The development of young people's information- seeking behaviour

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Abstract

This article uses the results of a recent research project to explore young people's information-seeking behaviour and how it develops during childhood. Young first schoolers learn much through practical experience and conversation with adults but, in the later stages of this school phase, books, CD-ROM and the Internet assume increasing importance. In the middle school, the Internet is used more frequently and CD-ROM exploitation gradually diminishes. Books from departmental libraries and textbooks provided by teachers play key roles in satisfying the academic information needs of high schoolers. It is in this phase that use of the Internet is greatest, although many teenagers are highly critical of it. Whilst the information-seeking behaviour of high schoolers is markedly more sophisticated than that of young children, some essential similarities remain. The article closes by discussing how the overall findings of the research have implications for practice, especially within schools and public libraries.

Introduction

This paper is a follow-up to one appearing in the last issue of *Library and Information Research* (Shenton and Dixon, 2004), in which the findings of a recent qualitative research project were used to present a picture of how youngsters need information of particular types at different points in the period of childhood. Taking a similar approach and again based on the data collected and analysed in the study described in the original article, this piece explores the methods employed by young people to pursue messages that satisfy these information needs. Such actions are henceforth referred to here as their *information-seeking behaviour*.

Just as many commentators over the past fifteen years have lamented the lack of investigation into the information needs of youngsters, considerable concern has been expressed in relation to the limited coverage given in research to their information-seeking behaviour (Moore, 1988, Moore and St. George, 1991, Busey and Doerr, 1993, Fourie, 1995, Chelton and Thomas, 1999). The paucity of work in this area should not, however, obscure the importance of the topic. By gaining, through research, more understanding of the information-seeking behaviour of young people, information services, such as libraries, and information skills teaching programmes within schools can be developed with greater attention to the tendencies of youngsters themselves and to the problems they have been seen to encounter.

The purpose of this paper is to offer a developmental picture of information-seeking behaviour during childhood to complement the commentary on information needs that has already been presented. Any reader wishing to learn more about methodological matters involving the sample and the data gathering and analysis techniques is referred to the previous piece, which addresses these issues in some detail.

The developmental commentary

First schoolers (i.e. youngsters aged four to nine years)

First schoolers use a variety of techniques to gain information, although, in specific situations, they are often unaware of the range of options available to them. Early years children are familiar with many forms of media in the home but these are frequently used only for entertainment, without any attention to their information-providing potential. Comics, for example, are looked at for fun, television is watched primarily for cartoons, and computer-based technology is chiefly employed for games.

The young child gains much knowledge from "hands on" experiences, such as practical activities, "exploration" with artefacts and the use of toys, games and other playthings. Nevertheless, more unaided methods of finding out are also prevalent. Observation is particularly common and may be either direct or one step removed, via television. In the very early years at school, little information-seeking behaviour in the generally accepted sense is evident, as the child's abilities to understand messages that are recorded as information in written form and to engage in detailed question and answer dialogues with others in order to elicit information provided orally are limited.

Youngsters typically progress from experiencing story books to basic non-fiction works, although the latter may be familiar to children as young as Reception age. An adult is generally required to assist when books are consulted for information in the early years but children become more independent and make greater use of these materials as they are increasingly exposed to books at school. Books listing multiplication tables are among the earliest consulted specifically for information by some young children, largely because little reading is necessary. Posters may be scrutinised for the same purpose. The use of tables books may also mark the beginning of youngsters' non-sequential use of non-fiction books, although this may be slow to develop and does not always extend into exploitation of books of other kinds. The fact that young children's first contacts with books usually involve picture books, story books and school reading books, all of which are intended for cover-to-cover reading, means that the use of non-fiction books for information in a more selective fashion may appear unnatural to them and demands conceptual adjustment. Whilst they are taught the value of contents pages and indexes early in first school, youngsters may still read many non-fiction books sequentially even when they are seeking specific information but, as they begin to use books to a greater degree to investigate personal interests, they realise the importance of these aids and exploit them more than previously. Nevertheless, some sequential behaviour may persist, even in the higher phases. Encyclopaedias become popular among older first schoolers, both for academic work and to satisfy their own interest in the world around them. A familiarity gradually develops with a range of types of book. They are used with growing confidence but confusion may arise as to the differences between similar sources, such as dictionaries and encyclopaedias. Many of the first books to be used for information are bought for the child or are already present in the home. The latter may be owned by older siblings. Even young children may amass substantial collections of personal books in relatively short periods yet, when investigating topics of interest to them, they often rely strongly on a favourite volume.

