

**EXPLORING THE EXPERIENCES OF UPPER ELEMENTARY SCHOOL  
CHILDREN WHO ARE INTRINSICALLY MOTIVATED TO SEEK  
INFORMATION**

by

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This dissertation, based on a research study undertaken during the fall of 2008, sought to understand the experiences of children in order to inform school library media specialists' practice in fostering the development of intrinsic motivation for information seeking in young patrons. Research was conducted using an inductive naturalistic approach in order to address the following question, "what are the experiences in the lives of upper elementary school children that foster an intrinsic motivation to seek information?" The conceptual framework for the study was composed of the Taxonomy of Tasks (Bilal, 2002a) and A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a, 2006b). Self-determination Theory (Deci & Ryan, 1985b) provided the basis for the theoretical framework of the study. Participants were selected from a pool of fifth graders from three diverse schools within a single community. Initially, the children were chosen based on the results of a survey especially developed for the study.

Interviews and a drawing activity were used to collect the data that served as the basis for analysis. Analysis of the data indicates that students came from various family situations and socio-economic backgrounds, exhibited different communication styles, and described varied school experiences. They also exhibited an affinity for play, a tendency toward creativity, and the disposition of non-competitiveness. With regard to their

information seeking behavior, informants indicated a variety of information seeking styles and interests, engaged in information seeking in order to facilitate maturation into their next developmental stage (adolescence), and recounted diverse and successful information seeking episodes. A *point of passion* experience occurred in the lives of all of the informants, and the presence of “anchor” relationships helped in fostering their intrinsic motivation for information seeking. Students specified that interest/relevance of topic, working in a group, at least some choice in the task, creating a final product, and fewer time constraints are all components of intrinsically motivating information seeking episodes. Implications and recommendations for practitioners include suggestions for defining the missions, directing the services, and structuring the environments of school library programs toward the goal of supporting and developing intrinsic motivation in school children.

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## CHAPTER 1

### INTRODUCTION

Most young children begin school with an excitement that is evident in their shining faces, their wiggling-all-over bodies, and their irrepressible impulses to call out answers and happily share experiences with their classmates and teachers. They race into the library media center as though it were overflowing with a bounty of treasure. While some exhibit a shy streak, most of these will overcome their timidity when drawn into the simplest of conversations about pets, toys, or almost any topic with which they have even a modicum of experience. These are characteristics typical of the early elementary student, but as the years go by, I, as an elementary library media specialist, have often seen what seems like a natural exuberance and interest in learning begin to wane. Students who once saw school as an experience as exciting as an African safari begin to see it instead as an experience they must simply endure. By the time I send many of those young students off to middle school, I wonder if they still possess even a bit of that “kindergarten spark.”

An accepted goal of library media specialists is to help students become lifelong learners (American Association of School Librarians & the Association for Educational Communications and Technology, 1998). As professionals, school librarians are commissioned to enable students to use skills and resources in order to “share knowledge and participate ethically and productively as members of our democratic society” and to “pursue personal and aesthetic growth” (AASL, 2007, p. 3). While the attributes of lifelong learning have not been definitively established, Dunlap and Grabinger (2003), researchers in the field of adult education, describe the lifelong learner as having the

“capacity for self-direction, meta-cognitive awareness, and disposition toward lifelong learning” (p. 7). AASL emphasizes that in order “to become independent learners, students must gain not only the skills but also the disposition to use those skills” (2007, p.2). These, as well as other descriptions of lifelong learning (e.g., Flew, 2002; Hargreaves, 2004), include the importance of the learner’s motivation. In fact, it is considered to be the *key* attribute, for the other attributes are “insufficient if learners are not disposed to engage in lifelong learning” (Dunlap & Grabinger, p. 9). Even though they possess the skills to learn, people who are not inclined, or *motivated* to use them—will not.

There is a tension for library media specialists in this age of testing and the No Child Left Behind Act (2001). Library media specialists want to help their schools meet state standards (or educational requirements) for learning, yet they also want to provide environments for students that foster a love of information seeking that will endure into students’ adult lives. Current standards and testing procedures in schools often skew attention away from learning in the broad sense and reduce education to what is being tested (Sheldon & Biddle, 1998). How do these educational practices affect the intrinsic motivation of students? How do they affect the potential for cultivating lifelong learning in students? Are the goals of our school system and the resultant teaching strategies “sabotag[ing] a key goal of education—creating a flexible population of life-long learners who can adjust to the changing needs of society and the workplace” (p. 164)? Is the educational system actually working against the goals of fostering intrinsic motivation to seek information, and therefore lifelong learning, in students?

Of course school success and student motivation are affected by factors other than the school environment. The home environment, especially parental support for learning, is also key. While socio-economic level has been seen as an important variable (e.g., Lance, Wellborn, & Hamilton-Pennell, 1993; Lance, Rodney, & Hamilton-Pennell, 2000) there is certainly no research to support a cause and effect here. True, those students with more resources at home tend to generate higher grades, and many display a heightened interest in school as well; yet I have observed that there are always low-income students who seem just as eager to seek information as any of the more financially-advantaged students. What experiences outside of school might be contributing to this eagerness to learn?

Based on these observations and experiences, I began to wonder how the in-school and out-of-school experiences of students might affect their desire to seek information on their own. These reflections led me to this study, which was aimed at looking closely at intrinsic motivation in elementary aged-students as it related to information seeking, all within the framework of lifelong learning.

### Significance

The decrease of interest in learning by students has been a matter addressed in the literature and is seen by contemporary educators and other observers as a significant problem. It is significant both for the individual and for society. People, communities, and nations suffer when the citizens do not seek information that will enable them to adapt to changing environments.

### *Significance for the Individual*

Students' declining academic interest has been tied to a lack of internal desire, or *intrinsic motivation*. This lack of intrinsic motivation can lead to significant problems for the individual student. Less-motivated students are less likely to achieve good grades (Gottfried, 1985, 1990; Hidi, 1990), stay in school (Vallerand, 1991), be well adjusted (Ryan & Connell, 1989), and most importantly, are less likely to become lifelong learners (McCombs, 1991). When considered in terms of information seeking, it has been noted that students who lack the internal desire to seek information will not do so on their own, and if forced, will show less evidence of conceptual learning and retention than those more motivated students (Grolnick & Ryan, 1987). This is a problem that not only jeopardizes a student's future success in life (McCombs, 1991), it also affects his or her general sense of well-being (Ryan & Frederick, 1997; Ryan, Deci, & Grolnick, 1995). Furthermore, the lack of intrinsic motivation to seek information is a problem that has implications beyond the individual.

### *Impact on Society*

Just as the decline of intrinsic motivation is detrimental to the lifelong learning potential of individuals, the decline of lifelong learning will also negatively affect the well-being of society. Lifelong learners are continually bettering themselves, providing for improved economic status, enhancing employability, and adding to productivity. The flipside to lifelong learners, then, are workers in a society who do not learn new skills and find it difficult to adapt to societal changes (McCombs, 1991). This problem was recently addressed by the National Advisory Group for Continuing and Lifelong Learning (NAGCLL) in England. The group's primary goal is to help English citizens become the

type of learners who can adapt to the changing economic climate. In its first report, the NAGCLL recommended a move toward a learning culture that would better equip people to solve the country's economic and social problems (Bartlett, 2003). "If, however, something does not happen to intervene, a large group of socially excluded and dispossessed people will evolve, which will in turn lead to an increasingly unstable society" (p. 198). The recent general decline of lifelong learning—both in skills and disposition—by many individuals in U.S. society has also caused alarm, especially for those in the industry and business communities (McCombs, 1991).

### The Problem

Developmentalists agree that the intrinsic motivation to seek information is in-born (Ryan & Deci, 2000b). One has only to watch a healthy, non-sleeping infant or very young child for only a few minutes to see him or her reach toward something new in active, curious inquiry. Within the lexicon of LIS, this step toward seeking information is conceptualized as "bridging the gap" (Dervin, 1993) "moving from uncertainty to understanding" (Kuhlthau, 2004), "resolving an anomaly" (Belkin, 1980), or "resolving a problematic situation" (Wersig, 1971). When action toward seeking information is initiated from within the individual "for its inherent satisfactions rather than for some separable consequence" (Ryan & Deci, 2000a), it is considered *intrinsic*.

While most children experience a decline in academic intrinsic motivation, research has shown that some children maintain their excitement and a disposition toward intrinsic motivation for learning throughout their elementary years (Lepper, Corpus, & Iyenger, 2005). Within a school context, looking at the "starting block," the initial moment and place where students begin seeking information on a particular topic, the

point at which they begin to manifest the desire to “know something more,” does not tell the story of *why* some students have a disposition toward intrinsic motivation to seek information and others do not. These individual starting block experiences are virtually invisible, mostly based on what Taylor termed “a cognitive level of visceral need” (1968). What will lead to a discovery, then, of what is different about these children who maintain *the disposition* toward intrinsic motivation to seek information?

