

Of Special Interest

Evaluating the Impact of the School

Library Resource Center on Learning

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This research project, funded by Resource: the Council for Museums, Archives and Libraries in the United Kingdom, investigated the impact of the school library resource center (SLRC) on learning, first, by looking at what teachers, students and librarians perceived to be the learning experiences taking place in this environment and, second, by examining specific examples of SLRC activity to identify whether this learning was indeed happening and how it might be monitored. The evidence of this research is that the potential to impact on learning goes well beyond impact on information handling skills. The article explores the challenges of the SLRC and offers some recommendations for those seeking to evaluate the impact of their own SLRC on learning.

Introduction

The school library resource center (SLRC) has been recognized as having a key role in supporting information and communication technology (ICT) initiatives and the development of the skills required to extract and to use information effectively. Recent government initiatives in the United Kingdom to raise educational standards, encourage social inclusion, and introduce information technology throughout the curriculum have led to a shift in emphasis toward the development of core skills to enable students to learn independently, both in the school environment and beyond. Similar developments have been taking place in other countries, and the research project discussed in this article has widespread implications.

Alongside these educational developments, local authorities in the UK, including educational establishments and public libraries, are required to demonstrate public accountability in terms of service to clients and value for money. The increased expenditure on technology, as well as the traditional hard copy resources in the SLRC, has prompted a need for improved quality assurance. The school library profession has embraced this and, in Scotland, performance measurement has been integrated into the system used by the school as a whole. Traditional evaluation of a library service has looked at outputs in terms of statistical information relating to expenditure, resources, and use. However, the emphasis in recent guidelines on evaluation of the SLRC is on service outcomes and the qualitative approach to evaluation that this entails. For example, one of the performance indicators in the Scottish

schools' quality assurance document (HMI Audit Unit, 1996) and the SLRC equivalent (SOEID/SCCC/SLA/SLIC, 1999) is the "quality of pupils' learning." This is an area that librarians have found difficult to tackle, especially as the literature hints at the need for a critical look at the learning without giving clear guidelines on how to achieve this on a practical level. (Librarians in Scottish schools are professionally qualified as librarians, rather than holding a dual qualification in teaching and librarianship.) Teachers understand the need to encourage use of the SLRC and its resources through the curriculum and to develop independence beyond the classroom, but do not necessarily place sufficient emphasis on the skills required to ensure the SLRC can contribute most effectively to student learning.

These issues form a backdrop for research that has recently been completed at The Robert Gordon University in Aberdeen. The research examined the impact of the SLRC on learning. The study complements the work already undertaken in the United States where Lance, Welborn, and Hamilton-Pennellet (1993, 1999, 2000a, 2000b) have linked the provision of a SLRC to academic achievement. The study also complements work reported in the theme issue of *School Libraries Worldwide* (Hopkins & Zweizig, 1999) in which the evaluation team of the Library Power initiative connect improvements in the quality of provision of service with greater opportunities for students to develop information handling skills through an integrated approach to inquiry. However, the Impact of the SLRC on Learning project described in this article was devised to look at the SLRC's contribution to effective learning in its broadest sense and was not confined to academic achievement or information literacy aspects of learning.

Impact Studies in Information Contexts

The challenges of measuring impact can be recognized from other studies that look at the impact of information in business and professional contexts (Marshall, 1993) and on development (Menou, 1993). One of the greatest challenges is the need to identify reliable, valid indicators of impact and suitable and practical means of monitoring them in a particular environment. The indicators used in this study had to reflect the stated curricular goals of individual schools and the approach taken by the schools to achieving those goals. The learning activities in the SLRC could not and should not be viewed in isolation. The student or staff users of the SLRC are similar to other information users in their need for information in that the resultant decision-making process will depend on previous accumulated experience and knowledge, and the time scale for impact will vary according to the individual and the specific circumstances. However, the complexity of the learning environment, the maturity of the users, the involvement of the teacher as intermediary and the need to weigh competing priorities must also be taken into account. Earlier impact studies, such as those of Marshall (1993), have relied on the users being able to articulate their information need

and being able to self-evaluate the impact that their information use has on a future course of action. The immaturity of some of the information users and the involvement of the teaching staff and librarians as intermediaries in the school context posed significant new challenges in assessing the impact of the SLRC on the learning of the users.

