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MAKING SENSE OF AN INFORMATION WORLD: THE EVERYDAY-LIFE INFORMATION BEHAVIOR OF PRETEENS

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This article presents an empirically-grounded framework for mediating the everyday-life information worlds of youth aged 9–13. "Tweens" are a sandwiched population with behaviors, circumstances, and needs distinct from children and young adults. Little research has addressed their information-seeking, especially regarding nonschool contexts. Thus, empirically-based conceptual tools are needed to help professionals in mediating the complex information worlds of tweens. Guided by multiple frameworks (Dervin's sense-making, Fisher's information grounds, and Chatman's normative behavior), data were collected using the "Tween Day" technique, involving scenario-based focus groups and interviews with thirty-four youth in three distinct settings. The study aimed at understanding the situations for which tweens seek everyday information; which sources they use, and why; what social settings foster information-sharing, and how; and what factors (especially affective) promote or hinder information-seeking. Using these findings, the proposed professional service framework contains five descriptive principles for mediating everyday-life information-seeking and information use by tweens.

> Generation Y is named that for a reason, spelled W-H-Y, and that's because [my] generation tends to ask a lot of questions. (Austin, age 13)

Introduction

This article addresses the everyday information worlds of Millennials or Generation Y—today's preteens, or "tweens" between the ages of 9 and 13—

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and how these worlds can be mediated effectively by youth service professionals based on an emergent framework. What began as an exploratory inquiry of "why tweens turn to other people for everyday information," that is, interpersonal information-seeking, developed into a deeper investigation of (*a*) how this age group differs empirically from adjacent populations (children and young adults) regarding its information behavior (IB), particularly for everyday-life situations, and (*b*) how Millennials' defining characteristics, which bolster their information worlds, suggest principles upon which focused youth services can be based. In addition to library and information science (LIS), the nature and needs of youth have been of interest to researchers and professionals in several fields, notably education, psychology, sociology, and social work, with each, predictably, contributing domain-specific insights. For LIS, these insights have largely focused on school and public library services regarding scholastic needs and information literacy. Scant research has examined minors' IB either within or outside of the classroom for non-school-related situations. The irony here is that, by nature, tweens, particularly the Millennial generation, are undergoing significant physical, emotional, and cognitive development during an era of unprecedented social change and technological advancement. Library services, however, still focus predominantly on curricular-driven homework assistance and reading advocacy. Examples of promoting technical literacy are increasing as public libraries in particular engage in providing public access computing services, largely due to investment by the Bill and Melinda Gates Foundation [1, 2]. We note with caution, however, that technical fluency is not the same as information literacy, nor does unmediated access to technology negate the need for information services. Our research thus calls for and proposes a framework that begins to address the need for an expanded youth services agenda that empowers tweens to develop and flourish in an increasingly complex world.

Following a brief review of studies of everyday-life IB and youth, we draw on the developmental theory of Lev Vygotsky [3, 4] to suggest a social practice lens for examining the way that tweens engage in interpersonal information-seeking. The Tween Day methodology is then introduced, followed by the findings from our exploratory qualitative study of tweens. We conclude by presenting our framework for basing future information services to this population.

The Myth of the Digital Native?

As a prelude to reviewing how adolescents have been studied in LIS, it may be helpful to chart the plethora of terms used to describe young information-seekers, most notably the most recent moniker of the Digital Native. Among

these are youth, young adults, early adults, teenagers, preteens, tweens, tweeners, and tweenies, with each generation having its own name or extension to mark its uniqueness from others—witness Boomers (and Late Boomers), Generation X, and now Generation Y, also known as the Millennials, the Net Generation, and the Google Generation, these marking the first waves of Digital Natives. But are they truly Digital Natives? The term was coined by technologist Marc Prensky [5, 6] to describe youth born after 1989 who, because of their immersion in interactive, media-rich technologies such as the Internet and the Web since birth, "think and process information fundamentally differently from their predecessors" [5, p. 1]. The implications of this brave new beginning do not necessarily make Digital Natives easy-to-serve users: Richard Sweeny [7] describes them as impatient, multitasking, highly demanding, experimental, and experiential, adding that they have different attitudes and expectations toward research and different skills and "literacies." Although this assertion is supported anecdotally (e.g., [8–10]), empirical research describing qualitative differences in student cognition based on longitudinal analysis is lacking, particularly outside the United States. The upshot is that, as Millennials enter college and as technologies further permeate the educational context and broader geosocial world, educators and librarians struggle to understand and adapt to these digital scholars.

Yet, arguments may be made, at least until hard science shows otherwise, that youth remain the same: despite the pathways afforded by evolving technologies, the physical, affective, and social contexts that shape one's information worlds are constant. Such is the rationale for why the stories of Beverly Cleary's characters have never gone out of print after fifty years. The high level needs experienced by youth, the needs to turn to a peer for information, emotional support, and identity confirmation, do not change—one can argue—whether one is growing up in New York City in the 1950s or in Port Orchard, Washington, in 2008. Moreover, not all youth today, not in the United States and certainly not worldwide, are growing up digital, as great efforts remain to be undertaken at promoting digital inclusion [11–13]. As we show in the following review of the literature regarding the everyday information behavior of youth, following Vygotsky's work development together with findings from our empirical research, tweens may be best served through a holistic practice model that accounts for their broad-based social, affective, and physical needs surrounding information.

Youth and Everyday-Life Information-Seeking

Ross Todd [14, p. 34], in his review of adolescent information-seeking and use, identifies three strands of research in the general area of youth in-

formation behavior: (1) school students learning through the school library, (2) children and adolescents and the World Wide Web, and (3) children and adolescents and everyday information-seeking. It is this third area that concerns how children seek and use information for meeting their developmental needs, investigating career and lifestyle choices, and building relationships with friends and family members. While of critical importance to children as they grow up, everyday-life information-seeking is by far the least studied of these three research strands. With few exceptions, these studies have focused on teenagers, a population with significantly greater autonomy and mobility than preteens and thus greater capacity for creating and using social networks that might facilitate interpersonal information behaviors. While only two of the studies elaborated on below cover youth between the ages of 9 and 13 [15, 16], we find them all significant for their approach to everyday information-seeking from the perspective of youth; in contrast, older studies tended to portray youth from the point of view of adult service providers.

In their work on Project CATE (Children's Access to and Use of Technology Evaluation), Eliza Dresang, Melissa Gross, and Leslie Holt [15; see also 17] examined the library behaviors of preteen youth, including three focus groups with children aged 9–13, and their observations of library activity focused on technology and computer access. They found that children of this age, male and female, often choose to work together, in contrast to the "one child per computer" paradigm common in many schools and information service environments. Children's information-seeking and information use was decidedly social, and their desire for social technologies was further reinforced by the desire for face-to-face information-sharing venues. Furthermore, these researchers found that preteens' suggestions regarding the design of information services could increase the effectiveness of information spaces, such as the public library.

Andrew Shenton and Patricia Dixon [16] found that "youngsters" of all ages turn to adults and peers for information. Conducting focus groups and interviews with 188 students aged 7–17 in a rural town in Great Britain, they revealed a typology of thirteen different information needs: advice, spontaneous "life situation" information, personal information, affective support, empathetic understanding, support for skills development, school-related subject information, interest-driven information, self-development information, preparatory information, reinterpretations and supplementations, and verification information. The study further identified that some young people take three general social types into consideration when selecting persons to consult about an information need: (1) people of convenience, (2) friends or peers of comparable experience, and (3) experts, such as teachers. Teachers and librarians were cast as negative social types by some students, who were loathe to approach them for particular

information needs. Unfortunately, Shenton and Dixon's typology fails to distinguish information needs developmentally or to enumerate qualitative differences in strategies among the developmental periods of childhood, preteen, and teen.

Studying the everyday-life needs of older youth, Denise Agosto and Sandra Hughes-Hassell [18–20] performed semistructured group interviews with twenty-seven urban teens (aged 14–17) in two Philadelphia venues to identify their information needs, sources, and preferred media. Using Reijo Savoleinin's [21] ELIS framework, they reported that teens identified friends and family as their preferred information sources and cell phones as their most preferred method of tool-mediated communication. Top noninterpersonal sources were the telephone, television, school, and the Internet. A typology of their needs listed schoolwork, time/date, social life, and weather as their primary information needs. Furthermore, these teens were highly skeptical of libraries and books as sources of everyday information, casting library staff as negative social types. Kathy Latrobe and William Havener [22] studied eighteen teens (16–17 years old) in an eleventh grade honors math course. Through surveys and individual interviews, they reported that teens were most in need of course-related information but that they also sought information on relationships, work, future plans, recreation, health, and lifestyles. All students reported using teachers, peers, and course-related materials to fulfill their information needs.

Developing Socially: Vygotskian Theory and LIS

The rising social constructivist metaphor stands in contrast to traditional approaches to LIS research, which focused on individuals, their information needs, and independent seeking strategies [23, 24]. While studies of youth IB have found that information-seeking supports the developing social self (e.g., [16, 18–20, 22]), information-seeking among youth has not been situated as a social practice. The current study goes one step further in not only recognizing social manifestations of IB but also suggesting a social ontogenesis of that behavior in youth.

Agosto and Hughes-Hassel's [18–20] study of urban teens, for example, appears to understate the critical importance of social factors in the development of young adults. They present a theoretical and empirical model of the urban teenager, incorporating seven aspects of the developing self. While their model situates the "social self" equally among six other areas, including the emotional, reflective, physical, creative, cognitive, and sexual selves, their qualitative data suggest that the social self is the crux and driving force behind these other aspects. The sexual self, for example, is discovered, explored, and actualized only in relation to other people. An-

thony Bernier reminds us, in a recent collection of youth information-seeking behavior research: "Like it or not, all adolescent literacy acts come embedded in social contexts" [25, p. xviii].

The social constructivist metaphor is based in the developmental theory of Vygotsky, developed and refined in theories of situated action and learning (see also [26, 27]). Vygotsky [3, 4] conceived of adolescence as a critical period in the development of children's mental and social functioning. Qualitative changes in social development and meaning-making define this period. Preteens begin to think conceptually and to take steps toward the formation of higher mental processes. They also begin to grasp their own personality, the outward reality that surrounds them, and the "self" in relation to broader social structures. Tweens can conceptualize activity and its consequences through reflection and metacognition that younger children cannot [28, 29]. Conceptions of morality develop, although moral concepts and behavior may not be aligned. The issue of fairness becomes paramount, as preteens become cognizant of the choices that others make with regard to their lives. More complex relationships among preteens, their peers, and adults drive this process forward. This is similar to the stage that Jean Piaget [30] defines as "formal operations." The emphasis on relationships distinguishes Vygotsky's work from that of his contemporary, Piaget, who presented stages that were predetermined and highly internalized. Vygotsky writes: "Human learning presupposes a specific social nature and process by which children grow into the intellectual life of those around them" [3, p. 88].

