Product or Process: Using explicit instructional design in literacy for the primary school to enhance reading, knowing and doing.

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The students of today and tomorrow, the digital natives, interface confidentlywith thetechnological demands of the multi-literate world. The "face" of literacy is "text" the "changing face" is the availability of these "texts" and the way that "texts" can be used to enhance learning experiences for our students if meaningful contexts and purposeful scaffolding for teaching and learning experiences are provided.The Dimensions of Learning Framework provides a model for explicit instructional design that can focus on knowledge cquisition and integration, and on using knowledge meaningfully. The focus of the work done with students can be on the development of knowledge and skills throughout the process, as well as on ensuring that the final product reflects meaningful learning. Process, product or both?

Introduction

This paper provides a commentary of issues that concern the development of effective literacy skills of researching (information literacy) in the primary school setting and examines new approaches to explicit instructional design that could be incorporated into the work being done by classroom teachers and teacher librarians alike. Explicit instructional design identifies clearly defined strategies and explicit language linked to those strategies, that have the highest probability of enhancing student achievement, and is seen as "instruction that reflects the best of what we know about how learning occurs." (Marzano, 2000, pg 4) This explicit instructional design is seen as a supplement, rather than a replacement to the work being done; an opportunity to enhance student learning and to engage students with knowledge at purposeful and meaningful levels. This paper seeks to identify that whilst the work done currently around the development of information literacy with students is adequate, the nature of   the work being done is problematic. Missed opportunities exist for the creation of meaningful contexts that engage students in rigorous, authentic learning, with an emphasis on the product rather than on the process. This paper also seeks to identify that the Dimensions of Learning Framework (DoL) is one that can provide opportunities for teacher librarians in collaboration with classroom teachers, to build on the current practices used, to make instruction more explicit, and to enhance students' learning outcomes.

I begin by contextualizing the issues around the Process/Product debate through a series of personal narrative episodes; episodes taken from my experiences as a parent of school-aged children and as a classroom teacher in a primary school setting. These episodes provide commentary on the completion of research-based tasks in the primary school and highlight the need for explicit instructional design that complements meaningful contexts. "Many students will complete tasks simply because they have been assigned, but when students perceive tasks as being meaningful and relevant, they are motivated to acquire the knowledge needed to complete the task." (Marzano & Pickering, 1997, pg189)

I continue by defining the term "information literacy" and its link to the "researching process" to provide a backdrop for the work to follow. I also identify a perceived problem; that teachers place more emphasis on the end product resulting from research-based tasks than the process itself. This paper proposes that research-based tasks set for primary school students require the students to operate at "functional levels" of locating, accessing and using information (process). This "functional level" allows for the completion of the task, the compilation of information using an information gathering model into a "presentation form"(product), but does not maximize the learning opportunity presented at each stage of the information gathering.

The next section will explore the bodies of work undertaken by teacher librarians and classroom teachers in collaboration with each other. In this section I will consider the ways in which a collaborative approach between teacher-librarians and classroom teachers can ensure an intellectual rigour and a real-life context for the units of work and the subsequent research-based tasks that sit within them. Meaningful contexts are integral to effective instructional design; "the challenge is
to engage learners in using knowledge in a context that is meaningful to them"(Marzano & Pickering, 1997, pg 189). With increased levels of student engagement, students are more likely to demonstrate what they have learned.

I will then examine the way that the DoL framework (with a particular focus on Dimensions two and four) could be used as a planning and instructional design tool to maximize the opportunities for developing research-based tasks which reflect a connectedness to the students' world, which engage students in higher order thinking skills and which facilitate "learning" at each stage of the "researching" (information literacy) process.

I will then provide suggestions and examples as to how teacher librarians and classroom teachers, working collaboratively, can take the work they have already started, further; ways to audit their own practice, embrace a "shared language" and facilitate explicit instructional design within their work.

The conclusion will provide a summary of recommendations that provide a "way forward" for the work being done by teacher-librarians and classroom teachers.

A Focus on Product at the Expense of Process - Personal Narratives

In this section I will offer **personal narratives** which serve as commentary, highlighting the issues implicit with the process versus product debate.

I have been a primary school teacher, classroom based, for twenty five years. I have two sons, one who is currently in a secondary school, and the other who is eleven years old and is still currently part of the state primary school system. My husband is a teacher librarian. A bone of contention, and a constant source of irritation in our home, have been the "projects" (research-based tasks) set for both home and school time; the intention of which one might presume, being to provide opportunity for practice around researching skills, and an opportunity for acquisition and integration of knowledge.