Traditional impact studies in other information and library service sectors have taken a critical-incident approach to examine how information helped with decision-making and progress along a planned course of action. Although the use of information in the school context can have such applications, there are other more complex issues associated with the impact on learning that meant the use of traditional impact methods was more challenging and less easily implemented.

The Research Approach

The aim of the project was not to compare the relative impact in different schools, but to examine a range of learning situations in SLRCs where attempts had been made to provide a good standard of service as specified in standards published by the Convention of Scottish Local Authorities (CoSLA, 1999). It was decided to limit the scope of the research to mainland Scotland, thereby maintaining consistency in the curriculum and allowing for relative ease for visits. A brief questionnaire was distributed via the Heads of School Library Service with the aim of attracting SLRCs that were keen to take part in the research and met the above criteria. The preliminary focus group discussion phase of the project involved 10 Scottish secondary schools, and during this phase, possible case study schools were identified. The aim of the case study units was to examine a range of SLRC-related activities across the year groups and in schools where the librarian and/or teacher were prepared to commit time and effort to the project. The logistics for visits by researchers and the timing of the activities played a crucial part in the final selection of eight case units in the six schools finally selected for case studies.

As a preliminary to detailed case studies of these learning activities, focused discussion groups with teachers and students and semistructured interviews with librarians identified a broad spectrum of learning experiences generally expected from use of the SLRC. These ranged from specific library, information, and ICT skills to more abstract ideas of encouraging imagination and increasing motivation and self-esteem. Although prompted to do so, the research participants found it more difficult to establish where and how they might look for evidence. It became apparent during the start of the case study investigations that teachers and librarians were not in a position, for a variety of reasons, to move beyond these general expectations of learning outcomes to examining actual evidence of SLRC impact on learning, despite discussions and ideas put forward by the research team. The case study research, therefore, took an observational approach in which the re-

searchers used a variety of techniques for gathering data from the learner, the teacher, and the librarian, including self-reporting, observation, and examination of recorded work executed by the learner. This ensured triangulation in the case studies. The methodology and techniques are described in greater detail in the full project report (Williams & Wavell, 2001).

By focusing on a range of learning contexts, the emphasis was placed on the impact of the SLRC as a whole in those contexts rather than the impact of specific information or resources. There was no attempt to try to isolate the impact on learning from the multitude of other influencing factors, but simply to monitor the learning experiences in SLRC-related activities over a relatively short period. The process of monitoring impact was considered as important in this research as the actual evidence of impact on learning, and the findings may provide a useful starting point for practitioners to examine their own situations over a longer period.

Learning in the SLRC

The stakeholders, that is, students, teachers, and librarians, initially identified a range of learning experiences that the SLRC was considered to have the potential to affect. These learning experiences are not unique to the SLRC, but form part of the whole learning experience in the school. The learning experiences accord well with the entire breadth of learning as described by key learning classifications, for example. Bloom (1956), the Scottish curriculum documentation (SCCC, 1999) and Taking a Closer Look at the School Library Resource Centre (SOIED/SCCC/SLA/SLIC, 1999). The expectations of students, teachers, and librarians involved in this research were that the SLRC could potentially affect all the areas of learning expressed in current Scottish educational documents as forming part of the curriculum goals in schools, that is, motivation to learn, progression in learning, independence in learning, and interaction with others. Although other learning classifications were not explored in depth, the breadth of learning experiences mentioned would suggest that other learning classifications would also be valid. It is important to remember that the description of learning in this project is used as a starting point to enable practitioners to define the learning in terms that are meaningful in their own local context. There are also important correlations between the learning experiences and examples of indicators of impact, the influencing factors, and the concepts of planning and evaluation described in the project report (Williams & Wavell, 2001) and in Todd's (2001) 10 principles of learning that express learning in the context of the SLRC as a learning environment.

