This article is intended to complement a paper that previously appeared in this journal (“Just What Do They Want? Just What Do They Need? A Study of the Informational Needs of Children, Children and Libraries, Summer/Fall 2003). It explores the information needed by young children and teenagers in their everyday lives. The focus is not the subjects of the information, nor the purposes for which it is required—both of which have been commonly investigated in previous need typologies—but other situational factors that must be appreciated if an adequate understanding of youngsters' needs is to be gained.

The criteria discussed emerged from research undertaken in England with four- to eighteen-year-olds. The situational factors identified may be grouped into five categories: those pertaining to the stimulus that has given rise to the need, those relating either to the manner in which the need develops or to its timescale, those concerning the nature of the information itself desired by the individual, those associated with the user's situation, and, finally, those involving the end product for which the information is required. The article closes by presenting general conclusions and implications for practice.

Existing typologies of the information needs of youngsters developed by Minudri, Gratch, Walter, Latrobe and Haven, and Shenton and Dixon tend to devote particular attention to the purposes for which information is required and to the subjects of that information. The former frequently provide the basis of the main divisions, and the latter are discussed to clarify the scope of each category. Coverage of further issues that should be appreciated in order to understand these needs in more detail is usually lacking. Indeed, in the late 1980s, the DOMensions Consulting Party Ltd. commented that the literature was, for the most part, limited to listing “general areas in which young people reportedly need or require information.” More recently, however, the inadequacy of such an approach has been recognized. Choo writes that experiences giving rise to information needs include elements that relate not only to subject matter but also to situational conditions and should be considered. Moreover, Nicholas's eleven “major characteristics of information need” are representations of these situational issues.

The intention of this paper is to examine such variables within the context of the needs experienced by the youngsters taking part in an empirical research project, thereby complementing the typology of information needs that has already been...
presented by the authors and which was itself largely centered on the purposes and subjects of the information required by the participants.

**Aims, the sample, and the methods employed**

The results discussed in this article emerged from a qualitative, British Academy-funded Ph.D. study that explored the information universes of young people. Insight into the situational factors pertaining to their information needs was gained by investigating the ideas of youngsters as they expressed them. Informants were drawn from six schools in a small town on England’s Northeast coast. Three were first schools (for children from four to nine years of age), two middle schools (for nine- to thirteen-year-olds) and one high school (for youngsters between thirteen and eighteen). In each organization, youngsters from one form in each year group contributed data. The form sampled and the individual pupils approached within that class were chosen at random. Each form teacher verified that the sample taken from his or her class embraced a wide range of ability. In total, 188 pupils from fourteen year groups were involved. Data was collected via twelve focus groups and 121 individual interviews conducted during the 1999–2000 academic year. Each informant was asked the following:

Think of a time recently when you needed help, when you needed to decide what to do, when you were worried about something or when you needed to find something out or learn something, either for school or your own interest. It might’ve been at home, at school, or anywhere else. Could you tell me about what you remember of that time?

This approach was based on a strategy devised by Dervin et al. for their study of the information needs of Seattle residents. After providing stories relating to the needs they had experienced, informants were asked to describe the action they had taken in response. Each dialogue was tape-recorded, and verbatim transcripts were prepared soon after its completion.

Although individual interviews and focus groups were the principal methods of data gathering, the data contributed by the youngsters was verified against documentary sources where possible. In particular, data was triangulated against internal school documents and England’s national curriculum requirements. Ultimately, data was coded inductively using the constant comparative method of Glaser and Strauss.

**Conceptual boundaries of the project**

For the purposes of this study, an information need was considered to be the desire or necessity to acquire the intellectual material required by a person to ease, resolve, or otherwise address a situation arising in his or her life. In accordance with widespread assumptions among writers and researchers involved in library and information science, information was perceived to include facts, interpretations, advice, and opinions. Unlike some authors, however, the researchers considered “information need” to embrace needs and wants alike, partly because to concentrate exclusively on what the investigators might consider “necessary information” would involve the introduction of a judgmental approach that seemed incompatible with the aim of examining information needs from the youngsters’ own perspectives. It may also be argued that because a researcher cannot experience the emotions and thoughts of an informant, the making of such distinctions is, as Line implies, virtually impossible. Only those needs that the study participants actually felt were explored within the project. Needs that were preempted by teachers, who provided information in advance of such feelings emerging were beyond the scope of the work.