As a parent, over the years, I have observed both my sons': disengagement with the tasks; heavy reliance upon parental input for both accessing resources and collating the information into usable formats; limited use of available sources and a heavy reliance upon print based materials that could be accessed at school, and encouraged to be used by the teacher librarian and the repetitive use of the same types of data collection strategies without a commensurate development of skills to use the data purposefully.

As an educator, I have questioned: the validity of the task set and the purposefulness of them in relation to my sons' learning; the absence of connectedness to their real world or to their interest base as well as the intellectual rigour of the tasks and the knowledge "take-away".

When Jack came home and dispiritedly said:
 "I have a project to do, it's due in two weeks and it's on beans!, I could barely contain my disbelief.
"Why did you choose that topic Jack ?"
"They wanted us to use these (sic) books and it was the last one left, so I get to do beans."
"Are you interested in beans?"
"Hell no, I just have to do it to finish the work. Then I can cross it off my list."

Or another time when Hamish came home and excitedly asked:
"Have we still got Jack's project on chocolate?"
"Yes, I think so," I replied cautiously.
"Great," said Hamish, *"that'll save me a whole lot of work . It's the same project that Jack did five years ago. I just showed him the task sheet and he reckons that his project will do perfectly. I'll just copy the information and do it on a piece of cardboard!"*

Still another time, just recently, Hamish's class was embarking on a unit centred about the theme of "Journeys". Hamish, days prior had participated in an inspiring workshop with the author of the novel "Anna's Suitcase," and had really taken a keen interest in the rise of Nazi Germany, the attitudes towards Jews and the subsequent Holocaust .

When questioned by the classroom teacher for personal responses to the question,
"What is a journey?", Hamish suggested that Hitler's rise to power was a journey. His ideas
were accepted and readily transcribed onto the whiteboard.
The next day in the library lesson, the teacher librarian asked the students to choose their topic for
research around journeys. Hamish chose Hitler and the Holocaust; the teacher librarian chose
explorers because it fitted with where the classroom teacher was taking the unit.Hamish was forced
to choose an Australian explorer, Matthew Flinders. He gathered information in relation to the
research questions, he organized the material and he presented the information. He used the
"researching process" at a functional level and had the required product to show as the
"evidence of his learning." At a functional level, he had passed the task, but what had he learned?

Somewhere in the education of my sons, they have learned the systemic demands placed on them by the school, of the importance of the product, and the value placed upon it as the "evidence for learning." My prejudices exposed through those scenarios are not representative certainly, of all research-based tasks set in primary schools; yet in my experience they represent a wider snapshot than one might consider is the reality in primary schools. In an assessment-driven educational climate, there seems within research-based tasks, far too much emphasis on the end *product* and too little emphasis on the *process* by which the student arrives there. Our focus needs to change to one which not only tracks ongoing skill development and knowledge acquisition, but values it.

Information Literacy – Process versus Product

In this section I will **define the terms "literacy information", "process"** and **"product"** and explore a **perceived problem** that students are too often required to complete research-based tasks at a functional level which values the end product, rather than the process and the learning opportunities provided therein.My contention in this paper is that it is indeed the "process"; "the method of doing or producing something" (Collins Compact Australian Dictionary, 1981) that is pivotal to the development of the students' information literacy skills and maximizing opportunity for learning at each step of the way.

Table 1 identifies a systematic model for the development of "researchingskills" . The model identifies the process, linear in presentation but not linear in use necessarily, and clarifies each stage of the process with key questions to be asked by the student. This is a workable model that focuses on a series of questions which guide information gathering and collation. However, I would argue that this set of questions positions the student at the "functional level" of information retrieval. The student, in responding to the questions, may still do little more than restate information. The questions also do not challenge the student to use knowledge meaningfully; rather the information retrieved and used at each step is drawn together to produce a product . The product which comes from this process, irrespective of the choice of presentation mode, whether it be cardboard chart, booklet, powerpoint or oral speech, should reflect more than the restating of information. It should reflect the meaningful use of knowledge. (Marzano, 1997, pg 189)

