Available online at www.sciencedirect.com
ScienceDirect
ELSEVIER
Library & Information Science Research 29 (2007) 310–331
Library & Information Science Research

Studying the everyday information behavior of tweens: Notes from the field☆

Eric M. Meyers*, Karen E. Fisher, Elizabeth Marcoux

The Information School, University of Washington, Roosevelt Commons Building, 4311 11th Avenue NE, Seattle, Washington 98105-4608, USA

Available online 23 August 2007

Abstract

Researching how children engage with everyday information poses methodological challenges that differ significantly from those associated with adult populations. These challenges are exacerbated by the lack of domain-specific methodological research in library and information science (LIS) that addresses the developmental needs and attributes of young people. This article introduces a novel approach to the study of "tweens" (preteens ages 9–13) and their everyday information seeking. A description of the specific features of the study design includes discussion of how the methods used target the developmental attributes and needs of early adolescents (physical, social, and cognitive). The study design was tested with diverse populations in three distinct locations. The article outlines key features of a holistic youth information perspective, directions for future studies using the Tween Day methodology, and implications for youth information behavior studies in general.

1. Introduction

Children are not little adults. While this statement seems obvious, it has critical methodological implications for the study of children's information behavior. Cognitive

☆ This material is based upon work supported by the National Science Foundation under Grant 0414447. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of National Science Foundation.

* Corresponding author.
E-mail address: meyerse@u.washington.edu (E.M. Meyers).

0740-8188/$ - see front matter © 2007 Elsevier Inc. All rights reserved.
doi:10.1016/j.lisr.2007.04.011

psychologists such as Piaget and Vygotsky recognized this essential fact (Kozulin, 1998). However, one continues to see research in education, sociology, anthropology (Greene and Hill, 2005), and library and information science (LIS) that fails to demonstrate a clear understanding of how developmental factors influence study design and results. In LIS, partial oversight may be attributed to the lack of domain-specific texts that discuss methodological issues in regard to youth populations. The cost of this knowledge gap and lack of research tools is steep. Key research problems go uninvestigated, and actualized studies yield weak findings that poorly inform information policy, services, and system design. Thus, while LIS researchers focus on youth for the express goals of building knowledge and improving services, significant efforts are needed to devise optimal research tools. The results of such tools can yield findings crucial to librarians, educators, caregivers, policy makers, and ultimately the children themselves. The field's empirical investigations, and particularly the way they are designed, take on tremendous importance in this light.

This paper shares a unique, developmentally targeted methodological approach for researching how tweens seek information as part of everyday life (i.e., in nonschool contexts). To date, no adequate holistic approach exists which (a) focuses specifically on early adolescents or tweens, those sandwiched between childhood and the full-fledged teenage years and (b) addresses the myriad aspects of tweens' information behavior in tandem with their cognitive, affective, social, and sensorimotor development as proposed in cognate literature. Without such a tailored, interdisciplinary framework, LIS researchers, and practitioners cannot fully engage the early adolescent population and provide them with optimal information services. This article presents an overview of past methodological approaches used in LIS to study youth and the developmental dimensions of tweens, followed by a detailed explanation of the proposed "Tween Day" framework design. This method was utilized in three settings with three demographically different populations, and methodological findings illustrate its adaptability. The paper concludes by discussing the approach's underlying methodological philosophy, its limitations, and directions for future study.

2. Past LIS research on the information behavior of youth

The vast majority of LIS studies on youth chose schools to recruit participants, and moreover used the same schools during the daytime as the actual data collection sites. Several notable studies focused specifically on students' academic information needs and information seeking (e.g., Gross, 2004; Kuhlthau, 2004; Large et al., 1998), and thus the context of school was both appropriate and necessary. Other studies, however, used school as a convenient locale for studying youth information behavior that was not necessarily related to school. These studies introduced a school-centric bias (e.g., Fidel et al., 1999; Hirsch, 1999; Latrobe and Havener, 1997; Shenton and Dixon, 2003). Schools are a highly convenient setting for gaining access to large numbers of children in different age ranges, yet most researchers do not discuss specific recruiting methods or access issues or rationale. In

short, most studies report relying on observation, short individual interviews, or focus groups—less than one hour of contact with each participant. These studies consistently omit explanations of the contextual and developmental appropriateness of the selected methodology for the age groups studied.

Using school as a context for studying nonschool behavior has several significant challenges and drawbacks. First, the school context limits researchers' roles with participants to those that are already established within the school's authority structure. Adults who would like to assume a role other than teacher, paraeducator, or administrator run the risk of undermining the behavior standards that are already in place (Graue and Walsh, 1998). Second, the school context prompts students to perceive questions and answers in a particular light, which may influence how they respond to researchers' questions. The dialog and communication norms of the classroom, for example, dictate the interactions that children have with adults; in a classroom-like interview setting, students will limit their range of responses to those deemed acceptable in the school environment (Hundeide, 1985; Kellett and Ding, 2004). Third, the confines of the school schedule do not permit extended interactions with children because this would disrupt the education process. Gaining release time for a small group of children for less than an hour can be accomplished, but a longer span may be perceived as hindering the learning mission, penalizing the student, or causing academic harm. Fourth, the multi-layered school bureaucracy may make it difficult to obtain needed permission from different stakeholders, such as the school board, principals, teachers, parents, and the children themselves, especially in a timely manner.

Looking beyond school-based research, only a few researchers used public libraries or community organizations as study venues. In discussing her qualitative study of preschool girls and their mothers at the public library, McKechnie (2000) focused on the challenges of gaining trust and access to children over time. She also discussed how some methods are inappropriate for very young children due to their developmental capacities and propensities. Agosto and Hughes-Hassell (2005), who used one-time focus groups with urban teens (ages 14–17) in a community setting to establish an information needs and sources typology, emphasized the importance of developing trust with their informants. They also noted the challenges of gaining access to underrepresented groups, thus echoing the concerns of Carey et al. (2001). The researchers did not find examples of studies regarding preteens and the use of a community-based approach, nor did they find LIS-specific resources that discussed the methodological implications of working with this age group.