**Discussion of findings**

Broadly, the situational factors identified in the study relate to the need stimulus, the development and timescale of the
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need itself, the information that was sought, the user's situation, and the nature of the end product for which the information was required. These areas are shown in figure 1. The principal aim of this illustration is to represent the variables associated with information needs addressed in this paper. To ensure greater completeness and to place them in a broader context, however, the additional criteria of the subject of the information required and the general purpose for which it might be needed are also shown. As explained previously, these issues formed the basis of the typology of information need outlined in a previous paper in this journal.

The need stimulus

Need capture

Many youngsters sought subject information in response to a desire or awareness within their heads that such material was necessary. Others, especially those pursuing information for school, were guided by documentary material, such as an assignment brief, which provided a less subjective construct of the need.

Specificity

This may be understood on a scale from high to low. The former end encompasses situations where information was required for producing a school assignment, solving a problem, or making a decision. “Low specificity” may apply in circumstances where youngsters sought information simply because of a passing personal interest in a subject. Situations within the middle ground include those in which pupils, realizing the need to develop knowledge of a topic for their studies at school, undertook background reading during their course without purposely revising for an exam.

Need development and timescale

Need anticipation

Many youngsters were able to define their needs before information-seeking action, and their searching concentrated entirely on these areas. Some began with a rough idea of the need topic, but it was only with time that more detail about it became known to them. Sometimes this was achieved through a photograph. Olivia (age eight) required more information relating to a Roman coin, which she photographed, and Joshua (age eight), a keen birdwatcher, took pictures of the creatures as he observed them so he could find out more about them. In each case the photograph, when developed, provided further information about the subject of the need.

For other informants, needs relating to certain aspects of the overall subject emerged during the seeking process. This was often the case when a detailed school assignment was being prepared. Needs of a broad nature were initially identified but, when work was undertaken, more specialized information on particular aspects was required. Harrison (age seventeen) explained how, while writing an essay on Nazi Germany, he eventually looked for information specifically on areas “that hadn't been covered particularly well” in sources he consulted and the importance of which he now realized.

Comparisons may be drawn between the way in which some youngsters gradually decided that they needed more material on matters that they were coming to believe were integral to their main area of concern and Belkin's Anomalous States of Knowledge (ASK) hypothesis with regard to adult information seekers. Belkin postulates that, in contemplating a problem (which, in this case, may be a homework assignment), an individual recognizes that his or her existing knowledge (or here the information that has already been retrieved) is insufficient to provide a solution. In the context of the study, the youngster could not at this point complete his or her work satisfactorily. The inadequacy, according to Belkin, may take many forms, including gaps, lacks, uncertainty, or incoherence. The person seeks information in order to rectify such an anomaly and solve the problem. Initially, he or she may struggle to articulate precisely the information that is required. As Belkin, Oddy, and Brooks write, it is common for an individual not to know in advance what is appropriate for his or her purpose, since it is the inquirer's very lack of knowledge that has prompted action. During the search, however, the information gathered causes the individual's state of knowledge to change and, increasingly, a clearer grasp of what is required is developed.

Topic constancy

When a particular need emerged in relation to schoolwork, most youngsters sought information solely on the subject nominated by either themselves or their teachers at the outset of the work, and their subsequent information-seeking did not deviate from the overall area. A few, however, recalled occasions when the whole topic shifted during the course of their assignment work. Usually such “topic reorientation” resulted from the youngsters' redefining the area of need after early information-seeking difficulties. Kirsty (age thirteen) first sought information on “poltergeists,” but after finding little information on the topic, considered it too restrictive and broadened it to “ghosts.” This runs contrary to what Irving considers to be the typical problem for youngsters engaged in work where they select their own topics, namely that the area initially nominated is too broad.