Locating *Where can I find the information I need?*	Which sources best meet my needs? Which sources do I already have? Where can I find those resources? Do I need help to find the resources?
Selecting *How can I search these sources effectively?*	Are there any clues and cues to help me? Which main ideas am I looking for? Which search terms will help me find them? How will I know that the information is recent, relevant, accurate and unbiased? How will I record the information I find?
Organising How can I organize this information so that I can understand it better?	Does it need to be in a special order? How can I arrange it so that it is easily understood by others? Have I answered the focus question? Do I need more information?
Presenting *How can I share this information with other people?*	Who will be my audience? What is the purpose of the presentation? Which would be the best format to meet these needs? What do I need to do with this presentation?
Assessing What have I learned from this?	Did I answer my focus question? Which parts did I do well, parts I could change?
Reflecting Where to from here?	How does what I have learned connect with what I already knew?

Table 1: Systematic model for development of researching skills
(Braxton, 2000)

Kulthau,(cited in Braxton, 2000) believes that being information literate is "knowing when you have a need for information, finding the information, and evaluating it and using it for your needs." My point here, is that the students' needs must be aligned with meaningful contexts and purposeful learning. If this meaningful context and purposeful learning are not made clear to the students, then despite the use of a systematic researching process (refer to Table 1, Braxton, 2000), the research-based task requires very little more from the student than a regurgitation of declarative knowledge (facts and generalizations) around a specific topic, presented in a colourful, reader-friendly format. Does the research-based task demonstrate a "knowing"; a "knowing" of why this body of work is valuable? At what level of cognition are we asking our students to work? Explicit instructional design with clearly defined strategies, and explicit language would supplement the work being done within the development of information literacies and provide opportunities for a deeper engagement with the information. The DoL framework, with its focus on explicit strategies would enhance the use of Braxton's model.

Product or Process? By posing this question in relation to the narrative episodes which set the scene for this paper, I question the validity of the learning experiences contained therein. There was little or no academic engagement, a superficial functional use of the researching process for information literacy and a product that had been produced with little or no acquisition, nor integration of knowledge; a missed opportunity for engagement and substantive conversation at higher levels of functioning.
If as educators, we can embed explicit instructional design into "the process', and if we value that "process" for learning as well as creating learning opportunities that reflect intellectual rigour, then our students should be able to acquire and integrate knowledge, and extend and refine that knowledge before using it meaningfully. Marzano & Pickering (1997, pg 35) succinctly explain that "students need to be clear about the directions and demands of the task. It is possible for students to complete tasks by focusing more on the product to be handed in than on the knowledge being used."

"Information literacy is the ability to access and evaluate information that promotes both independent learning and social responsibility. "Today's students must possess information skills or research and study skills that will lead to critical thinking, effective problem-solving and decision making. It is the teacher-librarian's role to show students how to analyse information critically and how to use it wisely. They process what they find to create a product." (Lighthall, 1990, pg 65) The emphasis here is on Lighthall's point with regard to a student's ability to "analyze information critically". Operating within a functional strand of accessing, sourcing and using information, students can create a product, but the critical analysis of information and knowledge contained therein , relies on the scaffolding offered by the teacher librarian throughout the process. The teacher librarian, through carefully structured materials, can set the students up with strategies that will develop critical analysis, higher-order thinking and enhanced product as the outcome. In order to do this well, meaningful learning contexts need to be established.

Teachers need to change the emphasis they place on the work contributed by students and be prepared to assess different aspects of the learning. Prensky (2004) argues that the information age has produced a need for contemporary learners to develop many new skills. He discusses a process of **knowledge filtering** as a means to discernibly refine information to be used meaningfully in a relevant context. In this instance, a teacher would not assess the glossy product that a student produces, if one was produced at all, but gauge how this information had been used by that student in a meaningful occurrence to create knowledge for and with that student. In the information age, students no longer need to simply record information in the form of traditional research based tasks, they need to do something with the information to interfere with and develop their cognitive abilities. Dimension 4 strategies of complex reasoning processes, can play a critical role in this process.

