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School librarian as teachers: learning outcomes and evidence-based practice

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Abstract:

In the context of the development of the librarian as a teacher, this paper focuses on the instructional role of the school librarian, particularly in relation to student learning outcomes. It first identifies some of the research that shows the contribution of the school librarians' instructional role to student learning outcomes. It further identifies some significant challenges seen essential to school librarians playing a central role in the learning processes and outcomes of the school, and ensuring the centrality of the school library to the educational goals of the school. Embedded in this discussion are also some strategies and processes to help school librarians more effectively engage with the school's teaching and learning roles.

Introduction

The IFLA / UNESCO School Library Manifesto (IFLA, 2000) provides a clear mandate for the instructional role of the school librarian. In articulating the integral relationship of the school library to the educational process, the Manifesto identifies three fundamental beliefs that are at the core of the

establishment and functioning of libraries in schools. First, the provision of information is viewed as "fundamental to functioning successfully in today's society which is increasingly information and knowledge based". This makes the assumption that the provision of information can make a difference to the lives and well-being of people; that there is a relationship between the provision of information and personal and social benefits. Second, an integral aspect of this provision is the recognition that this does not happen by chance, that professional intervention is required that "equips students with lifelong learning skills and develops the imagination, enabling them to live as responsible citizens". The Manifesto states that "In an increasingly networked environment, school librarians must be competent in planning and teaching different information-handling skills to both teachers and students. Therefore they must continue their professional training and development". Third, this role is embedded in the documented evidence that shows that when school librarians and teachers work together, "students achieve higher levels of literacy, reading, learning, problem-solving and information and communication technology skills".

At a fundamental level then, the instructional role of the school librarian, in proactively engaging with the curriculum and learning goals of the school, is formational as well as informational, interventionist and integrative, supportive and service-oriented, and it is both outcomes-oriented and process-oriented. Against this backdrop, school librarians have significant challenges ahead of them as they contribute to the development of their school as an inclusive, interactive and empowered learning community, particularly now in the context of an intense information and technological environment. These challenges particularly centre around professional practice being informed by research, a pedagogy directed to knowledge construction, and in the emerging context of outcomes-based education, a focus on evidence-based practice where the central contribution of the instructional role of the school librarian to learning outcomes is clearly understood, documented, and celebrated.

From Research to Practice

Research informing practice, and practice informing research, is a fundamental cycle in any sustainable profession. A substantive body of research evidence exists that demonstrates the important and multifaceted contribution that school libraries can make to the learning outcomes of the school. While the research agenda in relation to school libraries and learning has taken shape only within the last twenty or thirty years, a number of themes are clearly identified in this research. Callison (2001) identifies these as the instructional role, instructional methodologies, intellectual freedom, information search process, students' use of online technologies, program evaluation, and student achievement. Substantive analyses and syntheses of these research themes are increasingly being made available to the profession, and it is imperative that practitioners engage with these findings to inform their day-to-day practice.

Within the context of their instructional role, there are two types of research evidence readily available to inform school librarians. These are the macro-research reports which focus on the broader relationship of a range of library dimensions to learning outcomes, and which are primarily large scale studies involving large samples; and the micro-research which seeks to identify and understand the specific dynamics of individuals' engagement with, and use of, information in a variety of ways, both within and outside the classroom setting. The latter are typically studies of small groups of students in local settings focusing on a narrow range of information and learning dimensions (Todd, 2002a).

The most prominent macro-research has been undertaken by Keith Curry Lance and colleagues, based in the Colorado Department of Education, USA. These researchers have undertaken substantial statewide studies in the USA, involving hundreds of primary and secondary schools, and include: Colorado I (1993); Alaska (1999); Colorado II (2000); Pennsylvania (2000); New Mexico (2001); Oregon (2001); and Texas (2001). A similar study has been undertaken by Baughman (2000) in Massachusetts. While there are individual differences in each of these studies, they have generally sought to establish empirically the

relationship of school library programs to student achievement, and particularly to identify some generalisations about components of school library services that are especially important predictors of student achievement. The studies collected data on school libraries and their school and community context, including staffing, instructional programs, collection holdings, usage levels, available technology and its functionality, reading scores; and data from statewide skills/competency test scores.