In their later elaboration of findings from the urban teens project, Agosto and Hughes-Hassell (2006) provided important methodological implications for studying youth. First, they suggested that multiple data sources are necessary to capture the full range of youth information seeking. Second, they remarked that teen participants are eager to participate in research that permits them to express their ideas and opinions. These implications fall short of giving researchers necessary guidance for developing age-appropriate research, but they do emphasize the importance of building relationships with youth participants in order to gather richer data sets.

3. Designing developmentally appropriate youth research

Developmental psychologists identify the preteen years as beginning at roughly age nine and continuing through age thirteen (Harter, 1998; Wigfield et al., 1996). During this period, which some researchers regard as "early adolescence," children undergo significant physical, emotional, and cognitive development. As the preteens transition between their childhood dependence and the independence of the adult world, their social interactions demonstrate a switch in emphasis. Parents become less important than peers in their decision-making processes, identity formation, and in validation of their behaviors (Harter, 1998). In describing youth library services philosophy, Jones (2002) identified seven developmental needs of early adolescents.

1. *Physical activity*: Growing bodies need time to both move and relax.
2. *Competence and achievement*: Tweens need a chance to prove themselves and receive admiration because they are highly self-conscious.
3. *Self-definition*: Tweens need to explore a widening world and reflect on their roles and experiences.
4. *Creative expression*: They need to express their interests, which helps them understand and accept themselves.
5. *Positive social interaction*: Tweens need support, companionship and opportunities to build relationships with adults and peers.
6. *Structure and clear limits*: A system with rules they understand, security, and boundaries aids self-expression.
7. *Meaningful participation*: Tweens need the chance to express their social and intellectual skills and a sense of responsibility.

Researchers must balance the cognitive, affective, social, and sensorimotor needs of tweens with the demands of collecting rigorous, high-quality, minimally biased data. As with other special populations, researchers must incorporate the unique needs of tweens into the study framework while considering time and other design constraints.

In designing the data collection method for this study, the research team selected and structured activities that would meet the developmental needs of the 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 to

- engage and stimulate tween participants;
- provide an array of interactions with adult researchers and peers; and
- promote a sense of empowerment and achievement.

The focus of this research design was moving from the traditional perspective of doing research *on* youth to doing research *with* youth. In this respect, it shares some common philosophical underpinnings with participatory design as described by Druin (2002). Each

stage of the research process, from recruitment and child protection to scheduling to data collection to recognition, takes this philosophy into account.

Table 1 illustrates the different elements of the research program and how they supported the developmental needs of tween participants. 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. A "kid receipt" created a communication structure and behavior expectation for parents and tweens; it also fostered a sense of trust. The assent procedures allowed the researchers to frame the research for tweens as empowering, exciting, and meaningful.
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

Table 1
Research elements and developmental needs

Research elements	Description	Needs supported
1. Child protections		
Kid receipt	Researchers provided each parent with 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
2. 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
3. Data collection		
Focus Groups I and II	Groups of four to six tweens engaged in discussion with 2 adults about information seeking, information sources, and social life.	SI, SD
WebQuest	Working alone or with a friend, tweens 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
4. Incentives and recognition		
Gift pack	Tween were provided with a gift bag of university-logo items.	MP
Certificate of participation	Personalized certificates were printed for each tween.	MP, CA

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.

strengths of individual participants. The focus groups and individual interviews provided opportunities for social interaction and self-definition as tweens engaged in discussion, debated ideas, told stories, and reflected on their personal experiences. The lab-based WebQuest activity afforded creative expression and collaboration with other tweens. Demonstrating their work to adults and peers fostered a sense of competence and achievement.

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.

Each of these research elements is explained in greater detail in the following sections. The individual elements might not appear unique, but as a whole they present a research design that supports the wide range of preteens' developmental needs.

4. "Talking with you"

This study incorporates several theories of information-seeking for everyday life situations, including Dervin's (1992) sense-making, Chatman's (2000) normative behavior, Fisher's information grounds (Fisher and Naumer, 2005), and principles of everyday information behavior discussed by Harris and Dewdney (1994) and Case (2007). The primary research question guiding this study was, "Why do tweens turn to other people for everyday information?"[1,2] It was expected that rich insights would be obtained from studying tweens, a population at a life juncture of becoming independent from the adult-oriented family/school structure. They have been nurtured from birth to seek information interpersonally, and society considers them the most technically 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, instant messaging, e-mail, chat rooms, and newsgroups).

[1] The investigation of the everyday information behavior of tweens was part of a larger study entitled "Talking with You: Exploring Interpersonal Information-Seeking," funded by the National Science Foundation. This larger study is the first to focus specifically on why people turn to other people for everyday information, including finding new jobs and information on lower mortgages, healthcare, housing, childcare, social activities, and other aspects of daily life. The collective results are being used to derive a theoretical model of interpersonal information seeking that will help design and deliver information systems and services.

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

5. The Tween Day study design

Researchers initially chose an urban community youth center for the study venue and planned to collect data over three weeks, with one data collection activity and the same participants each week. Challenges with scheduling and site availability, along with obtaining both parental consent and tween assent (as per Institutional Review Board requirements), however, were insurmountable. Other potential sites had insufficient hours and meeting room availability, which would have limited the scope, size, and frequency of the data collection opportunities. The high attrition rate associated with youth studies that require consistent, voluntary participation over multiple sessions was a further obstacle.

To overcome access and attrition difficulties, researchers needed a new strategy to condense the study into a single day. The subsequent "Tween Day" approach compressed 3 weeks' worth of staggered data collection activities into a five-hour session held from 10 a.m. to 3 p.m. on May 14, 2005, at a major research university in a large metropolitan area ("the School"). Tween Day was thus structured to provide the cumulative effect of a longer study while simultaneously preventing the boredom expressed by many preteens engaged in extended research or academic work. No activity lasted more than 55 minutes, and each was held in a different room to encourage movement and breaks during transitions. The sixteen tweens participated in two audio-recorded focus groups and individual interviews, which were separated by a creative activity (WebQuest) in the computer lab, snack breaks, and lunch.