Information Literacy – the "Changing Face" of Literacy

In this section, I will briefly discuss the **changing face of literacy** and link that to the need for **meaningful contexts** for student learning. "Information literate people: recognize the need for information, determine the extent of information needed, access information efficiently, critically evaluate information and its sources, use information effectively to learn, create new knowledge, solve problems and make decisions, classify, store, manipulate and redraft information collected or generated…." (Australia & New Zealand Information Literacy Framework, 2004, pg 3)

The face of literacy is changing – the students of today and tomorrow, the digital natives (Prensky,2004), interface confidently with the technological demands of the multi-literate world. They juggle with ease the inflow of visual information, the collage of visual images sitting amidst the configurations of words, letter and hyperlinks. The "face of literacy" is "text" – the "changing face" is the increasing range of interpretations of what constitutes a "text", the availability of these 'texts" and the way that 'texts" can be used to enhance learning experiences with our students. Electronic resources are second nature to most young people. That may be the dilemma. Students are technologically literate from the manipulative sense, but are they technologically illiterate from the process point of view? Miller (1997, pg 16) argues that "they can get to it, print it, highlight it, clip it and regurgitate it. But have they owned it? Have they learned it? Have they embraced it? Do they really know the process of searching for it?"

I would take Miller's point further; have the students the ability to make connections between the material and the point in learning about it, in searching for it? Do they understand or even value the work that they are doing? Has their learning been reduced to task completion? Does it come back to product – the cardboard sheet, the powerpoint presentation, the oral delivery or the booklet?

Meaningful Learning Contexts

In this section I will **identify and discuss the need for teacher librarians and classroom teachers to work collaboratively** to develop units of work that are **rigorous, intellectually challenging and supportive of students' interests.**
Baule, (1999, pg 42) states that the modern day teacher-librarian must not only be proficient with the wide range of information technologies available today, but they must still be able to work with teachers to instill information literacy skills in their students. Baule identifies the collaborative opportunities that exist between these stakeholders. Scheirer (2000) concurs; identifying the need for integrating library skills into a curriculum that supports classroom goals. To this end classroom teachers and teacher librarians can work collaboratively; they can support the work of each other in developing information literacy skills in meaningful, purposeful contexts.

The teacher-librarian is uniquely positioned within the school community. A major part of the work of a teacher-librarian through co-operative planning and teaching, is to support classroom teachers in their design and delivery of transdisciplinary curricula. "Teachers acknowledge that the processing and use of information is a school-wide concern, for integration with classroom content instruction." (Canadian Association for School Librarians, 2005, pg…..) This collaborative approach proactively attempts to positively support the work done in classrooms with supplementary work done by the teacher-librarian, as well as providing for a shared language between these stakeholders. "Information literacy may be a unifying concept that can bring us all together to form a curriculum partnership in which consultants, administrators, teacher-educators, teacher-librarians and classroom teachers can work together for a common set of learning outcomes. In this way, one part of the system is not in competition with the other for value and support; all partners have a role and a place in the overall plan." (Australia and New Zealand Information Literacy Framework, 2004)

There is also opportunity presented here to ensure that the nature of the work done by teacher-librarians is rigorous. The teacher-librarian should ask of the classroom teacher, *"Why are you teaching this unit of work?", "What is it that you want your students to know and to be able to do?"* It is an opportunity for the teacher-librarian to ensure that the planning encapsulates the intended integrity of the work, and it is an opportunity for the teacher-librarian to take information literacies forward. To that end, it is an opportunity for the teacher-librarian to develop research-based tasks that are more than a cosmetic cut and paste and a rearrangement of material on beans, chocolate or on any other topic. Without a clear understanding of the knowledges to be acquired, integrated, extended, refined and used meaningfully, this work is nothing more than busy work.

"They need projects that do not lend themselves to copying from resources. Students confuse data with knowledge." (Farmer, 1999, pg 11) By this I mean that the teacher-librarian and classroom teacher are in a position to identify significant questions, deep knowledges and deep understandings that drive the unit of work, and indeed are then embedded within the research-based tasks set for students.

A colleague of mine, asked to support the work being done by a classroom teacher, narrated the story of a classroom teacher who was developing a unit of work around "Masks" for a year seven cohort of mixed gender.

"Why are you doing this particular unit of work?"
"I can meet the outcomes from several KLA's in a very workable way."
"But why this unit, why the masks? What does this unit offer that another cannot?"
"I think that students would find it interesting. There is a lot of good art work that could be done here."
"But why are you doing masks as opposed to another art focus?"

The conversation continued on in this vein for quite some time before the very essence of the work was determined.
"I believe that there are a lot of children in this room hiding behind their public "masks" and it affects their behaviour, their attitude to school, to their work and to their classmates. The "masks" idea can work at different levels, but I would really like to explore that notion of not letting others see who you really are."

