body of established research to inform the instructional process. There is increasing criticism of the plethora of information literacy models that exist today, many of which are without theoretical foundation, and not derived from systematic research to be strongly tested and validated models; they often do not take into account research validated patterns of information seeking. This criticism also focuses on its predominant ‘resource’ focus, rather than any strong focus on the ‘‘use’’ concept which is embedded in the rhetoric of information literacy. In the information literacy discourse, ‘‘use’’ is largely undefined and explicated, and giving little attention to the complex cognitive processes required to engage with the found information and to transform information into deep knowledge, actions, and decisions. In addition, educational systems around the world are adopting orientations and practices that can be labeled as evidence-based education. Central characteristics include an emphasis on scientifically-based research to provide foundation for learning and instruction, and a focus on scientifically-based research as a framework for professional decision making and action (Whitehurst, as reported in Kersting, 2003, 1; Davies, 1999, 109)..

Against this backdrop and the concerns raised, Kuhlthau’s model of the Information Search Process is the instructional framework proposed as holistic framework for engaging students in the reading-literacy-knowledge development process. The Information Search Process was developed in the 1980s and refined in the 1990s through an extensive series of research studies ((Kuhlthau, 1986; Kuhlthau, 1988; Kuhlthau, 1989; Kuhlthau, Turock, George & Belvin, 1990; Kuhlthau, 2004). It is a research generated and validated model, and since its conceptualization and development, the model has been used as a framework and diagnostic tool for understanding the information search experience of people in a variety of library and information settings, and as a framework for developing instructional interventions to support the information-to-knowledge journey of people in a range of library settings, particularly school and academic libraries. A review of the application of this model to an extensive range of research and professional contexts is provided by Kuhlthau, Heistrom & Todd (2008). The model is founded on the belief that learning is a process of personal and social construction developed by influential 20th century educational thinkers such as John Dewey (1859-1952), George Kelly (1905-1967), Jerome Brunner (1915 -), Jean Piaget (1896-1980), Howard Gardner (1943 -) and Lev Vygotsky (1896-1934). The Information Search Process model is shown in Figure 2.

Figure 2: The Information search Process



According to Kuhlthau’s research, the Information Search Process has been found to occur in seven stages: Initiation, Selection, Exploration, Formulation, Collection, Presentation, and Assessment (Kuhlthau, Maniotes & Caspari, 2007, 19). These stages are named for the primary inquiry task to be accomplished at each point in the process. These six stages explain the thoughts, feelings, and behaviors students commonly experience in the process of learning from a variety of information sources. Instruction and guidance are provided in the form of strategic interventions that enable students to activate prior knowledge and experiences, build background knowledge, select a viable topic, explore a wide variety of information sources, formulate a focus, collect, evaluate, analyze, and synthesize information, and present a learning outcome that represents new understandings in innovative, meaningful and creative ways. This approach to learning across the curriculum is known as Guided Inquiry (Kuhlthau, Maniotes & Caspari, 2007). Embedded in the guidance provided by the school librarian are interventions that build competency in locating, evaluating and using information to construct their own deep knowledge and understanding through a combination of reflection strategies, social networking, and application of Web 2.0 tools.

Guided Inquiry is carefully planned, closely supervised targeted interventions of an instructional team of teachers and school librarians 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 (Kuhlthau, Maniotes & Caspari, 2007, p. 3). Through Guided Inquiry, students not just develop deep knowledge and understanding of their curriculum topics, they also systematically and explicitly develop capabilities – the skills, abilities and habits of mind – that enable them to prepare for, plan and successfully undertake a curriculum-based inquiry unit. Through working with information resources and ideas, students question, discover, think, reflect, and build deep knowledge and understanding of their curriculum topics. These capabilities build on and extend the information literacy framework that has become the hallmark of many school libraries over the last two decades, and include:

- *Resource-Based Capabilities:* These are abilities and dispositions related to seeking, accessing and evaluating resources in a variety of formats, including people and cultural artifacts as sources, and libraries. They also include using information technology tools to seek, access and evaluate these sources, and to construct and represent their own knowledge and understanding

