The principal's role in developing information literacy: findings from Australia and Canada

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ABSTRACT

IASL and IFLA have provided funding for an international study of the principal's role in developing and supporting information literacy. In this paper, the researchers describe the development of this international project and report on the progress of the study in two of the participant countries, Australia and Canada. Some preliminary findings are presented related to both the research questions and the research methodology. This information will be of interest to researchers who might want to replicate the study in other countries. The completed research should provide information that will be useful to principals and school librarians in countries throughout the world, as they struggle in difficult times to provide quality schooling and information services and to contribute to the development of literate and independent library users.

Background

This project continues a program of research that has been developed by the researchers in Canada and Australia. Lyn Hay and James Henri have completed a qualitative study in Australia, based on work done in this area by Dianne Oberg and Linda LaRocque in Canada (LaRocque & Oberg, 1991; Oberg, 1996). Findings from the Canadian study were presented at the 1990 IASL conference (LaRocque & Oberg, 1990) and findings from the Australian study were presented at the 1995 the IFLA Schools Section Standing Committee meeting and in Australia as well (Hay & Henri, 1995; Henri & Hay, 1996). The qualitative studies, conducted by Oberg and LaRocque and by Hay and Henri provided analyses of the ways that principals working within an information literate school community are able to support the school librarian. The projects also identified the methods used by school librarians to involve the principal in the development of effective school library and information services. The Canadian project involved 5 schools in Alberta; the Australian project was undertaken in 6 schools in New South Wales.

Having identified the factors of influence and support that exist between the principal and the school librarian, the researchers have undertaken the development of a quantitative study to test the existence of these factors across a broader range of schools. In doing so, statistical measures have been employed to test the correlation of years of service, types of experience, and qualifications of principals and school librarians; size of, financial status of, and methods of communication within the schools to the existence of various forms of support. While the qualitative studies have provided in-depth understanding of a small sample of schools, it is important to test the validity of these findings over extended populations.

Progress on the international study

The international study involves a quantitative investigation, surveying both principals and teacher-librarians about principal support, making use of data from the original qualitative studies. Involvement of other countries in the study began at the 1995 IFLA conference, and funding was sought from both IFLA and IASL. For last year's IFLA conference, the researchers organized a full day workshop. Four papers were given on the research related to the role of the principal (Dogg Hafsteinsdottir, 1997; Henri & Hay, 1997; Moore, 1997; Oberg, 1997), and a workshop was held for the researchers participating in the international study. Seven countries are involved in the international study: Australia, Canada, Finland, France, Japan, Scotland, and South Korea. Researchers from each of these countries provided input and advice regarding the adaptation, translation and administration of the quantitative instrument and planned the procedures for data collection, analysis, and dissemination.

Description of the research methodology

Questionnaires, based on the interviewee data fields used and the key factors resulting from the original qualitative studies , were developed and tested in Australia. Two model questionnaires—one for principals and one for school librarians—were developed. The questionnaires include both forced choice and open-ended questions. It was recognized that these questionnaires would have to be adapted and translated in order to be administered in other countries. Each member of the research team is responsible for the collection of data in their country and for the entry of those data into database at the School of Information Studies, Charles Sturt University (CSU). Where possible, the study participants have been asked to enter their responses on an electronic format of the questionnaire, accessed through the Internet. The quantitative study data are being analyzed using SPSS by Hay and Henri at CSU. Statistical measures will be employed to test the correlation of years of service, types of experience, and qualifications of principals and school librarians; size of, financial status of, and methods of communication within the schools, and so on to the existence of various forms of support. The qualitative data from the open ended questions will be analyzed using a framework and procedures developed by Oberg at the University of Alberta. Each member of the research team is responsible for compiling a report, including findings from both qualitative and qualitative data, for their own country.

The online approach to data collection

The piloting of the instruments was conducted in Australia using standard hard copy questionnaires employing a four point Likert scale, with a zero weighting for the additional category "cannot comment." The traditional five point scale was rejected because the instruments were lengthy and it was felt that there might be an interest in over-using a mid point. The Internet was used to distribute the instruments, however, the inability of many respondents to translate attachments resulted in the faxing and/or snail mailing of instruments to the majority of respondents.