According to Lance (2001), all of the recent studies of the impact of school library programs on academic achievement provide evidence to support several common findings. These include: professionally trained school librarians do make a difference that affects students' performance on achievement tests; in order for school librarians to make this difference, the support of the principals and teachers is essential, as well as the availability of support staff who can free the librarians from routine tasks to undertake their curriculum role; a dual instructional role of teaching students in facilitating the development of information literacy skills necessary for success in all content areas, and in-service trainers of teachers enabling them to keep abreast of the latest information resources and networked information technology services within and beyond the school library. What is of critical importance about all the studies under taken by Lance and colleagues is that improvements are shown in student learning outcomes, particularly state test scores, when it can be demonstrated that the school library has a carefully articulated instructional focus that fosters the development of students' intellectual scaffolds for interrogating and utilising information in all its formats to foster the development of new understandings and insights. This is very significant outcome, and one that should motivate and inspire school librarians to pursue their instructional role, or at least to question and reflect on their own practices if they do not include this strong instructional role. Lance also poses some key research questions: How can school librarians be taught the leadership skills they need to succeed? How should school librarians, teachers and students interact to improve student achievement? How does the availability of and involvement with information technology affect these interactions? Some insights to these questions are provided through the micro-research that has been undertaken across a range of school and curriculum settings.

The micro-research examines more closely the myriad dimensions of the complex relationship between student learning and engagement with and use of a variety of information sources and formats the information environment, particularly in the context of specific curriculums. This work complements the macro-research. These studies, available across a wide range of age groups, curriculum settings and instructional designs, particularly examine the behavioural, affective and cognitive dimensions of students' information seeking and use, as well as the processes and benefits of integrating information literacy skills into the curriculum. More recently these studies are beginning to articulate a wide range of learning outcomes in relation to the instructional interventions of school librarian-teacher collaborations. They tend to be small scale, local, and employ a range of methodologies such as case studies, action research, survey questionnaires, interviews, quasi experiments, observational approaches, process tracking, document analysis, and group comparisons. One of the difficulties with such research studies however is that they tend to be published in a wide range of journals, and it is often difficult to identify generalisable patterns across this diverse research. This has been a limiting factor on the availability and take-up of this research. However, a number of important syntheses of these studies are beginning to appear which identify some generalisable patterns, (Loertscher & Wools, 2002; Callison, 2001, Haycock, 1992, 1995, Oberg 2001a, b).

Three major generalisations can be identified (Todd, 2002a). First, the research evidence establishes that a process approach, focusing on the systematic and explicit development of students' abilities to connect with, interact with, and utilise information to construct personal understanding, results in improved performance in terms of personal mastery of content. This is shown in examination and assignment grades, and through the mastery of a wide range of particular information skills. What is also clear in this research is that successful information literacy programs are ones that set clear expectations and manageable objectives, establish realistic timelines, and gather meaningful and systematic feedback from

students and teachers on the learning impacts. (Todd, Lamb & McNicholas, 1993; Todd, 1995; Jones, 1996; Moore, 1996; Hawkes, 1997; Grant, 1998; Lewis, 1999; Gordon, 2000; Maxwell, 2000). Second, the systematic and explicit development of students' abilities to connect with, interact with, and utilise information to construct personal understanding, results in: more positive attitudes to learning; increased active engagement in the learning environment; and more positive perceptions of students themselves as active, constructive learners (Todd, 1995; Moore & Poulopoulos, 1999; Rich, 1999). Kuhlthau (1993), in particular, has studied attitudes and feelings of certainty and confidence in the search process, and demonstrates how feelings of uncertainty and poor self concept can change positively through engagement in active inquiry centered learning. Third, there is clear evidence that active reading programs encouraged by the school library can foster higher levels of reading, comprehension, vocabulary development, and language skills. Indeed, research spanning many decades highlights that when there is access to diverse reading materials, more reading is done, and literacy development fostered. Research evidence shows that providing opportunities for voluntary reading impacts positively on reading comprehension scores. (Elley, 1991; Foertsch, 1992; Krashen, 1993, 2001; Lipscomb, 1993; Digiovanna, 1994; Halliwell, 1995; McQuillan, 1997).