- *Thinking-Based Capabilities:* These are abilities and dispositions that focus on substantive engagement with data and information, the processes of higher order thinking and critical analysis that lead to the creation of representations / products that demonstrate deep knowledge and deep understanding.
- *Knowledge-Based Capabilities:* These are the abilities and dispositions that focus on the creation, construction and sharing the products of knowledge that demonstrate deep knowledge and understanding.
- *Reading to Learn Capabilities:* These are the abilities and dispositions related to the transformation, communication and dissemination of text in its multiple forms and modes to enable the development of meaning and understanding.
- *Personal And Interpersonal Capabilities:* These are the abilities and dispositions related to the social and personal aspects of learning: about self as a learner, and the social and cultural participation in inquiry learning.
- *Learning Management Capabilities:* These are the abilities and dispositions that enable students to prepare for, plan and successfully undertake a curriculum-based inquiry unit. (Todd, 2010; Gordon 2009)

The Australian Guided Inquiry project

The Australian Guided Inquiry project was undertaken from late 2008-2010. It was funded through the New South Wales Association of Independent Schools/Catholic Education Commission Quality Teacher project, and part of a broader Australian Government Quality Teacher Program. Its focus centered on taking professional standards into practice, with emphasis on: Innovation in learning and teaching; Instructional interventions underpinned by research; Effective utilization of the information and technological landscape; Connected, shared learning – for teachers and students; Evidence-based practices; and Collaborative teams. The project involved collaborative teams of classroom teachers and teacher librarians working with classes from twelve independent schools in New South Wales implementing Guided Inquiry instructional units centering on selected curriculum objectives.

The purpose of the project was to (1) understand the dynamics of developing and implementing collaborative Guided Inquiry units, based on the Information Search Process model; (2) track and understand how students build on their existing knowledge of a curriculum topic and how their knowledge of a topic changes in the context of a collaborative guided inquiry unit; (3) examine the transformation and integration of found information into existing knowledge, and the creation of new personal knowing, and reflective processes; and (4) use some school-based tools for measuring and charting knowledge development. It is important to note that this was a professional development program, engaging the collaborative teams in professional development centering on Guided Inquiry, Guided Inquiry instructional design, and use of school-based assessment tools to chart the learning of students. Specifically, the project involved 34 teachers, 18 teacher librarian and 935 student participants.

The essence of this project was to engage teacher/teacher librarian teams to develop, implement, measure and evaluate curriculum units, underpinned by a range of instructional interventions to develop a range of information, technical and critical literacies, and employ a

range of evidence-based practices to track the development of student's knowledge and information capabilities, and to reflect on the learning outcomes and learning process. Kuhlthau's "Information Search Process", as documented above, was the instructional framework that underpinned the curriculum units. This instructional framework provided the basis for determining the range of competencies to enable students to develop deep knowledge of their curriculum topics. A holistic approach to literacy development was employed, based on the stages of the information-to-knowledge journey, and included resource-based competencies, thinking-based competencies, knowledge-based competencies, reading-to-learn competencies, personal and interpersonal competencies, and learning management competencies. These capabilities are the abilities and dispositions that enable students to prepare for, plan and successfully undertake a curriculum-based inquiry unit.

Following the professional training, each school developed an open-ended research task with Guided Inquiry scaffolding, which was carried out in the schools. Most projects were in Years 7-10, with 8 in History, 1 each in English and Personal Development, Health and Physical Education, 2 in Geography and 1 in Science. Two elementary schools were involved, with projects in Year 5 Geography and Year 4 Science. All projects had significant teaching input from teachers and teacher librarians.

Each inquiry unit involved:

- use of the Information Search Process as the instructional design framework;
- planning of instructional interventions to initiate the project, to help students select topics, build background knowledge, develop specific focus questions, analyze, synthesize, deal with conflicting knowledge, develop arguments, and develop personal positions and perspectives;
- an area of inquiry which allowed students freedom to develop their own focus questions;
- developing and using existing background knowledge;
- high quality resources for students and instruction in their use.

The project focused on:

- presence of teachers and teacher librarians at each stage of the process to guide and intervene, both in planned ways, and in unplanned ways which arose out of information provided by students in the Student Learning Through Inquiry Measure (SLIM) Reflection Sheets;
- process more than product, and most did not tell students what the product was to be until they had passed the Collection phase of the Information Search Process;
- the gathering of data from students at three points of the Information Search Process - at Initiation, at Collection, and at Assessment.

The instructional teams went beyond the traditional paired collaborations of class room teacher and school librarian, and at times included four or five educators working together. In some schools, gifted and talented teachers, teachers of children with special needs, literacy support teachers, reading support teachers, technology teachers and curriculum coordinators were substantially involved in the instructional unit of each school. This enabled instructional activities to be targeted and supported to meeting diverse student needs. Instructional interventions were developed by collaborating teams to directly support each stage of the Information Search Process. These were shared amongst the various teams through a wiki designed explicitly to help each other in the planning process. An extensive range of instructional activities were thus made available to all participants as examples of specific interventions. These included interventions such as "building background", "creating

questions”, “initial question development”, a range of “note taking” scaffolds, scaffolds to support analysis of information, developing deep perspectives, critical analysis, topic selection, and peer review processes.