Once the significant questions, deep knowledges and deep understandings of the unit were clarified, the **knowing** and the **doing** became much clearer as well. This unit offered opportunity for students to really engage with the materials; a provocative unit that questioned them and sought answers from more than just a literal level.

New directions in curriculum need to be accompanied by some contribution to the pedagogy needed to teach it. Information literacy skills are the "what skills to teach", but we need a focus as well on the "how" of teaching. In a professional development session recently, a teacher from St. Joseph's College, Gregory Terrace, Brisbane stated that "at times teaching has had too little focus on its practice and too much focus on the curriculum." "There is little evidence that changing the curriculum will improve the level of student outcomes unless there are significant attempts to change what teachers do." (Ramsey, 2001, pg 56) These two reference points highlight the need for educators to develop meaningful contexts for learning that embrace changing curricula demands, but we also need to embed explicit teaching and learning opportunities within our planning to ensure that they come through in delivery.

Rethinking Pedagogy – Instructional Design and Information Literacy

In this section I will elaborate on parts of the DoL framework that incorporate current research about the Dimensions of Learning framework; a framework that supports explicit instructional design and can support the development of information literacy skills. Dimensions of Learning (DoL) is a compendium of strategies developed through research that can give the teacher-librarian and the classroom teacher a shared pedagogy, a consistent approach, and a shared instructional language. Strategically placed within the school community, the teacher-librarian, through embracing this framework, could become an "agent for change" in reinstating rigour and purpose to classroom instructional activity. DoL is an instructional design approach that can be used as a catalyst for a whole-school approach, bringing about a rethinking of pedagogy that research shows will result in student gains. With a focus on students' thinking and learning and building instructional strategies around these processes, DoL is a language of teaching that encompasses classroom strategies that work. "Teacher-librarians' flexibility and positive response to change will directly influence the success of information literacy programs." (SLASA – School Library Association of South Australia, 2003)

Dimension	Identified as…
1	Attitudes and Perceptions
2	Acquiring and Integrating Knowledge
3	Extending and Refining Knowledge
4	Using Knowledge Meaningfully
5	Habits of Mind

Table 2: Summary of the Dimensions of Learning
(Marzano & Pickering, 1997)

In this section I will examine more closely, the individual Dimensions of Learning, two and four, and identify briefly the ways each dimension might contribute to solving a perceived problem; removing the focus from the product onto the process. Additionally the use of DoL can provide opportunity to enhance the nature of the product.

A Focus on Dimension 2 within a structured approach:

The development and use of **graphic organizers** contribute to ensuring that the teacher-librarian is well positioned to guide students through the information literacy (researching) process, maximizing learning opportunities within the process and enhancing opportunity for students to use knowledge meaningfully. Marzano, Gaddy & Dean (2000, pg 86) identify that studies have shown that the primary way that teachers present new knowledge to students is linguistically. They typically either talk to students about the new content or have them read about the new content. However, when teachers scaffold students around this new knowledge acquisition, the effects on achievement are strong.

Marzano, Gaddy & Dean (2000, pg 62) have identified nine categories of instructional strategies that have the highest probability of enhancing student achievement for all students in all subject areas in all grade levels. (see table three below) .The use of graphic organizers (non linguistic representations) is identified as the fifth ranking instructional strategy and whilst graphic organizers might appear different in shape and form, they all have a common goal; the creation of nonlinguistic representations for knowledge in the minds of learners. Graphic organizers, used at all stages of information literacy development, enhance this knowledge.

Ranking	Category of Instructional Design that Strongly Affect Student Achievement
1	*Identifying similarities and differences*
2	*Summarising and notetaking*
3	*Reinforcing effort and providing recognition*
4	*Homework and practice*
5	*Non-linguistic representations*
6	*Co-operative learning*
7	*Setting goals and providing feedback*
8	*Generating and testing hypotheses*
9	*Activating prior knowledge*

Table 3: Categories of Instructional Strategies that Strongly Affect Student Achievement
(Marzano, Gaddy & Dean, 2000)

To help students learn, one must not only understand the learning process, one must also understand the nature of knowledge; an understanding integral to the work done by teacher-librarians if students are to **acquire and integrate knowledge (Dimension Two)** within the information literacies agenda . Cognitive psychologists believe that knowledge can be organized in two ways. *Declarative knowledge* is the information – facts, concepts, generalizations – within content knowledge. *Procedural knowledge* requires the learner to perform a process or to demonstrate a skill, to take some kind of action.(Marzano & Pickering, 1997, pgs 43/44)