From Practice to Informed Practice

The research findings for the school library profession raise a number of important issues that need to be addressed. Two issues will be addressed here – the take-up of research, and the careful interpretation and application of this research in practice. Communicating research findings effectively and developing effective practice on the basis of these findings is not an easy task, and there is research evidence to suggest that librarians' use of research is low (McClure & Bishop, 1989). Often the argument is raised that busy school librarians do not have time to read the research literature. It is not an acceptable position for a school librarian to argue that he or she does not have time to read research, or to dismiss research as being 'out there' in a world 'removed from practical reality', as is sometimes posited. Such an attitude devalues both the profession as a thinking and informed profession, and cuts off the profession from advances in knowledge which shape sound practice. A profession without reflective practitioners willing to learn about the advances in research in the field is a blinkered profession, one that is disconnected from best practice and best thinking, and one which, by default, often resorts to advocacy and position as a bid for survival. As part of their own ongoing professional development, is important that school librarians continue to engage with this research as it provides a rich understanding of the dynamics of the learning process when students engage with information sources, as well as practical insights into how local evidence might be gathered, analysed, and utilised to position the school library as central to the learning process.

However, one of the challenges in doing this comes back to the manner in which research findings are presented and made available to the profession. It is critical that these be done in ways that enable and empower practice, and there is some research evidence to suggest that this may not be done effectively as it could be. Turner's New Zealand study (2002) sought to identify the perceptions of information professionals concerning their use of library and information science research: how often and why they consult the research, and what are some of the participant variables that affect the amount of their research use. The findings signal some urgent needs for the profession to address. Participants in this study found that applied research that seeks to resolve operational concerns is most widely used; that research is not consulted because it is perceived to inadequately address the real concerns of practice; or that it is not presented in ways that foster understanding and application. There is a clear message here for both researchers and practitioners. For researchers, it centres around the systematic and explicit articulation of the relationship of this research to professional practice in ways that foster its application to a variety of professional contexts, as well as addressing more fully the research's generalizability or transferability across a range of contexts. However, it is not only the researcher's role to undertake this articulation. One of the challenges that exist is the disparate spread of this research, and the need to analyse and

synthesise this research into meaningful generalizations with practical utility. School librarians, as the proclaimed information literate experts in the school (and presumably with information literacy competencies centring on the ability to analyse, organize, synthesise and evaluate information, and especially the information of their discipline) can surely play a central role here, bringing insights as the reflective practitioners to the research and its outcomes for practice.

It is this focal point of information literacy that raises the second issue, that of the careful representation of research in practice, and which underscores the importance of critically and reflectively engaging in the research. One of the fundamental building blocks for the collaborative instructional role of the school librarian centring on information literacy development is the longitudinal research undertaken by Kuhlthau (1991, 1993, 1994, 1999). This research provides the field with some of the strongest research evidence of the nature and dynamics of inquiry based learning centring on the information search process, and the nature of information literacy pedagogy. According to Kuhlthau, an inquiry approach "takes students out of the predigested format of the textbook and rote memorization into the process of learning from a variety of sources to construct their own understandings. They learn to think through subject content apart from prescribed responses or preset solutions. They are guided through a process of intellectual construction that enables them to build on what they already know and to come to a deeper understanding of the concepts and problems underlying the subject" (Kuhlthau, 1999). With a strong focus on knowledge construction through effective engagement with a variety of information sources and formats, Kuhlthau's research establishes the cognitive, behavioural and affective dimensions of the search process. Her Information Search Process (ISP) has been found to occur in seven stages: Initiation, Selection, Exploration, Formulation, Collection, Presentation, and Assessment. These stages are named for the primary task to be accomplished at each point in the process.