James Wertsch [31] outlines three major themes in Vygotsky's social formation of the mind. First, the internal activities of individuals can be understood within a broader social context. Cognitive activity occurs first on the social plane, and it is then internalized by the individual. This is important in considering the diverse ways in which children evaluate information and information sources. The social and cultural context of children's information-seeking influences what is important to know as well as how it is sought and known [32].

Second, learning is facilitated by more capable peers or more knowledgeable members of a cultural group. This is the concept of a "Zone of Proximal Development" or ZPD, which Vygotsky defines as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" [3, p. 86]. Several LIS researchers have identified or utilized the ZPD as a frame for studying children's IB: Linda Cooper [33] identified the role that adults play in the "grazing" and search processes of seven-year-olds; Carol Kuhlthau [34] modeled her "zone of intervention" after Vygotsky's ZPD—this zone in the search process is "the area in which

an information user can do with advice and assistance what he or she cannot do alone or can do only with great difficulty" [34, p. 129]; Lynne McKechnie's [35] work with young children in the public library found a similar mediating role in the process of picture-book browsing. These researchers found that adults can be supportive and provide confidence and validation to children even when they do not provide technical assistance with the search. Adults are thus seen as "scaffolding" the IB of young people [36]. This notion has been empirically tested with students and mediating information professionals but not in an everyday context of interpersonal information-seeking. Questions still remain regarding the role that peer and adult relationships play in preteen interpersonal information processes, particularly those that occur outside the professional mediation of teachers and librarians.

Third, activity is mediated by tools and symbols, particularly psychological tools (language being the "tool of tools") but also including different media, technologies, and places that facilitate social interaction and meaning-making. Informal space as a tool for facilitating information-sharing among preteens has been largely unexplored. This is a particularly important point when considering the constraints that youth encounter in their daily activities, including information-seeking. Michael Cole and Yrjö Engestrom [37] posit that to fully understand an activity (such as information-seeking), one must address how these artifacts mediate activity situated within a cultural context.

As children transition to adulthood, how others mediate their activities changes considerably. Tweens are in a period of development during which they are drawn to closer association with their peers and start to pull away from the previously comforting and secure relationships with parents and other adults. They idolize the activities of teens but are limited in their participation by a number of constraints, including mobility and authority. The current study thus proceeded from the assumption that preteens, being distinct from younger children and older teens in several ways, will also have different information needs, strategies, and mediations.

The Current Study

Our investigation of the everyday information behavior of tweens (children aged 9–13) is part of a larger study entitled Talking with You: Exploring Interpersonal Information-Seeking, which is funded by the National Science Foundation. This larger study focuses specifically on why people turn to other people for everyday information ranging from finding new jobs and lower mortgages to health care, housing, child care, social activities, and other aspects of daily life. From over thirty populations, tweens were spe-

cifically chosen for their conceptual interest: it was hypothesized that rich insights would be obtained from a population that has been nurtured from birth to seek information interpersonally and that is at a life juncture of becoming independent from the adult-oriented family/school structure but that also is marked as society's most technologically savvy generation. It was further hypothesized that tweens would engage in media-rich interpersonal information-seeking behavior, using all available synchronous and asynchronous media (e.g., face-to-face, telephone, e-mail, Web pages, instant messaging, forums, blogs, and Wikis).

The research was informed by several information and everyday-life theories, including Brenda Dervin's sense-making [38, 39]), Elfreda Chatman's normative behavior [40], and Karen Fisher's information grounds [41], as well as the principles of everyday information behavior discussed by Roma Harris and Patricia Dewdney [42] and Donald Case [43]. *Sense-making*, providing the base notes for the larger study of why people turn to other people for information, was pivotal in identifying the main concepts of interest, that is, information needs/gaps, information-seeking strategies, barriers, uses, and outcomes. The micro-moment interview technique was used to structure the exit interviews with the tweens. Chatman's work was key on several levels, beginning with her orienting concept of small worlds. Borrowed from sociologists Alfred Schutz and Thomas Luckmann [44] and Manfred Kochen [45], she defined a *small world* as one in which "everyday happenings occur with some degree of predictability" and where "legitimized others" share conceptual and physical space and thus shape social norms around information and other behaviors [40, p. 3]. As explained in her 2000 keynote address at the Information Seeking in Context conference in Sweden, her research prompted development of three related frameworks for explaining everyday-life information behavior: the theory of information poverty, the theory of life in the round, and the theory of normative behavior. In simplest form, these frameworks can be considered as progressing from a small world, in which information-sharing is not conducted openly and in a healthy regard but rather is highly secretive and hoarding in manner due to a paucity and high cost of information ("information poverty"); to a mixed open/closed environment, where whether an individual seeks, avoids, or shares information depends on circumstances marked by large degrees of imprecision ("life in the round"); to an open, healthy setting, where information-seeking is viewed as a normal activity except under unusual circumstances that are caused by behavior sanctioned by the group ("life in the norm"). Key themes running across Chatman's body of work include social types, social norms, and worldview. We hypothesized that the small worlds concept together with the theory of normative behavior would best fit or help in our understanding of the everyday information lives of tweens. Our working ex-

pectation was that the tweens occupied or lived in small worlds in which information-seeking was essentially viewed as a healthy activity by its members—the tweens, their families, peers, teachers, and others.

The general principles of information-seeking described by Harris and Dewdney [42] and Case [43] were particularly useful for designing the data collection instruments and data analysis, albeit with the caveat that they were largely drawn from research on adult populations. In *Barriers to Information* [42, pp. 20–27], Harris and Dewdney integrated previous research to develop six general principles of information-seeking behavior. They interpreted these generalizations to apply to "ordinary" people, of which we would include tweens. The principles are these:

1. Information needs arise from the help-seeker's situation.
2. The decision to seek help or not seek help is affected by many factors.
3. People tend to seek information that is most accessible.
4. People tend to first seek help or information from interpersonal sources, especially from people like themselves.
5. Information-seekers expect emotional support.
6. People follow habitual patterns in seeking information.

We integrated these principles with the "lessons" derived from Case [43] in his extensive survey of information needs, seeking, and use research. Thus, an aim of the current study was to learn whether the principles we draw from the research of adult information behavior were relevant to the tween population.

Recognizing that information-seeking is a complex phenomenon involving an interplay of personal and contextual variables, the researchers developed the following research questions (RQs) to guide the study:

- RQ 1: What types of everyday information do tweens perceive themselves as needing?
- RQ 2: How do tweens seek everyday information?
- RQ 3: What barriers do tweens encounter in seeking and using information?
- RQ 4: How do tweens manage their accumulated everyday information?
- RQ 5: What criteria do tweens use in assessing and sharing information and information sources?
- RQ 6: What roles are played by different social types regarding information flow?
- RQ 7: What are the roles of information grounds in tweens' lives?

The research questions were wide-ranging and inclusive but consistent with prior research on everyday-life information-seeking and information grounds [41–43]. The researchers sought to gather information that would

expand our understanding of how preteens experience information-seeking, including processes, outcomes, and affective dimensions.

Method

Researchers must balance the cognitive, affective, social, and sensorimotor needs of youth informants with the demands of collecting rigorous, high-quality, and minimally biased data. In response to this challenge, the research team developed the "Tween Day" methodology, a five-hour research "play date" combining social interaction, creative play, and multiple data collection methods. The agenda included carefully selected and structured activities that would meet the developmental needs of our target population while allowing the collection of a rich data set. Beyond triangulating data through the use of multiple methods, which is a common qualitative approach, the type and order of activities were selected:

1. To engage and stimulate tween participants
2. To provide an array of interactions with adult researchers and peers
3. To promote a sense of empowerment and achievement

The focus of our research design was moving from the traditional perspective of doing research on youth to doing research with youth. Table 1 illustrates the different elements of the research program and how they supported the developmental needs of tween participants, as identified in the youth services philosophy of Patrick Jones [46]. The researchers felt that this service philosophy was consistent with the developmental theory used to guide this research and that it helped frame research activities in terms of youth-centered outcomes. The procedural elements are divided into four categories: child protection, schedule design, data collection, and incentives and recognition.

1. *Child protection*: The researchers provided the tweens with structure and clear limits to their participation. They set up the norms of social interaction among adults and youth at the beginning of the study.
2. *Schedule design*: Knowing that tweens need to move, eat, and talk with each other in a relaxed atmosphere, the researchers created a schedule to facilitate physical activity and positive social interaction. Keeping the students moving and engaged through regular activity change was essential to preventing boredom and fatigue, as well as impolite, aggressive, or disruptive behavior.
3. *Data collection*: Multiple methods of data collection were employed to triangulate data, permit different types of interaction among tweens and adults, and play to the different strengths of individual participants. Focus

TABLE 1
RESEARCH ELEMENTS AND DEVELOPMENTAL NEEDS

Research Element	Description	Needs Supported
Child protections:		
Kid receipt	Researchers provided each parent a schedule and contact information	SL
Assent procedures	Tweens were welcomed to the project, provided age-appropriate assent information, and empowered to participate as "experts"	SI, SL, MP
Schedule design:		
Lunch and snacks	Healthy snacks and a lunch break allowed tweens to socialize and recharge	SI
Bio breaks, activity change	Tweens were kept moving to avoid "boredom" and given time to socialize with both peers and adults	PA
Data collection:		
Focus groups 1 and 2	Groups of from four to six tweens engaged in discussion with two adults about information seeking, information sources, and social life	SI, SD
WebQuest	Tweens alone or with a friend designed an informational Web page for other preteens	CA, SI, CE
Individual interviews	Each tween was given the chance to talk one-on-one with an adult researcher and reflect on earlier group discussions	SI, SD, MP
Incentives and recognition:		
Gift pack	Tweens were provided with a gift bag of university-logo items	MP
Certificate of participation	Personalized certificates were printed for each tween	MP, CA

NOTE.—PA = physical activity; CA = competence and achievement; SD = self-definition; CE = creative expression; SI = positive social interaction; SL = structure and clear limits; MP = meaningful participation.

groups of from four to six preteens, individual interviews, and a lab-based WebQuest activity afforded creative expression and collaboration with other tweens and adults.

4. *Incentives and recognition*: The researchers provided two levels of recognition to tweens: gifts that served as a measure of appreciation for their participation and personalized certificates that demonstrated the importance of their contribution to the research effort. Both were meant to afford a sense of meaningful participation and achievement.