A key features of the instructional interventions was a predominant focus on complex knowledge building and information transformation tasks, such as question formulation, analysis, synthesis, interrogating diverse viewpoints and perspectives, developing arguments, developing conclusions, addressing implications, critical reflection, and learning to structure their outcomes in ways that conveyed the complexity and richness of what they had learned. This was so that students could progress from collecting sources to engaging with the collected information to build deep knowledge and understanding. Typically these interventions are weakly developed in traditional information literacy instructional units.

As part of each curriculum unit, data were gathered from students using the Student Learning through Inquiry Measure (SLIM) Toolkit (Todd, et.al 2005). The SLIM toolkit was developed, tested and revised as part of an Institute for Museums and Library Services (IMLS) funded research project during 2003-2005 titled "The Impact of School Libraries on Student Learning". It was developed to provide an easy-to-use and reliable measurement toolkit to enable school librarian and teacher teams to show the growth of student learning through Guided Inquiry. The toolkit provides evidence of student learning in multidimensional ways including growth of knowledge of their curriculum topic, interest, feelings, and experiences during the inquiry process, and their reflections on their learning. The SLIM instruments (available at www.cissl.rutgers.edu) provide data at three stages of the students' inquiry process: at the Initiation stage of the research task, midway during the task (typically at Formulation stage of the ISP), and at the Assessment stage of the task. Data are collected through three short survey instruments which capture responses to open-ended questions as well as categorical responses.

The Australian schools in this project used the SLIM toolkit, with the following questions asked at each stage:

1. Write the title that best describes your research project at this time.
2. Take some time to think about your research topic. Now write down what you know about this topic.
3. What interests you about this topic?
4. How much do you know about this topic? Check (✓) one box that best matches how much you know. Nothing, Not much, Some, Quite a bit and A great deal
5. Write down what you think is EASY about researching your topic.
6. Write down what you think is DIFFICULT about researching your topic.
7. Write down how you are FEELING now about your project. Check (✓) only the boxes that apply to you. Confident, Disappointed, Relieved, Frustrated, Confused, Optimistic, Uncertain, Satisfied, Anxious or Other.

The third reflection sheet also included students' reflections on what they had learnt.

Achievements of AIS Project

The school teams were responsible for analyzing the data that were collected in their schools, using the handbook provided with the SLIM toolkit. As part of the grant reporting process, each school was required to submit a formal report of the process, including synthesis of learning outcomes, as well as reflections on the process and outcomes by the instructional teams. This is currently being analyzed and will be published in due course. Reflective

commentary compiled by each instructional team identifies eight key common dimensions as they relate to the reading-literacy theme of this paper. These are:

1. Teaching for enabling students to engage in quality research is simply hard work: engagement, reading for learning, writing to demonstrate learning, and constructing knowledge require complex planning, co-ordinated delivery and thinking about the whole learning journey of the student;
2. The ISP approach works as a key learning diagnostic: helps identify roadblocks in terms of: engaging with diverse information sources, reading for meaning, reading with focus, transitioning from reading to writing, providing analytical frameworks for engaging with various texts to construct meaning with focus and efficiency;
3. Developing students as quality researchers embraces multiple literacies that need to be fostered and taught. This goes beyond the traditional list of information skills; rather it involves visual literacies, social literacies, emotional literacies, and project management capabilities;
4. Valuing of staged approach and formative assessment along the information-to-knowledge journey: instructional support throughout the entire research process, and not abandoning students at the critical period of knowledge building, that is after the Collection stage of the ISP;
5. A key component of reading for meaning is building on prior knowledge, and connecting the desired learning outcomes to real world significance. This builds ownership of learning, interest and motivation;
6. Understanding of the complexity of knowledge building: teachers witnessed the struggle of students to narrow broad topics and develop deep focus questions that direct their inquiry; saw just how complex it was for students to engage in question formulation; and saw how students were challenged to craft arguments; conclusions, positions. Transforming found information into personally held knowledge is a key instructional challenge, and one that needs ongoing support, reinforcement and feedback;
7. Reading and writing for meaning takes time. Collaborative teams working together means that time, expertise and instructional load are shared, enabling focus on individual needs. A bonus is that through sharing of expertise, there is ongoing learning from one another as teachers; and
8. The interest and engagement of students as they developed their own focus questions and directed their own inquiry fostered further development of students' love of reading and desire to read more. Their research, which answering a focused question, provided opportunities to raise further questions and open up opportunities for pursuing personal interests.