One might argue that many research-based tasks sit very squarely within this area of **Acquiring and Integrating Knowledge**. These tasks require students to "get the answers to the questions", and to present the information. However, one can still enhance this process with explicit instructional practice designed to help students construct, organize and store information (declarative knowledge), and to shape,internalize and practice skills and processes (procedural knowledge). Constructing knowledge is a critical component of the skills addressed within information literacy and our instruction should be aimed at addressing this Dimension two component. The perceived problem of process versus product can be addressed through this dimensional work. The use of graphic organizers and advance organizers, combined with explicit jnstruction around their use, should continue on through the dimensions.

To this end, students must be clear about the language central to task completion. The teacher-librarian should take some time, prior to starting work on a new area of study, to offer students the opportunity to clarify their understandings – misconceptions can cloud and distort the knowledge. There is a need to clarify knowledges to be learned, identify the vocabulary to be used within the body of work and to activate prior knowledge about the intended study. Graphic organizers can be designed and customized to specifically target this construction of knowledge. **A knowledge identifier** can be used with students to clarify their understandings prior to undertaking a "project". A **KWL chart** could also be used in conjunction with this knowledge identifier, with the understanding that the KWL is not the "hook" to engaging the learner, but a means to tracking knowledge acquisition.

"Summarising and notetaking are part of the same category of instructional strategies because both require students to distill information. Although these processes may seem straightforward for students, they in fact, require a great deal of them. In order to make decisions about points that are important to a summary and those that are not, students must analyse the information in depth. Similarly, in order to decide what information is important to make notes about and information that is not important, students must be able to mentally sift through and synthesise information." (Marzano, Gaddy & Dean, 2000, pg 27)   Herein lies the need and the opportunity for teacher-librarians and classroom teachers alike to value the process of the information gathering and to value the opportunity to take student thinking to higher levels It is not enough to focus solely on the "what" of the information; it is necessary to scaffold the thinking behind and the integrating of, the knowledges. This is where explicit instructional design can impact on student gains.

The development and explicit use of *"Reciprocals"* (templates that identify the key aspects to Reciprocal teaching) can enhance a student's summarizing abilities by acknowledging that more than information gathering is required; rather the initial summary point is the platform for further questioning, for further clarification, for further integration of knowledge. Here I maintain that instruction for the student focuses on the "how" in equal parts to that of the "what". The value is placed not on the initial identification of the information but rather on the discussion around it, the extension of understanding around it and the quality of the information that is being gathered and organized.Similarly, research on note-taking (Marzano, Gnadt & Jesse, 1990;, Hattie, Biggs& Purdie, 1996) identifies that notes should be considered a work in progress. That is, once students initially take notes they should be encouraged to continually add to them and revise them as their understanding of content deepens and sharpens. These commentators add, that the use of explicit instructional strategies, particularly those identified in table two above, that target the use of these notes in explicit ways, will enhance knowledge acquisition and integration.

A useful strategy to introduce note taking is to provide students with notes, providing them with a model of how notes might be taken. There is in fact, no one correct way to take notes. It is advisable to present students with a variety of formats for taking notes. I would add at this point that "concept webbing" seems to be a much-used strategy for notetaking that visually represents the relationships between ideas or elements, but it can be restrictive to the amount of information identified as being relevant and important (Marzano, Gaddy and Dean, 2000) and it may in fact, restrict the student from identifying information that, whilst not specifically addressing research-based task requirements, may be of high interest to them personally. I would argue too that notetaking should be called "notemaking" in as much that the central component is reading for meaning for the reader; making notes that mean something for the writer. A variety of notemaking strategies, combined more significantly with explicit instruction around their use should be incorporated into the teacher-librarian's repertoire of practice. Alternate ways, coupled with detailed graphic organizers illustrating their use, should be the basis for this.