The ISP model particularly highlights that the early stages of the search process - Initiation, Selection, Exploration and Formulation - are complex stages where learners contemplate the information task and its question in preparation for the investigation ahead; where they consider what they already know, and what they want and need to find out; where they undertake initial exploration and where they commonly encounter information that is inconsistent and incompatible with what they already know and what they expect to find; where they come to a point where they are able to identify and formulate the focused questions that will enable them to collect and utilise pertinent information rather than vaguely relevant information, rather than relevant information, to construct their own focused perspective of the topic. The point here is to not only highlight the complexity and importance of these early stages of the research process, identified by the empirically validated longitudinal research of Kuhlthau, and more recently by Vakkari (2000) but also highlight that these stages, particularly the stages of Selection, Exploration, and Formulation, are often overlooked in many of the models of information skills presented in schools, in library policy statements, and indeed, in many documents of library associations which espouse the value of information literacy development around the world. These stages are also often weakly articulated in listings of information literacy competencies developed by various library associations to support the collaborative instructional role of the school librarian. Further more, they are weakly addressed in any of the manuals on information literacy pedagogy that present a range of instructional strategies for the development of information literacy skills. Yet the research shows that these stages are critical to the process of personal knowledge construction rather than students just merely manipulating and transporting available information to their final products. The outcome is that students fail to build background knowledge that promotes seeking and formulating a focus during a search; fail to establish a clear focus that guides the collection of, and interaction with, highly pertinent information rather than vaguely relevant information; fail to stay focused and not be detracted from the learning task; and fail to move beyond perceiving the task of searching as primarily one of information gathering to a task of forming a focused perspective from the information encountered.

In addition, research identifies the holistic nature of information seeking and use. In other words, it is more than an intellectual activity, but one of a complex interplay of thoughts, actions and feelings. On the basis of her research, Kuhlthau (1993) has established the Uncertainty Principle, common in the early stages of any constructive process, and defines it thus: "Uncertainty is a cognitive state that commonly causes affective symptoms of anxiety and lack of confidence. Uncertainty and anxiety can be expected in the early stages of the ISP. The affective symptoms of uncertainty, confusion and frustration are associated with vague, unclear thoughts about a topic or question. As knowledge states shift to more clearly focused thoughts, a parallel shift occurs in feelings of increased confidence. Uncertainty due to a lack of understanding, a gap in meaning or a limited construction initiates the process of information seeking" (Kuhlthau, 1999). Kuhlthau argues that affective dimensions such as uncertainty have not been adequately addressed in the systems and services designed for information seeking. She argues that user's uncertainty is traditionally considered a negative to be reduced as quickly as possible. Affective dimensions of the search process such as uncertainty have yet to be strongly represented in the articulation of information literacy competencies and continuums across grades levels in schools. In the context of this research-practice discussion, the challenge for practitioners is to ensure that both the articulation of an information literacy framework, and the pedagogy of its integration into the curriculum actually reflect the current research-based understanding of information searching and use. This indeed calls for greater researcher-reflective practitioner collaboration, as well as the ongoing development and dissemination of pedagogical examples that continue to empower practice.

From Information Literacy to Knowledge Construction

Information literacy instruction is part of making actionable all the information and knowledge that a school possesses or can access. But the critical question is: actionable for what, and for whom? Why? School librarians need to be clear about what actually is their motivating force for their instructional roles in schools. There are at least two ways of looking at this: Doing and Being. The fundamental motive for the instructional role of the school librarian has to go beyond enabling students to master a range of information handling skills. This is DOING. And often it is perceived by teachers to be a library's doing, an add-on to an already crowded curriculum. There is no question that this is important DOING. However, the development of an information literate student is integral to BECOMING and BEING. This begs the question: by developing information literacy skills, what do we want students to become? The destination is not an information literature student, but rather, the development of a knowledgeable and knowing person, one who is able to engage effectively with a rich and complex information world, and who is able to develop new understandings, insights and ideas. This is what teachers would hope for. The development and use of human knowing, the construction of understanding and meaning is what learning is all about, and that defines the central role of the school librarian.