In-school research is typically slow because of the approval protocols, and because the candidate respondents are usually very busy professionals. It was with these factors in mind that the decision was made to transfer the administration of the process from a snail mail, paper based approach, to an online Web based approach.

The online questionnaires employed a simple Common Gateway Interface (CGI) script to capture data in a form that could be processed by Standard Generalized Markup Language (SGML ISO 8879:1986 see:<www.sil.org/sgml/sgml.html>) tools. The HyperText Markup Language (HTML) is an example language which is described by a Document Type Definition (DTD). The CGI scripts were written in Python <www.python.org>, a programming language that is much easier to write than the scripting language popularly used for scripting, perl <www.perl.org>. Python was also used to convert the questionnaire data into a suitable form for processing.

The main challenge in the design was making sure the complex questionnaires had unique field names for each of the questions. In future, it would be preferable to write a script to generate the HTML questionnaires. A questionnaire could be marked up according to an Extensible Markup Language (XML, <www.sil.org/sgml/xml.html>), DTD, and a script written to generate the final online document. XML is a simplified version of SGML designed for online applications. It is likely to replace HTML as it is much more versatile.

Whilst the administering of a traditional snail mail based questionnaire is fraught with danger—postal strikes, non-delivery, incorrect delivery, and so on—so too is an online product. This case was no exception and there were a number of minor problems typically associated with the online operation. The server was subject to several power failures (as part of ongoing building construction at CSU) and outages (as networks systems were being improved). The unique School Identification Number (SIN) would have been more reliable had it included a check digit which would have guarded against a respondent entering an incorrect number.

Although the snail mail version of the instruments were tested through the pilot process, the online version received only in-house testing. Previous experience with programming of online instruments had ensured that the system was robust enough to cope with the typical errors (though the original error message was somewhat facile "programmer error"). Error reports from some respondents indicated that more robust public testing would have been beneficial.

Problems with instrument design created one problem and one potential problem. One question in particular in the demographics, Principals Instrument 1, caused problems. Question 2 asked (among other things) for the number of school librarians employed in the school. A note asked that where there was "less than one full-time position, please indicate

number of days/hours per week." The data entered by subjects was 'open', and the instrument designers had not foreseen the number of ways this data could be packaged. For example, a TL who teaches for 3 days could be entered as either: (a) 3 days; (b) 0.6 of a position, or (c) 18 hours per week. While the majority of data could be coded correctly, some data was ambiguous and could not be used as an accurate measure. This was the major flaw in survey instrument PR1. The potential problem was associated with the online version only and was related to the choice of default. When designing the online version the default had been set at "a lot" and "strongly agree" with the thought that this would force respondents to make a choice. What had been overlooked was that a respondent who ignored a question would (by default) be entering a value. Fortunately a careful inspection of the data showed that this did not happen. However, in future, the default will be set at "Please Select."

In addition to the problems associated with lack of testing noted above some additional problems should be mentioned. Many respondents did not have sufficient skills to independently enter all of the required data and submit their surveys successfully. The online approach is dependent upon the robust nature of individual schools' Internet connections. If all data were not entered prior to a connection failure, schools lost what they had previously entered on the instrument on which they were currently working. Should this happen a number of times to the one respondent, it is unlikely that s/he would submit the data.

If respondents did not enter a School Identification Number (SIN), their completed instrument could not be submitted. (While this represents a frustration, a submitted instrument without a SIN would prevent pair matching and would therefore be less valuable.)

Hard returns made in the boxes provided for free choice responses caused problems for data importation in preparation for data analysis. A hard return was read by the program as being a discrete, new piece of data when in actual fact it could have been one of a series of points entered as an answer for one question.