Through the subsequent case studies, it became evident that the SLRC was indeed influencing a wide range of learning experiences and not simply those experiences most closely and traditionally associated with finding and using information and resources in a library. Examples of impact on motivation, independence, and interaction in learning were observed alongside

evidence of impact in the area of progression (including the introduction, development, and reinforcement of appropriate information handling skills), which is often the natural focus of attention among librarians. In addition, it was clear that the impact was not always a positive one, and that the quality of the learning experience in the SLRC was conditioned by a range of factors, not all in the control of the librarian. The specific case study findings are detailed in the full report (Williams & Wavell, 2001). In the following sections, we explore the implications of the findings of this study for schools seeking not only to assess the impact of the SLRC on learning, but also to improve the quality of the learning experience for students.

Implications of the Findings

As might be expected, the research highlighted how the SLRC can contribute to the development of a variety of skills associated with the handling of information and how students can demonstrate a knowledge and understanding of these skills when intervention is appropriately applied. More interestingly perhaps, the study also shows how complex this process is and the extent to which information-handling is closely bound up with other aspects of learning. The SLRC provides those who are equipped with the skills to progress to independent learning with the opportunities to increase their knowledge, understanding, and help to fulfill personal achievements. However, the case study investigations would suggest that use of the SLRC alone does not motivate students to learn, as was suggested during the preliminary focus group discussions. Students need to understand what is required of them and have the skills, or an understanding of the skills, required to proceed with the task set. Students of a wide age range were able to locate appropriate sources of information with relative ease, but difficulties arose when using the information, and this would suggest that a greater emphasis should be placed on the latter activity. In order to give students appropriate support in the use of information, all those involved in the delivery of activities and courses in the SLRC need to have a clear understanding of the processes involved and of appropriate intervention techniques. Students who have mastered some of the information-handling processes are able to take advantage of the opportunity to work independently (and many appear to do so in their own time). However, those students who are not confident or competent in the skills involved in handling information need additional support to make their use of the SLRC more effective. One of the features of the focus group discussions was a concern with the difficulties students have in transferring skills and knowledge to new settings. Evidence from the case study observations would suggest that this may not be a problem once a skill or knowledge has been mastered and the connections have been made, but that the opportunities are not always available for full development of the learning experience.

The complexity of skills development in the curriculum and the challenges it poses was also apparent in the research. Library, information-handling, ICT, reporting, study, and critical skills were all mentioned during the focus group discussions, but there did not appear to be a clear appreciation of how these skills needed to be dissected further into learning outcomes and how this could be related to specified curriculum goals. More development work needs to be done in individual schools to identify the most appropriate way to tackle the introduction and reinforcement of these skills in the local context. There are signs that the curriculum documents in Scotland are beginning to give clearer guidelines for work on information-handling (SCCC, 2000) and work on information literacy standards carried out in the US (AASL & AECT, 1998) and Australia (Information Literacy Standards, 2001) might prove useful in providing a basis on which to work.

Although the two are interrelated, there may be a distinction between the aims of a project or course and the aims for using the SLRC and the impact this might have on learning. The study provides evidence that the specific aims for using the SLRC are not necessarily fully explored by teachers and librarians. Teachers are often using the SLRC for a specific curriculum goal, and this is being assessed formally, but the skills that are needed to complete that specific task are not being consistently analyzed and reinforced and, therefore, the support is not necessarily forthcoming at the most appropriate times. Similarly, some of the indirect and less immediate learning experiences are not given due consideration, and in many cases these have a direct bearing on the cross-curricular, core skills emphasized in recent educational thinking and on other high-profile areas such as ethos and social inclusion.

The research findings help us understand the relationship between the SLRC and learning and open the way for greater reflection by schools, teachers, and librarians on what the learning potential is and how this potential might be maximized. It is clear from this research that the impact of the SLRC does not need to be confined to the areas of progression in learning (i.e., information-handling skills, increased knowledge and understanding, and improved quality of work) unless school policy and local circumstances indicate this to be the most appropriate course of action. Although it may be appropriate for the main emphasis to be on progression skills and knowledge, the SLRC can contribute, alongside other departments, to learning in its wider sense of motivation, independence and interaction, for instance, an awareness of the needs of others, peer cooperation, use of initiative, and improved motivation to learn.