Data Collection: Focus Groups and Interviews

During focus group 1 the tweens were given the scenario of a new kid (of their age) moving to their neighborhood. The tweens were asked to describe what everyday life would be like for the new tween and what types of things she or he would need to know. Then the tweens were asked to discuss how the following information sources would be used:

- Peers with whom the tween is close
- Peers with whom the tween is not close
- Adults with whom the tween is close (mainly family, teachers)
- Adults with whom the tween is not close
- Web sites
- Television
- Books and magazines

Focus group 1 ended with the tweens identifying the information grounds that their new neighbor might utilize. As explained by Karen Fisher and Charles Naumer [41], *information grounds* are social settings where people go for a particular purpose/activity (e.g., to get a bike fixed, to get a haircut, to eat, or to play a sport) but wind up sharing information in the course of interacting with other people. During focus group 2, the tweens were asked to expand on the information grounds previously identified in terms of how frequently one would go there, who else would be present, what one would talk about, what one liked about it, and so forth. Tweens were also asked to explain under what circumstances the sources discussed in focus group 1 would not be used to seek information. In the individual interviews, tweens were asked to recount a recent incident in which they sought non-school-related information as well as a time when they shared non-school-related information with someone. The recounts were based on Dervin's [38] sense-making, micro-moment time line approach. The tweens were also asked to explain how they manage or keep track of all the everyday information that they pick up—personal information management is a key area of research interest across all populations, and little is known about the practices of youth as most efforts have focused

on work domains [47, 48]. To end the interviews, the tweens were asked to explain why they agreed or disagreed with ten generalizations regarding tweens and information that were purposively designed to be thought-provoking. For example, tweens were asked to respond to the statement: "Parents can answer any question a preteen might have."

Study Samples

Three iterations of Tween Day were completed by the research team with three unique tween samples. The locations chosen were a university campus in the city (hereafter "University"), a faith-based ministry in a culturally diverse urban neighborhood ("Ministry"), and an elementary school in a middle-class suburb twenty miles from the city ("School"). In total, thirty-four tweens participated: sixteen at University (ten females and six males; average age 11 years), five at the Ministry (two females and three males; average age 12 years), and thirteen at the School (seven females and six males; average age 11 years). The University tweens were Caucasian; the Ministry tweens were African American; and the School tweens were a mix of Caucasian, African American, Native American, and Asian/Pacific Islander. Although the participants were recruited conveniently at each location, the combined sample of thirty-four tweens represented a diverse range of socioeconomic and ethnic groups, one roughly equivalent to the study's geographic region, which was broadly situated in a large urban-suburban area with a population in excess of 3 million.

Data Analysis

By systematically collecting data from three sites using identical instruments, protocols, and time frames, the research team was able to perform a thorough, cross-site analysis of the qualitative data. All data collected were rigorously checked for validity. To ensure trustworthiness, we implemented several measures as recommended by Yvonne Lincoln and Egon Guba [49]. Dependability (or reliability) was ensured through:

- Consistent note-taking and the use of multiple researchers
- Using multiple, triangulated methods
- Comparing emergent themes with findings from related studies
- Audiotaping and transcribing interviews
- Employing intercoder checks
- Analyzing the data for incidents of observer effect

We addressed different forms of validity as follows:

- *Face validity*: asked whether observations fit an expected or plausible frame of reference

- *Criterion/internal validity*: (1) pretesting instruments, (2) peer debriefing, and (3) participant verification (i.e., member checks)
- *Construct validity*: examined data with respect to the various theoretical constructs represented in the literature and pertinent to different aspects of the study (e.g., information grounds)

The qualitative data set was analyzed using a set of coding techniques, memos, and research team conversations. Major themes emerged from the data, which, at a high level, guided the analysis and permitted the team to break an enormous data set into manageable portions. These themes (e.g., information grounds, social types, affect, and information needs) or first-level codes were mapped onto the instruments' questions to create thematic "sets" that could be analyzed using iterative pattern-coding techniques. The researchers utilized the coding and querying features of Atlas Ti 5.0 (Knowledge Workbench, Inc.) to parse the data into these thematic sets. Repeated reading of the interview transcripts, memos, and group discussions allowed the researchers to identify patterns (second-level codes) of behavior within these sets. Some patterns appeared in multiple themes, which permitted thematic bridging. Select questions that provided particularly rich data were further analyzed independent of the themes, using third-level coding schemes specific to those smaller analytic sets.

The complete methodology (including instruments and techniques) is explained in detail in Meyers, Fisher, and Marcoux [50]. The resulting data amassed from fourteen focus groups and twenty-five interviews were analyzed using the aforementioned frameworks and principles, yielding unique insights into the information worlds of tweens and its social, affective, and cognitive dimensions.

Findings

The findings presented below are organized by the research questions posed earlier in this article. These questions represent the various dimensions of information-seeking experience we explored with tweens, ranging from how their information needs emerge to the processes of seeking information (including how, when, and where) to techniques and tools they use to share and organize the results of their search. In each of these dimensions, we find that social and affective factors were salient, if not critical, to both the process and outcome.

RQ 1: What Types of Everyday Information Do Tweens Perceive Themselves as Needing?

Information needs is a topic commonly explored in the research on information behavior. We sought to explore whether tweens, with access to a greater array of information sources and formats than children had just fifteen years ago, may have everyday-life information needs that are unique as compared to those of older populations, as well as compared to those documented in earlier school-based research on students' needs.

In focus groups, tweens explained the common types of information needs they experience in their everyday life. The tweens' most commonly reported information needs concerned concrete, immediate, or short-term goals and activities (rather than long-range needs, e.g., career choices); these included school work, social events and relationships, sports and hobbies, consumer information, fashion and popular culture, neighborhood information, and "stuff"—a ubiquitous term used to describe the object of spontaneous, undirected information-sharing, as in "stuff that went on at school," "stuff that you found on the Internet," and "stuff like movies or where to get the latest video games."

The urban Ministry tweens differed in their concerns from the two suburban groups (School and University). When asked what local information tweens needed, the Ministry group included how to deal with bullies, dangerous strangers, drug and alcohol users, and unsafe places. For example, one tween in a focus group reports: "If you're about to get into a fight, like how to react, how to refuse it, and not make people think you're like a wimp when you refuse it."[4] Although the urban Ministry tweens shared concerns and needs with the other groups, these particular concerns stood out for them.

All of the tweens stressed the need to share and receive private or secret information—an intrinsic part of social information exchange. The ability to keep secrets, ranging from everyday "news" to more "juicy" topics such as quarrels or crushes, was an important part of friendship evaluation and trust. The need for privacy—and the ability to trust peers—seemed to be the driving force in interpersonal information-sharing. Face-to-face communication was usually preferred over other forms, even if it required traveling or waiting until friends could meet at school or at some other social spot. A prime example of private or confidential information in-

4. Quotes from individual interviews are attributed to the tween with the study sample in parentheses (e.g., Kylie [School]). Quotes without attribution are derived from focus groups sessions. All tween names used in this article are pseudonyms. Tweens were permitted to select their own pseudonyms; hence, Mr. Blackwood and Mr. Henderson.

cluded the following: "You tell stuff like if someone's being mean to you, or you don't like somebody and, like, got mad at them. Or if you got in a fight with somebody." The tweens had strong ideas of who could be trusted with certain kinds of information needs. Trust was a quality generally established through tenure and extended contact: "If you get to know someone for a school year, it's considered your friend, you could tell them secrets. . . . The first day of school when you go into a new class, if you see somebody who you think would be nice, you can't start telling them all your secrets." Tweens also suggested that they kept their IB separate from parents and other adults, as the following tween explained: "My dad, he's always trying to get into my life—like 'What happened at school?' If my sister and I are talking about who we like and stuff, my dad's like, 'Oh, who's this person?' Like he's gonna get into our lives."

RQ 2: How Do Tweens Seek Everyday Information?

From an initial exploration of student needs, the research focused broadly on strategies and sources of information, including interpersonal, print, and digital sources. Rather than focusing on a specific kind of information-seeking or source (e.g., how children use a common Web search engine or resource), we focused on children's information problems—how they turned their needs into usable answers and solutions. Their seeking behavior, then, included a wide range of sources and search moves.

Interpersonal peer sources were highly salient, as tweens regularly consulted other tweens early in the information-seeking process. Sometimes the advice of a peer or adult was sought in selecting an information source—"a recommender"—when a need arose. Interpersonal information-sharing was enhanced by telephones, instant messaging (IM), and e-mail for those who had access, which enabled tweens to share information in the evening if they lived in different neighborhoods.

Tweens with Internet access reported using it as a means of seeking information, but access to and perception of its utility and function varied both within and among the three populations, as illustrated in the following responses to how often they go online: "Only when I'm in school, to do projects and stuff, because other than that I don't need to go to the Internet." And: "Whenever I get the chance, I have a computer at home with AOL, so I can get on the Internet, but sometimes when I try to get to certain sites, it blocks it because of the parental control. So I go to the library, too." Print sources (e.g., books and magazines) were less popular than electronic and interpersonal sources, as was mass media (e.g., TV and radio). Again, differences appeared between and among study groups, and

socioeconomic status seemed to condition perceptions of media utility and credibility. The University sample, for example, placed greater trust in books and print media and distinguished sharply between TV news/entertainment and "educational" TV. By contrast, the African American Ministry tweens identified TV, notably situation comedies, as an important source of social cues.

In addressing an information problem, tweens used varied sources and often consulted different types of media to answer the same question. For example, a tween might consult a peer, who recommends a Web site, which is vetted by a parent, and ultimately they together consult a store professional. Austin (University) described the process he used in finding an audio recorder, which included consulting a parent, store professionals, and finally eBay:

> I said, okay, where can I get another one of these? Radio Shack won't have them, this is the best that Radio Shack had. I need to find some information on where I can get this next one, so I talked to my dad. I said, "Hey Dad, this voice recorder doesn't work," and he said, "Shoot, let's pack it up and take it back." So I packed it up, and then I said, "So where should I get some information for it, or where do you think I could find another one that works?" And he said, "Well what about Radio Shack? Do they have any other ones?" I said, "Well this was the most expensive one there, it's probably the one that they, that will work the best." And so I didn't know what to do, so I suggested eBay, and he said, "I don't know if they'll have anything good, but you can check it though." So we checked it and found this really cool little voice recorder thing, which I talked about. Eventually, we looked at the price, it seemed reasonable, so we went ahead and got it. And it worked fine.

When tweens recalled a time when they needed information, they mostly used an interpersonal source—as seen in table 2, which details each tween's age, sex, information need, and resulting strategy. In nineteen of twenty-five incidents recorded in individual interviews using a critical incident approach, tweens used another person as the primary or secondary source of information. Many strategies involved multiple sources, including interpersonal, media, and Internet search tools. Tweens thus employed a kind of information bricolage, gathering and assembling ready-at-hand information from varied persons and media in the course of a single problem, provided they were motivated to do so. Tweens also indicated that they frequently "satisfice," or use "good enough" information, when they are less motivated—this is a phenomenon coined by Herbert Simon [51] and developed by LIS researchers such as Patrick Wilson [52]. Due to the differences within and among the tween groups, further study is warranted to elaborate on and clarify these preliminary findings.