A Focus on Dimension 4 as part of a structured approach:

The purpose of acquiring, extending and refining knowledge is to ultimately be able to use it meaningfully. Tasks that require students to use knowledge meaningfully are a powerful method, and potentially a more accurate method, of assessing learning. The "product" can represent real evidence for learning if the process has been valued and explicitly drawn upon for learning, along the way. Moreover students are more willing to engage in higher levels of thinking and interaction with the knowledge if provided with explicitly designed opportunities, previously described, to work around. By asking students to use knowledge meaningfully in authentic contexts, or by allowing students to be involved in the construction of tasks, meaningfulness and relevance and subsequently, students' level of engagement, can increase. The key idea here is that using knowledge meaningfully requires students to engage in thinking and reasoning that is quite different from that required when they are asked to simply recall, restate, recognize, recollect, reiterate or otherwise reproduce knowledge that may come from the information literacy process. This thinking is directly related to what is being required of the student in terms of the compilation of information. Does the "product" (that which is deemed to be evidence of learning around the topic) require only the organization of material drawn from the use of the information literacy framework, or does it, by embracing the dimension four processes, provide a meaningful context for the demonstration of the knowledges gained? Again, the teacher librarian is well placed to ensure that the rigour that is developed within the task can accommodate the use of the Dimension 4 processes of decision making, problem solving, invention, experimental inquiry, investigation and systems analysis or a combination of these.

Conclusion

Teacher–librarians are strategically and professionally well-placed within schools to embrace a focus on th**e** "how" of instruction to support the "what" of instruction**.** By developing information literacy frameworks that build on the work already being done to teach students how to access, isolate, record, collate , organize and use information gathering through "researching" strategies, teacher-librarians can redirect the focus of student work away from *regurgitating facts to satisfy the demand of the end product* to place it directly on the *thoughtful analysis and consideration of materials at higher levels of thinking,* at each step of the information literacy framework. Teacher-librarians can do this by collaboratively developing units of work and research projects with classroom teachers that are embedded in meaningful contexts; centred around issues and questions that require more rigorous academic attention than a "cut and paste" of online material in response to simplistic questions, can provide.

The DoL framework, with particular reference within this paper to Dimensions two and four, provides opportunities for teacher-librarians and classroom teachers to develop a "shared language' for work done with each other and with the students themselves. The framework provides a "checking device" to ensure that the work to be undertaken has value; that the teacher-librarian and classroom teacher alike can justify the work to be done. The framework provides a focus for explicit instructional design strategies that research has shown, will improve student achievement. Explicit instruction, coupled with the use of graphic and advance organizers, can provide a pedagogical way forward; a means of ensuring that students "know" why the information is important, "know" the connections between the information learned, "know" how to use the information to extend their thinking around reasoning processes and can "do" something with the information that takes them beyond rehashing facts. The student can "do"; they can use the information gained to develop a knowledge that can be used meaningfully.

By embracing a willingness to audit their practice and to develop more explicit instructional strategies and language set in meaningful contexts, teacher-librarians and classroom teachers might see improved student engagement that is mirrored in better quality work submissions and more substantive conversations between student/teacher and student/student around, and during the completion of set tasks.

Further work now needs to be done to construct specific graphic organizers and advance organizers that relate to the issues identified in this paper. Generic templates need to be developed so that teacher-librarians and classroom teachers can customize from them in order to suit the needs of particular cohorts . Further exploration of the planning process undertaken in collaboration between teacher-librarians and classroom teachers needs to be done.

Explicit instructional design as outlined in this paper can only be successfully used by practitioners if it is clearly embedded into the planning stages of work; if it is clearly identified and articulated. The use of explicit instructional design cannot be done in an ad hoc fashion; rather the ideas explored need to be drawn together as part of the ongoing big picture of instruction.

The planning process used by teacher-librarians and classroom teachers needs to reflect clearly the focus on authentic, meaningful contexts, a commitment to the development of an "end project product" that values the researching/information literacy processes equally and a
commitment to explicit instruction along the way. The teacher-librarian is well-placed to work co-operatively with classroom teachers and curriculum co-ordinators to develop new units of work or to review current units of work.

The ideas articulated within this paper serve to prompt the reader into reflecting on their own personal practice; an opportunity to consider the ways and means of instruction that target the development of information literacies across a range of curriculum learning areas. It is a platform from which one might audit their practice and in so doing, embrace a range of alternative instructional strategies that could enhance what is already being done.

"Never be afraid to try something new. Remember, amateurs built the ark. Professionals built the Titanic."
(source unknown)

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Susan is passionate about "nurturing" professionals for the future who believe in their ability to effect "positive change within our practice;" who believe they can make a difference in the lives of the students with whom they work.