### The Research Question

The basic research question presented in this dissertation is “what are the experiences in the lives of upper elementary school children that foster an intrinsic motivation to seek information?” It was assumed that a look at these experiences would lead us to an understanding of how some children are able to maintain their intrinsic motivation to seek information throughout their elementary school years, and even throughout their entire lives.

The implications of such a study for school libraries could include changes in “defining the basis of our mission, directing our services, and structuring our environments” (Crow, 2006, p. 30). Our mission of helping students become lifelong learners could be based on a clearer understanding and definition of those experiences that contribute to lifelong learning. The services we provide could better reflect activities that foster intrinsic motivation to seek information. For example, classroom teaching techniques are becoming increasingly extrinsic in light of the pressure on teachers to increase test scores. “By collaborating with teachers to design projects that will meet classroom goals, teach information literacy skills, and motivate students, library media specialists can help students begin transferring those skills into fulfilling their personal

needs for information” (p. 30) which will make information seeking—and learning—more personal and intrinsically motivating. Finally, an understanding of experiences that foster intrinsic motivation could help library media specialists develop environments that will “enhance and promote stimulation of thought and interest” (p. 30).

### Summary

Research indicates that the key to lifelong learning is the individual’s intrinsic motivation (Dunlap & Grabinger, 2003; McCombs, 1991). The problem of declining intrinsic motivation to seek information is significantly detrimental for both individuals and for society. Based on my observations and experiences as an elementary library media specialist, and building on the theoretical and empirical literature, I proposed and conducted a study that looks closely at the intrinsic motivation of upper elementary school children as it relates to information seeking within the context of lifelong learning. The guiding question for the study was “what are the experiences in the lives of upper elementary school children that foster an intrinsic motivation to seek information?” Chapter 2 reviews the relevant literature, and Chapter 3 provides a description of the research design, including the research assumptions and stance of the researcher, the selection of participants, the steps in data collection, the experience of doing naturalistic research, and the approach to data analysis. Chapter 4 describes the theoretical and conceptual frameworks of the study, and Chapter 5 presents an overview of the research results, including data collection methods and field experiences, as well as the data analysis. Conclusions, implications, and recommendations are presented in Chapter 6, along with suggestions for future research.

## CHAPTER 2

### LITERATURE REVIEW

The research question, “what are the experiences in the lives of upper elementary school children that foster an intrinsic motivation to seek information?” contains strands of thought that encompass the issues of information seeking, intrinsic motivation, and naturalistic research, all within the context of the lives of children. This chapter entails discussions of research and theory in the areas of: a) the information seeking behaviors of youth, and b) intrinsic motivation and children, with special consideration to the frame of reference of LIS.

The conceptual framework for the dissertation, coming from the theoretical and research area of information seeking behaviors of youth, is composed of the Taxonomy of Tasks (Bilal, 2002a) and A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a, 2006b). Self-determination Theory (Deci & Ryan, 1985b) provides the basis for the theoretical framework of the current study and has its roots in theory and research concerning intrinsic motivation and children. The following discussion in these two areas of research and theory provide context for the decision to base the conceptual and theoretical frameworks on the three chosen theories.

#### Information Seeking and Youth

The study of information behavior began about thirty years ago and has been conceptualized as “how people need, seek, manage, give and use information in different contexts” (Fisher, Erdelez, & McKechnie, 2006, p. xix), including unintentional or passive information-gaining behaviors, as well as the avoidance of information (Case, 2007). Most of the beginning studies were system-oriented, concerned with information



as a concrete object and people as passive users of information (Fisher et al., 2006). In a seminal article published in 1986, Dervin and Nilan called for a shift in information behavior research. They challenged the field to move from a *system-centered* to a *user-centered* focus. This emphasis, which has guided information behavior research over the past 20 years, is based on the assumptions of the subjective meaning of information, the active role of users, and the situational dynamics of information seeking (Todd, 2003). While research into the information behaviors of youth followed much the same evolutionary path as general information behavior studies, the shift in emphasis to users led to the increase in research concerning the information behavior of youth as a particular type of user, with the primary emphasis on the information *seeking* behavior of youth. “*Information seeking* is a conscious effort to acquire information in response to a need or gap in. . . knowledge” (Case, p. 5). The latest focus of information seeking in youth has been on information seeking in context.

The literature can be classified into the following categories: early non-empirical literature on children’s use of new technologies; system-oriented studies; user-oriented studies; and finally, information seeking in context.

#### *Early Non-Empirical Literature on Children’s Use of New Technologies*

Early information seeking behavior literature focused on children was generated from a pragmatic need to teach students how to use new information technologies.

*Information Power: Guidelines for School Library Media Programs* (AASL & AECT, 1988) moved the school library vision from a resource base to a mission base, that is, of ensuring “that students and staff are effective users of ideas and information” (p. 1). Early articles focused on guidelines and methods for online instruction curriculum design

(Aversa, 1985; Mancall & Desking, 1984), ways to assist students in developing strategies to manipulate the new systems (Montgomery, 1987; Ward-Callaghan, 1987), and the differences in the skills required to use the new technologies versus the old (Hooten, 1989). Surveys about the growing use of online retrieval services abounded (e.g., Clyde & Kirk, 1989; Kuhlthau & Sherman, 1990; Tenopir, 1986). The overall theme in these early works was the importance of children's education in using electronic information systems and how this affected their ability to seek information (Chelton & Cool, 2004).

#### *System-Oriented Studies*

The empirical studies on children's information seeking reflected the early non-empirical literature concerning children's use of electronic databases and online catalogs. Research on children's effective use of the online public access catalog (OPAC) had mixed results. The study at the Edmonton Public Schools (1983) reported that students grade 2 and above found the OPAC easy to use, whereas Edmonds, Moore, and Balcom (1989) concluded that fourth graders were not developmentally ready for the many steps involved in using the online catalog. Other studies (e.g., Callison, Daniels, Estell, & Gunderson, 1986; Craver, 1985) reported on the effectiveness of online bibliographic instruction, and the quality of the materials students retrieved. These studies seemed to indicate that secondary students could be taught to do the process of bibliographic searching, but that they were less able to implement the use of the sources they retrieved from their searches in actual projects (Mancall & Desking, 1984; Wozny, 1982).

### *User-Oriented Studies*

User-oriented research on the information seeking behavior of youth began with an emphasis on the cognitive processes of the user. The studies asked questions about the thinking processes, mental strategies, and searching techniques employed by the child (Chelton & Cool, 2004).

### *Designing Better Systems*

One body of research had the aim of finding out about how students search with the goal of designing better electronic systems (e.g., Barlow, Karnes, & Marchionini, 1987; Borgman, Chignell, & Valdez, 1989; Borgman, Krieger, Gallagher, & Bower, 1990; Liebscher & Marchionini, 1988; Marchionini & Teague, 1987). Some of these studies (Barlow et al., Liebscher & Marchionini; Marchionini & Teague) concluded that the design of CD-ROM and online encyclopedias did not fit the cognitive patterns and mental models of elementary and high school-aged students. Borgman et al. found that students' limited knowledge of subject matter hindered their ability to use online subject catalogs. Recommendations were made from this category of research for the design of more "child friendly" electronic products.

### *Helping Children Develop Better Information Seeking Skills*

Another body of research, conducted primarily in the UK, was aimed at discovering how children seek information with the goal of helping them develop better information seeking skills (Carter, 1989; Davison, 1984; Galpin, 1989; Spavold, 1990). Results include those by Spavold, who found that there is a substantial difference between the problem-solving strategies of children and those of adults, and that children need to understand electronic information and databases in terms of their own

experiences. Davison concluded that index terms need to relate to the curriculum being taught and to the students' own language. Better instructional techniques were recommended as a result of the UK studies.

### *The Information Search Process*

A major contribution to the field of information seeking in youth was the research of Carol C. Kuhlthau, which began with studies conducted to investigate how high school students moved through the information seeking process. Her model, the Information Search Process, maps the stages through which youth proceed in their information seeking in the cognitive, behavioral, and affective domains. These stages are initiation, selection, exploration, formulation, collection, presentation, and assessment (Kuhlthau, 2004). Studies that extended Kuhlthau's research included exploration of students' higher-order thinking skills used during the information search process (McGregor, 1993), and the decisions students make while seeking information (Pitts, 1994). This research confirmed both the non-linear nature of youth information seeking and students' general focus on the final product and not on a process of information seeking (McGregor, 1994).

### *Using the World Wide Web*

More recent user-oriented studies have focused on youth information seeking behavior in using the World Wide Web (Akin, 1998; Bilal, 2000, 2001, 2003; Bilal & Kirby, 2002; Hirsh, 1997, 1999; Kafai & Bates, 1997; Large, Beheshti, & Rahman, 2002; Lazonder, Biemans, & Wopereis, 2000; McNicholas & Todd, 1996). These studies show that despite the enjoyment young people derive from using the web as a social and entertainment medium, in general they have not learned to use it as an effective means of

gathering information. Barriers include a lack of ability to critique, manage, and effectively use the sheer quantity of information available (Todd, 2003).