Notwithstanding the problems noted above, the use of a Web based approach to data collection has a number of significant advantages. Perhaps most importantly, the approach allows the standardization of survey instruments and coding of data across all countries. Likewise, all data from the participating countries can be collected on one server. In addition data collection methods can be standardized across participating nations. This is particularly useful because it facilitates standardized data testing and analysis across all countries and allows for simplicity in future comparative data analysis. These commonalities enhance the management of the project and enable ready monitoring of the progress and the timely identification of problems affecting all participating countries or arising from individual countries (if any).

The timeline for data collection time is reduced as respondents enter data directly to the server rather than onto paper and thereby requiring a third party to key in data. When funding is an issue this is of special benefit. In addition, all data entered via the Web is automatically formatted to be imported into the data analysis programs.

All raw data is tagged by the Schools Individual Number (SIN) and the instrument number. A tabular summary of all data entered can be monitored via a web page "Principals' Survey

Submission List" at <http://farrer.riv.csu.edu.au/principal/survey/list_surveys.cgi>. This allows individual country coordinators and project managers to monitor the percentage of data collected and allows simple identification of missing instruments and SINs that have not submitted. A significant benefit of this is that it can facilitate the chasing of outstanding surveys from schools.

Respondents were able to complete each of the three survey instruments separately which gave them the flexibility of time to enter as they wished, as against sitting at their PC for a substantial block of time. This may have enhanced the qualitative data entered in the third instrument. This approach was evident in a number of cases where subjects submitted half an instrument and then came back later and submitted the remaining data. Using the SIN and instrument tag, data collectors were able to successfully match the two pieces of data.

The online approach provides advantages to both the respondents and the researchers particularly in a multi-country project where a number of languages were employed. The significant reduction in data entry time and the collection of all data together at a convenient point that enables a range of time savings and enhancements that cannot be over valued. Like all cutting edge approaches, however, it did create challenges for those respondents who were not regular online users. Improvements in off-the-shelf software will enable enhancements to the approach to be made. A system could be developed where a questionnaire is typed into a word processor using special markers from which an online questionnaire could be generated. The resulting entered data could be automatically prepared for processing using SPSS. Microsoft Office '99, for example, is expected to use XML for internal processing with 'styles' determining the markup.

Conducting the study

One of the goals of the researchers was to review their overall research design and methodology in light of their experience with this international project. We will describe the context for the study in the two countries and then consider the problems experienced and lessons learned by the researchers. Because most of the Canadian data has now been collected, we have also been able to give some very preliminary findings from the data collected by Instruments 1 and 2 in the Canadian study.

The Australian experience

In Australia the initial qualitative study was conducted in six public schools within the Metropolitan South West Region of the New South Wales Department of School Education (DoSE). It was originally intended to use this same region for the quantitative study, however, administrative changes within the DoSE made this impossible within the required time frame. The pilot for the quantitative study was undertaken by using a convenience sample of schools that subscribe to the teacher-librarian listserv, OZTL_NET, and therefore took place in schools from across the country.

The quantitative study has been conducted within the Australian Capital Territory (ACT). The ACT has a population of approximately 310, 000 and is a relatively homogeneous socio-political area, being the national capital. All schools within the ACT within the public and Catholic systems that employed both a full time principal and a teacher-librarian were surveyed. Close liaison with key personnel in each system enabled this identification and therefore facilitated a population, rather, than a sample, to be surveyed. The public

schools included 191 schools(comprising, schools that were K-6, 7-10, and 11-12) and the Catholic schools included 55 schools (comprising K-6 and 7-12).

One of the challenges associated with an international project is the timing of the project. In the northern hemisphere, November and December may be good times to administer a survey but not so in Australia where teachers are getting to the end of the school year and schools shut down for six weeks over the Christmas and New Year period. The research in schools protocol is to seek approval from the System and when this is granted, permission must be sought from individual schools. This process can be time-consuming, particularly at the close of a school year. The Catholic system provided the green light in time to facilitate the sending out of individual school letters in November 1997. Permission from the public school system took longer and these letters could not be sent until February 1998.