In two further cases, unforeseen events outside the youngsters’ control led to “need expansion.” Here the subject embraced by the need again increased beyond the person’s original expectations, although not in these instances because of initial information-seeking failure. Required to produce work on the English Civil War, Tanya (age thirteen) planned to work with a partner. The pair divided the topic into areas so each person was responsible for particular aspects. But when her partner was absent from school, Tanya had little alternative but to investigate the whole topic herself. Similarly, Pamela (age thirteen) recounted how unexpected information needs arose after problems she encountered during a geography field trip. Little work had been possible during the visit because it rained much of the time. The local studies assignment that had already been set was then widened to include areas that would have been addressed in the fieldwork had this been possible.
After her difficulties in finding information on poltergeists, Kirsty encountered a similar problem when investigating a topic relating to outer space. Here, however, she changed the subject considerably, rather than merely widening it. Kirsty first selected “the moon” for scrutiny, then shifted toward “rockets and things that people use to go into space” because most of the information she discovered pertained to these areas rather than the moon. Emily (age sixteen) took similar action. Her original topic was witchcraft, but noting that more material seemed to be devoted to witch hunts, she, too, changed her area.

The only problem of this kind that emerged in the context of interest-driven needs was experienced by Hilary (age eleven). She admitted that her “real interest” was in the work of a veterinarian but, as her CD-ROMs at home did not provide such information, her computer-based searches concentrated on animals in general. Needs of this type, where what is actually desired is comparable to the “enlightenment” type of the Web, it must be stressed that her territory is slightly different from the concern here since ending information-seeking action is not entirely the same as the termination of an information need. Nevertheless, Agosto, too, notes how information-seeking may cease when action has resulted in a satisfactory outcome. She also highlights the effects of “physical discomfort associated with excessive computer use,” “boredom onset,” the setting of time limits for information-seeking action, repetition of information and “information snowballing.”

Need termination

In instances in which the need ceased, three patterns emerged:

- **Termination on action.** The need continued until it was satisfied by effective information-seeking activity and resolution of the situation triggering the need;

- **Termination on event.** The need disappeared with a particular development in the life of the youngster that was outside his or her control. For school-required information, this might be the submission date for an assignment; in the case of advice, the time at which a decision had to be made; or with effective support, the passing of an event causing anxiety. For some informants, the stage of termination was not clear-cut. Penelope (age seven) admitted being shy and sought advice on “how to make friends at school.” Only gradually, as youngsters made friends with her, did her need dissipate;

- **Termination on interest depletion.** Where information was required on an ongoing basis for a personal interest, the need often continued until the individual’s enthusiasm for the subject waned. Piers (age ten) recognized that his interests changed, and drew attention to how his information-seeking was directed towards “anything that was interesting at the time,” as well as other subjects he considered long-term interests. In another reference to interest depletion, Zoe (age fourteen) described going to an afterschool club until its subject no longer appealed to her. In her own words, “It just became boring.”

Agosto isolates a number of factors that may lead to the termination of information-seeking action in relation to the use of the Web. It must be stressed that her territory is slightly different from the concern here since ending information-seeking action is not entirely the same as the termination of an information need. Nevertheless, Agosto, too, notes how information-seeking may cease when action has resulted in a satisfactory outcome. She also highlights the effects of “physical discomfort associated with excessive computer use,” “boredom onset,” the setting of time limits for information-seeking action, repetition of information and “information snowballing.”

Urgency

This issue was highlighted by two informants who had two very different types of information need. Ross (age fifteen) confirmed his choice of topic for an English talk the day before it was due and thus required his information for the following day. Although many instances were reported in which youngsters were working with school deadlines, this was the only case where it was specifically stated that the information was needed urgently. The second situation involved the need for advice to inform a decision that had to be made “on the spot.” Cathy (age eleven) said her veterinarian asked if she should have her terminally ill rabbit “put to sleep,” so she required guidance from her mother but “I could only talk for a few minutes because I needed to tell her [the vet] there and then.”

Information pertaining to the need

Precision

The specificity of the information required may, once more, be understood as a continuum. At one extreme, youngsters sought highly focused information relating to quick reference questions, like the query of Ian (age nine): “How many stars are there in the galaxy?” General information pertaining to topics may be seen as lying at the opposing end. In one such case Tessa (age eighteen) described how she initially required information on the background of the French Revolution that would help her make sense of the actual events. This information need is comparable to the “enlightenment” type.
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defined by Taylor and is characteristic of the “prefocus exploration” phase within Kuhlthau’s information search process model. A similar continuum is presented by Armbruster and Armstrong in relation to reading goals. They identify its opposing poles as “very specific” and “very general.”