### *Information Seeking in Context*

The recent trend in information seeking in youth has been about context. While it may seem that information literacy instruction and system designs are based on “a generic user in a decontextualized context, those who work with young people know that such a creature simply does not exist” (Chelton & Thomas, 1999, p. 8). After examining the system, then the user, it would seem natural that the next step in information seeking research would be to consider context. Two areas to be reviewed in the study of context are task definition and everyday life information seeking.

#### *Task Definition*

Several researchers have explored the importance of task definition to information seeking behavior. Findings indicate that children are more successful at finding information for completing ill-defined, open-ended tasks than they are for well-defined, specific tasks (Schacter, Chung, & Dorr, 1998), and that they enjoy and are more successful at the self-initiated task, which holds personal interest (Bilal, 2002b; Branch, 2003; Farmer, 2007; Hirsh, 1999; Shenton, 2007). Bilal’s Taxonomy of Tasks shows the variety and relationship of task type, task nature, and task administration. Her conclusions point to the fully self-generated task as the type with which children are most likely to experience success (2002a) and found that this conclusion applied to more than one culture (Bilal & Bachir, 2006).

In a study with a different perspective, Gross, the originator of the Imposed-Query Model (1995), found that children will voluntarily engage in and have a positive

experience with an imposed query given they accept the question as their own and feel that their response to the research will be accepted. She concluded that the child's understanding of the context of the task, whether it is imposed or self-generated, "is fundamental to question development as well as to understanding, transferring, negotiating, and determining the relevance of answers" and that this understanding becomes more important as the question becomes more abstract and open-ended (Gross, 1999, p. 518).

### *Everyday Life Information Seeking*

Researching the information seeking behaviors of youth beyond the context of the task at hand into the broader context of daily life has brought about the study of everyday life information seeking (ELIS) in youth. This category of research has its roots in the exploration of the social and cultural factors that affect people's information seeking behavior. Savolainen (1995) created a model that mapped *way of life* and *mastery of life*, positing both as reasons people seek information. Williamson (1998), in her Ecological Theory of Human Information Behavior, examined both intentional and incidental information people gather. Chatman (1999, 2000) explored the characteristics of the "information poor" and found that context was the most important factor in determining a person's use or non-use of information. McKenzie (2003) emphasized social contexts and relationships in source selection and patterns of information seeking.

Research in youth ELIS has resulted in varied and mixed conclusions. In a study expanding the task definition research discussed above, Oliver and Oliver (1997) found that when students participated in information seeking tasks that were linked to purpose, context and practical need, they retained more. Shenton (2004) reported that magazine

use by teens (especially boys) was overwhelmingly for information about hobbies and consumer interest, but that the Internet was their source of choice for these topics. Fisher, Marcoux, Myers, and Landry (2004) found that “tweens” (children aged nine to thirteen) thought information seeking was a healthy activity, but did not think that their personal and social information needs are easily met. Julian (1999) found that many teens looking for information on careers did not know where to look, felt overwhelmed by the choices, and did not know what questions to ask.

Several studies have examined the perceived effectiveness of the library by teens, and concluded that secondary-aged students do not believe that school and public libraries contain the information they need for everyday life concerns such as drug use, coming-out experiences, and sexual and reproductive health. Findings also indicate that the organization of libraries might not facilitate adolescents locating the information they need (Mehra & Braquet, 2006; Poston-Anderson & Edwards, 1993). Todd’s findings were similar, though less bleak, indicating that when teens actually do participate in the information seeking process on topics of concern to their everyday lives, that they are active creators of meaning (Todd, 1999a; Todd, 1999b).

Based on their study of urban teen ELIS, Agosto and Hughes-Hassell (2006a, 2006b) developed a theoretical model illustrating the concept that teens seek information in everyday life in order to “facilitate the teen-to-adulthood maturation process” (p. 1394).

A key assumption in the research to date in youth ELIS is that the school and public library can be powerful catalysts in the lives of youth, “providing both an environment and access to sources of information that can shape choices and decisions



about life and lifestyle matters” (Todd, 2003, p. 39). The studies indicate, however, that libraries have not always been effective in this role.

#### *Information Seeking Behavior Theories Used in the Current Study*

The conceptual framework for this dissertation defines and conceptualizes the social contexts that either foster or hinder the individual’s intrinsic motivation to seek information. The conceptual framework is composed of two information seeking models: the Taxonomy of Tasks (Bilal, 2002a), and A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a, 2006b). The Taxonomy of Tasks addresses the context, with reference to task definition, of the particular questions students ask. For the current research, it directed the collection and organization of questions being asked by the students under study. Its use helped in understanding the task definition of students’ questions and the reasons behind their success or failure, as well as their preferences, in answering these questions. The current study also used A Theoretical Model of Urban Teen Development to classify and sort the topics of interest generated by the intrinsically-motivated students under study. The seven independent variables in the Agosto Hughes-Hassell model are based on personal and cultural situations and settings. Use of the model illuminated the socio-cultural, as well as developmental, reasons behind the information seeking behaviors of the student participants. For the full discussion and rationale behind the decision to use these theories, see Chapter 4, Theoretical and Conceptual Frameworks.

#### *Intrinsic Motivation and Youth*

Motivational theories address why people and animals think and act the way they do (Weiner, 1992) and explore both “the energization and direction of behavior” (Deci &



Ryan, 1985b, p. 3). They can be categorized into two basic approaches: mechanistic and organismic.

### *Mechanistic Motivation Theory*

The mechanistic approach to motivation began with the earliest motivational theories—the drive theories—which assumed that an organism’s responses are governed by the interaction between its own physiological drives and the environmental stimuli around it. Freud (1914, 1915) and Hull (1943) were early proponents of this perspective. Freud theorized that there were two drives (first called “instincts,” the definition later evolved to “drives”) that determined behavior—sex and aggression, whereas Hull (1943) believed that there were four drives—thirst, hunger, sex, and the avoidance of pain (Deci & Ryan, 1985b). For some time after the onset of Hull’s work, theorists and researchers continued to develop and verify theory based on the drive concept. Theories of secondary or learned drives, such as fear (Miller, 1948), incentives (Spence, 1956), anxiety (Spence, 1958), conflict (Miller, 1944, 1959), and frustration (Brown and Farber, 1951) emerged (Weiner, 1992).

Over time, however, it became clear that people (and animals) exhibited many complex behaviors that could not be explained through drive theories. For example, Hartmann (1939) highlighted the normal development patterns of organisms, and Berlyne (1950) and Harlow (1950) pointed to animals’ persistent need to explore and manipulate their environments regardless of rewards and punishment.

### *Organismic Motivation Theory*

The organismic approach presumes an active role for the organism, one that is volitional and involves initiating behaviors. The organismic view does not see outside

stimuli as causes of behavior, but as opportunities or affordances for the organism to satisfy its needs (Deci & Ryan, 1985b). This approach recognizes the organism as oriented toward growth, continually aspiring to integrate new stimuli with its own psychic elements “into a unified sense of self as well as integrating into larger social structures” (Deci & Ryan, 2000). It is this approach that led motivational theorists to create new definitions and concepts of motivation, specifically intrinsic motivation. Expectancy-Value Theory (Vroom, 1964), Curiosity (Berlyne, 1960), Flow Theory (Csikzentmilyi, 1975, 1990), and Self-determination Theory (Deci & Ryan, 1985b) are all examples of intrinsic motivation theories.

#### *Research on Intrinsic Motivation and Youth*

The daily grind of life finds everyone engaged in required activities, such as cooking, cleaning, working, etc., activities that for most people are *extrinsically* motivated, or caused by an external force (Ryan & Deci, 2000b). People exhibit *intrinsic* motivation when engaging in activities just for enjoyment, such as solving puzzles, doing art, or playing games. Because intrinsic motivation involves both a task and an organism, it can be defined both in terms of the interest of the task and in terms of the satisfaction gained by the person when engaged in the task. These differing orientations stem from reactions to two behavioral approaches that dominated empirical psychology from the 1940s to the 1960s.

#### *Interest in the Task*

Operant theory (Skinner, 1953) maintained that all behaviors were motivated by rewards, and that organisms could be conditioned to respond to extrinsic reinforcements such as food or money. It is based heavily on Thorndike’s (1913) *law of effect*, which

states that when an action is followed by reinforcement the likelihood of the reoccurrence of the action will increase. Koch (1956, 1961) later asserted that operant theory should be revamped to include an explanation of actions that are motivated by simple *interest in the task*, or engagement that is absorbing to the individual for the mere pleasure of doing it—in other words, intrinsic motivation (Deci, 1975). More recent theorists (e.g., Csikszentmihalyi, 1975; Hidi & Baird, 1986; Krapp & Fink, 1992) have continued in the Koch tradition to explore characteristics of activities that make them interesting, the individual interests of people, as well as the effect this “interestingness” has on the learner (Renninger, Hidi, & Krapp, 1992).