The research also identified examples of indicators of impact (illustrated in Figure 1) that give an indication of the breadth of the learning experiences. The indicators used as evidence of impact provide examples that will help practitioners identify their own context-specific indicators that are related to the particular aims and objectives of a course and are reflected in the activities chosen to support those goals. Some of these indicators are also

| Motivation | Progression | Independence | Interaction |
|---|---|--|--|
| Introduction and development (progression) of skills and knowledge leads to confident, competent and unaided use (independence) of skills and knowledge | | | |
| <ul style="list-style-type: none"> • Expression of enthusiasm • Willing participation/ absorption in task • Continuation of activity • Change in attitude (over period of time) | For example, <ul style="list-style-type: none"> • Use of catalogue • Use of relevant Information • Find appropriate Information on Internet • Try different genre • Evidence of new knowledge • Higher personal achievement | <ul style="list-style-type: none"> • Confidence and competence to continue unaided • Awareness of need for help and confidence to seek help • Independent study • Ability to apply, transfer skills in new context • Increased self-esteem • Use of initiative | <ul style="list-style-type: none"> • Discussion about task • Peer cooperation • Friendships and ability to mix with other groups • Use of appropriate behavior, i.e., awareness of needs of others |
| Ability to apply skills or knowledge in different context leads to confidence and independence | | | |
| Examples of monitoring techniques used during case study investigation | | | |
| <ul style="list-style-type: none"> • Observation • Discussion/ • Questioning • Review of completed work | <ul style="list-style-type: none"> • Review of work in progress • Discussion/ questioning • Observation | <ul style="list-style-type: none"> • Observation • Evidence beyond SLRC • Work/discussion/ questioning | <ul style="list-style-type: none"> • Observation/ listening |

Figure 1. Summary of indicators identified during the case studies.

supported by Kuhlthau's work where Library Power librarians describe learning experiences (1999).

However, improving the quality of the learning experience in the SLRC depends not only on planning effective learning activities, but also on establishing a more effective learning environment. The research highlighted a number of factors (see Figure 2) that influenced effective learning during the case studies, and an understanding of these will help during the evaluation process to identify what is being achieved in the SLRC and what developments need to be planned for future implementation. Factors that enhance or detract from the impact will always be present, but need to be borne in mind when planning and evaluating courses, thus enabling the most appropriate activities to be organized for the specific requirements in relation to the overall learning potential.

| Enhancing | Limiting |
|---|--|
| Interaction and intervention | |
| <ul style="list-style-type: none"> • Enthusiasm of teacher • Interest shown by teacher/librarians and interaction with students • Intervention by staff at appropriate time | <ul style="list-style-type: none"> • Lack of confidence to seek help, or unaware of need for help |
| Class management | |
| <ul style="list-style-type: none"> • Ensure absent students are integrated and fully briefed • Rotation of students on computers | <ul style="list-style-type: none"> • Frustration caused by problems, e.g., computer access • Tensions within a group • Time constraints or too much time • Size and organisation of SLRC (distraction from other classes) |
| Preparation | |
| <ul style="list-style-type: none"> • Understanding of main aims and tasks required to achieve the goal • Understanding of SLRC and resources from previous experience • Ability to proceed, the skills required have been developed | <ul style="list-style-type: none"> • Lack of understanding of information handling process by staff and students • Lack of focus, need to reinforce aims and skills especially after break from project • Lack of understanding of subject theory • Lack of reference to instructions and checklists by students |
| Review and reflection | |
| <ul style="list-style-type: none"> • Opportunity to try again when developing new skills • Application of skills in different practical context | |
| Motivation | |
| <ul style="list-style-type: none"> • Familiarity with surroundings • Use of computers • Display of work • Positive referral for achievements award • Appreciation from librarian and/or teacher of effort • Opportunities given to use initiative | <ul style="list-style-type: none"> • Treated as any other lesson (by staff and/or students) • Problems |

Figure 2. Summary of factors influencing effective learning observed during the case studies.

The SLRC contribution to enhancing the quality of learning must not be evaluated in isolation from the rest of the school, and planning must be a joint process to make educational sense. In the schools where senior management was actively involved in the development and integration of resource-based learning into the whole school, there appeared to be greater understanding of the issues involved, and these schools were in a better position to engage in the practical implementation of reviews and revision of practice.