Using flyers and listserv notices, tweens were recruited from the children of the university's faculty, staff, students, alumni, and other affiliates. Parental consent and tween assent forms[3] were e-mailed in advance to facilitate compliance and save time. Tween Day was presented as a day of fun and interactive participation, similar to an educational "play date." The fact that parents could drop-off their children for a safe, supervised activity on a Saturday provided an obvious incentive. At 10 a.m., team members met participants at the designated drop-off point, collected signed consent and assent forms, and issued parent receipts. Volunteer graduate students escorted tweens to the School lounge, where the researchers welcomed them and informed them of the day's itinerary.

5.1. Child protections

With 30+ combined years in K-12 teaching and experience as parents and youth leaders, the researchers were highly sensitive to the nature of working with children. Therefore, they included several protections in the study's design to ensure informed consent, honest and safe participation, and parental assurance. The study's campus location provided instant credibility with the parents and the tweens. Parents had the researchers' e-mail and phone

[3] PDFs of all recruitment and other data collection tools are available at the IBEC Web site: ibec.ischool.washington.edu.

contacts, an emergency cell number, and a paper receipt with the details of the day, pickup time, and location. Parental consent forms were re-worded into youth-accessible language assent forms that tweens were asked to sign. Through the assent forms, the researchers aimed to empower the tweens by giving them control over the process. Before each activity, tweens were reminded of their rights and assured of the confidentiality of their responses. Indeed, some participants saw this emphasis on "anonymity" as an entrée to imaginative exercise, and two boys said they would like to be known as "Mr. Henderson" and "Mr. Black" in the transcriptions.

Key to Tween Day's success was recognizing that tweens are children who are developing heightened awareness of gender and identity. According to France (2004), when researchers elect to study early adolescents, they must address supervision issues that might not be necessary in a study of shorter duration, with younger children, or with parents present. The research team thus comprised male and female members of varying ages. Two facilitators (male and female) or an open-view location was chosen for all activities including lunch, pickup and drop-off. A male and female researcher were also present during each focus group. However, an insufficient male-to-female ratio required that interviews be conducted in the open space of the School's main hall. One researcher served as the emergency contact for parents throughout the study. Although parents were invited to observe or participate in the study, all but one declined; this adult assisted the team with food preparation, supervising at lunch, and working in the computer lab.

5.2. The focus groups

Focus groups are commonly used in market research with youth (Del Vecchio, 1997) and are documented as ways to improve library services (Hughes-Hassell and Bishop, 2004). Non-LIS researchers have increasingly used focus groups or group interviews in recent decades, specifically adapting the format for different groups of children (Hennessy and Heary, 2005; Kellett and Ding, 2004). For the current study, sixteen tweens were divided into three mixed-gender bunches of five to six participants each (the ideal size for facilitating children's discussion according to Hennessy and Heary's 2005 study). Each bunch then participated in two focus group sessions (I and II).

Focus groups with adult participants afford two important benefits: they permit researchers to collect a large amount of data quickly, and they permit a "brainstorming effect" as participants build on the ideas of others in discussion. For youth, who need peer interaction and approval, focus groups provide these advantages and more. Group discussions can decrease individual anxiety and reduce the response pressures and cognitive load associated with individual interviews. By discussing issues with peers, the participants can be reflective, which facilitates the sharing of tacit knowledge. Most importantly, focus groups serve to decrease the authority of the adult moderators, placing them in a unique role between the child and the adults with whom they interact at home and school.

Each focus group was run by a male and female researcher. They facilitated discussion by encouraging participation, prioritizing topics and enforcing simple discussion ground rules. A simple "ice breaker" and test of the audio recorder started discussion. Students were asked to

discuss their day-to-day activities. Facilitators provided students with a hypothetical scenario of a new neighbor whom they might help find everyday information. Additional questions regarding interpersonal sources, media preferences, and information grounds framed the discussion. The research team approached the children as experts in their own behavior and cast themselves as curious adults seeking to understand. All moderators exuded a sense of warmth and friendliness, as well as a sense of humor.

As often as possible, tweens' vocabulary was validated to promote a sense of trust and understanding. Some of the older participants (ages 12 and 13) objected to the term "tween" or "preteen" in some of the questions. One girl responded, for example: "So most of the people I'm around are teenagers, so I don't know." When some interviewers sensed this push-back, they began using the terms "kids" and "people your age" to ensure that all participants felt comfortable responding to the questions. Above all, the participants needed time and patience from the focus group moderators to develop their responses, which sometimes changed as they spoke:

> I'm not sure. I don't really think so. Sometimes. I think it's a yes and a no. It's like I said earlier. We want to know stuff, as much as we can, but at the same time, when adults are constantly telling us stuff that we didn't ask for, a lot of times it seems like they're trying to tell us they're superior. (Mr. H_MGH)

The team felt it was important not to act unnatural or pretend to be overly youthful and "cool"; instead, the researchers held the stance of curious and accepting adults.

Focus Group II occurred in the afternoon, after the lab activity and lunch break. The researchers kept the same locations and group compositions to promote consistency. They wanted to build on tweens' earlier discussion, specifically by providing counter-examples. Tweens engaged each other more directly, specifically by arguing viewpoints. Their engagement grew as they became more familiar with each other and the moderators. The following exchange occurred among three tweens in one of the focus groups as they debated the merits of print and electronic sources:

> Tween 1: [I]f I really want something that's really accurate, like in an encyclopedia, I would prefer a real encyclopedia.
> Tween 2: Except you can find things faster online, because you can take whatever you're looking for and take it [copy and paste]...
> Tween 1: But sometimes you can't find it online
> Tween 3: Well if you're faster looking for things in World Book Encyclopedia because you're used to doing it a lot...
> Tween 1: [If you need information] fast, you can just look up things and know where they are in a book. I'm not sure how to look, it's very hard to find it in a search engine on the Internet, for the exact topic you're looking for, and load it up if you don't have discs. Then it's very frustrating.
> Tween 3: If you dial it up, it's frustrating.
> Tween 1: Plus the actual encyclopedia in front of you, you can just look it up like it's in the dictionary and it's really easy.
> Tween 2: Right, but if you already have it on the computer, you could go to the computer page, it's faster, because all you have to do is type your word in.
> Tween 1: But what if you have to... It's an ongoing debate. (MGH_EM_FG1)

Testing behavior also occurred as the participants pushed back at the moderators and challenged their authority in subtle ways, such as by playing with their water bottles. The moderators thus had to engage in more behavior management and reinforcement of the established group norms.