*Flow theory.* Csikszentmihalyi (1975, 1990) explored the characteristics of activities that cause flow, or a state of complete absorption. He found that these activities have clear goals and rules appropriate to the activity, and that usually flow activities provide feedback that is immediate and unambiguous. He also found that the abilities needed for the activity align with the person’s abilities. His, and other, research indicate that the results of engaging in activities of high interest and flow are unselfconsciousness, serenity, joy, involvement, and happiness (Csikszentmihalyi, 1975) as well as higher comprehension (Schiefele & Csikszentmihalyi, 1990a, 1990b). Csikszentmihalyi and Hermanson (1999) applied flow theory in developing a “formula” for learning in museum experiences. The formula includes “the hook,” opportunities for involvement, conditions for flow, and growth complexity in consciousness.

*Dewey’s definition of “interest.”* Dewey (1913) differentiated between learning that is based on student interest and learning that is not. He presented interest as: a) being active, b) based on real objects, and c) containing personal meaning. He believed that the

level of a student's effort is based on his or her level of interest and went so far as to say that learning that is not based on student interest is coercive (Schiefele, 1991). Empirical studies have since shown that interest affects text comprehension (Asher, 1980; Schiefele, 1990); the use of learning strategies, including information seeking strategies (Brown, 1988; Nolen, 1988; Schiefele, 1991; Schiefele, Winteler & Krapp, 1991); and that interest facilitates "deep level" processing (Entwistle, 1988).

### *Satisfaction of the Person*

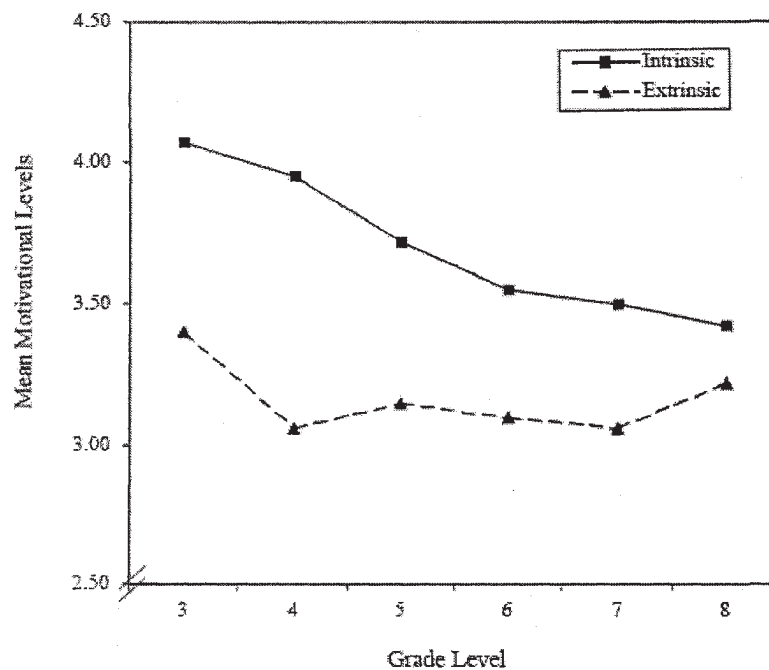
The concept of intrinsic motivation based on the *satisfaction of the person* (rather than the interest of the task) actually began as early as 1918 when Woodworth asserted that people, as active organisms, are moved to act by such motives as constructiveness, curiosity, and self-assertion. Woodworth's ideas were virtually ignored until the late 1940s and early 1950s. At that time there was a spate of research that pointed to people's and animals' motivation to explore their environments and manipulate interesting objects (e.g., Butler & Harlow, 1957; Berlyne, 1950; Glanzer, 1953; Montgomery, 1952; Myers & Miller, 1954, Welker, 1956). The most common response to these discoveries was to name more drives—the exploratory drive, the boredom-avoidance drive, the manipulation drive, etc.—or to contend that these behaviors were secondary reinforcements of the primary drives (Keller, 1969). However, White (1959) criticized this approach, stating that if motives such as exploration were to be named "drives" they must have the same function as the established drives of thirst, hunger, and sex. Since exploration has no relationship to a physiological "tissue" need nor a visceral need, is not a consummatory response (behavior intended to reduce a deficit or need), nor does it provide reinforcement for need reduction, White argued that it cannot be classified as a

“drive.” In fact, he asserted that animals often make choices that increase exploratory motives, not reduce them. He also contended that exploration could not be considered a secondary reinforcing behavior since it occurs in newborn organisms before they have a chance to associate it with a primary drive (White, 1959).

*Effectance motivation.* Instead, White (1959) proposed the concept of *effectance motivation* to describe innate energy sources that cannot be explained as caused by the primary drives. He posited that these actions—e.g., visual exploration, crawling, grasping, language and thinking, exploration, and manipulation of surroundings—were motivated by the organism’s psychological need to “interact effectively with his environment” (p. 329). In addition, he proposed that these activities are not random, but “show direction, selectivity, and persistence in interacting with the environment” (p. 329). The term coined by White to mean the organism’s ability to deal effectively with his surroundings was *competence*.

*Psychological needs satisfaction.* Another important development in the approach to exploring need satisfaction emanates from the work of Murray (1938). Murray was concerned with needs that are psychological, not physiologically based. He defined a need as “a construct (a convenient fiction or hypothetical concept) that stands for a force (the physico-chemical nature of which is unknown) in the brain region, a force that organizes perception, apperception, intellection, conation and action in such a way as to transition in a certain direction an existing, unsatisfying situation” (pp. 123-124). This definition, though extremely broad, recognized the organism’s psychological needs, and not just its physiological needs (Deci & Ryan, 2000).

More recent studies of intrinsic motivation based on the satisfaction of the person's needs are those by Harter (1980, 1981) and Lepper, Corpus, and Iyengar (2005). Extending White's (1959) concept of *effectance motivation*, Harter developed a scale to test both intrinsic and extrinsic reasons children engage in classroom activities and learning. The scale delineated five dimensions: a) curiosity versus pleasing the teacher, b) preference for challenge versus preference for easy work, c) independent mastery versus dependence on the teacher, d) independent judgment versus reliance on the teacher's judgment, and e) internal versus external criteria. The findings indicate that there is a significant and progressive decline in intrinsic versus extrinsic motivation across elementary and middle school years. Harter's scale was flawed, however, because it did not allow for a child to choose both extrinsic and intrinsic motivators for an activity, and therefore a perfect negative correlation was built in. Lepper et al. improved upon Harter's scale by allowing independent assessment of both intrinsic and extrinsic motivation for each activity. Their findings, in a large study of ethnically diverse third through eighth grade public school students, indicated that extrinsic motivation was negatively correlated with academic outcomes and remained relatively stable across grade levels. Intrinsic motivation, however, positively correlated with higher grades and test scores but steadily and significantly decreased throughout the grades (see Figure 1).



*Figure 1.* Mean levels of intrinsic and extrinsic motivation by grade level.

From "Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates," by M. R. Lepper, J. H. Corpus, and S. S. Iyengar, 2005, *Journal of Educational Psychology*, 97(2), p. 190. Copyright © 2005 by the American Psychological Association. Reproduced with permission (see Appendix A). The use of APA information does not imply endorsement by APA.

Many studies about intrinsic motivation and youth are based on the Self-Determination Theory (SDT; Deci & Ryan, 1985b). SDT is an organismic motivational theory that categorizes motivation into three basic types spread across a spectrum: amotivation, extrinsic motivation, and intrinsic motivation. The theory points to three innate psychological needs: competence, autonomy, and relatedness. People living in social contexts that provide opportunities to meet these basic psychological needs are not only optimized for motivation, but also for performance and development (Ryan & Deci, 2000b). The studies about youth from the SDT camp are many and varied, but most of the research falls primarily into two categories: how parental styles affect children's intrinsic motivation, and how educational contexts affect students' intrinsic motivation. Both categories focus on autonomy- versus non-autonomy-supporting environments.

SDT postulates that environments that foster intrinsic motivation are those that support people's inherent need for autonomy by minimizing controls and by providing choice (Deci & Ryan, 1985b). Findings indicate that parenting that is autonomy-supportive is associated with children's ability to regulate their own behavior (Grolnick & Ryan, 1989) and their emotions (Grolnick, Kurowski, McMenemy, Rivkin, & Bridges, 1998). Children who have autonomy-supportive parents are higher achievers and are better adjusted (Grolnick, Deci, & Ryan, 1997). Another finding is that high levels of parental involvement, if it is controlling, is less beneficial to a child's intrinsic motivation than low levels of involvement (Weiss & Grolnick, 1991).