Monitoring and Evaluating Impact on Learning

Many of the challenges faced by schools in evaluating the impact of the SLRC are related to the process of monitoring and gathering evidence in a practical way. Experiences in this research show that some types of learning are easier to monitor than others, but it is important to ensure that the activities can support the indicators sought and that the indicators reflect the aims and objectives of the course of action. This was not always found to be the case. It was found to be easier to examine the immediate learning context, that is, the work done in the SLRC and its relation to the curriculum goal, which during the research was generally set by the teacher. In theory, the goals for using the SLRC should be subject to collaborative discussion between the teacher and librarian to enable the most appropriate activities and resources to be used to support the specific skills intended for development and also to ensure that information-handling skills are tackled across the curriculum and throughout the year groups. The indicators for skills development can be specific and lend themselves to tracking techniques that are relatively easily managed and relevant to the main focus of activity, such as observation, discussion, and some form of student evaluation. These are methods of evaluation and assessment that are recommended in the Scottish curriculum documents (SOED, 1991) as well as the work edited by Kuhlthau (1994) on assessment in the school library media center. Librarians are not necessarily accustomed to assessing student progress either formally or informally, and the teachers are not necessarily aware of the need to assess students' progress in relation to specific information-handling skills. However, the experience of this research is that this information is needed to ensure effective instruction and effective learning.

The study also looked at impacts beyond the immediate SLRC learning environment. There was evidence of the transfer or development of skills and learning to other areas of the curriculum, such as the discussion and use of ICT skills introduced elsewhere in the SLRC and transferred by the learner to a new context. This type of evidence required monitoring beyond the immediate planned activities, either by observation of the learners in the SLRC, by discussion with learners in the SLRC or at other times, or by making enquiries of teaching staff and keeping note of activities happening beyond the SLRC. Librarians do not necessarily see the end result of work

carried out in the SLRC, but this can provide useful evidence to support activities conducted in the SLRC or to highlight areas of weakness to enable appropriate measures to be taken in the future. During the case studies, there was evidence of development of learning that was not directly related to the immediate goal, such as students developing an awareness of the needs of others or changes in attitude to work. It is important for librarians and teachers at least to be aware of these other impacts on learning. Whether planned for or just taken into account as part of the teaching and learning process, awareness of the overall breadth of learning experience and of the factors that influence effective learning can contribute to a greater understanding of a student's individual strengths and weaknesses. That awareness can help to explain some of the reasons for student achievement, or lack of achievement, in stated curriculum goals assessed in the final piece of work. This, in turn, can be used to ensure that activities contribute to the development of a more integrated learning environment, particularly for some of the cross-curricular core skills.

Effective Learning or Efficient Service?

The development of appropriate indicators is key to success in the evaluation of impact. It was clear in this study that this still remains one area of confusion and challenge for librarians and teachers. For example, two case study librarians indicated that they believed teacher satisfaction and their return to use the SLRC was an indicator of the success of the SLRC. This may well be the case, but they were confusing an indicator of a valued service with an indicator of learning, unless the teacher is the learner returning to the SLRC and an expression of satisfaction was used as an indicator of learning. The teachers may well have evidence that using the SLRC has had an impact on student learning, although this was not forthcoming, and it would be useful for the librarian if ways could be found to share such evidence. Further research is necessary to establish whether the use of indicators of learning and a growing requirement for them would increase collaborative partnerships. However, before progress can be made, all parties need a clearer understanding of what are the indicators of impact on learning and what are indicators of another kind.

It is hoped that the particular examples of indicators identified in the research will help to clarify what indicators might be used, how evidence might be collected, what the evidence signifies, and how it should be used. One use of the evidence of impact is to demonstrate effective learning, for instance, a student's progress, motivation, or ability to work cooperatively. Another important use of this evaluation exercise is to enable continual reflection, revision, and adaptation of activities and courses to ensure learning is maximized for all users. The evidence accumulated in this way can then be used to support departmental development plans and be used as performance indicators for quality assurance. It is the evidence collected