Although first schoolers gain much of their materials-based information from books, CD-ROM becomes increasingly important during the later years in this phase. The rise in its use coincides with greater experience of this technology in school. Both CD-ROM resources and the Internet, which children usually begin exploiting when slightly older, are generally very popular with first schoolers. Early home use of CD-ROM for information, typically when youngsters are aged around six or seven, frequently involves the exploitation of hardware and software owned by a parent or older sibling, and often centres on the package, "Encarta", which is interrogated chiefly for information on subjects of personal interest. In the last years of first school, as academic work assumes greater importance, the emphasis shifts and needs

pertaining to this domain are responsible for much use of electronic encyclopaedias, a pattern that continues throughout the two subsequent school phases. Whereas CD-ROM can be exploited by older first schoolers fairly independently, the Internet is rarely used without parental supervision. In many cases the Web's main value lies in providing illustrations, maybe because the reading level of the text offered by many sites is too advanced for youngsters of this age. Despite the fact that use of the Internet becomes more extensive as children move through the first school, even youngsters in their final year of first school continue to employ CD-ROM to a greater degree.

Search strategies are rudimentary whether the materials exploited are paper-based or electronic. First schoolers are usually uncritical of the sources and materials they employ, partly perhaps because the heavy involvement of adults shields them from prolonged exposure to some of the most frustrating problems but they realise over time that certain types of sources are better suited than others to meet particular needs. With adult prompting and help, they may also make intelligent use of materials for purposes other than those for which they were intended.

Use of television shifts during the first school years. Older youngsters are no longer content simply to watch cartoons but exploit the medium to learn more about subjects of interest. The programmes viewed provide both "pre-packaged" information and a substitute for first-hand experience. Even children as young as six and seven may develop a knowledge of Teletext.

School libraries are generally small and many pupils do not consider them significant providers of information, either for school work or on subjects of personal interest. This situation in part results from the low profile of many libraries within first schools.

The use made of the public library varies from one child to another according to the library-going tendencies of their families. The youngest children are entirely dependent on their parents for access and for the development of an understanding of its organisation. Some youngsters make regular family trips from a young age, and may frequently consult the children's collection for books on matters of interest, sometimes at the instigation of a parent. Exploitation of the public library for material on school-related topics typically increases as youngsters move through the first school. The young child's dependency on the adult further emerges when materials are sought within the building. The youngster is reliant on the grown-up for practical help, and the approach employed is likely to be that favoured by the adult. Misconceptions concerning the arrangement of materials are rife and may reflect the fact that it is the accompanying adult who leads the information-seeking activities. Youngsters may exhibit ignorance not only of library terminology but even of the name of the library they visit regularly.

Other people play a key role in meeting first schoolers' information needs, and an interpersonal approach may be the first method that comes to mind for many youngsters, partly perhaps because conversation has become a natural means of communication by this point and partly because children are so dependent generally on others. In their later years in this phase, youngsters may seek tuition in developing skills in relation to areas of interest, and the necessary instruction is often provided by specialists in group sessions. Throughout the first school years, much subject information, however, is sought from parents because they are readily accessible. Since the young child possesses limited reading skills, the adult typically responds to requests by *telling* the inquirer the desired information or paraphrasing the content of books that have been consulted for the purpose. On occasions, youngsters expect members of the family to be able to provide fairly specialist information from their own knowledge, and appear not to appreciate the limits of what is known by those who are not experts. The task of finding an adult with the appropriate experience to answer detailed or specialist questions can prove challenging.