5.3. WebQuests: creative lab activity

Creative approaches to research with children have been explored by educators, sociologists, anthropologists, and psychologists (Veale, 2005), but they are undocumented in LIS research. The research team incorporated a creative computer activity in the schedule for three purposes: (1) it served as an incentive for the participants and created enthusiasm and excitement for the project; (2) it presented an opportunity to view how participants sought and used information online in real-time, as researchers and tweens incorporated experiences from the lab activity into the second focus group discussion; (3) the lab activity could be moderated by fewer researchers than the focus groups, which permitted logistical activities such as lunch preparation. After the second focus group, tweens returned to the lab for additional computer time, which allowed the researchers to perform individual interviews while the majority of tweens were kept engaged. This activity permitted tweens to collaborate and socialize with each other and the researchers, providing a positive interactive experience and an opportunity to see peers and adults as supportive and helpful.

A common teaching tool in upper elementary and middle school, WebQuests are interactive online lessons which promote exploration of the Web in a structured way. They ask the participant to complete specific tasks or activities using the information found by following embedded hyperlinks (Dodge, 1995, 2000). The WebQuest format was chosen because it would be empowering and engaging. It would also lend unique insights into how children seek, aggregate, and present everyday information in their areas of interest. Tweens created a simple WebQuest using a template designed for the time allotted to the task. Upon completion, tweens were encouraged to share their work with the other participants as team members circulated through the lab providing inspiration and encouragement. Tweens were free to work individually or with a friend or sibling at the same or adjacent computer. Six female tweens chose to work in pairs at the same computer. All but two tweens worked adjacent to a friend or shared a computer, which reinforced the research team's understanding of the social nature of preteen information behavior. The WebQuest activity occurred following the first focus group as a prelude to lunch. The tweens became so engaged in building their pages that many did not want to stop for lunch. Here, the researchers had to demonstrate flexibility because food was not allowed in the lab. Tweens were encouraged to take a break to eat but assured that they could return to the lab to continue working through lunch if they desired. After the second focus group, tweens were permitted back in the lab to continue working and sharing their creative work with the others. During this second lab session, selected individuals were invited to participate in one-on-one interviews by members of the research team.

5.4. Individual interviews

Interviews can be an effective qualitative technique for probing a child's world (Graue and Walsh, 1998; Holmes, 1998; La Greca, 1990; Mayall, 2000). Combining group discussion and individual interviews, particularly in this order, is an effective way of eliciting responses from young people who may be intimidated by the research process (Hennessy

and Heary, 2005). Thus, the final Tween Day activity comprised 20- to 25-minute interviews with eleven individual tweens, who were selected based on the nature and clarity of their participation in the focus groups. All interviews were audio-recorded to create an accurate conversation record. Five researchers conducted concurrent individual interviews in a long corridor with sufficient space to keep conversations private, while the sight distance provided participants with assurance and protection in the one-on-one situation with the adult interviewer. Tweens were asked to elaborate on two critical incident prompts: (1) a time when they needed to find information and (2) a time when they gave information to someone else. Additional prompts explored the affective aspects of the incidents, as well as the outcome and future implications of that information search or provision. These prompts provided an opportunity for tweens to talk about themselves and their personal interests, problems, and accomplishments. Tweens expressed a wide range of information problems (from "how do I make my mouse less stinky?" to "how do I teach myself Japanese?") that did not emerge from the group discussions.

Tweens also responded to ten generalizations about preteen information behavior. These generalizations prompted participants to take a stand and explain their response. Many responses drew on the tweens' concrete experiences, and demonstrated a nuanced, reflective quality. For example:

> Interviewer: Kids don't like it when they're given information.
> Tween: 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 make a, 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. (Austin_MGH)

Other responses were less articulate and required more interpretation by the research team.

> Interviewer: Kids don't like to seek information or ask questions, unless they absolutely have to.
> Tween: Um, no. Sometimes, stuff you just like – some stuff you just kind of – it gets to you and then you're just kind of, 'Oh, what happened?' (Adam_BEV)

The interview responses provided a particularly rich set of data. They revealed not only how preteens find and use information, but also how they construct meaning from everyday life, justify their knowledge warrants, and regulate their knowledge-building activities.

5.5. Participant incentives

Each tween received a nutritious lunch, snacks, and a gift pack including a school logo mug, pencils, keychain, candy, and a personalized certificate of appreciation. Tweens who participated in the interviews also received a T-shirt bearing the university logo. While there is debate in the literature regarding providing incentives to young people who participate in research studies (e.g., Hill, 2005), the researchers felt that the incentive validated their participation. The thank-you gifts were less an inducement to participate and more a way recognizing the value of their contributions to the research effort.

6. Testing the methodology: taking Tween Day on the road

The initial Tween Day proved successful. In five hours, researchers gathered hundreds of pages of group conversation and more than seventy-five pages of individual interview transcripts. The technique was tiring for the researchers. However, the extended contact with the tweens provided a unique data set that richly documented their information behaviors. While the original design employed theoretical, investigator, and methodological triangulation (Patton, 2002), the true test of Tween Day would be to replicate the study with different populations. Thus, Tween Day was taken "on the road" to two additional locations: a church ministry and an elementary school.