The research on autonomy-supportive educational environments indicates that these environments also provide benefits to students. Benefits include higher academic achievement (Boggiano, Flink, Shields, Seelbach, & Barrett, 1993; Flink, Boggiano, &



Barrett, 1990), more positive emotionality (Patrick, Skinner, & Connell, 1993), higher self-esteem (Deci, Nezlak, & Sheinman, 1981; Deci, Schwatz, Sheinman, & Ryan, 1981), greater conceptual understanding (Benware & Deci, 1981; Grolnick & Ryan, 1987), greater flexibility in thinking (McGraw & McCullers, 1979), more active information processing (Grolnick & Ryan, 1987), greater creativity (Koestner, Ryan, Bernieri, & Holt, 1984), and higher rates of retention (Vallerand, Fortier, & Guay, 1997). An interesting corollary to this research is the question of whether or not teachers can be taught to be autonomy-supportive. Reeve (1998) examined this idea and found that pre-service teachers who were trained in autonomy support did learn how to be autonomy-supportive, but that their “prior beliefs about the nature of motivation strongly affected how willing they were to accept the merits of an autonomy-supportive style” (Reeve, in Deci & Ryan, 2002, p. 188-189).

Other areas of youth research based on SDT are emerging, one of which differentiates between parental control and structure. Developing studies in this area define *control* as coercion and pressure, and *structure* as expectations, guidelines, and rules. When defined in this way, structure can be measured as a separate construct from autonomy support/control, and appears to have different outcome associations (Grolnick, SDT Conference Program Book, 2007, p. 24). Another area of emerging research is intrinsic motivation across cultures. There seems to be a tension between the need for autonomy and relatedness. New research is pointing to the universality of the connection between need satisfaction and well-being, with autonomy seemingly the dominant need for people to maintain intrinsic motivation in individualistic societies and relatedness being the dominant need in collective societies (Chirkov & Ryan, 2001; Deci, Ryan,

Gagne, Leone, Usunov, & Kornazheva, 2001, Hayamizu, 1997; Yamauchi & Tanaka, 1998). However, most of this new research is about people college-aged and above, not children and adolescents. The work of Chirkov & Ryan (2001) is an exception.

Other youth-focused studies based on SDT are discussed in Chapter 4, Theoretical and Conceptual Frameworks.

#### *Intrinsic Motivation Theory Used in the Current Study*

The Self-Determination Theory (SDT; Deci & Ryan, 1985b) is the intrinsic motivation theory serving as the basis for the current study. The factors that make SDT an appropriate theoretical framework for a study of experiences that foster intrinsic motivation are the epistemological, ontological, and axiological assumptions of the theory relative to the research question, its distinct treatment of the construct of intrinsic motivation, SDT's specific frameworks for examining social contexts and causality orientations that facilitate or undermine intrinsic motivation, and its compatibility with accepted principles and practices of human development and learning. The theory's limitations—the use of nomothetic (also known as experimental and quantitative; Burrell & Morgan, 1979) methodology in the majority of its supporting research and its single-disciplinary perspective—did not preclude its use in the current study, and can actually be seen as advantages, especially with augmentation from context-based information seeking theories. For the full discussion and rationale behind the decision to use SDT as the theoretical framework for the current study, see Chapter 4, Theoretical and Conceptual Frameworks.

## Motivation and Youth in LIS

While much of the LIS research on information seeking and youth touches on issues of motivation (such as the importance of context and task definition to the information seeker), there is a body of LIS research that more directly addresses motivation and youth. This literature focuses on student motivation/frustration while using technology, the use of Accelerated Reader as a motivational tool, the library media specialist's use of motivational strategies, and the motivation of the student during the information searching process.

### *Student Motivation/Frustration while using Technology*

Studies conducted to examine student motivation and/or frustration while using technology during the search process have yielded varied results. Findings have shown a high level of frustration during students' use of the Internet and the online public access catalog, particularly regarding sorting through the abundance of materials available (Borgman, Hirsh, Walter, & Gallagher, 1995; Broch, 2000; Solomon, 1993). Silverstein, in her "Just Curious" study (2005), conversely found that students using digital reference services to answer self-initiated questions were highly motivated to do so, especially in elementary and middle school. Bilal (2005) also found a high level of motivation of students to use the World Wide Web. Her study indicates that children are motivated because of an increased level of self-confidence once they learn to use it, and because they enjoyed the challenge of searching and discovering new information. Convenience of use was also a factor.

### *The Use of Accelerated Reader as a Motivational Tool*

Many studies have examined the motivational aspects of Accelerated Reader (AR; e.g., Krashen, 2003; McLoyd, 1979; Robbins & Thompson, 1991), a computer-generated reading program that claims to help educators “build a lifelong love of reading and learning in every student” (Renaissance Learning, 2008, page heading). Everhart (2005) studied the relationship between the implementation of AR and student motivation, then applied her findings to the leadership role library media specialists can play in implementing AR. Everhart found that “motivational style interacts with gender in relation to the competitive and social aspects of the AR program” (p. 12), that the level of implementation in the schools did not correlate with the extent of student reading, and that the management aspects of the program were not being effectively utilized. Based on these findings, she recommends that library media specialists who already work in AR schools can be instrumental in its implementation, “particularly in the area of book selection, reading guidance and motivation, organization of materials, and teacher professional development” (p. 12). She recommends that library media specialists in non-AR schools use her study to support “collaborat[ing] with teachers to set individual reading goals for students and develop a responsive collection” (p. 13) outside of the AR program.

### *The Library Media Specialist's Use of Motivational Strategies*

Ruth V. Small explored K-8 library media specialists' use of motivational strategies in library skills instruction and the consequential effects on the on- and off-task behaviors of their students. In her study, (Small, 1998) nine exemplary library media specialists were observed teaching library skills to students in third (age 8) to eighth (age

13) grade. The motivational strategies were categorized using the ARCS Model of Motivational Design. ARCS is founded on expectancy-value theory and consists of four components of instructional motivation: attention, relevance, confidence, and satisfaction (Keller, 1987). Small found that the library media specialists used a significant number of motivational strategies during lessons (averaging 24 strategies per 30-minute lesson) and that middle school librarians used more motivational strategies than elementary school librarians. She also reported that only 2 percent of the motivational strategies used were considered to stimulate behavior based on intrinsic motivation (Small, 1999). A later study (Small, Zakaria, & El-Figuigui, 2004) explored the motivational strategies used by community college librarians in information literacy skills instruction. Small et al. found that the college librarians used fewer motivational strategies in their instruction than did the elementary/secondary school library media specialists, and that both the college librarians and library media specialists “experienced off-task student behaviors as a result of an overuse/repetition of certain strategies,” which may have caused boredom for their students (p. 116).

#### *The Motivation of the Student during the Information Searching Process*

There have been a few studies on the motivation of the student during the information seeking process. Kuhlthau (2004), in her research into the Information Search Process, acknowledges the effects of uncertainty on the intrinsic motivation of the seeker. She theorizes that, with the mediation of library media specialists and teachers, students can overcome the natural anxiety caused by the searching process and develop a personal interest in the topic being explored.

Building on Kuhlthau's Information Search Process, Burdick (1996) explored differences by gender in the information seeking experiences of high school students. In her study, she developed an Information Search Styles Matrix based on the focus and involvement of the learner. The more focused and involved the learner, the more successful his or her project. Success was defined by the learning that took place, the level of involvement, and the sense of competence experienced by the student. She found that there were some gender differences, but that both genders were equally represented in the two most academically successful styles.

In a study founded on human developmental theory, Fourie & Kruger (1995) used the works of Erikson (1950), Havighurst (1972), Piaget (1981), Bruner (1973), and Kohlberg (1958) to identify the psychosocial, cognitive, and affective needs behind the information seeking behavior of secondary school students. They theorized that the fulfillment of these developmental needs is the basis of teens' motivation to choose particular books and media.

#### Summary

The topical interests discussed in this chapter were: a) the information seeking behaviors of youth, and b) intrinsic motivation and youth. The purpose was to provide a background of the literature, with emphasis on these topics within the framework of LIS, as well as provide context for the decision to base the conceptual and theoretical frameworks on the three chosen theories. The review of the literature about information seeking and youth included early non-empirical articles on children's use of new technologies, system-oriented studies, user-oriented studies, and information seeking in context. The review of the literature about intrinsic motivation and youth included an

overview of mechanistic and organismic motivational theory, and an examination of the research on intrinsic motivation based on interest in the task, as well as based on the satisfaction of the person. Literature about motivation and youth in LIS featured studies about student motivation/frustration while using technology, the use of Accelerated Reader as a motivational tool, the library media specialists' use of motivational strategies in instruction, and the motivation of the student during the information searching process.

The final strand of thought behind the research question, “what are the experiences in the lives of upper elementary school children that foster an intrinsic motivation to seek information?” is the use of naturalistic research. This topic will be discussed in Chapter 3, Methodology.