A small number of sources is generally used when first schoolers attempt to find information for school. Usually a single search term is employed, and that selected is considered by the youngster to reflect most appropriately the topic of interest. Assessments of the value of a source are typically based on the amount of information within it which pertains to the subject of the need. Information-seeking is difficult for many first schoolers, especially in the early years. Their limited awareness of the width of information that can be found in books and their poorly developed reading skills are particularly major handicaps. Youngsters may find themselves using materials that are inappropriate to their reading age but whose content matches the field of their interest. Should their preferred information-seeking method fail, their experience is so meagre that they are often uncertain as to what further action they might take.

Middle schoolers (i.e. youngsters aged nine to thirteen years)

The middle school years are a time of changing information-seeking behaviour, with a range of resources hitherto unfamiliar to youngsters exploited for the first time and perceptions of the value of sources previously consulted habitually shifting. Inquirers often become aware that some of their existing methods and skills no longer stand them in good stead, as school assignments require them to seek ever more detailed and specialist information.

Middle schoolers become increasingly adept at recalling, for use in homework, information accumulated through school activities and which now takes the form of knowledge. Although rarely sufficient in itself, the remembered content may form a starting point or complement information retrieved from other sources. A growing range of diverse materials plays a significant part in the information universe of the middle schooler. Exercise books and files of work may prove valuable for assignments and revision for tests. When tackling projects, youngsters with older siblings may supplement information from other sources with work within the exercise books or files of their elders. Materials produced by teachers,

such as booklets and sheets, may also be made available for assignment work, although additional content is again likely to be required from sources that the youngster must seek elsewhere. Television continues to be watched for information on subjects of personal interest and the viewing of programmes on specialist documentary channels is common.

Books are read for a range of purposes. They are still scrutinised for subject information and may also be consulted for skill development. Paper encyclopaedias remain popular, although those designed for children lack the in-depth material required for many assignments set in the upper school. Nevertheless, youngsters relish the fact that their content is easily read. Books at home continue to be widely used but, rather than looking at just their own and those of siblings, middle schoolers may exploit those that belong to their parents. The first schooler's awareness of different types of books and the circumstances in which they should be read grows in the middle school years, and reliance on electronic sources also increases. Paper materials consulted may include less general sources, such as atlases. Whereas books are typically bought *for* youngsters in the first school, their older counterparts may assume greater responsibility for their purchase and some may be acquired in response to class studies of particular topics, as well as to pursue personal interests. Middle schoolers are cognisant of the respective characteristics of contents lists and indexes but do not always use them when seeking information within a text and, like their younger fellows, may be prone to consult an index from the very beginning of the sequence. As middle schoolers find themselves required to use more substantial subject books, they may struggle with the large amounts of text involved.

A greater interest in and appreciation of the world at large may lead to newspaper reading, and magazines are much more likely to be looked at by middle schoolers for information on matters of personal interest than by first schoolers. Magazines devoted to sport and computers are popular among boys. Seemingly unaware of their valuable material, many middle

schoolers make very little use of journals for school-related subject information, however.

Exploitation of the Internet typically expands during the middle school years, although parental control may still be strict. Conversely, levels of CD-ROM exploitation tend to decline from high levels in Year Five. In the early years of middle school, reliance on both CD-ROM and the Internet may be so widespread that those without these resources may believe that they are working at a grave disadvantage relative to their fellows and may be keen to exploit opportunities for access offered by friends and school computer clubs. Some youngsters accumulate considerable CD-ROM libraries that include general encyclopaedias and more specialist titles, the latter again often purchased when a particular topic is being covered at school. A downturn in CD-ROM use in the second half of the middle school phase is largely the result of a need for increasingly detailed and specialist information for school assignments in the final year or two of pupils' time at the school. CD-ROM encyclopaedias have limited value in meeting such needs. Particular Web sites often excite youngsters. They develop favourites and consult them habitually, often after "bookmarking" them. Youngsters' choices of search engines may be heavily influenced by experience at school and advice from others. There is little preliminary planning of searches, and trial and error approaches are common. Despite their increasing use of the Internet, many middle schoolers are critical of it and no longer do they view its shortcomings as simply characteristics of the system, although where adults assist in Internet searching many of the frustrations that youngsters would experience if working alone are still reduced. Particular search engines may also be targets for condemnation.