6.1. Overview of the ministry setting

A nondenominational church ministry in a low-income, minority-populated neighborhood was chosen as the second research site. Eight boys and girls were recruited from the youth members of the congregation. Through contact with a church member, permission was obtained to use the facility on July 14, 2005, from 10 a.m. to 3 p.m. The schedule was nearly identical to the original Tween Day, with slight modifications to account for the smaller number of participants and researchers and the smaller space in which to conduct the study. Five of the original eight tweens were able to participate in the study (three boys and two girls), which constituted a single focus group. All participants were African-Americans from the greater metropolitan area. Because the church was not able to provide an Internet connection for the computer lab activity, the team substituted an analog equivalent: the tweens created informational posters using magazine images and hand-drawn illustrations that centered on a theme of the tweens' choosing. Just as with the original Tween Day, participants took part in two focus group sessions, a creative activity, and an individual interview. Lunch, snacks, and additional incentives for participation were offered.

6.2. "Gate-keeping" within the ministry

The Tween Day format worked well with the church setting, but participants responded differently than the university tweens. Many of these affects were attributed to the nature of the second tween group. The members knew each other well, whereas the researchers were "outsiders" to the ministry and to the ethnic culture of the informants. Despite receiving permission from the parents and tweens, the team was tested throughout the day in subtle ways. While the university setting and credentials gave them instant credibility with the first group of participants, this was not the case at the church. The church location was chosen so the tweens would feel comfortable, but they also needed time to become comfortable with the team. Unlike the university parents who were content to drop-off their children with one of the researchers, the church parents all came inside to talk. They carefully examined the consent and assent forms and appropriateness of the incentives. When the parents were satisfied that the researchers were sincere and well intentioned, they joined hands with the

youth and prayed for the success of the project and the guidance of the researchers. One parent stayed and monitored all the activities. At the conclusion of Tween Day, the church pastor engaged the researchers in small talk.

The researchers' flexibility and sensitivity were crucial to this group of tweens, who took significantly longer to "warm up" to the team. It was not until lunch that they truly engaged the team in conversation without prompts. Because all the participants knew each other prior to the study, the researchers had to adjust to the conversational norms of the group and probe some responses to reveal the tacit understandings of the tweens (such as common terms they used or places they frequented). For example, the run-down mall which tweens chose to avoid was "cracked"; a highly desirable car or piece of clothing was "filthy."

An advantage of this familiarity was the fact that the tweens readily engaged with each other, supporting each other's responses and co-constructing narratives of their experiences. They would often finish each others' sentences, as in the following exchange:

> Interviewer: [Tween 1] … you said you want to find out people that get on your nerves. Who are the people that get on your nerves? How do you know?
> Tween 1: People that talk a lot of…
> Tween 2: Smack.
> Tween 3: Smack, and don't do it. And people that are bullies and are hitting on people, beating people up everyday, cussing at you, everything that they could make it up. They could say they are the best in sports, but they don't really know how to play sports. (BSOM_FG1)

In this vein, the tweens were open with one another and spoke in ways that were coded using negative case analysis and suggested minimal incidence of observer effect on this group. The tweens spoke in the ways of "insiders," people with whom they were okay with speaking naturally about sensitive topics such as bullies, violence, and sex.

Overall, the second Tween Day was highly successful. It again yielded a rich data set although the variety of responses differed in subtle contextual ways from the first. This variety can be traced to the differences in the participants' socioeconomic backgrounds. Since most participants did not have access to cell phones or computers in the home, the focus shifted toward problems of social life, face-to-face communication with peers and adults, and how different media (television, radio, magazines) influenced their decision making. The challenges of youth-adult communication were particularly salient. One participant explained

> Tween: Like they [adults] 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?
> Tween: No, not other kids. They make it hard for us to talk to them [adults]. (Payton_BSOM)

6.3. Taking Tween Day to school

The success of the second Tween Day, as well as the researchers' desire to validate the initial findings, prompted the selection of an additional location and population: an elementary school in a working-class city approximately 20 miles from the University. The third iteration

of Tween Day was held on November 21, 2005, from 10 a.m. to 3 p.m. The student population included diverse ethnic and cultural groups (32 percent non-White), as well as a fair number of low-income students (30 percent participated in a free/reduced lunch program). Working with the school librarian, thirteen students were recruited (10–12 years of age; six boys, seven girls). Anticipating that the school environment would present unique challenges to the study design, as elaborated earlier in this paper, the researchers worked with the school administration and the librarian to release the students for the entire school day. They also arranged for the library to be closed to other activities to permit the extended interaction with students in a stable physical location. The computer lab, situated in an adjacent room, was dedicated to the WebQuest activity, and the librarian permitted the team to load the necessary project templates to the computers. The schedule, format of data collection activities, and incentives were nearly identical to the original Tween Day, with small allowance made for the students' regular lunch period and recess.

6.4. Barriers to conversation: gender and authority issues

With an equal mix of boy and girl participants, the researchers decided to create two gender-specific focus groups and one mixed group to gauge how the different gender dynamics might influence the conversational qualities of the focus groups. The transcripts from the girls' group, as well as research notes and anecdotal evidence from the group moderators, suggested that the girls participated more freely and openly than the mixed gender groups. The boys group, on the other hand, showed less openness with the moderators. The second boys focus group produced much less conversation than the morning group; in fact, the boys began to adopt a similar response to probing questions, remarking that information was "classified." The fact that the boys were acquaintances allowed them to create a new conversation mode and effectively shut down conversation with the moderators toward the end of the session. These same students readily assented to individual interviews and shared freely during other portions of the day. While these observations may also be explained by the personalities of the children recruited in the study, more work with same and mixed gender focus groups would be necessary to ascertain the optimal blend of age and gender for effective research conversations with tweens.