## CHAPTER 3

### METHODOLOGY

In order to develop a research design it is essential for the researcher to examine the theoretical and philosophical orientations that frame and provide context for the research question. Further, the researcher's own "ways of knowing" and orientation to inquiry should be considered. Through these examinations, the researcher provides a foundation for deciding the appropriate type of methodology, which includes the analytical frame as well as data collection methods, management of access and distance issues, means of data analysis, and ways to establish validity and reliability of the study. The purpose of this chapter is to consider these issues for the current research question, "what are the experiences in the lives of upper elementary students that foster the intrinsic motivation to seek information?" In addition, a discussion of special considerations when researching children and a discussion of the limitations of the study will be presented.

#### Theoretical and Philosophical Orientations

The first orientation to examine in developing a research design is the research approach, consisting of the epistemology, the ontology, and the axiology of the study. From these examinations, the type of methodology and discourse appropriate to the research was discerned.

#### *Research Approach*

The research orientation assumed in the current question is subjectivist (Burrell & Morgan, 1979)—an approach based on an alternative paradigm to the classical ideal of science (Littlejohn, 2002). The classical research approach is based on the hypothetico-



deductive method (questioning, hypothesizing, hypothesis testing, and theorizing). In a gradual, building block style, this process is repeated, using the concepts of hypotheses, operationalism, control and manipulation, covering law (cause and effect), and prediction. It is based on the assumption that complex ideas and concepts are best examined through fine analysis of its parts (also known as the variable-analytic tradition). The major theme of the classical approach is “knowledge is discovery.”

The alternative or subjectivist approach, on the other hand, portrays action as voluntary and assumes that human behavior cannot be predicted based upon outside variables. Another tenet is that knowledge is socially created, and that theories are a historical reflection of their original settings. In turn, theories influence the realities they create. Additionally, theorists are not separate but are a part of the worlds they produce. Finally, the alternative approach presents theories as value laden; they are never considered neutral (Penman, 1992). The following is a discussion of the epistemology, ontology, and axiology orientations that make up the research approach of the current study.

### *Epistemology*

Epistemology is defined as how we begin to understand the world and how we communicate that understanding to others (Burrell & Morgan, 1979). Worldview I (Littlejohn, 2002; identified as positivist by Burrell & Morgan) is based on empiricist and rationalist ideas. It assumes that reality is outside of the knower and must be discovered. In Worldview I, objectivity is all-important. It is concerned with creating laws that are generalizable across situations and over time. In contrast, Worldview II (also known as non-positivist, Burrell & Morgan) is based on constructionist ideas. It assumes that

knowledge is created through the interaction between the knower and the known, and believes that the perceptions and interpretations of individuals are worthy areas of study. Another assumption is that the knower takes an active role in creating knowledge. It is not concerned with creating laws, but instead concentrates on rich descriptions of the contexts that surround the informants under study (Littlejohn, 2002).

The epistemology of the current study is Worldview II. The aim has been to construct knowledge based on the perceptions and interpretations of the students and the researcher. The concern has not been with creating laws, but with writing rich descriptions and visual representations of the experiences that surround the students who are intrinsically motivated to seek information.

### *Ontology*

The definitions of ontology include “the essence of the phenomena under investigation” (Burrell & Morgan, 1979, p. 1) and “the nature of the things we seek to know” (Littlejohn, 2002, p. 28). In social science, it refers to the essence of human existence. The two ontological stances are: non-actional (also known as determinist), which holds that behavior is determined by biology and environment; and actional (also known as voluntarist), which holds that people create meanings, have intentions, and make real choices. The non-actional stance emphasizes the creation of laws and downplays individual interpretation. The actional stance is not concerned with creating laws, but believes that people behave differently in different situations. Burrell & Morgan also discuss another aspect of ontology with two stances: realism and nominalism. Realism assumes that the world is made up of hard, tangible structures, whereas

nominalism assumes that the world is made up of the names and labels artificially created by people in order to better negotiate their realities.

The ontological stance of the current study is actional and nominalist. The research is concerned with the experiences of students—how they create meanings, have intentions, and make real choices based on those experiences. The assumption is that children choose to behave in certain ways based on how they themselves define situations. Because students used their own labels and names for their experiences, the stance is nominalist.

### *Axiology*

Axiology is the philosophy of values. The two stances are value-neutral and value-conscious. Scientists with the value-neutral stance believe a researcher's personal values should not be considered in framing research questions or in choosing methodologies, and that research should be value free in order to be "good" science. They hold that research must be conducted objectively with as little interference from the researcher as possible, and that it is the researcher's role to produce knowledge—not social change—leaving the role of applying knowledge to politicians and practitioners. On the other hand, researchers with a value-conscious stance believe that research can never be value-free. They believe that topics are chosen by persons and institutions (private, corporate, governmental, or academic) that are influenced by their own values and ideologies. Value-conscious researchers also hold the view that the practice of inquiry influences the informants being studied as well as the researcher, so that it is impossible to be completely objective or to be sure that the data collected at any one point in time will be the same at another time. Finally, value-conscious researchers make

efforts to translate the knowledge they produce into positive contributions to society (Littlejohn, 2002).

The axiology of the current study is value-conscious. The assumption of the researcher is that possessing the intrinsic motivation to seek information is beneficial both to the individual and to society, and it was hoped that by examining the experiences of a few intrinsically motivated students an understanding would develop that would lead to fostering intrinsic motivation in other students. These assumptions are the essential purpose of the research, and as such, have been made explicit in the study.

### *Methodology*

Once the scholar explores his or her own inquiry orientation, as well as the approaches and metatheories as they pertain to the research question (as outlined above), the appropriate methodological orientation should become clear. A researcher who is objectivist, positivist, determinist, and value-neutral would most likely use *nomothetic* methodology (also known as experimental and quantitative; Burrell & Morgan, 1979; Creswell, 1998, 2003). This approach uses scientific protocol and techniques, and it relies on few variables and many cases. The methods include standardized research, experiments, surveys, and questionnaires. A researcher who is subjectivist, non-positivist, voluntarist, and value-conscious would most likely use *ideographic* methodology (also known as qualitative and naturalistic; Lofland, Snow, Anderson, & Lofland, 2006). This approach emphasizes first-hand knowledge of the subject, recoverable in five research traditions: phenomenology, biography, ethnography, grounded theory, and case studies (Creswell, 1998). Methods related to these traditions include the use of diaries, journalistic entries, observation, in-depth interviews, and the Experience Sampling

Method (Kubey & Csikszentmihalyi, 1990; Kubey, Larson, & Csikszentmihalyi, 1996). It relies on few cases and many variables, and the researcher works inductively—beginning with broad questions and narrowing to topics based on an emerging design as the informant discloses information and as observations are made.

Because the current study is subjectivist, non-positivist, voluntarist, and value-conscious it led to the use of ideographic methodology. The approach was phenomenological, which “describes the meaning of the lived experiences for several individuals about a concept or *the phenomenon*” (Creswell, 1998, p. 51). The idea of the phenomenological approach began with Edmund Husserl, who emphasized that researchers should “search for the essential, invariant structure (or essence)” (Creswell, 1998, p. 52) of a phenomenon based on the experiences of the person as revealed to and interpreted by the researcher. In this case, the phenomenon was “being an upper elementary-aged student who is intrinsically motivated to seek information.” The research was based on the first-hand knowledge and experiences of the students. It depended on few cases and informant-specific characteristics in an emerging research design that began broadly and narrowed based on the information given by the informants. Particular methods considered for use were in-depth interviews, drawing analysis, and observation of the students’ environments. These methods will be discussed in more detail in the data collection methods section of this chapter.

### *Rhetoric*

Rhetoric, or the discourse of research, is determined by the theoretical orientations of the study and the methodology used by the researcher. Quantitative rhetoric uses standardized language and terms, and a standard, formal, and traditional

format. Qualitative rhetoric, used in naturalistic research, is more personal and literary. The language and terms develop with the research (Creswell, 1998). Deetz (1996) calls this discourse of research its *language system*, and contends that it reflects the situated and constructed nature of all science. Van Maanen (1988) describes seven styles of qualitative rhetoric:

1. Formal tales—used inductively to emphasize and exhibit theory
2. Impressionistic tales—short, descriptive vignettes meant to bring the researcher’s experience alive for the reader
3. Confessional tales—often self-absorbed, meant to explain technique
4. Critical tales—often told from the viewpoint of disadvantaged or marginalized groups, meant to shed light on larger societal issues
5. Literary tales—with a journalist’s nose for the noteworthy, written in narrative style
6. Realist tales—third person, accent on authenticity, usually dispassionate, most prominent
7. Jointly-told tales—from more than one point-of-view, usually the researcher and the native. (Van Maanen, 1998)

Because the current study is qualitative and naturalistic, the language and terms have developed as the research progressed. The tone of the study is personal and literary, based on a “local/emergent pole” as the basis of an open language system (Deetz, 1996, p. 196).