Information channels associated with the school take on growing importance. Materials consulted by youngsters include books within the classroom and textbooks provided by the teacher. School libraries, however, often remain peripheral to the youngster, especially if the stock is small and access is limited to particular times of the day. Again, the library may be maintained by an ordinary class teacher responsible for other curriculum areas. This does little to raise the profile of the library in the eyes of middle schoolers. Nevertheless, some become very attached to favourite books that they find in the stock. As with the Internet, problems that youngsters associate with the school library are often identified as major weaknesses.

Children without home access to the Internet or large domestic collections of books are frequently users of the public library. Some young people spurn the service, perceiving that opening hours are inappropriate, although others, noting that the stock easily exceeds that of the school library, are eager users. Confusion about the organisation of non-fiction materials within the building remains common. Even those who have become regular library visitors during their first school years tend to struggle when making the transition from the children's to the adult collection. Whilst often overwhelmed by the amount of material held in the senior section, they acknowledge that the junior stock, with which they feel more comfortable, is now unable to meet their needs for the specialist and detailed information demanded by school assignments. They require considerable assistance from grown-ups to make effective use of the adult collection, although ironically this is at a time when youngsters are striving for greater independence, and many visit the library alone or with friends rather than with their parents. Their difficulties in using the adult stock are exacerbated by the fact that the school libraries with which the youngsters are familiar may be small and equipped with only basic bibliographical tools. Such an environment provides an inadequate training for finding materials in a public library.

In response to school assignments, organisations like Tourist Information Centres, health awareness groups and embassies may also be approached for specialist information, usually at the prompting of adults.

Other people still provide significant amounts of skill-related and subject information. Middle schoolers contrast with their younger

counterparts, however, in that they have developed a realistic perception of the limitations of the knowledge of adults such as parents and also begin to recognise that they are fallible. They may be deterred from consulting others by the prospect of hostile reactions. Peers start to assume an important role when youngsters seek to verify their understanding of what is required in taxing homework assignments. All these patterns continue into the high school phase. Adults are important in directing the attention of youngsters to other sources that may be of use to them. In general, these are then exploited more independently than by first schoolers. Indeed, the middle school phase sees a gradual decline in the use of other people as process assistants.

High schoolers (i.e. youngsters aged thirteen to eighteen years)

Several themes emerging in the previous phase, such as increasing use of the Internet and information channels associated with the school, remain or become more pronounced among high schoolers. Recall for assignments of information obtained during school activities is still an important method. Although, as in the middle school, personal work from files and exercise books is used by some, many youngsters regard these as poor sources and are critical of their legibility, sense, detail and accuracy. They may opt instead for commercially-published revision guides. School option booklets and, especially, university prospectuses may be significant materials when youngsters make decisions on their futures. One of the most striking changes in comparison with the information-seeking behaviour of middle schoolers lies in the decline in the use of paper encyclopaedias, which now seldom provide information of the required detail or specificity, yet general reference books may still offer a good starting point for the initial investigation of a topic. Monographs are key sources. Where parents are closely associated with particular curriculum areas, some relevant books may be available at home. Youngsters continue to expand their own home libraries and may be ardent collectors of books on topics of personal interest. High schoolers are more likely than younger people to read

newspapers, and their motivation for doing so may be to acquire information for school. Magazines, alongside the Internet, constitute an important source of material on specialist interests but there remains very limited exploitation of them for academic assignments. Nevertheless, teenagers may make intelligent use for school purposes of ephemeral sources such as leaflets and catalogues. Television may be less important to the high schooler as an information source, partly because of the ready availability of other materials and channels.