TABLE 2
Tween Information Needs and Strategies

Alias	Age	Sex	Information Need	Strategy
Adam	11	M	Details about tonsil surgery	Ask doctor, friends
Aeisha	12	F	Trip to camp, dates, activities, etc.	Ask camp counselor, see info packet
Amber	10	F	Insect, animal identification	Internet search (Ask Jeeves)
Amy	9	F	Video game (purchase info)	Shop at mall with sister
Austin	13	M	Audio recorder (purchase info)	Check store, ask dad, Internet
Brenda	10	F	Movie review (for rental)	Internet search
Brooke	13	F	Japanese language (vocabulary)	TV, Internet chat rooms
Elizabeth	11	F	Soccer technique (learning)	Ask coach, talk to friends
Ellen	13	F	Drawing references	Internet browsing
Forrest	11	M	Football technique (learning)	Ask father, father's friend
Kevin	10	M	Why a friend was mad	Ask the friend
Kylie	10	F	Book club reading	Consult book club Web site
Ladarius	13	M	Sports jersey (purchase info)	Mall directory, ask store personnel
Lauren	11	F	Song lyrics	Internet search (Google)
Madison	11	F	Aunt's preference (for gift)	Ask father
Megan	11	F	Dog breeds (pet acquisition)	Internet search, books, dog shelters
Mr. Blackwood	11	M	Cat breeds (pet acquisition)	Ask mom, friends, shelter, Internet
Mr. Henderson	11	M	Food for dog (pet care)	Visit pet store, ask parents
Omar	13	M	Football technique	Asked father, close friend
Peyton	13	M	Family trip	Asked parents, sister, watched TV
Rose	10	F	Stinky mouse (pet care)	Asked friend, visited pet store, Internet
Shaniqua	10	F	Basketball technique (learning)	Asked brother's friend
Shayla	10	F	Television show schedule	Asked father, Internet TV guide
Sydney	11	F	Computer desktop	Asked friend
Trevor	12	M	Puzzle answer	Asked grandparent

RQ 3: What Barriers Do Tweens Encounter in Seeking and Using Information?

In seeking information, we often encounter barriers—problems of time, access, quantity, or quality, among others. How we overcome the barriers to our information-seeking is accepted as part of our search strategies and solutions. When talking with preteens, however, we found that barriers often affected what questions they felt they could ask—some barriers not only hindered solutions but played more deeply in their developing identity as information-seekers.

The tweens' age and maturity signified some obvious barriers to information-seeking and use. Less obvious but no less salient barriers, however, were constructed by the power and authority structure of the tween social context. Collectively, the tweens reported the following barriers:

- *Concerns for safety*: Parents often constrain tween movement and media access due to concern for safety and well-being (e.g., limits on which neighborhoods they can visit and when; restriction of access to chat rooms because of "predators"). Tweens often recognize that this is for their own good, but they sometimes resent such restrictions.
- *Reduced mobility:* Tweens often rely on adults for transportation, which limits their physical information venues—how often and when they may use them.
- *Adult authority:* The nature of adult control over information resources (including tools) conditions information-seeking. Adults may also enforce certain behaviors, organization, and sharing practices (such as leaving notes or recordings on a family calendar).
- *Oversight, monitoring:* The mere presence of adults can influence whether tweens feel comfortable sharing information. Tweens report a trust gap emerging in their relationship with parents, teachers, and other adults during this age span.
- *Access to information technologies:* Not all tweens have the same level of access to computers, the Internet, and telephones, based on household rules, socioeconomic status, and education background. Adults are often in charge of making these choices for them.
- *Schedule, daily structure:* Much of the tween day is spent in school, where the above barriers are even more salient. The times when tweens are permitted to share information limit how and what can be shared.
- *Social costs, perceptions:* Tweens associate some types of IB with social costs, including embarrassment and loss of esteem. This barrier conditions when tweens will ask questions, with whom they will share information, and what types of information they will share. Adults are often more reliable sources of information, but their associated costs

(misunderstanding, embarrassment, punishment) often make them prohibitive.

Often the tweens realized that these barriers were part of the parents' concern for their safety and welfare. Examples from the focus groups included: "My mom says I can't go to the mall until I turn 12 years old." "He [a friend] lives up by a highway, so I can't ride my bike up there." "My mom doesn't really like that chat room thing, so she put me on a kid AOL." "I know when we can go over there [a neighborhood hangout] and when we can't. On Tuesdays it's really, really bad over there, like there's people that smoke and they drink back there, so I don't go there on Tuesday nights."

During the interviews, most tweens (seventeen of twenty-five) agreed that there are many places, that is, information grounds, where they can go to share information with their peers. These places included physical settings, such as school, home, friends' homes, church, shopping malls, and public parks, where they routinely gather with friends to socialize; they also include virtual environments. Tweens also noted that they use asynchronous virtual spaces, including chat rooms, Weblogs, and multiuser Web sites to "display their feelings" (Mr. Blackwood, University), "write whatever you want," or "have an interesting conversation" (Austin, University). Communication technologies that preteens reported using with their peers were e-mail, instant messaging (IM), and the telephone. Some tweens, however, identified significant barriers to information-sharing, either for themselves or for other kids they know. These barriers fell into three categories: the safety of public spaces, concerns for tween privacy, and the authority of parents and adults. Omar (Ministry) suggested that some neighborhoods are dangerous for preteens, preventing them from gathering conveniently: "Some kids live in neighborhoods where you can't just walk down the street and go talk to other kids your age."

Tweens often do not want to share information in the presence of adults, particularly concerning personal issues, and this limits the number of places where they can socialize and the type of information that will be shared. Rose (University) explained: "Some places have grown-ups, and some preteens don't really like to talk about private stuff once grown-ups are around." Megan (School) reported that parents often intrude on youth conversations, which can interrupt information-sharing meant to be between peers: "When you're talking with your friends about something and then maybe an adult or your parent is walking by the door and they hear and then they come in and start telling you everything about their personal experiences." Tweens were aware of the limitations adults imposed on their information-sharing, both on their mobility and on the types of communication media they could use with peers. Madison (University) explained that some tweens have more freedom and mobility than others and that

this is a product of parental or family dynamics: "Some parents want [tweens] to stay in the house and help do chores and that kind of stuff, so they don't get to hang out with their friends very much. And other preteens, their parents don't care where they go. So they can go anywhere, and just get information from there." Sydney (University) did not feel that she had many places where she could talk to friends outside of school or her room: "I don't have a lot of places except for my room, or if I have my friend over or something." Kylie (University) expressed the limitations of parental permission to engage in some forms of information-sharing: "I'm not allowed to go on IM or chat rooms, so I basically have the phone, and e-mail, and face-to-face."

RQ 4: How Do Tweens Manage Their Accumulated Everyday Information?

Keeping track of everyday information is an important aspect of use, particularly of reuse. The research team hoped to explore the management dimension as an important aspect of how tweens use and reuse information and of how their access to digital tools (computer software, e-mail, Web browsers, etc.) might affect the ways that they organize their social worlds.

Tweens reported different techniques for managing their everyday information, but most relied on keeping temporary notes (Post-its, writing on hands; 37 percent) and sheer memory (32 percent). While many reported the use of bookmarks and affordances for organizing information within a technology tool, only a few used planners, organizers, or technological tools for personal information management (13 percent). Further probes in the interviews, however, showed that some tweens used unique artifacts and strategies (e.g., homemade calendars and planners or writing on their hands) as memory aids. Shayla (School) reported using a mnemonic device (self-generated songs) to remember information, which the researchers found to be clever and unique among the participants. Thirteen participants detailed management strategies that included two or more types. Both Lauren (University) and Peyton (Ministry) said that their schools promote information management by providing calendars or planners as a scaffold. Students are encouraged to write down assignments, schedules, and other school information, but they may also use these tools beyond the classroom for personal information. Peyton added that he uses his school planner to track friends' phone numbers and other social information.

Four participants specifically noted involving their parents in their information management, either by using a family calendar (Austin [University]), keeping notes by the phone (Kylie [University]), or by telling their parents things they wished to remember themselves (Shaniqua [Min-

istry], Kylie [University], Madison [University]). This latter group, which included some of the study's youngest participants, admitted to reducing their own cognitive load by allowing parents to manage some of their information. Austin's family calendar is designed to alert both parents and children of social obligations, including play dates and outings, as well as to track rental media due dates. This illustrates that some preteens are conscious of the need for joint information management with adults, who are responsible for, or must at least validate, certain preteen activities. This, however, is an adult management activity in which preteens are asked to participate, not one that preteens necessarily initiate.

Computers were mentioned by only five participants as important information management tools. Ellen further explained that it is important to have an information management strategy that supports retrieval and that writing notes is not always reliable: "I have pieces of paper everywhere. If I write it down, it's sure it's going to get lost." Brenda (School), on the other hand, uses a set of six different diaries to keep track of her information. She described the system she uses to keep track of different kinds of information:

> I have, like, six diaries at home because every year somebody gives me two diaries or something for my birthday. And so I have one that I have my agenda in, and I have one that I have facts in—like math facts and writing facts and stuff like that; and then I have one that's kept for boys and girls, that if I meet somebody new, I write about them. And then I have another one that's, like, like, "Dear Diary, today I did this and this and this and this and this." And then I have another one that's facts that people tell me. And I write it down—like, say it was at recess, I'd remember it and when I got in the classroom, I'd write it down on a piece of paper and I'd take that piece of paper home and then that day, right away—I would not do my homework, 'cause then I'd forget about the piece of paper—and I'd write it down in my diary.

Observations of tweens in the computer lab revealed that they often used memorized strategies and common routes to refind Web-based information in the absence of bookmarks.

RQ 5: What Criteria Do Tweens Use in Assessing and Sharing Information and Sources?

In an era of information overload, researchers suggest that young people may be approaching information assessment and using it differently than previous generations did [11]. But social or interpersonal information, particularly about everyday life, has different qualities than academic information. Diving further into tweens' experience of information-seeking,

we hoped to tease out how they approached information assessment as a critical component of their social information-seeking strategy but also how those assessments affected their views of source authority as well as their motivations in sharing information with others.

Visceral affective criteria emerged as important components of how tweens assess interpersonal information. They used notions of credibility and trust, as well as of the social costs associated with information-sharing, as important factors in deciding whom to consult and with whom to share information. These exploratory findings suggest that peer influence is ascendant in this process, while parent influence over information-sharing is waning. The rate of this change and the developmental factors that influence this change in the status of peers and adults requires further exploration with a larger sample and more detailed documentation of behavior over time. Tweens displayed varying and often naive criteria for assessing the veracity of more formal information sources and content, displaying both marked mature and immature notions of cognitive authority. They measured information against their personal experience, but their responses suggest that they rely heavily on the judgments of peers and adults to select vetted information. Some tweens reported understanding and using concepts of triangulation to verify information content, but this was not widely in evidence and varied among the study samples.