Currency

Few youngsters specified that the information they sought should be up-to-date, and those who did make such a stipulation introduced this requirement only when the initial information they retrieved did not match their expectations. Wes (age nine) was searching for population figures for the United States and was dismayed by discovering only a 1996 estimate. Victor (age seven) expressed similar dissatisfaction when he learned that the information dealing with the television program, Blue Peter, provided by the BBC's teletext service Ceefax, did not relate to the latest edition. “I get annoyed when it just talks about last week's and doesn't do this week's,” he admitted. In both cases the boys assumed up-to-date information would be provided. Like many variables emerging in the project, the issue of the currency of the material required has been given little attention in most studies of young people’s information needs, but the matter is raised by Callaghan and Meyers. Hirsh’s study of “relevance criteria” adopted by teenage users of electronic materials also offers further insight into the importance of this factor. Hirsh explains how some of her participants selected a particular resource specifically because its material was more up-to-date than that offered elsewhere.

By its very nature, some information desired by youngsters had to be up-to-date—the latest sports results and team news, consumer information dealing with new computer games, details of presently erupting volcanoes, current affairs, reports of innovations in information technology, and stories breaking in Germany and the financial world.

Level

This dimension embraces both conceptual complexity and (if the material is in text form) linguistic readability. Once more, the issue emerged only when retrieved information proved unsatisfactory. Norman (age thirteen), who was interested in alternative medicine, explained how he struggled to grasp the content when his mother had shown him her college notes on the subject. He admitted, “It's really submolecular stuff. I can only understand the basics.” Whereas Norman found his mother’s material to be too challenging conceptually, Tony (age seven) recognized certain literature devoted to a particular topic of interest to be inappropriate in its readability. Keen to learn about Newcastle United’s past soccer players, Tony realized that his father’s volumes on the subject were beyond his reading level and commented ruefully that few books on the topic seemed to be written for young children. Again, the level of information youngsters require has received scant attention in existing projects devoted to their information needs, although Minudri, Callaghan, and Fourie note its importance in terms of school-related subject information, and Lyons et al. and Wallace and Kupperman highlight it within the context of material found on the Web.

Accuracy

Only Wendy (age nine) stipulated that the information she sought must be accurate. In all other cases accuracy, like currency, seemed to be assumed. Wendy’s understanding of accuracy, however, was rudimentary. To her, information was either correct or wrong. She showed no understanding of either a middle ground or the concept of bias. Once more, the importance of accuracy as a factor in relation to the information needs of youngsters has scarcely been addressed in past work.

Form

Few youngsters specified that the desired information should take a particular form but where such a stipulation was made, pictures were usually indicated. Unless otherwise stated, the informants assumed that the information they found via computers and books would be textual. In some instances youngsters sought information of a certain type in response to demands made by their teachers. Norman (age thirteen) explained how, in answering questions about Kalapalo Indians, “We had to do a page of writing and a page of diagrams for each question.” This led to Norman seeking a map that he could copy in order to “show where Brazil is.” Pupils were also instructed to obtain pictures for use in relation to subjects such as French, design technology, and art. Usually these served as stimuli for the youngsters’ own creative work. Occasionally informants undertaking topic work decided to seek illustrations of their own volition. Sasha (age nine) identified early on that a picture of a hippopotamus was a prerequisite for her study of the animal.

Where youngsters were responding to their own interests, some again determined for themselves that they needed an illustration. For several, this arose from a belief that such material provided the most appropriate form for the information they desired. Vicky (age nine) considered that the best way of learning about “how people see” would be to locate a diagram showing the process, and Rod (age eight), who wanted to know “what UFOs are like,” believed that a picture would be most useful. Others sought information not for understanding but for a future practical activity. Rick (age twelve) wanted pictures relating to the television program Pokemon in order to make his own Pokemon cards, whilst Kylie (age nine), a talented artist, sought pictures of animals as stimuli for her own drawing work. The importance of form as a criterion of information need is discussed by Callaghan.