Speaking from a constructivist perspective, Wilson (1996) claims that learning which emphasizes "meaningful, authentic activities that help the learner to construct understandings and develop skills relevant to problem solving" is the central mission of the school. Hein (1991) emphasises the idea "that learners construct knowledge for themselves; each learner individually (and socially) constructs meaning as he or she learns. Constructing meaning is learning. There is no other kind". These are powerful words. He goes on to say that "Learning is a personal and social construction of meaning out of the bewildering array of sensations which have no order or stature besides the explanations which we fabricate for them". The instructional initiatives of school librarians centring on information literacy are about providing the best context and opportunities for people to make the most of their lives as sense-making, constructive, independent people. The provision of information does not necessarily mean that our learners become informed. Information is the input; through this input, existing knowledge is transformed, and new knowledge - as understanding, meaning, new perspectives, interpretations, innovations – is the outcome. Empowerment, connectivity, engagement, and interactivity define the

actions and practices of the school library, and their outcome is knowledge construction: new meanings, new understandings, new perspectives.

This suggests a pedagogy that has knowledge construction and inquiry learning at its heart, where through access to multiple sources and formats of information, and information technology, learners acquire the intellectual scaffolds to engage with multiple perspectives, sources and formats of information to be able to construct their own understanding. In this context, the role of the school librarian goes beyond developing a range of information literacy competencies, rather, it is significant responsibility of making actionable all the information and knowledge that a school possesses or can access so that students can construct their own understanding and develop their ideas in rich ways. This BEING and BECOMING is the focal point of Kuhlthau's research, and is the reason why school libraries exist.

From Actions to Evidence

The third challenge that this paper addresses is that of evidence-based practice. Evidence-based practice is an emerging paradigm of practice in many professions. In current usage, the concept of evidence-based practice has two important dimensions. First, and already discussed, it focuses on the conscientious, explicit and carefully chosen use of current best research evidence in making decisions about the performance of the day-by-day role. Second, evidence-based practice is where day-by-day professional work is directed towards demonstrating the tangible impact and outcomes of sound decision making and implementation of organizational goals and objectives. This latter dimension of evidence-based practice centers on local processes, local actions and local outcomes. It is about ensuring that day-to-day efforts of school librarians put some focus on gathering meaningful and systematic evidence of the impact of the librarian's instructional initiatives on student learning outcomes – what students can do and become. These evidences will clearly convey that learning outcomes are continuing to improve through the school library program. This is suggesting that school librarians need to engage actively in more carefully planned strategies that gather evidence about the impact of their instructional role.

While the notions of school library outcomes, library effectiveness and evaluation are not new, historically these has been directed to outputs in the form of statistical information related to type of resources and collection size, expenditure and facilities use, and staffing and technology infrastructure, rather than in terms of improved student outcomes that identify and demonstrate the tangible power of the school library's contributions to the schools' learning goals. Certainly considerable work has been done through the information literacy agendas of many school libraries, and these have contributed substantially in defining a range of information related outcomes, the doing of information skills. Evidence-based practice centers on the key questions: What differences do my library and its learning initiatives make to student learning? What has my library and its learning initiatives enabled my students to become? That is, what are the differences, the tangible learning benefits, defined and expressed in ways that lead the local school community to understand the important contribution of the library to learning outcomes, and to say: "we need more of this!"? These evidences will clearly convey that learning outcomes are continuing to improve, and inform the process of their continued improvement.

Evidence-based practice puts emphasis on student learning outcomes. This is clearly in line with curriculum developments across many countries, where emphasis is being given to specifying learning outcomes, establishing measurable indicators for these outcomes, and providing feedback to the learning community of the achievement of these indicators. Outcomes-based education is a curriculum practice which establishes clearly defined learner outcomes based on the premise that all students can be successful learners. An outcomes focus is also directed towards maximizing learning experiences of students, and where attention is given to identifying, understanding, and coming to terms with the real differences this makes to the lives of students. This remains a significant challenge for school librarians. Particularly high stakes are being placed on learning outcomes and student performance as shown through state-wide

testing programs, with implications for school profile, quality of delivery, funding, and at times employment and sanctions, embedded in this.

In the current scenario, the stakes appear to be high for school librarians, particularly amid concerns centering on the perceived lack of understanding of nature and dimensions of role of the school librarian, perceived lack of value, importance and appreciation, a negative perceptions of image, sometimes a perceived lack of support for role and the consequence of not being able to perform at the desired level, perceived low status, and ongoing funding and resourcing issues (Todd, 2001). In essence, evidence-based practice is about having the rich, diverse and convincing evidence that demonstrates that the library is a vital part of the learning fabric of the school – that it is integral, rather than peripheral.