Tweens readily provided evaluations of different information sources as well as their perspectives on the authority of different informants. During the interviews, tweens were asked to judge the truth of different generalizations or statements about tweens. See table 3 for a summary of responses to these questions. This became a rich source of data about how tweens evaluated information. Justifying their knowledge claims by drawing on prior experience was most common. Although the statements posed to the tweens were overly simplistic, the tweens were not required to prove or disprove them. Nonetheless, a very common response was the counterexample, typified by Aeisha (Ministry): "No, it's not true because when I asked my teacher how many people died on the Lewis and Clark expedition, she couldn't answer it." Frank (School) also noted that referring to another authority is a sign of one's incomplete knowledge: "Actually I've asked my mom a couple things, and she had to say, ask my—ask my dad, because she didn't know." Ellen (University) told us that knowledge and authority are domain specific, and she suggested that teachers are not only limited in how they see the world but also prejudiced against other knowledge domains—a bold statement: "Teachers have strengths in certain areas and weaknesses in understanding. It's like, my science teacher and math teacher hate language arts, she can't understand writing. My language arts teacher hates math. I don't understand why anybody—teachers can be very biased on their own subject,

TABLE 3
TWEEN RESPONSES TO TEN GENERALIZATIONS

			Response									
Alias	Age	Gender	1	2	3	4	5	6	7	8*	9*	10
Adam	11	M	D	D	D	A	B	D	A	A	D	A
Aeisha	12	F	D	D	D	A	D	A	D	A	D	B
Amber	10	F	D	D	D	B	D	A	A	A	D	A
Amy	9	F	B	A	D	D	D	D	B	A	A	D
Austin	13	M	D	D	D	D	D	D	D	A	D	B
Brenda	10	F	D	D	A	D	D	B	B	A	B	A
Brooke	13	F	D	D	D	B	B	D	B	D	A	D
Elizabeth	11	F	B	A	D	A	A	B	D	D	D	A
Ellen	13	F	D	B	D	D	B	D	D	D	D	D
Forrest	11	M	D	D	D	D	D	B	B	A	B	A
Kevin	10	M	D	A	D	D	A	A	D	A	D	A
Kylie	10	F	B	D	D	D	D	B	D	A	D	D
Ladarius	13	M	D	D	D	B	B	A	D	A	D	B
Lauren	11	F	A	D	D	B	B	B	D	A	D	B
Madison	11	F	D	D	D	A	B	B	B	B	NA	B
Megan	11	F	B	D	D	B	D	D	A	A	D	A
Mr. Blackwood	11	M	D	D	D	D	B	D	B	A	D	B
Mr. Henderson	11	M	D	D	D	D	A	A	B	A	A	B
Omar	13	M	D	D	D	D	D	B	A	B	D	A
Peyton	13	M	D	D	D	D	D	B	D	A	A	D
Rose	10	F	D	D	D	D	B	B	B	D	D	B
Shaniqua	10	F	B	A	D	B	A	A	D	NA	A	D
Shayla	10	F	B	B	D	B	D	A	B	A	D	D
Sydney	11	F	D	D	D	D	D	D	D	D	D	D
Trevor	12	M	D	D	D	A	D	B	A	A	D	D
Totals:												
Disagree (D)			18	19	24	13	13	8	11	5	17	9
Both (B)			6	2	0	7	8	10	9	2	2	8
Agree (A)			1	5	1	5	4	7	5	17	5	8

NOTE.—Generalizations eliciting the ten responses: 1. Teachers can answer any question that a preteen might have. 2. Parents can answer any question that a preteen might have. 3. Preteens always tell an adult when they have a question. 4. Preteens don't like to seek information unless they absolutely have to. 5. Preteens don't like it when people give them information. 6. Preteens don't like it when other preteens seek information and then know more than they do. 7. It's not cool to tell a preteen something unless he/she asks/or brings it up first. 8. Preteens have lots of places where they can go and share information with other preteens. 9. Society encourages preteens to gather wherever they want and socialize. 10. Adults make it hard for preteens to talk about everyday life with other preteens and share information. Institutional Review Board restrictions prevent the researchers from revealing ethicity information due to the small sample size. NA = not available.

* $N = 24$ for responses to items 8 and 9. For all others, $N = 25$.

but not only biased on their own subject, but they don't understand other issues."

Megan (School) clarified how gender-specific questions also create circumstances under which knowledge sources must be evaluated: "'Cause if it's a guy teacher, they can't answer, like, girl problems—like you started your period." Some tweens found reason to dispute the authority of teachers, largely through anecdotal evidence, but extrapolated these anomalous occurrences to a broader perception of teachers in general. Mr. Henderson

(University) remarked: "Teachers are not really that trustworthy." This was supported by Brooke (University), who recalled: "I realized that my teacher doesn't always answer the questions right and sometimes he doesn't always have the answers." These latter examples show that initial evaluation of knowledge sources (Is the answer my teacher gave me correct?) translates into more broad justifications for knowing (Are teachers credible?).

Through the interviews, tweens revealed that they engage in several regulating behaviors in the information-seeking process. Many behaviors revolved around the social cost of information-sharing. The act of asking questions can be a socially awkward act, and tweens were especially attuned to the issue of "embarrassment" in revealing their knowledge gaps. They also actively assess the quality of their questions for the circumstance. Brooke (University) revealed some conditions under which tweens will not ask a question: "They might be too embarrassed to ask, too proud to ask, or they just don't think it's important enough to ask." Tweens also told us that they feel more in control of their curiosity as a result of maturation. Adam (School) stated: "That's true, because I don't like to ask as many questions—like little kids do. 'Cause when you're little, you're really, really curious, so you blurt out whatever you're thinking. . . . Now that you're a preteen, you think about what you're gonna say before you say it." Tweens explained that they need to regulate the information that they take in from others and that sometimes information directed toward them is unwelcome. Brooke (University) stated that ill-timed information can be an impediment to certain processes: "We don't like information when we don't need it because it seems to clutter up the way, get in the way of what we're doing." Austin (University) provided a sophisticated view of knowledge provided by teachers, specifically feedback on assignments. He explained that some knowledge is appreciated temporally and that his opinion of the advice may change over time (long-term vs. short-term meaning of the same information given):

> I usually like it when I'm given information, unless it's criticism. And then I'll like it in the long run, but not in the short run. Not while it's happening will I like it. If you write a paper for English, if it's harsh criticism, I don't like it. If they say you misspelled this, then that's all right. But if they say, "Man, this paper sucks, what were you thinking?" I'd say, "What's wrong about it?" And they'd say, "Well it's a terrible subject, you obviously don't know what you're writing about, and I think you'd be better selling your computer and getting a turtle farm." That's the kind of information that doesn't click with me.

The tweens also suggested that they were not only aware of their own knowledge regulation behaviors but were keenly aware of others regulating knowing as well. The following dialogue with Amber (School) illustrates

how knowledge is sometimes held back from tweens and that they are cognizant that adults are motivated to do so:

> *Interviewer:* [Can] parents answer any question that a preteen might have?
> *Amber:* Probably not. Because they might not understand it or they might not know the answer. And they might not want to tell you. So it's one of those things, like, they know but you don't know that they know, so they might say, "I have no idea." Course they know, but they don't wanna tell you.

The interviews revealed that tweens are aware of their knowledge dispositions and motivations as well as the motivations that may lie behind different types of information-seeking and sharing. While the focus of this study was everyday information, references to school work invariably surfaced. Trevor (School) explained that "looking up" information in books is only valuable when there is a specific kind of need, either one prompted by a school assignment or by intense personal curiosity. Otherwise, as in the example he provided ("What year was Henry Ford born in?"), a simple answer ("A long time ago.") is sufficient. This is often referred to as "satisficing" when a precise answer is not necessary due to constraints of time, motivation, or access to knowledge.

RQ 6: What Roles Are Played by Different Social Types Regarding Information Flow?

Social types have been shown to play an important role in the flow of information [40, 41]. Social types were hypothesized to be an important factor for preteens in how they sought and used information, particularly in light of their developing social worlds. Little is known, however, about how tweens frame social types, what roles they assign and how, and what impact this has on their information-seeking behavior.

In the focus groups, tweens were asked to discuss how they shared information with other persons, including friends, family, teachers, and strangers. Using Mark Granoveter's [53] concept of strong and weak ties, the tweens were asked to differentiate between strong and weak relationships and how this influenced their choices to share information and the information they might spontaneously share. Tweens displayed a vetting process that relied heavily on affective concerns, trust, and specifically the duration of relationships: longer relationships were deemed to be qualitatively better and more stable for interpersonal information-sharing. Tweens distinguished levels of social interaction within their own peer group as well as with the adult peer group. Personal information and needs were shared only with strong ties, and this was particularly true of information that had potentially high social costs associated (e.g., "crushes" or

relationships). Information shared with weak ties—strangers or mere acquaintances—might be logistical (directions, time, and way-finding) or of little social consequence. The strongest evidence for social types and how this influences information flow came from the individual interviews. Tweens had widely variant notions of the adult social type as a source of information. Parents and teachers were seen as distinct types rather than as roles that adults play within a social type. Thus, varying levels of knowledge were associated with teachers and parents, enabling them to answer different types of questions. Tweens framed this in terms of types of questions that could be asked of different persons. There emerged a "kid question" type, for example, that was unsuitable for asking adults, often based on the perceived consequences or costs associated with seeking different kinds of information. These different social types and resulting questions types were linked to trust, affect, and social barriers that were a product of institutional and family structures that both afforded and constrained information flow.

Sydney (University) suggested that posing questions to friends was a way of demonstrating some autonomy from adults: "Sometimes I can ask my friends, and they'll tell me. And so I don't always need an adult's help." Aeisha (Ministry) added a different spin, saying that sometimes "it's a question that's meant for a kid to answer, that an adult might not understand." The idea that there are kid questions asked of peers and adult questions reserved for adults was a prevalent theme. Peyton (University), who earlier perceived that adults are not capable of understanding some preteen issues, suggested in the following exchange that adults make communication difficult between adults and preteens:

> *Peyton:* They might not understand what you're going through, so they'll just automatically give an adult answer instead of a kid answer so we could understand. Instead of us getting in trouble or something.
> *Interviewer:* So adults make it hard for kids to talk to other kids?
> *Peyton:* No, not other kids. They make it hard for us [preteens] to talk to them [adults].

According to Peyton, tweens seek information from their peers on social issues because they have difficulty communicating with adults, who might otherwise be a preferred source. He distinguishes between two types of answers: kid answers, which can be understood by young people, and adult answers, which are perceived by tweens as inappropriate and punitive. Mr. Henderson (University) said it would be "uncomfortable" to ask certain questions of adults. Rose (University) explained that parents will inadvertently embarrass tweens in public if they are aware of information that is "really personal," such as "the boy you like." Within a peer group, our participants said that there are "close friends" or "good friends" whom one

can trust with more sensitive information. Other members of the peer group may be called friends, but they are less trustworthy—people whom Peyton described "friends that I just say 'hi' and 'bye' to." In short, within the broader "friends" social type, the tweens identified friends by tie strength and shared different information on this basis.