The tweens appeared to chat more freely with the team when authoritative adults were not present or at a distance. When the librarian, library assistant, principal, or other school personnel were in close proximity, tweens tended to speak more softly, raise their hands when wishing to contribute to discussion, or simply not speak at all. This was especially salient when the school principal walked through the library. The tweens remarked to us casually that the principal was "new," and they had not yet developed a trusting relationship with her. From these observations, one might infer that (1) tweens are particularly attentive to adult social types and exhibit different behaviors in the presence of different adults; and (2) the research team members were not perceived the same as other school personnel. This confirms other researchers' suggestions (e.g., Graue and Walsh, 1998) that significant observer effects may be present in school-based research. These effects are grounded in the

tweens' perceptions of adult social types and authority status. Overall, the third Tween Day was successful, both for the rich data set gained through working with the participants, as well as the methodological insights derived from replicating the study format in a school context.

7. Discussion: Tween Day methodological limitations and future directions

Researching how tweens engage with everyday information poses several methodological problems that outnumber and differ from those associated with adult populations. This study required a rigorous design to balance efficiency against the need for collecting in-depth data—all against the backdrop of recognizing the unique needs of young people. As with any methodology, however, the Tween Day approach contains limitations. For example, it precludes gathering data relating to naturally occurring behavior. Observation, a standard technique in qualitative research, would have yielded such data. However, it was not a viable option for the current study due to time constraints and difficulties obtaining human subjects' approval. In analyzing the strengths and weaknesses of the data set derived from the current study, researchers identified several opportunities to further enrich the field's understanding of tweens' information behavior. Specifically, additional data points over the age span of the participants and a wider range of data collection procedures would enhance future explorations. Longitudinal research would create valuable links to connect the current study with findings in other fields, including psychology, sociology, and education.

7.1. Linking phenomenographic data to developmental trends

The rich "snapshot" in time generated through this study does not provide enough information about how youth needs develop through the tween years. A richer, longitudinal data set may be able to identify causal mechanisms that are key to providing learning opportunities and mediational interventions. This, in turn, would guide practitioners and researchers interested in how best to meet the information needs of this age group. The critical incident interviews suggest that the interplay of cultural constraints, information tools, and social roles plays an important part in shaping youth information behavior. Further clarification of this interplay can only come from longer exposure to tweens as they mature through this age span. More data points from a consistent participant sample would illustrate the progressive development of specific information needs and behaviors.

7.2. Capturing daily information behavior

In studying everyday life needs of preteens, this study has ventured into uncharted territory. There are limits to how one can capture everyday life; this study chose to combine interviews, focus groups, and creative activities. The key weakness of interviews and self-reports in this format is that the data collection may be removed from the information seeking and use

incidents by days or months. Additional methods could be combined with the Tween Day approach to further contextualize this data and provide greater accuracy:

- *Journaling or diaries:* Collecting information on a regular basis through prompts would condition reflective behavior in participants and provide insights that may not be recorded in interviews due to limitations of time, memory, and the social roles of the researchers.
- *Information tools:* Devices that provide the researchers with timely records of information seeking and use (logs or transaction artifacts) could be used to triangulate self reports and gain additional insights.
- *Experiential sampling:* Surveys or question prompts based on time or location could further enhance knowledge of life "as it happens," providing an additional dimension to researchers' understanding of information behavior and facilitating an accurate and timely affective dimension.
- *Creative opportunities:* Tweens responded strongly and positively to the opportunity to construct information products. Such artifacts and their development over time would give unique insights to the dialogic nature of constructing information use and meaning.

8. Conclusion

Due to the methodological diversity and extended contact hours with informants, the data set has the potential to yield insights beyond the original study questions. Overall, the three Tween Days were marked successes and represent an easily replicable, mixed-method model for studying youth information behavior. Moreover, the Tween Day approach, which posits children as experts and adults as learners, signals a shift from the older "user studies" paradigm to a holistic youth information perspective. Some of the key features of this perspective include:

- *Designing research that is developmentally appropriate:* One cannot use the same methods or techniques with young children, preteens, teens, and adults because each group has unique attributes and needs. Researchers must account for the groups' varied physical, social, and cognitive maturity.
- *Recognizing multiple levels of consent and assent:* While one often views parents, teachers, or other adults as children's primary gatekeepers, it is critical to view youth assent in the same light. Children deserve the right to be heard on their own terms and with full understanding of their participant rights.
- *Balancing researcher authority:* Adults often underestimate the power they wield in conversation with children. Gaining access to children's worlds means relinquishing the traditional adult role in favor of one that gives greater credence to children's words and creations. While it is naïve to think that adults can engage children on their own terms, adults can take concrete steps to involve minors as participants or even co-partners in the research process rather than simple informants.
- *Seeing context as an important part of all research:* Children are not context-less objects; the location in which studies are conducted, whether naturalistic or not, influences the data

gathered. Children's preconceptions and social norms are important considerations of any research approach.

- *Recognizing that the research process can be fun:* Designing study activities that engage children not only makes them less tedious for everyone involved, but it helps the children build meaning from the research experience. Children are active agents who construct their worlds with the researchers' help—they can teach a great deal if provided with the right building tools.

By implementing a methodological framework that adheres to the above tenets, researchers obtained a rich data set about how youth interact with everyday information. This data set would not have been derived through other means.

In spite of the progress made in youth studies to date, there is still need for additional research. Questions remain about how researchers can most effectively explore children's information universes in group and individual conversation, as well as through interactive, creative activities. The role of cognitive authority and gate keeping, both individual and institutional, and how they influence young people's research process deserves additional attention. The Tween Day method offers an alternative way of looking at research with children, as well as a unique perspective on the children who have so much to tell us about their worlds.

Appendix A. Study instruments

A.1. FOCUS GROUP GUIDE I

[Introductory text explaining human subjects items, etc., deleted to save space]

I'd like you to help me get a good idea of what life is like for a preteen. Pretend you have a new neighbor who's around your age has just moved here from another state. Tell me:

- What kinds of everyday things could your new neighbor expect to do as a preteen living in your area (go to school, play a sport, join a club, read, etc.)?
- What will his/her everyday life be like?
- What would he/she need in order to do these things?
- What would he/she need to know first?

When we study how people find information, we divide their information sources into different categories. I'm going to name some categories and I'd like you tell me what your new neighbor could use each source for and why.