Originally, it was the intention not to send a paper copy of the instruments with the letter of introduction, but rather to encourage participants to use the online facility. In fact the paper version was sent with the letter but respondents were encouraged to employ the online version. This was done for a number of reasons. Firstly it was known that not all schools had Internet access. Secondly, even where schools did have Internet access, it was felt that some respondents would not feel comfortable with that approach. Thirdly, because of the international timeline and the late commencement date for Australian participants it was felt that delays caused by the requesting of paper copy would create significant problems.

The success of the project hinges, to some extent on the successful completion of instruments by the teacher-librarian and principal of each responding school. The involvement of both allows for analysis on paired responses. If only one of the pair return their data other analysis can be successfully undertaken, but the value of the study is diminished. A weakness in the project has been that unless the teacher-librarian and principal communicate about the project neither will know whether the other has completed the instruments. It could be guessed that such communication is less likely to occur in schools that are at the lower end of the information literate school community scale.

At the time of writing, the response rate has been 17% and analysis of the data has not commenced. It is expected that followup with schools will increase the response rate.

The Canadian experience

In Canada the initial qualitative study was conducted in a small public school district on the province of Alberta. The current study is being conducted across the public and separate school districts of the province. In Alberta, both non-denominational public schools and separate schools (mostly Catholic schools) are fully funded by the provincial government. Alberta Education (the ministry of education for the province) sets the goals of schooling for the province, establishes curriculum guidelines and requirements, evaluates student learning through a program of province-wide testing at grades 3, 6, 9 and 12, and provides educational funding. The delivery of schooling is delegated to school districts, each governed by an elected board of trustees and ranging in size from several schools and a few hundred students to over 200 schools with hundreds of thousands of students. All teachers, principals and other educators working in schools must belong to the same

teachers' association or union. This organizational structure for public education results in considerable local autonomy, down to the level of the school, and considerable diversity (some would say inequity), even among schools within the same school district.

Selection of the research participants could not be done by random sampling because all schools in Alberta do not have teacher-librarians. A population approach (selection of all the schools in one district, for example) could not used either because no district in the province is large enough to have 250 schools with teacher-librarians, the sample size that was needed to ensure reaching the target response number of at least 150 participating schools (both elementary and secondary schools). This was based on a minimum 60% response rate, predicted from earlier survey research done in the schools of the province. Instead a purposive sampling approach was used. The sample—the 252 schools with a teacher-librarian assigned at least one-half time to the school library program—was identified using the teacher information database of Alberta Education.

In November information about the study and how to participate was mailed to the principals of the 252 schools. All public schools in Alberta were believed to have Internet access so that the researcher expected that the study participants could complete their questionnaires electronically. Because of the Freedom of Information and Protection of Privacy Act of the Province of Alberta, letters could not be sent to the principals and teacher-librarians by name. To increase response rate, reminder cards were mailed to the teacher-librarians one week after the invitations to participate were mailed to the principals.

As the responses began to come in, problems in the research design soon became apparent. By January, it was clear that some of the online forms were being only partially filled out, that only one or two of the three instruments were filled out by some participants, and that not both the principal and the teacher-librarian in some schools were responding. By early March, the Canadian data pool included responses from 74 teacher-librarians, 51 principals, and only 38 principal/teacher-librarian pairs. A second reminder letter was mailed out to the schools in March. At the time of writing, the response rate has been 15% (38 out of 252 schools with complete data sets). Although messages from principals and teacher-librarians about the research continue to trickle in, it is not anticipated that the Canadian data pool will increase substantially.

What went wrong in the Canadian study? There were a number of factors that influenced response rates, some we might have anticipated and some we could not have anticipated.

1. The survey instrument was viewed by the Canadian participants as too lengthy and too complicated to complete. Both principals and teacher-librarians contacted the researcher with concerns about the survey length and format. One principal commented in responding to Instrument 3, the open-ended part of the survey, "I can not believe that you sent out something so time consuming! I do not have time in my busy schedule to fill out this document!"
2. The electronic format of the instrument created difficulties for some of the participants. Not all schools actually had Internet access, despite the official Alberta Education stance that all Alberta schools are connected to the Internet. Some participants had difficulty getting into the survey website and some participants, particularly principals, were inexperienced Internet users. A number of participants, however, requested paper copies of the surveys and, in those cases, the data was entered online by a research assistant.