from an individual SLRC, about its own students, that will have the most impact in that particular school. The impact project could provide a starting point for individual evidence-based practice. The indicators to be used as evidence of learning should be context-specific and, therefore, need to be examined at a local level, but some general points have been made on the type of indicators that are easier or more difficult to track. As Kuhlthau (1999) points out, some of the indicators are "intuitive observation," (p. 87) whereas others provide more "documentable evidence," and both are considered necessary for planning and evaluation. However, further research may suggest that as practitioners become used to evaluating their own performance using intuitive observation, the documentable evidence becomes more reliable and valuable as indicators of quality provision, performance, and achievement. It would not be possible or desirable to evaluate everything, and the local context is likely to restrict evaluation to a particular learning theme or to specific programs, possibly in some form of rotational basis. However this is tackled, collaboration between the teacher and librarian is necessary to provide an understanding of the common goals and how the integration of the two professions can enhance learning.

Planning for Effective Learning through The SLRC

The evidence of this study is that teachers and librarians do not yet have a common vision or language to describe how the SLRC interacts with the classroom. The SLRC is not an end in itself, but it can be seen as a step toward an end, with the starting point and conclusion taking place outside the SLRC. The joint planning that exists is limited and the "outcome" of the curriculum activity tends to be measured in terms that relate only to the end product. The skills or processes that contribute to the end product, particularly those that relate to work in the SLRC, are not assessed or evaluated. Part of this may relate to a sense of detachment that teachers feel toward the SLRC: they do not have, or expect to have, control over the way the SLRC operates, and they may not plan the activity accordingly. Librarians, on the other hand, may assume that more has been planned than is, in fact, the case. They may not have a clear understanding of what the teacher expects, assuming the teacher does have specific expectations, and they are not, therefore, in a position to give support in the most appropriate way. Course evaluation should provide valuable information on what has been learned about the processes as well as the subject matter; properly done, it could provide useful information on where there are difficulties and should provide the opportunity to reflect on areas for further development or concentration of effort. The need for intervention at appropriate times helps to avoid disillusionment and frustration, and early intervention increases the chances of developing independent learners at a later stage. The detailed findings set out in the project report (Williams & Wavell, 2001) may help to provide the means for teachers and librarians to begin the planning and evaluation process.

Conclusion

This article targets school librarians; other dissemination activities will target members of the teaching profession, including senior management, training facilities, and support services. Clearer guidelines could be developed on how to integrate the use of the SLRC into curriculum practice, in particular with regard to the current educational emphasis on core skills in Scotland and similar initiatives in other countries. Senior management need to take a more active role to ensure greater collaboration between departments in the school (including the SLRC) in order to encourage greater understanding of the potential learning, progression of skills and activities, and consistency of terminology and aims. Teachers and librarians need to develop a common language and understanding of their respective expertise and the roles each profession can play to provide effective support for students who use the SLRC. Teacher-training institutions and information and library schools could incorporate a greater awareness of the potential learning associated with the SLRC into courses. Education departments and library services could take up the opportunity to disseminate current research into joint and profession-specific staff development programs.

However, there is also a great deal that librarians themselves can take on board. Todd (2001) suggests that "the school library in the 21st Century is about constructing sense and new knowledge, and building an information infrastructure and information resources to enable this" and that in order to achieve this the profession needs to focus on "connections, not collections; actions, not positions; and evidence, not advocacy" (p. 2). The impact of the SLRC on learning projects would support this view, in particular the need for evidence, and that will require a change in actions and the ability to make connections!

There is also a movement in the UK calling for statutory library provision in schools. The results of this impact study would suggest that more could be done to ensure that what is already available is used to the best advantage to maximize the learning potential, and once the evidence is forthcoming at a local level, status is more likely to rise, collaboration and use should increase, and sustained funding and recognition are more likely to follow.

In conclusion, the study found evidence of impact across a broad spectrum of learning areas, but found that the impact was not always directly related to the intended aims for SLRC use. Some form of evaluation needs to be put in place to ensure the learning and teaching are effective in the areas of recognized and stated priority. The roles and process by which such evaluation is carried out needs to be established by the practitioners in the local setting. The research offers an understanding of learning in the SLRC and the impact of the SLRC on all aspects of learning, but the findings are potentially useful in any learning context. In addition, because the study has been firmly embedded in the context of learning, the findings may provide

some basis for reflection on the impact of information services, in the broadest sense, on education and lifelong learning.

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