(1) *Other preteens that you know well or feel close to*
(2) *Other preteens that you do not know well or feel close to*
(3) *Adults such as family and teachers that you know well or feel close to*
(4) *Adults that you do not know well or feel close with*

[For each of the above (1–4), use the following prompts:

- What could you learn from this person? Why?
- How would you communicate with them, why, and how often?
- What other things would you do with this person?
- Does it matter how long you've known them? Why?
- How would you know/meet them?
- Would you give anything to these people in return for their info?
- What would make you ask information from this person again?]

(5) *Websites*
(6) *Television shows*
(7) *Magazines and books*

[For each of the above (5–7), use the following prompts:

- Where would you access it? How often? Would others be there?
- What could you learn and why:
- What would make you use a site again?]

My last question involves something we call information grounds—that is, places where people go for a particular reason such as to play a game, do volunteer work, study, etc., but wind up sharing information just because other people are there and they start talking.

Can you think of such a place that your new neighbor might go to? What are some possible information grounds for your new neighbor where s/he might learn about everyday things?

We're finished for our first focus group—is there anything you'd like to add about what we've been discussing? Thank you for participating. Your responses were terrific.

A.2. FOCUS GROUP GUIDE II

[Introductory text deleted to save space]

Earlier we talked about information grounds, places that people go to for a real reason such as to dance, workshop, play a sport, get transportation, etc., but they end up learning things because they get talking with other people. You said that X would be some good information grounds for him or her. I'd like to talk about that further.

What would you be doing at this place? (hanging out, playing music, studying, etc.)

- How often would you go there?
- Which days of the week?
- What times of day?
- How long would you stay?
- Why would X be a good information ground?
- What could your neighbor learn there? What else?

- How do these things come up? (by accident, people ask directly)
- Who else would be there? (other preteens, adults, etc.)
- How well would you know these people?
- Would you know these people in other ways (schoolmate, neighbor, relative, friend of a friend, parents know each other, etc.)
- Would you do things with or see these people in other places too?
- What do you like about this place?
- Is food or drink there?
- What makes this a good place for learning things?
- How could it be made a better place for learning things?

I'd like to change our topic now and return to something else we discussed earlier about your new neighbor. We talked about what kinds of things your neighbor could learn from different information sources. Now, I'd like to review those information sources but this time talk about reasons that someone would not use those sources, i.e., things that they are not good for. Let's start with other people your age:

(1) *Other preteens that you know well or feel close to*—What could you not learn from these people? Why? What would make you not ask for information from them again?
(2) *Other preteens that you do not know well or feel close to*—What could you not learn from these people? Why? What would make you not ask for information from them again?
(3) *Adults such as family and teachers that you know well or feel close to*—What could you not learn from these people? Why? What would make you not ask for information from them again?
(4) *Adults that you do not know well or feel close to*—What could you know learn from these people? Why? What would make you not ask for information from them again?
(5) *Websites*—What could you not learn from the Web? What would make you not use it again?
(6) *Television shows*—What could you not learn from TV? What would make you not rely on it again?
(7) *Magazines and books*—What could you not learn from these? What would make you not rely on them again?

That's it for my questions. Is there anything you'd like to add about what we've been discussing? Thank you for participating! Your responses were terrific!

A.3. GUIDE FOR FINAL INTERVIEW

[Introductory text deleted to save space]

During the focus groups, you discussed the everyday life of preteens and how you would use different information sources. Now I'd like you to think back to a recent time in which you needed to find something out as part of everyday life that was not related to schoolwork. Does

such a time come to mind? For example, maybe you needed to find out about an afternoon activity, where to buy something, how to solve a problem for a friend, etc. Now I'm going to ask you to tell me what it was about and to walk me through what you did.

- What was it you wanted to know? What was the need?
- What prompted the information need?
- How did you look for the information you needed?
- Where did you look? Why?
- What did you find in each place?
- How did each place make you feel? Why?
- What affected your information seeking?
- What – if anything – resulted? (How were you helped, or not?)
- How did you feel about the result? (How it did or did not help?)
- What, if anything, do you plan to do next?

Great! This time I want you to reflect on a recent incident in which you gave someone information (can be about anything to do with everyday life except schoolwork).

- How did you know that this person needed to know something?
- Were you were asked directly or indirectly?
- How did you obtain the information?
- How did you give the information? Orally, face-to-face; e-mail; online chat…
- How did it make you feel to tell the person that?
- How did you think the information would help that person?
- Do you know if they used it?
- How often do you give information to other people?
- How often do people ask you for information?

What do you do with all the information you pick everyday? How do you manage it? How do you remember everything that you hear about? Do you use anything to help keep track of it?

To end, I want to ask what you think of some things that adults say about preteens and information. As I say each, just say whatever comes to your mind. Take as long as you need to respond and please explain why you say what you do.

"Teachers can answer any question that a preteen might have."
"Parents can answer any question that a preteen might have."
"Preteens always tell an adult when they have a question."
"Preteens don't like to seek information/ask questions unless they absolutely have to."
"Preteens don't like it when they are given information."
"Preteens don't like it when other preteens seek information and then know more than they do."
"It's not cool to tell a preteen something unless he/she asks or brings it up first."

"Preteens have lots of places where they can go and share information with other preteens."
"Society encourages preteens to gather wherever they want and socialize."
"Adults make it hard for preteens to talk about everyday life with other preteens and share information."

Conclusion: Do you have any questions for me? Thank you for participating in our study. It was great meeting you.

References

Agosto, D. E., & Hughes-Hassell, S. (2005). People, places, and questions: An investigation of the everyday life information seeking behaviors of urban young adults. *Library and Information Science Research*, *27*, 141−163.

Agosto, D. E., & Hughes-Hassell, S. (2006). 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*, 1418−1426.

Carey, R. F., McKechnie, L. E. F., & McKenzie, P. J. (2001). Gaining access to everyday life information-seeking. *Library and Information Science Research*, *23*, 319−334.