Evidence-based practice is not just assessment of student learning; rather, it takes assessment and other feedback measures such as checklists, rubrics, to a higher analytical and synthetical level. It involves critically analysing the accumulated data and deriving statements about student learning outcomes on the basis of the evidence provided. Included in this evidence could be comparative analyses of assessment scores, exam grades and other scores. What is important is that this evidence is cumulated, analysed and synthesised so that a learning outcomes profiles of students engaging in library learning initiatives can be constructed. It can be both qualitative and quantitative, formal and informal, focus on both learning processes and learning products, and from multiple perspectives – the school librarian, the classroom teacher, and the students. It might involve analysing other sources of available evidence within the school, such as the results of national, state, school or grade-wide testing programs. Often state results are accompanied by reports on the local school, and these may make explicit suggestions relating to critical thinking skills, reading abilities, transfer of knowledge to new situations, ability to interpret information, and ability to structure and organise information. It may be possible to identify how actual class groups have performed, and correlate these with information skills or reading programs conducted by the library, and do across-grade comparisons to identify if there are differences where information literacy programs have been undertaken (Todd, 2002b). It might mean some thoughtful analysis of library data collected in automated library systems. For example, the school library's automated system can provide data about circulation of resources, as well as internet usage data and class booking data. These data can be correlated with information literacy or reading programs, test scores, or assignment results to see if there are patterns that indicate that using the library makes a difference. For example, it might show that the class that has the highest circulation, or the class where collaborative inquiry learning processes have been implemented have scored higher on reading comprehension or content mastery; or it might show that collaborative initiatives in science for a particular class result in higher overall exam scores when compared to the other science classes. Action research projects provide opportunities for gathering rich evidence, because they typically focus on interventions, change and improvement. At the heart of action research is the question: How can I help my students improve the quality of their learning? As such, they provide real, creative, and collaborative opportunities for school librarians to initiate and document learning improvements.

Conclusion

There is no question that there are challenges ahead. The instructional role of the school librarian is a significant leadership role. The dimensions of this leadership role include: *Informed Leadership* - engaging in and learning from the research of the field, and using this research to shape instructional initiatives; *Purposeful Leadership* - having clear vision of desired learning outcomes for students, centering on the intellectual scaffolds to enable them to construct knowledge, understanding, and meaning; *Strategic Leadership* - having a clear blueprint for translating the learning-centred vision into actions, through inquiry-based learning and engagement with a diversity of information sources and formats; *Collaborative Leadership* - building partnerships through a shared philosophy about inquiry-based learning for constructing understanding and knowledge; *Creative Leadership* - creatively combining

capabilities to deliver real value, and documenting the evidence of your actions in terms of real student learning outcomes; *Renewable Leadership* - being highly flexible and adaptive, continuously learning, changing and innovating, thinking outside the traditional ways of doing and being; and *Sustainable leadership* - establishing local evidence, identifying and celebrating achievements, outcomes, impacts. These dimensions provide the building blocks for a preferred future of school librarians, and the preferred outcomes of their roles: process and outcomes oriented, formational as well as informational, interventionist and integrative, and supportive and service-oriented. The Icelandic popsinger, Björk in her song "New Worlds" in her "Selmasongs" album, poses the key question: "If living is seeing, I'm holding my breath In wonder – I wonder What happens next? A new world, a new day to see". And the author, N. Hill, (1883-1970) gives a springboard to answering that question "First comes thought; then comes organization of that thought into ideas and plans; then transformation of those plans into reality. The beginning, as you will observe, is in your imagination".

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His primary teaching and research interests focus on adolescent information seeking and use. The research is multi-faceted, and includes: information and critical literacies with emphasis on digital information environments; information technology and learning; cognitive information utilization and knowledge construction; how school libraries and the role of school librarians may more effectively empower student learning; and knowledge management and building schools as effective information-knowledge sharing communities. He has published over 100 papers and book chapters on these areas, and has been an invited speaker at many international conferences. Recently he has given major addresses in New Zealand, Sweden, UK, Ireland, USA and Canada.