RQ 7: What Are the Roles of Information Grounds in Tweens' Lives?

An *information ground* is a synergistic "environment temporarily created when people come together for a singular purpose but from whose behavior emerges a social atmosphere that fosters the spontaneous and serendipitous sharing of information" [54, p. 811]. As discussed by Karen Fisher, Carol Landry, and Charles Naumer [55], such information-rich social settings can be analyzed or facilitated using fifteen characteristics presented in a people-place-information trichotomy.

In light of research reported by Fisher and Naumer [41], along with our earlier environmental scanning, we expected that tweens might have unique information grounds based on their social and developmental uniqueness. The tweens reported a variety of places that they share information, usually with their peers. The most common information grounds were school (including cafeteria, hallway, playground, and bus), shopping malls, athletic fields, community parks, home, and their neighborhoods. Less common information grounds ranged from churches and libraries to restaurants, convenience stores, and public transit. School was the most common information ground for good reason: all the tweens attended school; it is a common place to plan social activities; it is a place where opportunities to mingle and socialize are planned into the schedule, albeit with constraints. Tweens also used school as a place to plan other opportunities to get together in person or online. In focus groups, tweens explained: "Like half of our school is in the lunchroom, so you can talk to more people," "Me and my friends at recess, we talk to each other," and "At school, we ask each other if we'll be on IM." Within schools, recess and lunch were noted as times of the school day when preteens were most likely to share information. Lauren (University) explained: "You can always do it at school. You can always do it at recess, you can always do it at lunch. You can do it after school, you can do it before school, if you got there early enough. And if they come over to your house, they can always do it there." Some tweens reported that the school can also be a place for social interactions among ethnic groups. This was reported most frequently in our Ministry group, who were all African American:

Tween: There's the group things. There's the table where all the Mexicans sit.

And they talk Spanish most the time. And there's other tables and stuff. And like, yeah. So we just talk about stuff. So we just talk about stuff.

Interviewer: What kind of stuff?

Tween: Movies, our homework.

Not everyone viewed school as a place where information flows easily. Ellen (University) pragmatically saw school, which many tweens acknowledged as a place where socialization occurs, as a highly structured environment where adults discourage social opportunities: "We have almost no time for socializing except for lunch. We get five-minute breaks between hours. You get five minutes to walk from one end of the school, take a detour to the locker, pick up our five pounds of stuff, walk around to the other side of the school, sit down, unpack all by the end of the bell. And go back to the bathroom and get Kleenex. It feels like a lot of work, and I don't see how they expect us to socialize in that time as well."

In addition to school, tweens reported other locations that may be considered information grounds. The neighborhood was commonly cited as a place where tweens get together after school and on weekends due to the concentration of kids that permits easy socialization: "Sometimes I go over, and since there's a million kids in that cul-de-sac, if [one] can't play with me, then I go over to somebody else's house." The shopping mall was also cited as a place where tweens could find peers with whom to socialize, shop, and share information. Our informants explained: "You meet up with your friends, and you go to the mall, and then when you get to the mall, you usually go in shops, and you go, like, 'Oh, this is a nice coat,' you know, stuff like that." And "I hang out with my sister, she's fifteen, and we go to the mall and watch movies and stuff." Athletic fields and sporting events, both organized and casual, provided opportunities for tweens to get together. Tweens also identified these as places where their parents could socialize if they were involved directly in a soccer match or other athletic contest. When asked the reasons for choosing these information grounds, tweens reported the following important considerations:

- *Peer interaction*: "I like the fact when you meet people around your age group." "Pretty much all the people [are] really nice."
- *Access to older teens*: "Sometimes we can ask questions."
- *Opportunities to play*: "I like video games."
- *Computer access*: "They have computers at the library."

There were salient differences among the three study samples with regard to information grounds. The suburban school tweens felt comfortable in their neighborhoods, particularly the cul-de-sac, which afforded both play and socialization. For the urban Ministry group, the neighborhood provided some places to socialize (e.g., ball courts), but mobility was con-

strained by concerns for safety. The urban/suburban University tweens often did not socialize in the neighborhood except to the extent that neighbors were also schoolmates. The limited mobility of tweens was made up for in two of our groups (University and School) by access to virtual interactions (e.g., e-mail, Web, chat). In the Ministry group, only one tween had home Internet access.

Chatman and the Principles Revisited

According to Chatman's normative behavior framework, the thirty-four tweens in our study should have lived in similar small worlds, sharing a cultural space where few surprises occur, life is predictable, and information-seeking is viewed as a normal and healthy, albeit somewhat boring, behavior that is necessary for holding the collective worldview or reality together. Our research revealed differences in what perhaps could be best described as multiple normative behavior disorder (to pun on Chatman): the tweens repeatedly discussed straddling multiple worlds, navigating many systems simultaneously—the home, the school, the neighborhood, clubs, the world at large, and so forth—each with its own set of social norms, worldview, social types, and expected/condoned information behavior that could be in balance or diametric to those of the others. Moreover, data analysis revealed that successful coping or healthful information-seeking behavior by the tweens suggested an ability to engage in multiple discourses or multiliteracies as a result of their expanding social networks/social worlds paired with increased cognitive maturation.

Developmental factors (social, affective, and cognitive maturity) have an important influence on tween information behaviors and their place in the multiple information worlds they inhabit. Other factors, particularly race and socioeconomic status, emerged strongly within our study samples—no doubt these also play an important role and require investigation. While this study sought to delineate how tweens may be unique among other age groups, tweens are by no means homogenous. We approached tween information-seeking as a healthy part of their development, but we found that, in some tweens' worlds, information-seeking is rebellious, dangerous, or socially stigmatizing. Further, we found that parents' and tweens' values regarding information-seeking often come in conflict, creating unhealthy situations for some tweens. Additional research is needed to tease out these other factors and to identify how cultural, economic, and education-related aspects of preteens lives affect their information behavior.

The principles of Harris and Dewdeny [42] and the lessons of Case [43], applied to the supporting evidence from our tween informants, suggest that the collective lessons of research on adult information behavior are,

for the most part, broadly applicable to youth. There were, however, some important emphases in tweens' accounts of their information-seeking that influence the way these broad, general considerations may be applied. We find the following summary points, specific to our study group, useful in assessing the fit between prior work and our own analysis:

1. Tweens' developing social worlds create a dynamic situation for information-seeking and use. The tweens are negotiating new relationships with interpersonal information sources.
2. Emotional support must preempt the asking of questions rather than merely accompanying it. Children need a supportive environment for inquiry. Barriers to information-seeking are strongly linked with emotions and social costs.
3. Tweens reported rejecting formal information channels and institutions in favor of interpersonal sources for everyday-life information. Information behavior often transcends the boundaries of traditional help systems.
4. Tween information behaviors can be complex. Beyond notions of "least effort," tweens expressed that they calculated social costs and benefits of sharing information and information needs. Social roles were important factors in assessing trust.
5. Tweens rely on informal social spaces (i.e., information grounds), both virtual and face-to-face, for everyday life information. Within formal spaces, like school, tweens adapt and adopt social spaces (hallways, bathrooms, cafeterias) for information-sharing.

Table 4 aligns these points with the frameworks of Harris and Dewdeny and Case. The points above can be further distilled into a guiding framework for the development of youth-centered information services for tweens.

Applicability of the Research to Practice: A Guiding Framework

Based on our empirical findings regarding tweens' everyday-life information behavior, we propose that the following five principles be used as a framework for basing the mediation of information services to this age group. The principles operate on the basic assumption that tweens are social beings and that information—as part of communication—is natural and empowering.

Information-seeking is a natural and necessary part of tweens' physical, social, and intellectual growth.—Generation W-H-Y, as Austin and other tweens explained, is naturally and insatiably curious. They are constantly seeking information to perform academic work as well as aid in their transition to

TABLE 4
PRINCIPLES OF INFORMATION BEHAVIOR AND TWEENS' EVERYDAY LIFE BEHAVIORS

Principle 1: Information seeking is a natural and necessary part of tweens' physical, social, and intellectual growth		
Related Literature	Supporting Evidence from Tweens	Key Points
• Information needs arise from the help-seeker's situation (Harris and Dewdney, principle no. 1) • Information-seeking is a dynamic process (Case, lesson no. 6)	"It really is kind of a time when we're trying to find out about as much as we can. Or at least for me that's how it is" "Sometimes I can ask my friends, and they'll tell me. And so I don't always need an adult's help" "Some places have grownups, and some preteens don't really like to talk about private stuff once grownups are around" "Like a relationship between a girlfriend and a boyfriend or something, you might not go to your parents for advice or something, because they might blow something out of proportion. Something like that. But if you talk to your friends, they probably won't know what to say, but it will be easier to talk to them"	Tweens' developing social worlds create a dynamic situation for information seeking and use. They are negotiating new relationships with interpersonal information sources

Principle 2: All aspects of information behavior have social and affective nuances		
• Information seekers expect emotional support (Harris and Dewdney, principle no. 5)	"They might be too embarrassed to ask, too proud to ask, or they just don't think it's important enough to ask" "Because sometimes we don't ask people questions because we don't want them to know that we don't know. Do you know what I mean by that? You'd be embarrassed, because you don't want them to know, that you don't know" "Adults really embarrass preteens, but sometimes it's okay for a parent to be there because they might, if it's a bad situation, they might help out, if there's a problem" "If someone knows more than I do, I can ask if I need anything. And it makes me feel good that there is someone I can ask"	Emotional support must preempt the asking of questions; children need a supportive environment for inquiry. Barriers to information seeking are strongly linked with emotions and social costs
Principle 3: Information literacy is developed and honed in informal settings as well as in tandem with formal scholastic venues		
• The decision to seek help or not seek help is affected by many factors (Harris and Dewdney, principle no. 2) • Sometimes information—particularly generalized packages of information—doesn't help (Case, lesson no. 4) • Sometimes it is not possible to make information available or accessible (Case, lesson no. 5)	"Teachers are better for learning math, reading. But friends are better for talking about movies and games and stuff like that" "There's also some things you can't really find at a library because the information is so hard to find. So sometimes it's easier to find it on the Internet" "Whenever I feel like I don't know something, I'll just call somebody who I think might know, or ask someone like my parents" "Yeah, like, nineteen-year-olds that just come and, like, ride their bikes and, like, hang out. And then, it's, like, sometimes we can ask them questions"	Tweens reported rejecting formal information channels and institutions in favor of interpersonal sources for everyday-life information. Information behavior often transcends the boundaries of traditional help systems