## Overview of Process

In order to study the experiences of upper elementary students who are intrinsically motivated to seek information, a means by which such children could be identified was chosen. Once the students were identified, naturalistic research was conducted in order to determine which of their life experiences had contributed to their intrinsic motivation to seek information. The data was collected in various ways, beginning with interviews, and then further data collection methods were determined in an emerging research design based on the information gathered in the interviews. Data analysis, validity, and reliability methods were also ascertained based on the emerging research design.

### *Instrument for Identifying Study Participants*

An instrument, the Self-Regulation Questionnaire (SRQ; Ryan & Connell, 1989), was developed to assess individuals' types of motivation or regulation toward a specific domain. The SRQ is based on the concept of self-regulation, or the degree to which a person chooses to act or is compelled to act, as presented in Self-Determination Theory (SDT; Deci & Ryan, 1985b). SDT postulates that there are six types of regulations. Listed in order of least to most autonomous, they are: non-regulation, external, introjected, identified, integrated, and intrinsic (see Chapter 4 for a full description). The questions on the SRQ focus on the regulation of a specific behavior (e.g., exercising regularly) or category of behaviors (e.g., practicing religious behaviors). The questionnaire asks respondents why they exhibit a certain behavior (or category of behavior), then provides several answers that represent different styles of motivation or

regulation. The following is an example of a question from the Academic Self-Regulation Questionnaire (SRQ-A):

A. Why do I do my homework?

1. Because I want the teacher to think I'm a good student.  
Very true      Sort of true      Not very true      Not at all true
2. Because I'll get in trouble if I don't.  
Very true      Sort of true      Not very true      Not at all true
3. Because it's fun.  
Very true      Sort of true      Not very true      Not at all true
4. Because I will feel bad about myself if I don't do it.  
Very true      Sort of true      Not very true      Not at all true
5. Because I want to understand the subject.  
Very true      Sort of true      Not very true      Not at all true
6. Because that's what I'm supposed to do.  
Very true      Sort of true      Not very true      Not at all true
7. Because I enjoy doing my homework.  
Very true      Sort of true      Not very true      Not at all true
8. Because it's important to me to do my homework.  
Very true      Sort of true      Not very true      Not at all true

(University of Rochester, 2006)

Several SRQs have been developed, two of which were specifically designed to use with upper elementary and middle school children, and concern classroom and prosocial behavior (Ryan & Connell, 1989). Other SRQs designed for adults test for



learning styles, treatment behavior, exercise regulation, religious behavior, and regulations of friendships (University of Rochester, 2006). All of the questionnaires contain between two and five questions with a range of 4-16 possible answers.

The instrument used in the current study is an adaptation of the SRQ-A for the domain of information seeking behavior. The originators of the SRQ and SDT condone adaptation. "New SRQs may need to be developed for new behaviors or domains...as the research question changes" (University of Rochester, 2006). Other instruments to measure intrinsic motivation are the New Self-Report Scale of Intrinsic Versus Extrinsic Orientation in the Classroom (Harter, 1981) and Motivational Orientations in the Classroom (Lepper, Corpus, & Iyengar, 2005). However, due to its ease of use, adaptability, and compatibility with the study's theoretical framework, the SRQ was chosen to adapt for use in the current study (see Appendix B). A pilot test of the SRQ-IS was administered to a fifth grade public school class in May, 2008. The administration of the SRQ-IS for the actual current research was conducted in the fifth grade classrooms of the selected schools.

#### *Site Selection*

The sites I selected for the administration of the SRQ adapted for information seeking (SRQ-IS) are three elementary schools in a single school district in Colorado Springs, Colorado. Colorado Springs was chosen because of access and distance issues (to be discussed later in this chapter), and this particular school district because of its diversity in terms of socio-economic level and ethnicity, as well as access issues. The three schools chosen represent neighborhoods with low, medium, or high percentages of students who are eligible for and who are receiving free/reduced lunch. The SRQ-IS was

administered to the fifth grade students at all three schools, and those students who were identified as dominant for intrinsic motivation to seek information were considered to be informants for the current study. Permission was obtained from parents or guardians for administration of the SRQ-IS, and for continuation of the research process. Care was taken to use as little instructional time as possible, including offering to make arrangements to do interviews and follow-up research during before and after school hours, lunch, recess, and off-site. The number of informants was considered sufficient when a level of saturation in the collected data was reached (Creswell, 1998).

#### Possible Data Collection Methods

Data collection began with interviews and continued based on the information gleaned from the informants in an emerging research design. Methods of data collection for ideographic studies that were considered were drawing analysis and observation of environment. What follows is a brief discussion of each method, along with a description of the pilot testing for each method.

#### *Interviews*

Interviewing is the first method of data collection that was chosen for the current study. It was chosen as the first method because the research should begin and be based on the experiences of the students in their own words, their own language, and taken in the direction they lead. The interviews were semi-structured and open-ended, beginning with broad questions and narrowing in on the experiences that illuminate the phenomenon of interest—intrinsic motivation and information seeking (Creswell, 1998, p. 121). On a deeper level, active, in-depth interviews “are conversations where meanings are not only conveyed, but cooperatively built up, received, interpreted, and

recorded by the interviewer” (Silverman, 2004, p. 147). The informant and researcher collaborated together to construct meaning from the student’s experiences. The information sought in these interviews was: a) the factors in the students’ life experiences that have contributed to their dispositions toward seeking information generally, and b) the factors surrounding their information seeking experiences, especially the types of questions they ask (see Appendix C for protocol). The protocol for the second line of questioning (information seeking experiences) was developed by Shenton and Dixon (2003) for a study of the information seeking behavior and needs of young people, and was based on a similar study by Dervin et al. (1976).

A digital recorder, the Olympus DS-30, was used to record the interviews. Transcriptions were created by a professional transcription service. All of the interviews were conducted at the selected school sites.

#### *Drawing Analysis*

Drawing analysis has been conducted in many fields, including psychiatry, art therapy, and psychology, in order to discover and explore emotional and psychological characteristics of both adults and children. It is considered to be an effective means of inquiry for children because, especially for young children, drawing can be more comfortable than talking (see more on this issue in the Special Considerations when Researching Children section later in this chapter). By the same token, this type of data collection has been used as a measurement of intelligence and personality, as well as a means of communication, expression, and problem solving (Malchiodi, 1998).

It may seem at first blush that the researcher who chooses to use drawing analysis should have a great deal of training and experience in the topic, and this would of course,

be beneficial. However, this novice researcher chose to pilot drawing analysis with a group of fifth graders and was pleasantly surprised at the results. Students were first tested for their motivational orientations in the classroom (Lepper, Corpus, & Iyenger, 2005), and then were asked to draw a picture of what makes a good day for them. Results of the test were compared to the drawings. Of the 22 students who took the test, two were identified to be intrinsically motivated. The drawings of these students were very different from those of their classmates. Theirs were the only drawings that were not just realistic representations of concrete items. An example of a concrete drawing was one that depicted a hand holding a report card with all "A"s (this child tested as one of the highest in the class in extrinsic motivation). Both of the drawings of the intrinsically motivated students were abstract and contained imaginative elements, which confirms studies that indicate that creativity is associated with intrinsic motivation (Amabile, 1979). The type of drawings that were appropriate for the current study were those illustrating a student's good day (as illustrated in the pilot study), and also about information seeking experiences the child has recently had. Based on a procedure established by Amabile (1982b), the input and interpretations of art teachers provided a means of checking reliability. Drawing analysis exercises were conducted at the selected school sites.

### *Observation of Environment*

Observation of environment is a method intended to give the researcher a window into experiences from the informants' socio-cultural surroundings. There are different roles the researcher can take, depending upon his or her theoretical perspective and the kinds of data he/she wishes to collect. The Chicago School, a tradition of field research

that began at the University of Chicago in the 1920s, emphasized imaginative participation/observation in the lives of others in order to study human nature and society. This tradition outlined four roles: complete observer (either overt or covert, no interaction between the researcher and the informants), observer-as-participant (overt, some formal and brief interaction between the researcher and the informants) participant-as-observer (highly interactive role, intimate and evolving hopefully into an insider role, most advocated role of the Chicago School second generation), and complete participant (covert, researcher feigns membership, discouraged by the Chicago School; Adler & Adler, 1987). Each of these roles comes with issues to consider, such as the setting, the fieldworker him- or herself, the changes in the setting and the fieldworker, covertness and overtness, and the theoretical orientation and philosophies of the fieldworker.

The role considered for use in the current study was that of complete observer. Specifically, the researcher planned to examine the desk, room, and other artifacts surrounding the informants. The examination of the physical evidence of the experience of children was to shed light on the factors that influenced their intrinsic motivation, both as a disposition and specifically for information seeking. After observing the classroom environment, I was to discuss my findings with the individual students for their points of view. These discussions not only would lend an emic dimension to the observation, it would also serve as a strategy to establish validity of the findings (Creswell, 2003). Environment observations were to be conducted at the selected school sites; however, at the conclusion of the drawing activity it was determined that data had reached saturation and that there was no need for the environment observation data collection.