It is in the high school phase that use of the Internet is greatest. Teenagers relish the detail of its material and the range of curriculum subjects on which they can find information. Whilst many perceive it to be a major resource for information for school assignments, they are critical of the Internet's weaknesses. They are disconcerted by the mass of irrelevant sites listed by search engines when a search is made, and are intolerant when downloading times are slow. Nor do they enjoy reading large sections of text on-screen. Finding useful information on the Web can prove very challenging and frustrating. Curbs on home use are often still imposed by parents, who may insist, ostensibly on the grounds of cost, that the Internet is employed only for school, although, where a less restrictive stance is taken, teenagers may exploit the resource for information on a range of personal interests, typically sport, popular culture and consumer matters, especially in relation to the possible purchase of computer games. Use of the Internet may involve the regular monitoring of favourite sites to learn of the latest news and developments in a field of interest but, where a subject is new to the youngster or no specific sites are known, as is the case with the topics of much school work, search engines are commonly employed. Those without the Internet at home frequently depend on friends and free access at school, although, faced with filters that limit the subjects on which information can be retrieved, they may struggle when undertaking at school searches on sensitive or controversial matters even for academic assignments. CD-ROM encyclopaedias are used for information much less than in the previous phase but, where they

are employed, they may provide a useful overview of a topic or help to fill gaps after the exploitation of more specialist sources. No longer are youngsters able to base an entire assignment mainly on the information they have found via CD-ROM. Whilst levels of exploitation are more limited, CD-ROM resources remain well regarded, principally because of their ease of use and the directness with which information can be accessed.

With respect to channels of information provided by the school, subject textbooks supplied by teachers make considerable contributions when youngsters undertake assignments and revision for exams. One or two core books may be heavily employed throughout a two-year course for some curriculum subjects, although others may necessitate the use of a different book for virtually each topic studied. Departmental libraries, which may be substantial, are a first port-of-call for some youngsters when producing assignments, and increasingly specific texts are consulted as pupils move up the school. The main library of a high school tends to be larger than those of schools in earlier phases, may be more accessible in terms of opening hours and is more likely to be staffed by a professional librarian. Where they perceive the school library to be effective and beneficial, pupils may use it extensively, usually for curriculum information, and library materials may be employed in conjunction with sources such as Internet articles, textbooks from subject teachers and books at home. Other pupils are more apathetic in their attitude to the school library and a few are even hostile, either never using it of their own volition or visiting it only for the access it may offer to personal computers.

Some high schoolers remain enthusiastic users of the public library, although many consider that, as they have a range of other resources at their disposal, both paper and electronic, they have no need of it. Often those who do exploit a public library gravitate towards the central library. Many make the journey to the library unaccompanied but, if they live some distance away, others may still be reliant on parents for

transport. The time when they used the children's section is now past and even the adult stock may not be able to provide them with information of the required detail or specialism when advanced work is being undertaken.

Other people, especially parents and teachers, play an important role in alerting youngsters to particular sources of information that may be of help to them, and high schoolers often act on this advice independently, although some ignore such recommendations altogether. Teenagers recognise that usually sources exist which are more appropriate than other people for providing detailed subject material, yet the latter continue to play a key role in supplying information of a range of kinds. Specialists are used for skills information, especially in sporting domains, and youngsters working at a high level may be regularly trained by coaches. When faced with problems associated with homework, even teenagers may still instinctively turn to parents, often for advice on where information may be obtained but by this stage many have developed tactics that they use habitually for finding material for school. Information for the youngster's own interest is unlikely to be sought from parents. Friends are important sources of gossip, confirmation of what is expected for school assignments and, occasionally, subject content. The increasing specialisation with which youngsters make use of other people for information is a key characteristic of the high school phase. People play an important role in providing information in specific areas in which they are involved. Teachers, for example, are approached for information on option choices at school and to clarify what they require in the academic work they set. Nevertheless, teenagers may be wary of subjective information dispensed by those in positions of authority, especially when this takes the form of advice.