3. A postal strike delayed the mailing of the letters inviting participation in the study until November which is the beginning of the busy time of the fall school term. In addition, the two largest school systems in the province were involved in labour disputes during the time of the study. One system experienced a "work-to-rule" situation when teachers were expected to limit their non-classroom activities to one half-hour before and after the school day and the other was threatened with such action for several weeks.

Lessons for researchers from the Canadian experience

The labor problems of the postal system and the school districts are examples of the kind of research problems that can never be predicted or prevented but the issues related to piloting of instruments and the format of instruments are examples of the kind of problems from which researchers can learn.

Piloting of data collection instruments needs to be done very carefully and thoroughly. In an international study, the instruments need to be piloted in each of the countries involved and with a population that is very similar to the one that will be surveyed.. Even though Canada and Australia seem quite similar in their educational systems and in their general educational culture, the Canadian and Australian participants' reactions to the survey instruments seemed to be quite different, and this influenced the response rate. Also, because the instruments were piloted with educators likely to have familiarity with the Internet, that is, a sample of schools that subscribed to a teacher-librarian listserv, the problems that inexperienced Internet users would face with completed Web-based forms was not anticipated. In any study, using a new format can reduce the chances of getting adequate response rates. Using an online survey format in the Canadian study showed once again that "being on the leading edge is being on the bleeding edge." The lack of familiarity with web-based forms was a major obstacle for many participants and likely a total deterrent for many potential participants.

Preliminary Findings from the Canadian Qualitative Data

Three instruments were used to collect data. Instrument 1 collected demographic data from each of the principals and teacher-librarians. Instrument 2 collected data on the activities and beliefs of the principal and teacher-librarian, using Likert scales. Instrument 3 collected responses to 12 open-ended questions, presented in sentence completion form. For example, Question 3 for the principal and the teacher-librarian was stated in this way: "The following things that the teacher-librarian does are critical to the quality of teaching and learning:_____ ." The data from Instruments 1 and 2 is being analyzed using the statistical package, SPSS, and from Instrument 3, using a content analysis approach.

The findings from the Canadian data that are reported below are based on data collected until March 1998 (responses from 74 teacher-librarians and 51 principals) for Instruments 1 and 3, and these findings must therefore be regarded as tentative and preliminary at this time. The data from Instrument 1 gave information about the school context of the participants and about their education and experience. To give readers a sense of the Canadian participants and their context, a composite picture has been developed by selecting the modal (most frequently selected) response for each of the categories in

Instrument 1. Responses to Instrument 1 could be quickly tallied and examined for patterns.

Responses to the open-ended questions on Instrument 3 were analyzed through a lengthy process of reading and re-reading responses, noting the content of responses, identifying themes or categories according to the content, and then grouping and re-grouping the responses within the themes or categories. This interpretive process began with reading all the responses to get an overall sense of the data. Then, each of the open-ended questions was analyzed. For example, the responses of the principals to Question 3 were read and content of each response was noted (that is, the ideas within the response were written down). Themes were identified and the ideas were grouped under the themes. From this, the frequency of ideas could be seen and the dominant themes could be identified. This process was then repeated for the responses of the teacher-librarians to the same question. After the responses to individual questions have been analyzed, the responses to Instrument 3 provided by teacher-librarians and principals in the same school will be examined for possible patterns.

Composite picture of the Canadian participants

The Canadian principal is a male in his fifties with BEd and an MEd (a two-year graduate level degree). He is the administrative head of an elementary (K-6) school in an urban area. The school has approximately 15 teachers and 450 students. The principal has been in that position for more than a decade and he was a classroom teacher for 10 years or more before he was first appointed to a principalship. He has worked with more than 10 different teacher-librarians as a classroom teacher and administrator. He is a member of the teachers' association specialist council for administrators.