Case, D. O. (2007). *Looking for information: A survey of research on information seeking, needs, and behavior* (2nd ed.). Amsterdam: Academic Press.

Chatman, E. A. (2000). Framing social life in theory and research. *Information Behaviour Research*, *1*, 3−17.

Del Vecchio, G. (1997). *Creating ever-cool: A marketer's guide to a kid's heart.* Gretna, LA: Pelican.

Dervin, B. (1992). From the mind's eye of the user: The sense-making qualitative-quantitative methodology. In J. D. Glazer & R. R. Powell (Eds.), *Qualitative research in information management* (pp. 61−84). Englewood, CO: Libraries Unlimited.

Dodge, B. J. (1995). *Some thoughts about WebQuests.* Retrieved May 10, 2005, from http://edWeb.sdsu.edu/courses/edtec596/about_Webquests.html

Dodge, B. J. (2000). Thinking visually with WebQuests. Presentation at the National Educational Computing Conference, Atlanta, GA. Retrieved May 10, 2005, from http://edWeb.sdsu.edu/Webquest/tv/

Druin, A. (2002). The role of children in the design of new technology. *Behaviour and Information Technology*, *21* (1), 1−25.

Fidel, R., Davies, R. K., Douglass, M. H., Holder, J. K., Hopkins, C. J., & Kushner, E. J. (1999). A visit to the information mall: Web searching behavior of high school students. *Journal of the American Society for Information Science*, *50*, 24−37.

Fisher, K. E., & Naumer, C. M. (2005). Information grounds: Theoretical basis and empirical findings on information flow in social settings. In A. Spink & C. Cole (Eds.), *New directions in information behavior* (pp. 93−112). Amsterdam: Kluwer.

France, A. (2004). Young people. In S. Fraser, V. Lewis, S. Ding, M. Kellett, & C. Robinson (Eds.), *Doing research with children and young people* (pp. 175−190). Thousand Oaks, CA: Sage.

Graue, M. E., & Walsh, D. J. (1998). *Studying children in context: Theories, methods and ethics.* Thousand Oaks, CA: Sage.

Greene, S., & Hill, M. (2005). Researching children's experience: Methods and methodological issues. In S. Green & D. Hogan (Eds.), *Researching children's experience: Approaches and methods* (pp. 1−20). Thousand Oaks, CA: Sage.

Gross, M. (2004). Children's information seeking at school: Findings from a qualitative study. In M. K. Chelton & C. Cool (Eds.), *Youth information seeking behavior: Theories, models and issues* (pp. 211−240). Lanham, MD: Scarecrow.

Harris, R. M., & Dewdney, P. (1994). *Barriers to information: How formal help systems fail battered women.* Westport, CT: Greenwood.

Harter, S. (1998). The development of self-representations. In W. Damon, & N. Eisenberg (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (Vol. 4, pp. 553–617) New York: Wiley.

Hennessy, E., & Heary, C. (2005). Exploring children's views through focus groups. In S. Green & D. Hogan (Eds.), *Researching children's experience: Approaches and methods* (pp. 236−252). Thousand Oaks, CA: Sage.

Hill, M. (2005). Ethical consideration in researching children's experiences. In S. Green & D. Hogan (Eds.), *Researching children's experience: Approaches and methods* (pp. 61−85). Thousand Oaks, CA: Sage.

Hirsch, S. G. (1999). Children's relevance criteria and information seeking on electronic resources. *Journal of the American Society for Information Science*, *50*, 1265−1283.

Holmes, R. M. (1998). *Fieldwork with children.* Thousand Oaks, CA: Sage.

Hughes-Hassell, S., & Bishop, K. (2004). Using focus group interviews to improve library services for youth. *Teacher–Librarian*, *32*(1), 8−12.

Hundeide, K. (1985). The tacit background of children's judgments. In J. V. Wertsch (Ed.), *Culture, communication and cognition: Vygotskian perspectives* (pp. 306−321). New York: Cambridge University Press.

Jones, P. (2002). *New directions for library service to young adults.* Chicago: American Library Association.

Kellett, M., & Ding, S. (2004). Middle childhood. In S. Fraser, V. Lewis, S. Ding, M. Kellett, & C. Robinson (Eds.), *Doing research with children and young people* (pp. 161−174). Thousand Oaks, CA: Sage.

Kozulin, A. (1998). *Psychological tools: A sociocultural approach to education.* Cambridge, MA: Harvard University Press.

Kuhlthau, C. C. (2004). *Seeking meaning: A process approach to library and information services.* Westport, CT: Libraries Unlimited.

La Greca, A. M. (1990). *Through the eyes of the child: Obtaining self-reports from children and adolescents.* Boston: Allyn and Bacon.

Large, A., Bheshti, J., & Breuleux, A. (1998). Information seeking in a multimedia environment by primary school students. *Library and Information Science Research*, *20*, 343−376.

Latrobe, K., & Havener, W. M. (1997). Information-seeking behavior of high school honors students: An exploratory study. *Journal of Youth Services in Libraries*, *10*, 188−200.

Mayall, B. (2000). Conversations with children: Working with generational issues. In P. Christensen & A. James (Eds.), *Research with children: Perspectives and practices* (pp. 120−135). New York: Falmer Press.

McKechnie, L. E. (2000). Ethnographic observation of preschool children. *Library and Information Science Research*, *22*(1), 61−76.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.

Shenton, A. K., & Dixon, P. (2003). "Youngsters'" use of other people as an information-seeking method. *Journal of Librarianship and Information Science*, *35*(4), 219−233.

Veale, A. (2005). Creative methodologies in participatory research with children. In S. Green & D. Hogan (Eds.), *Researching children's experience: Approaches and methods* (pp. 253−271). Thousand Oaks, CA: Sage.

Wigfield, A., Eccles, J., & Pintrich, P. R. (1996). Development between the ages of 11–25. In D. C. Berliner & R.C. Calfee (Eds.), *The handbook of educational psychology* (pp. 148−185). New York: Simon and Schuster.