TABLE 4 (*Continued*)

Principle 4: Trust, as a blend of cognitive authority and multivariate cost, is a critical determinate of information seeking		
• People tend to first seek help or information from interpersonal sources, especially from people like themselves (Harris and Dewdney, principle no. 4) • Formal sources and rationalized searches reflect only once side of information behavior (Case, lesson no. 1) • More information is not always better (Case, lesson no. 2)	"Like they [parents] might not understand what you're going through, so they'll just automatically give an adult answer instead of a kid answer, so we could understand" "If you see somebody who you think would be nice, you can't, like, start telling them all your secrets" "Things that kids do and kids talk about are a lot of the time things that teachers *don't* talk about and know a lot about" "Yeah I can trust my parents more than I can trust my friends, but it's just easier to talk to my friends" "The only people I will tell are my really good friends, and I'm absolutely sure I can trust them"	Tween information behaviors can be complex. Beyond notions of "least effort," tweens expressed that they calculated social costs and benefits of sharing information and information needs. Social roles were important factors in assessing trust
Principle 5: Informal social settings provide key opportunities for information exchange, particularly about everyday-life situations		
• People tend to seek information that is most accessible (Harris and Dewdney, principle no. 3) • People follow habitual patterns in seeking information (Harris and Dewdney, principle no. 6) • Context is central to the transfer of information (Case, lesson no. 3)	"You can always [share information] at school. You can always do it at recess, you can always do it at lunch. You can do it after school, you can do it before school, if you got there early enough. And if they come over to your house, they can always do it there" "What I like about [church group] is you get a chance to be with girls around your age and that you get to have somebody to talk to. And you can share your opinions and stuff like that" "So that's what really catches my attention on MySpace, 'cause they teach you a lot"	Tweens rely on informal, social spaces (i.e. information grounds), both virtual and face-to-face, for everyday life information. Within formal spaces, like school, tweens adapt and adopt social spaces (hallways, bathrooms, cafeterias) for information sharing

young adulthood. Two processes are at work during this period of development: socialization (how they come to adopt social norms and processes of relating to others) and individuation (how they develop a unique identity among peers). Both formal and informal sources of everyday life information are critical to these co-occurring developmental processes. Thus the founding principle of any service agenda to youth should focus on how information is an intrinsic and central aspect in their worlds.

All aspects of information behavior have social and affective nuances.—In most information-seeking incidents described by tweens, other people (peers, parents, other adults) played paramount roles in the search process. This finding is supported by research with younger [33] and older [19, 20] populations. In the tween years, however, we begin to see the mediating preferences switch from adults to peers. Adult influence in information-seeking decreases and comes to be, in some instances, resented. Peer friendships begin to perform a more complex purpose: not only do these peers provide entertainment and socialization, but they also become confidants, intimates, and sources of assistance in the transition to young adulthood. Such transitions involve emotions, which are important to personal and social life [56]. Abraham Maslow [57] stated that social needs such as friendship are integral to the intellectual health of the human. Tweens develop their emotive worlds through these social connections, which were found to be closely intertwined with their everyday-life information needs. As their curiosity tends toward relationships and intimacy, their information-seeking becomes more affect-laden.

Information literacy is developed and honed in informal social settings as well as in tandem with formal scholastic venues.—Information literacy frameworks used in formal education, such as the Big6 [58] and ISP [34], are rarely translated into the world of everyday-life information-seeking. Tweens reported that they explore different information sources—interpersonal, text, and media—and often develop an understanding of concepts such as trust and authority through trial and error experimentation. These unstructured forays into the realm of informal information literacy are valuable and often prove effective. Initiatives such as Connecting Learners to Libraries [59] suggest the need to approach the student audience with unanimity of purpose, blending public library and school library agendas. Tweens benefit from a consistent message and a consistent approach to information literacy. However, they also need opportunities to explore a variety of information strategies with the support of mediating professionals, adults, and peers.

Trust, as a blend of cognitive authority and multivariate cost, is a critical determinate of information-seeking.—In experimenting with different interpersonal sources, tweens are learning valuable lessons about trust and authority. Factors emerging in their explicit and implicit decisions include

(1) the perceived credibility of the source, (2) the loyalty of the source, and (3) their personal connection to the source (i.e., tie strength). Tweens may sacrifice information quality (in objective terms), particularly on sensitive topics like sex, to satisfy their need to reduce social costs, such as embarrassment, intimidation, or loss of social status. Social roles and social types are also important factors in tweens' developing conceptions of trust. Tweens begin to make generalizations, sometimes false or naive, about the ability of adults and peers to answer their questions. As tweens further develop their ability to engage in perspective-taking, they begin to understand more fully their roles as information-seekers as well as the roles others take in helping or hindering their search for information.

Informal social settings provide key opportunities for information exchange, particularly about everyday-life situations.—Just as formal models of information literacy appear strained in their application to everyday-life problems, formal spaces often fail to provide the proper context for information-sharing. This study found that tweens have a rich repertoire of strategies for sharing everyday-life information, few of which involved formal channels, such as libraries and help systems. As socialization and information behavior are found to be closely entwined, it is important to recognize the power of informal space in mediating the information needs of young people. The soccer field, the school cafeteria, and the shopping mall become essential information grounds to tweens, both for satisfying their curiosity and for meeting their developmental needs. Information professionals who wish to assist tweens in seeking authoritative information must consider expanding their services to these information grounds where possible.

Practitioners who use this framework to guide the development of information services for preteens should audit their current practices and policies, looking specifically to increase peer interaction and to foster natural cross-over or convergences between everyday and scholastic activities. For example, are student assistants relegated to shelving books, or do they help mediate services through peer assistance? Do tween users have social spaces (physical and virtual) to gather and share everyday-life information as well as school-related information? How are routine spaces such as hallways, lunchrooms, bathrooms, buses, and even libraries (school and public) being used to promote everyday information-sharing (e.g., information grounds per Fisher, Landry, and Naumer [55])? Are books on sensitive topics (e.g., reproductive health) and "light" topics (e.g., hobbies, fashion, and music) available in modes and venues that can be accessed privately as well as those that appeal to tweens' social interests and behaviors? As part of information literacy training, are tweens instructed in (*a*) how to recognize or clarify information needs in their own minds as well as the information needs of others, (*b*) articulate those needs to others personally or using an information system, and (*c*) use efficient strategies for sharing

and managing information? Such questions focus attention on the developmental needs of youth and how services can be oriented toward their personal and social growth as information-seekers.

Conclusion

This exploratory study of three groups of tweens yielded rich insights into their everyday information worlds. Many threads were illuminated for further research with tweens in different settings and for exploration with other age groups as well. Moreover, the themes that ran across the data showed varying degrees of fit with Chatman's general concept of small worlds and her theories of everyday-life information-seeking. Chatman, a luminary in the LIS field, should be properly credited with coining the concept of "information worlds" for indeed that is the precise phenomenon to which her work leads. What may begin as a small world, especially for those starting from sociology, morphs quickly into an information world as we land squarely in the middle of all the emotional, social, political, physical, technical, and, yes, informational complexity when we consider phenomena through the lens of Chatman. A complementary framework to Chatman's on several levels, and one of the first in LIS to focus explicitly on the physical role of context, Fisher's information grounds proved useful for understanding the role of social settings in information flow, particularly how the presence of key individuals affect tweens' views of whether a locale is "good for information." Our data revealed varying degrees of fit with the principles summarized by Harris and Dewdney and Case, suggesting unique attributes to tweens (and perhaps all minors seeing as the principles were largely drawn from research of adults).

An Important Issue Arising

Libraries and information professionals labor to build collections, both physical and virtual, under the assumption that access to print and media is of central importance to resolving users' information needs. In discussing everyday-life information problems with tweens, however, we found that it is access to other people that often makes or breaks an information search. This has important implications for those who provide information services to young people. Our five-point framework emphasizes the critical role that social factors play in mediating successful information-seeking as well as developing efficacious information behaviors in preteens.

Vygotsky's concept of a Zone of Proximal Development suggests that adults play important roles in developing information-seeking skills through modeling and scaffolding behavior. Our research extends this concept to include peer mediation of information skills, particularly in the

realm of everyday-life information problems. Furthermore, the richness and complexity of informal social settings has been shown to provide an important context for the development of socially mediated information-seeking practices. The more knowledgeable "other," whether in the form of an adult mediator (librarian, teacher, or parent) or a peer, must understand and reconcile the information-seeker's conception of the information problem, as well as the social, cognitive, and affective resources that the young person brings to bear on it. The discourse surrounding information practices becomes paramount: being able to distinguish between "kid answers" and "adult answers," for example, means the difference between successfully solving an information problem and erecting barriers to necessary information.

A further contribution of this work has been the identification of social costs and their compromising effect on tween information-seeking. While other studies have focused on physical or cognitive barriers to youth IB [e.g., 60], our findings suggest that tweens are capable of articulating their information needs and employing sophisticated strategies, yet they may be tripped up by embarrassment, social perceptions, or unequal power relationships. As additional barriers related to affect may exist, further research is needed to clarify how and when these barriers emerge developmentally, as well as the role these barriers play in different types of information-seeking. Such research would help mediating professions and institutions better understand how to serve this Millennial generation and generations to come.

REFERENCES

1. Bertot, John Carlo; McClure, Charles R.; Thomas, Susan; Barton, Kristin M.; and Jessica McGilvray. *Public Libraries and the Internet, 2007: Study Results and Findings.* Seattle, WA, and Washington, DC: Bill and Melinda Gates Foundation and American Library Association, 2007 (July). http://www.ii.fsu.edu/plinternet_reports.cfm.
2. Institute for Museum and Library Services (IMLS). *Nine to Nineteen: Youth in Museums and Libraries: A Practitioner's Guide.* Washington, DC: Institute for Museum and Library Services, 2008. http://www.imls.gov/pdf/YouthGuide.pdf.
3. Vygotsky, Lev S. *Mind in Society: The Development of Higher Psychological Processes.* Translated by James Wertsch. Cambridge, MA: Harvard University Press, 1978.
4. Vygotsky, Lev S. *Thought and Language.* Translated by Alex Kozulin. Cambridge, MA: MIT Press, 1986.
5. Prensky, Marc. "Digital Natives, Digital Immigrants, Part 1." *On the Horizon,* 9, no. 5 (2001): 1–2. http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf.
6. Prensky, Marc. "Digital Natives, Digital Immigrants, Part 2." *On the Horizon,* 9, no. 6 (2001): 1–6. http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part2.pdf.