The students provided substantive reflections on their learning process. Some of these reflections which explicitly center on reading and literacy dimensions are highlighted here.

At the heart of inquiry-based learning, students produce their own questions, work to improve their questions, strategize on how to answer the question, develop the knowledge building skills to answer the questions, and understand the real world value / implications of their questions in the answers they create. This is a central principle in relation to Guided Inquiry. Thinking is not driven by answers but by questions, and students found it challenging to formulate the focus questions that were at the heart of their research:

Question formulating was difficult and required a lot of thinking and deliberating. I loved making up my own questions. (This) made me more comfortable with what I was reading and researching.

Creating my own question was hard. I had to read so much stuff to get to it, and it was worth it

You have to really dig into all the ideas and understand them before you can come up with your own important question

Students found it challenging to analyze and synthesize ideas from the resources they had collected and read.

Before this task, I was very uncomfortable taking notes. After the library lesson on it, I felt that I knew the method but needed practice. Taking notes from multiple books, videos and websites really improved this skill.

You have to concentrate on your reading and topic in order to take the best notes

That making summaries and writing a range of notes before diving straight into the final project helps to eliminate some of those overwhelming and stressed feelings with so much to read.

The lessons we had on note taking were very helpful. Helped me select the different arguments and organize them

Students identified the connection between interest and engagement, and reading

I was very interested in my topic, it made me think what life was like back then. I want to read more about my topic.

I came away with many more questions that I am interested to read more about

The thing you have to know before you start researching is if you are interested in the topic or not. And if you are not, you will not make a big effort to find the information you want. So, always choose a topic that you are interested in! The reading will be easier

I learnt that having a choice of topic meant that I had freedom and individuality. You read what interests you. I enjoyed this because I was able to work on something no-one else did. More of this type of work would be good.

Students recognized the importance of reading across multiple forms and formats.

This project has helped me to acknowledge and use other sources such as documentaries, books and encyclopedias

You just can't skim read through one source and find your answer

I saw the value of multiple sources to cross check information for reliability and this makes you think more about what you are reading

Students recognize that the value of reading is in thinking and interpreting

That instead of just writing down the facts you also need to elaborate and interpret it. You have to really think about what you read and just not copy sentences that look good

All the steps were very time consuming but I can see how important they are now. You are made to go deep into the sources and not just grab bits here and there

Conclusion

The Information Search Process model describes feelings, thoughts, and actions in an information seeking task with a discreet beginning and end where considerable construction of knowledge takes place. The preliminary findings continue to support the extensive body of research findings on the usefulness of the model for instructional design in learning environments (Kuhlthau, Heinstrom & Todd, 2008). Inherent and crucial to a successful Guided Inquiry project is a holistic view of students' experience in the search process. In addition to cognitive processes, there are motivational and affective dimensions, and these play a critical role in shaping students' engagement in learning and the nature of that learning. Guidance and instruction in each stage of the Information Search Process provide rich opportunities to develop a range of literacy capabilities in a coherent and holistic way, and to support the construction of knowledge and understanding.

In the USA environment, The American Association of School Librarians' "Standards for the 21st Century Learner" (AASL, 2007) targeted for school librarians and classroom teachers are an important step in this direction. They are set within a knowledge construct, and are framed around four themes which center on skills (key abilities needed for understanding, learning, thinking, and mastering subjects); dispositions in action (ongoing beliefs and attitudes that guide thinking and intellectual behavior that can be measured through actions taken); responsibilities (common behaviors used by independent learners in researching, investigating, and problem solving), and self-assessment strategies(reflections on one's own learning to determine that the skills, dispositions, and responsibilities are effective). The four themes are: 1. Inquire, think critically, and gain knowledge. 2. Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge. 3. Share knowledge and participate ethically and productively as members of our democratic society. 4. Pursue personal and aesthetic growth. At the heart of these themes is the central concept of reading as "a window to the world" (AASL, 2007 1). It argues that "Reading is a foundational skill for learning, personal growth, and enjoyment. The degree to which students can read and understand text in all formats (e.g., picture, video, print) and all contexts is a key

indicator of success in school and in life. As a lifelong learning skill, reading goes beyond decoding and comprehension to interpretation and development of new understandings”.

Such a holistic approach to literacy as described above indicates that libraries can play a leading role in the reading-literacy-knowledge cycle of schools. And this is at the heart of the future of libraries.

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