In many ways, the information behaviour of the high schooler is much more sophisticated than that of his or her younger colleagues, even though there are respects in which they are still essentially similar. Whether using library collections, the Internet or individual books, the teenager continues to spend little time on

formulating keywords in advance of a search, and trial and error tactics when employing search engines remain common, partly because, when seeking information for school, little may be known about the topic under scrutiny. The search terms employed are often either those that are considered most obviously to represent the subject or simply lifted from the assignment brief. Like their younger fellows, some teenagers are confused by terminology relating to public libraries and IT.

High schoolers gradually realise that the information they require for in-depth school work is unlikely to be found in a single source, although this can cause much frustration. They come to appreciate that information must be pieced together from several sources and, mainly because of the nature of the work demanded of them, are more likely than their juniors to exploit a multiplicity of materials but they still tend to restrict the numbers of sources they consult as far as possible. Some develop written plans for the construction of assignments using different sources, recording the contribution each may make to the overall subject. Based on several years of experience, high schoolers may have a good knowledge of the sources that provide them with information on subjects of ongoing interest and better developed skills in their use. They also benefit from the greater variety of materials and channels available to them. Faced with growing numbers of increasingly detailed assignments and other activities that compete for their time, convenience, speed and accessibility are the key criteria employed by many teenagers when selecting information sources. Some are keen to concentrate their initial efforts on readily available materials, such as sources at home and textbooks provided by the teacher, but others move from general to specific information and conclude by using materials of a range of kinds to plug gaps in the content they have encountered. Whilst they are still prone to believe that a good source is one that contains much information, some realise that one that fills these gaps is also of value. Their evaluations of sources are thus more context-sensitive than absolute. Even high schoolers, however, rarely make attempts to assess the accuracy of the information they find, unless they consider there are good reasons to doubt it, as may be the case with information provided orally by other people or that within hand-written notes.

Implications for practice

Although the picture presented here must be seen against the context in which the inquiry was conducted and no claim is made that it is necessarily transferable to other places, it is pertinent to make some recommendations with regard to the specific situations pertaining in the study.

It was apparent in the research that some youngsters even in the older half of the sample struggle when using subject texts and find the task of reading solid blocks of text demanding. Pupils discouraged by long sections of small print may feel happier when more visual, diagrammatic forms of presentation or more broken, report style structures are employed. The youngsters' problems have implications for the selection of materials for acquisition in schools. In particular, the temptation of buying books simply because they address the necessary content must be resisted, even though to choose a text on the basis of its vocabulary, print size, layout, arrangement, etc. may necessitate a reasonably detailed first-hand examination. Educators should purchase books of varying complexities and styles of presentation as far as costs allow. Other difficulties experienced by the youngsters in the study, especially in relation to how to find information within a book quickly and effectively using indexes and contents lists and, indeed, how an index can be used without reading it from the very beginning, should be addressed within information skills teaching sessions.

The wisdom of the long-established practice of youngsters making notes at school must be questioned. Results from the project suggest that even "A" Level pupils find the skill difficult to develop, and the notes produced may be illegible, inaccurate and superficial, and make little sense on later reading. Study

participants had very little confidence in these materials and some considered them totally untrustworthy. Either more attention must be given to the teaching of effective note-making skills or alternative pedagogical methods should be investigated.

In terms of implications of the research for libraries, staff should be aware of the difficulties caused to youngsters, generally of middle school age, when moving from the use of the children's stock to the exploitation of that for adults. As those in this position might be reluctant to ask for assistance, leaflets could be produced explaining how information on subjects relating to popular culture, sport, computers and other matters of interest to young people might be found within the collection. Such leaflets must stress that the underlying information-finding principles should be applied when searching for content on any subject.

Throughout the sample, much use of CD-ROM for information was limited to general encyclopaedias. Nevertheless, the popularity of the medium, even among teenagers, indicates that many youngsters would relish the opportunity for greater exploitation of specialist CD-ROM software devoted to particular subject areas. A review of publishers' catalogues conducted by the investigators reveals that such packages exist but their details are generally disseminated to schools, rather than the public at large. More effort should be made to market them to pupils and their parents, as well as teachers.

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