7. Sweeney, Richard T. "Millennial Behaviors and Demographics." http://www.library.njit.edu/staff-folders/sweeney/Millennials/Millennial-Behaviors.doc.
8. Israel, Betsy. "The Overconnecteds." *New York Times* (November 5, 2006). http://www.nytimes.com/2006/11/05/education/edlife/connect.html.
9. Lippincott, J. K. "Net Generation Students and Libraries" In *Educating the Net Generation*, edited by Diana G. Oblinger and James L. Oblinger. *EDUCAUSE Review* 40, no. 2 (2005): 56–66. http://www.educause.edu/content.asp&PAGE_ID=5989&bhcp=1.
10. McHale, T. "Portrait of a Digital Native." *Technology and Learning* 26, no. 2 (September 2005): 33–34.
11. British Library and Joint Information Systems Committee (JISC). "The Information Behavior of the Researcher of the Future: A Ciber Briefing Paper." January 2008. http://www.jisc.ac.uk/media/documents/programmes/reppres/gg_final_keynote_11012008.pdf.
12. Harwood, Paul G., and Asal, Victor. *Educating the First Digital Generation*. Westport, CT: Praeger, 2007.
13. Warschauer, Mark. *Technology and Social Inclusion: Rethinking the Digital Divide*. Boston: MIT Press, 2004.
14. Todd, Ross. "Adolescents of the Information Age: Patterns of Information Seeking and Use, and Implications for Information Professionals." *School Libraries Worldwide* 9, no. 2 (July 2003): 27–46.
15. Dresang, Eliza T.; Gross, Melissa; Holt, Leslie E. "Project CATE: Using Outcome Measures to Assess School-Age Children's Use of Technology in Urban Public Libraries: A Collaborative Research Process." *Library and Information Science Research* 23, no. 1 (2003): 19–42.
16. Shenton, Andrew K., and Dixon, Patricia. "Youngsters' Use of Other People as an Information-Seeking Method." *Journal of Librarianship and Information Science* 35, no. 4 (2003): 219–33.
17. Dresang, Eliza T. "The Information-Seeking Behavior of Youth in the Digital Environment." *Library Trends* 54, no. 2 (Fall 2005): 178–96.
18. Agosto, Denise E., and Hughes-Hassell, Sandra. "People, Places, and Questions: An Investigation of the Everyday Life Information Seeking Behaviors of Urban Young Adults." *Library and Information Science Research* 27, no. 2 (2005): 141–63.
19. Agosto, Denise E., and Hughes-Hassell, Sandra. "Toward a Model of the Everyday Life Information Needs of Urban Teenagers, Part 1: Theoretical Model." *Journal of the American Society for Information Science* 57, no. 10 (August 2006): 1394–1402.
20. Agosto, Denise E., and Hughes-Hassell, Sandra. "Toward a Model of the Everyday Life Information Needs of Urban Teenagers, Part 2: Empirical Model." *Journal of the American Society for Information Science* 57, no. 11 (September 2006): 1418–26.
21. Savolainen, Reijo. "Everyday Life Information Seeking: Approaching Information Seeking in the Context of Way of Life." *Library and Information Science Research* 17, no. 3 (1995): 259–94.
22. Latrobe, Kathy, and Havener, William M. "Information-Seeking Behavior of High School Honors Students: An Exploratory Study." *Journal of Youth Services in Libraries* 10, no. 2 (Winter 1997): 188–200.
23. Beheshti, Jamshid; Bowler, Leanne; Large, Andrew; and Nesset, Valerie. "Towards an Alternative Information Retrieval System for Children." In *New Directions in Cognitive Information Retrieval*, edited by Amanda Spink and Charles Cole, pp. 139–65. Dordrecht: Springer.
24. Talja, Sanna, and Hansen, Preben. "Information Sharing." In *New Directions in Human Information Behavior*, edited by Amanda Spink and Charles Cole, pp. 113–34. Dordrecht: Springer, 2006.
25. Bernier, Anthony. "Introduction: Not Broken by Someone Else's Schedule; On Joy and

Young Adult Information Seeking." In *Youth Information Seeking Behavior II: Context Theories, Models, and Issues*, edited by Mary K. Chelton and Colleen Cool. Lanham, MD: Scarecrow, 2007.
26. Chaiklin, Seth, and Lave, Jean. *Understanding Practice: Perspectives on Activity and Context*. Learning in Doing. New York: Cambridge University Press, 1993.
27. Suchman, Lucy. *Plans and Situated Actions: The Problem of Human-Machine Communication*. New York: Cambridge University Press, 1987.
28. Mahn, Holbrook. "Periods in Child Development: Vygotsky's Perspective." In *Vygotsky's Educational Theory in Cultural Context*, edited by Alex Kozulin, Boris Gindis, Vladimir. S. Ageyev, and Suzanne M. Miller, pp. 119–37. Learning in Doing. New York: Cambridge University Press, 2003.
29. Wigfield, Allan; Byrnes, James P.; and Eccles, Jacquelynne S. "Development during Early and Middle Adolescence." In *Handbook of Educational Psychology*, edited by Patricia A. Alexander and Philip H. Winne, pp. 87–114. 2nd ed. Mahwah, NJ: Lawrence Erlbaum, 2006.
30. Piaget, Jean. *The Language and Thought of the Child*. London: Routledge & Keegan Paul, 1959.
31. Wertsch, James V. *Vygotsky and the Social Formation of Mind*. Cambridge, MA: Harvard University Press, 1985.
32. Wilson, Patrick. *Second-Hand Knowledge: An Inquiry into Cognitive Authority*. Westport, CT: Greenwood, 1983.
33. Cooper, Linda Z. "A Case Study of Information-Seeking Behavior in Seven-Year-Old Children in a Semistructured Situation." *Journal of the American Society for Information Science and Technology*, 53, no. 11 (September 2002): 904–22.
34. Kuhlthau, Carol Collier. *Seeking Meaning: A Process Approach to Library and Information Services*. 2nd ed. Westport, CT: Libraries Unlimited, 2004.
35. McKechnie, Lynne. "Vygotsky's Zone of Proximal Development: A Useful Theoretical Approach for Research Concerning Children, Libraries, and Information." *Journal of Youth Services in Libraries* 11, no. 1 (Fall 1997): 66–70.
36. Bruner, Jerome. *Actual Minds, Possible Worlds*. Cambridge, MA: Harvard University Press, 1986.
37. Cole, Michael, and Engeström, Yrjö. "A Cultural-Historical Approach to Distributed Cognition." In *Distributed Cognition: Psychological and Educational Perspectives*, edited by Gavriel Salomon, pp. 1–46. Cambridge: Cambridge University Press, 1993.
38. Dervin, Brenda. "From the Mind's Eye of the User: The Sense-Making Qualitative-Quantitative Methodology." In *Qualitative Research in Information Management*, edited by Jack D. Glazier and Ronald R. Powell, pp. 61–84. Englewood, CO: Libraries Unlimited, 1992.
39. Naumer, Charles M.; Fisher, Karen E.; and Dervin, Brenda. "Sense-Making: A Methodological Perspective." Sensemaking Workshop @ CHI 2008, ACM SIG CHI Conference, Florence, Italy, April 6, 2008. http://www.dmrussell.googlepages.com/sensemakingworkshoppapers.
40. Chatman, Elfreda A. "Framing Social Life in Theory and Research." *New Review of Information Behaviour Research: Studies of Information Seeking in Context* 1 (December 2000): 3–17.
41. Fisher, Karen E., and Naumer, Charles M. "Information Grounds: Theoretical Basis and Empirical Findings on Information Flow in Social Settings." In *New Directions in Human Information Behavior*, edited by Amanda Spink and Charles Cole, pp. 93–111. Dordrecht: Springer, 2006.
42. Harris, Roma M., and Dewdney, Patricia. *Barriers to Information: How Formal Help Systems Fail Battered Women*. Westport, CT: Greenwood, 1994.
43. Case, Donald O. *Looking for Information: A Survey of Research on Information Seeking, Needs, and Behavior*. 2nd ed. Amsterdam: Academic Press, 2007.

44. Shutz, Alfred, and Luckmann, Thomas. *The Structures of the Life-World*. London: Heinmann, 1974.
45. Kochen, Manfred. *The Small World*. Norwood, NJ: Ablex, 1989.
46. Jones, Patrick. *New Directions for Library Service to Young Adults*. 2nd ed. Chicago: American Library Association, 2002.
47. Jones, William. *Keeping Found Things Found: The Study and Practice of Personal Information Management*. San Francisco: Morgan Kaufmann, 2007.
48. Jones, William, and Teevan, Jaime. *Personal Information Management*. Seattle: University of Washington Press, 2007.
49. Lincoln, Yvonne S., and Guba, Egon G., *Naturalistic Inquiry*. Beverly Hills, CA: Sage, 1985.
50. Meyers, Eric M.; Fisher, Karen E.; and Marcoux, Elizabeth. "Studying the Everyday Life Information Behavior of Preteens: Notes from the Field." *Library and Information Science Research* 29, no. 3 (September 2007): 310–31.
51. Simon, Herbert A. *Models of Man: Social and Rational*. New York: Wiley, 1957.
52. Wilson, Patrick. "Some Consequences of Information Overload and Rapid Conceptual Change." In *Information Science: From the Development of the Discipline to Social Interaction,* edited by Johan Leif Olaisen, Erland Munch-Petersen, and Patrick, Wilson, pp. 21–34. Oslo: Scandinavian University Press, 1995.
53. Granovetter, Mark S. "The Strength of Weak Ties: A Network Theory Revisited." In *Social Structure and Network Analysis,* edited by Peter V. Marsden and Nan Lin, pp. 105–30. Beverly Hills, CA: Sage, 1982.
54. Pettigrew, Karen E. "Waiting for Chiropody: Contextual Results from an Ethnographic Study of the Information Behavior among Attendees at Community Clinics." *Information Processing and Management* 35, no. 6 (November 1999): 801–17.
55. Fisher, Karen E.; Landry, Carol F.; and Naumer, Charles M. "Social Spaces, Casual Interactions, Meaningful Exchanges: An Information Ground Typology Based on the College Student Experience." *Information Research*, 12, no. 2 (January 2007). http://www.informationr.net/ir/12-2/paper291.html.
56. Izard, Carroll; Kagan, Jerome; and Zajonc, Robert. *Emotions, Cognition, and Behavior*. New York: Cambridge University Press, 1984.
57. Maslow, Abraham H. *Motivation and Personality*. New York: Harper & Row, 1970.
58. Eisenberg, Michael B., and Berkowitz, Robert E. *Information Problem Solving: The Big Six Skills Approach to Library and Information Skills Instruction*. Norwood, NJ: Ablex, 1990.
59. Washington State Library. "Connecting Learners to Libraries Initiative." 2007. http://www.secstate.wa.gov/library/libraries/projects/connecting/.
60. Shenton, Andrew K. "Causes of Information Seeking Failure: Some Insights from an English Research Project." In *Youth Information Seeking Behavior II: Context, Theories, Models, and Issues*, edited by Mary K. Chelton and Colleen Cool, pp. 313–64. Lanham, MD: Scarecrow, 2007.