Amount

Believed by Callaghan and Wallace and Kupperman to be an important factor pertaining to information needs, the issue of amount needed was introduced by two informants with contrasting attitudes, both related to answering an essay question. Marcus (age eighteen) indicated needing “enough information to be able to answer the question properly.” His judgment of what constituted sufficient material was largely a qualitative assessment that “by going any deeper and getting any more, I'm going off the point.” Marcus’s opinion on the amount required to satisfy
his need was thus formed during interaction with sources. Several youngsters in Limberg’s study took a similar approach. A contrasting view, in which the amount believed necessary was driven by quantitative requirements, was held by Wayne (age eighteen), who considered that he needed “enough information to give me two thousand words,” the stipulated length of his essay. Despite their differences, the attitudes of Marcus and Wayne both support Fourie’s argument that the nature of the task is critical to the amount of information needed.

The user’s situation

Novelty of information

Three varieties of subject information were required:

- **New.** The youngster had no preliminary knowledge of the topic and any information on it was welcomed;

- **Extension.** Informants sought more detail about areas that were familiar to them and about which they already had some information; and

- **Complementary.** Some informants identified aspect gaps in their existing information or knowledge relating to a particular area and sought to plug these.

Information of the last two types was often required by youngsters who had been given opportunities during lessons to use resources at school, such as textbooks or the Internet, or had their own class notes. The information that these youngsters obtained during their work at school, however, was insufficient to meet the requirements of their assignment. Indeed, Joy (age seventeen) asserted that work in class “only covered part of what you need” in many instances.

Prioritization and motivation

Several youngsters believed that, generically, needs of some types were more important than others. Gillian (age ten) felt needs relating to her own interest to be “less important” than those for school, and Emily (age fifteen) described how her motivation to seek information was lower when presented with optional academic work than when the task was compulsory. Emily reported one particular occasion when she undertook optional work simply because “I had nothing better to do.” Eileen (age seventeen) had a similar attitude. Nevertheless, even when work was obligatory, the motivation of some youngsters varied from task to task. Corey (age eight), for example, was less inclined to seek information for school when it was not required for written work.

The way in which Gillian categorized her information needs into those for school and those that were associated with her own purposes echoes a similar division made by Gross, who distinguishes between imposed and self-generated queries. In the former, the inquirer acts on an imposition made by a party external to the searcher, such as a teacher who has set a homework assignment, whilst in the latter the youngster addresses his or her own concerns.

Source-dependent needs also emerged. These developed in relation to subject areas not because the youngster was especially interested in the topic or motivated by external pressure, but rather because a source known to provide information on a particular area of passing interest was readily available. Dominic (age nine) relished reading his grandmother’s books on the Romans; Norman (age thirteen) enjoyed listening to his grandfather’s true stories of World War II, which the old man remembered from his youth; Sandra (age eleven) was interested in following her uncle’s singing career in Australia via the Internet; Kirsty (age thirteen) watched animal programs on television. The youngsters were not sufficiently enthusiastic about the subjects in any of these incidences to investigate them in additional ways and would not have sought other sources had the information not been available from their favored providers. Some information needs relating to the content of television shows emerged in response to cues during or after the program. Such information was sought through teletext in relation to cooking programs, specifically “what you need, the full recipe, and how you do it” (Victor [age seven]) and activities discussed on the children’s magazine program Blue Peter (Victor, again). Sometimes the need disappeared when the source ceased to be available. Zoe (age fourteen) had attended a range of afterschool clubs to increase her skills in many areas where she had a passing interest but when the clubs ceased to take place, Zoe made no attempt to look elsewhere.

The end product

Nature

Youngsters seeking subject information for school had usually been asked to produce some form of end product. Consideration of its nature leads to perhaps the most tangible answer that may be given to Choo’s question, “What does your problem look like?” He asserts that this matter must be addressed if a proper understanding of the information need is to be gained. End products took various forms, including the completion of word searches, answers to quick reference and more open-ended questions, essays, reports, portfolios, talks, role-plays, and artifacts. Usually, these products were to be submitted to the teacher by a deadline and formally assessed. An exception was the scrapbook of stories relating to Germany that was kept by Eileen (age seventeen). Although assembled on the instructions of her teacher, it served merely to increase her understanding of life in the country she was studying and was not marked.