The teacher-librarian is a female in her forties, with one year of training beyond her BEd. She has been a teacher-librarian for less than five years, and was appointed to the role after several years as a classroom teacher. She has served in other informal school and district leadership roles and she is a member of the specialist council for teacher-librarians. She is a regular reader of Teacher-Librarian Today (the publication of her specialist council) and Emergency Librarian (a commercial publication for Canadian and American teacher-librarians). Although the school is connected to the Internet, she does belong to a listserv.

Both principal and teacher-librarian were selected for their positions by a competitive application process. Compared to the teacher-librarian, the principal is senior in age, in teaching experience, and in experience beyond the classroom.

Sample findings from instrument 3

For this paper, the findings that have emerged from the analysis of Questions 3 and 8 on Instrument 3 are being reported. Question 3 asked the participants to identify the things that the teacher-librarian does that are critical to the quality of teaching and learning; Question 8 asked them to identify the major barriers to the integration of information skills across the curriculum.

1. Teacher-librarians' critical contributions to the quality of teaching and learning

The three critical functions of the teacher-librarian, according to both principals and teacher-librarians in the Canadian study, are (1) inservicing staff, (2) cooperative planning and teaching, and (3) collection development. The participants emphasized the need for the teacher-librarian to be a person who could work well with staff and who could encourage teachers to take risks and to try new things. They pointed out that the teacher-librarian, therefore, needed to be a person who kept abreast of changes in curriculum, pedagogy, resources, and technology. The cooperative planning and teaching function of the teacher-librarian was presented in a diversity of ways—teaming with teachers, supporting teachers, leading teachers, assisting teachers—but both principals and teacher-librarians saw the importance of the teacher-librarians' involvement in the teaching and learning activities of the school. The content focus of those activities, for teacher-librarians was primarily on the research process and on promotion of reading and literature; for principals, the focus was primarily on the research process. The collection development function was seen as both providing the resources and providing access to the resources. Also mentioned by both principals and teacher-librarians, but with less frequency, were the contributions of the teacher-librarian in meeting the individual needs of students, in helping to develop a schoolwide plan or vision for learning, and in communicating the role of school library programs to parents and to the wider community. Overall, then, the principals and teacher-librarians were in agreement as to the nature of teacher-librarians' contributions to teaching and learning. However, the principals put the strongest emphasis on the inservicing role while the teacher-librarians put the strongest emphasis on the cooperative planning and teaching role.

2. Major barriers to integration of information skills across the curriculum

There was less agreement between principals and teacher-librarians about what barriers hindered the integration of information skills across the curriculum. The principals saw the problem of integration of information skills across the curriculum in terms of two types of barriers: inadequate funding and teachers' beliefs about teaching and learning. Funding was viewed as inadequate for the purchase of the resources and equipment needed for teaching information skills and also for the provision of inservicing in how to integrate information skills into the classroom curriculum. The beliefs that created barriers were ones related to "teachers not believing that working together could provide benefits" and "kids are only learning if the teacher is talking." The teacher-librarians saw the problem in terms of four types of barriers—two that were the same as those identified by the principals and two that were different: lack of funding, teacher beliefs, teacher overload, and lack of planning time. The teacher-librarians stated that teachers were resistant to the integration of information skills across the curriculum because they were burdened by large classes, an ever-expanding curriculum, and provincially-set examinations and that this, along with other factors such as lack of teacher-librarian time and rigid timetables, contributed to the lack of time that was available for teachers and teacher-librarians to work together. Principals emphasized funding and teacher belief as the major barriers while teacher-librarians emphasized funding, time, and teacher workloads as the major barriers.

Conclusion

By the end of May 1998 all data will have been collected and entered into the CSU database. Future analysis of the data will explore the forms of support for school librarians offered by principals; the types of actions taken by school librarians to develop principal support; the strategies implemented by principals and school librarians in developing information literate school communities; and the professional development needs of principals and school librarians with respect to developing an information literate school community. This project has demonstrated the potential benefits as well as the potential problems in conducting collaborative research in school librarianship on an international scale. It is anticipated that the project will contribute to the development and publication of an international set of guidelines for principals and school librarians in developing effective information services and supporting information literacy programs in schools.

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