While most youngsters seeking information out of personal interest simply wanted to know more about the subject, others prepared their own information books. During each summer holiday, Cathy (age eleven) produced a book on a particular animal, and Malcolm (age eleven) created work devoted to different countries for his own amusement. Other youngsters sought information that was necessary for another pleasurable activity. Kylie (age nine) sought artwork—she wanted pictures of animals that she would then draw.

Contribution of information element

The role of information required for a written school assignment fell into one of three categories:
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- Re-presentation. Many first- and middle-schoolers needed information they could copy or paraphrase in order to answer given questions or write about a particular topic. Project work often involved the re-presentation of information in both textual and pictorial forms. The need for information for this purpose was rare among high-schoolers, although a few situations emerged. The scrapbook of stories about Germany kept by Eileen (age seventeen), for example, involved merely the recording of stories.

- Use for analysis. Many high-schoolers required information to answer essay questions dealing with cause and effect relationships or the importance of a particular factor in terms of a certain event.

- Integration in creative writing. In this, the least common of the three categories, youngsters were asked to write, from their own perspective, an imaginary account of an event, the detail of which was expected to have a factual basis. Here youngsters were required to “personalize” the work in the manner described by Gross.27 Maureen, Linda, and Clint (all age twelve) explained how, in the “Hajj Diaries” that they were writing for religious education, they were to imagine undertaking an Islamic pilgrimage to Mecca and needed information in order to provide their account with authenticity.

This work is comparable to that of the role-play on drug usage devised by Emily (age fifteen). The storyline was again fictitious but the detail was to have a factual grounding.

Required accessibility of information

Just as the nature of the end product directly affected the use to which the information was to be put, this factor also determined the manner in which the material must be available at the ultimate point of need. Information was required for “in the head” storage when it had to be applied in tests and examinations, as well as when youngsters were looking to develop particular skills. However, in most cases where subject information was needed for the individual’s interest or for homework, youngsters were content to find a source that provided them with the information they wanted when they desired it. No memorization was necessary.

Conclusions

It is inadequate to investigate youngsters’ information needs purely in terms of the subjects of the desired information and the purposes for which the material is required. There is an increasing realization that an array of other factors must also be considered if a more multi-dimensional picture of information needs is to be gained. The study forming the subject of this paper has revealed such variables to emerge in relation to:

- the manner in which the need is initially represented;
- the specificity of the purpose for which the information is needed;
- the extent to which youngsters can define the totality of their need before seeking information;
- the degree to which the overall topic changes during the information-seeking process;
- the frequency with which information on a particular matter is needed;
- the way the need is terminated;
- the urgency with which information is required;
- the precision of the subject on which information is desired;
- whether highly up-to-date information is necessary;
- the required information’s levels of conceptual complexity and linguistic readability;
- the degree of accuracy necessary within the information sought;
- the form the information should take;
- the amount of material that is appropriate;
- how far the information pertains to a topic entirely new to youngsters, extends what they know, or complements it by filling in blanks within their knowledge;
- the motivation of youngsters and the priority they attach to a particular need;
- the nature of the end product to be prepared;
- the contribution that the desired information makes to the end product; and
- whether the information is to be memorized or if it is sufficient simply for it to be available in a source that may be consulted on demand.

Perhaps the most striking overall pattern in these criteria lies in the way that information needs and information-seeking behavior frequently appeared to be inextricably intertwined. This was particularly evident in the phenomenon of the source-dependent need, where some information needs emerged only during information-seeking activity and how several information needs changed entirely as a result of such action. Furthermore, in some instances, it was not until initial information-seeking work resulted in information that was somehow unsuitable for the inquirers’ purposes that their true needs became apparent, especially with regard to the material’s currency and level.

Implications for practice

Not all the situational variables addressed here emerged as factors in every instance of information need described by the informants. Clearly, the initial challenge for information professionals who conduct reference interviews with youngsters lies in developing a questioning method that is not based around a series of preconceived areas but rather one that allows them to draw out the young patrons’ real concerns regarding the information they seek, beyond the obvious matters of its subject and purpose.
References


15. Ibid.


20. Minudri, “Library and Information Services for Young Adults and Students,” 155–61; Callaghan, “Children’s Questions,” 55–65;