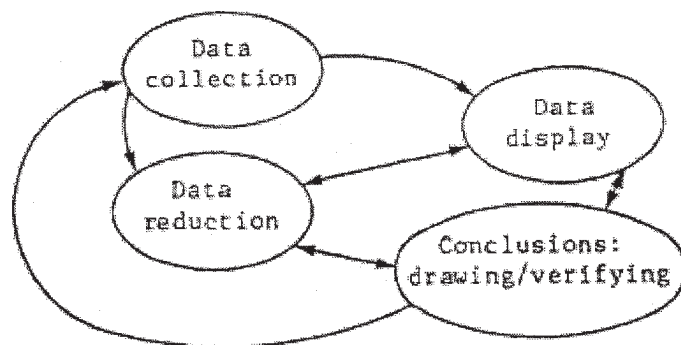
### *Pilot Testing*

Pilot testing of methodology is an essential part of the preparation for research (Krathwohl, 1998). Pilot testing helps “define the dimensions of the problem, the sample of persons and sites to be used, the instruments. . . to be involved, the behaviors to be targeted,” (p. 673) as well as helps the researcher identify ethical problems that may occur.

I have conducted pilots to test all of the proposed methodology. To begin, I conducted two pilot interviews. The pilot interviews were conducted in order to develop and also to test questions for the current study, as well as to give me practice and experience in interviewing. I also did a drawing exercise and analysis with several fifth graders using the primary question I used in the current study. I administered the questionnaire, *Motivational Orientations in the Classroom* (Lepper, Corpus & Iyengar, 2005) to a class of fifth graders as a pilot to help determine timing, response of students, and also to help me develop skill in administering such questionnaires. As previously mentioned, a pilot of the actual instrument to be used in the current study, the SRQ-IS, was conducted with fifth graders in the same district as the current study. In addition, an environment observation pilot was conducted in May, 2008.

### *Data Analysis*

Miles and Huberman (1994) define data analysis in terms of three flows of activity all happening concurrently, even while the data are being collected (see Figure 2).



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*Figure 2.* Components of Data Analysis: Interactive Model

From *Qualitative Data Analysis*, by M. G. Miles and A. M. Huberman, 1994, Sage Publications, p. 12.

Reproduced by permission (see Appendix D).

They are “data reduction, data display, and conclusion drawing/verification” (p. 10).

*Data reduction* is the process of summarizing, selecting, simplifying, coding, or abstracting the data. This process happens from the beginning of data collection until the end of the project and is useful in sharpening, sorting, and focusing the data so that connections can more easily be seen. Care should be taken, however, to highlight or capture the reductions within the original notes so as to not “strip the data at hand from the context in which they occur” (p. 11). *Data display* is the visual representation of the information gathered that makes comparisons, contrasts, and conclusions easier to perform. Tables, charts, graphs, webs, and matrices are all examples of data display. It is important to remember that this step is concurrent with the others and not just performed at the conclusion of data collection. Data display helps in the decision-making process of data reduction as well as in drawing conclusions and verification. NVivo7™, a software program intended for these purposes, as well as more traditional methods of data display such as tables, charts, and graphs were used in the current study.

*Conclusion drawing and verification* is the third concurrently occurring activity in data analysis. Usually, it is thought that this step is performed at the end of the data analysis process, and of course it is among the final steps. However, it is important for the researcher to begin deciding what the data means as they are being collected, noting possible patterns, propositions, and explanations. It is also important for the researcher to hold loosely to these conclusions and be willing to change them as more data are gathered. Verification is, in the same way, a continuing activity. The researcher manifests this process through note-checking, discussions with colleagues, and searching for similar results in other studies.



Other important considerations are that the data analysis process should be inductive, the researcher should be the central agent and immerse herself as much as possible in the data, and that it should “be pursued in a persistent and methodical fashion rather than in a haphazard, seat-of-the-pants manner” (Lofland et al., 2006, p. 196). Such were considerations of the researcher for the current study.

### Validity and Reliability

Why use validity and reliability checks in naturalistic research? In a world of meaning that is socially constructed, it can be argued that all knowledge is subjective and open to multiple interpretations. There would seem to be no way of seeing, hearing, or replicating the world of others that is universally valid and correct (Van Maanen, 1988). However, in order to build credibility, the researcher (as interpreter), must take pains to explain research decisions and interpretive assertions as completely as possible.

Kirk and Miller (1986), using the definition of objectivity as “taking an intellectual risk” (rather than “explaining everything in terms of causality”), do not view experimental research as “objective” and naturalistic research as “subjective.” Their argument is that in testing hypotheses, the experimental researcher is limiting the possibilities by the experimental design, and is therefore subjective in his view of limited “acceptable answers.” Kirk and Miller point to examples of important scientific discoveries that were considered “accidents” because the results were outside of the experimental design (penicillin and radioactivity, for examples). The naturalistic researcher, however, is open to outside ideas, and is therefore really more objective than the experimental researcher. Naturalistic, qualitative research is fully in need of validity

and reliability checks if it is to contribute to the collective knowledge that must stand on its own merit.

### *Validity*

Definitions of validity include “the degree to which the finding is interpreted in a correct way” and “the determination the researcher sees what he or she thinks he or she sees” (Kirk & Miller, 1986, p. 20-21). More naturalistic terms are “trustworthiness, authenticity, and credibility” (Creswell, 2003, p. 195).

Kirk & Miller (1986) examine the “trueness of measure” of an instrument or an observation. Apparent validity, or face validity, is when the instrument so closely corresponds with the information sought after that it is apparent that it is valid. Professional and occupational tests are examples. Kirk and Miller caution, however, that while this type of validity does hold some merit, it can be illusory.

### *Instrumental Validity*

Another test of trueness of measure is instrumental validity. This is when the findings from one instrument validate the findings from another. In quantitative research, the second “testing” instrument is used to prove the first valid. In qualitative research, this does not necessarily pertain because the data are constantly changing as the informants and circumstances change. However, qualitative researchers have found ways of attempting to prove the validity of their findings. One example of instrumental validity in naturalistic research was demonstrated when Kuhlthau (2004) used student journal entries and teacher interviews to validate her observational findings of student research behavior and attitudes. In the current study, the SRQ-IS (the instrument that was used to identify informants) is based on an instrument that has already been validated. According

to Edward L. Deci, one of the originators of the Self-determination Theory, “the SRQ has been used so many times successfully and there have been so many adaptations of it to related behaviors that have worked successfully that there is no problem with using it in a study without validating it *a priori*” (personal communication with E. L. Deci; May 1, 2008).

Another way to test the validity of the SRQ-IS is to compare the results of the survey with the results of the other data collection methods. The SRQ-IS results indicated that 21% of the students who took the survey were dominant in intrinsic motivation for information seeking, 9 of whom were identified as distinctly so because of a .3 differential between their intrinsic motivation composite mean score and their next highest motivation style score (see Chapter 5, Data Collection Methods and Results section). So, the question is, did the other data collected confirm the survey results?

According to the students’ descriptions of their lived experiences as given in the interviews, they were indeed intrinsically motivated for information seeking. *Intrinsic motivation* is action stimulated by interest, enjoyment, curiosity or pleasure (Ryan & Deci, 2000b). Throughout their interviews, all 9 students made statements indicating the pleasure and enjoyment they experienced through information seeking. In explaining why she liked a particular information seeking experience, Mickey explained it this way:

I thought it was fun. . . ’cause I like looking for information. I just—I don’t know why, I just like looking for facts. Facts about anything if it’s like not assigned and if I just do it for fun, it’s facts about anything. (Mickey)

The drawings of the students also confirmed the students’ intrinsic motivation for information seeking. Many (5) of their “good day” drawings showed the informants

engaging in information seeking activities, and many (7) of their “information seeking” pictures illustrated positive, self-initiated information seeking episodes. The other two information seeking pictures also portrayed positive experiences, but were school related (see Chapter 5, Data Collection Methods and Results section).

Another confirmation of the survey results was the indication that there was little difference in preference for the modalities among the intrinsically motivated children. The survey showed that if a student scored high in intrinsic motivation on the survey overall, he was very likely to show a high score for intrinsic motivation in each of the question categories (assigned project, new topic, using books, using the Internet, and using magazines), with a slightly lower correlation for magazines (see Table 4, Chapter 5). In examining the information seeking styles of the 9 informants, I found that they enjoyed both school and independent information seeking experiences. In fact, there was a slightly higher preference for school assignments involving information seeking than the independent experiences they described. With regard to their information seeking styles, the 9 students described using both books and the Internet successfully, though some did share more experiences using one over the other. As indicated in the survey results (see Chapter 5, Data Collection Methods and Results section), students did not share as many experiences using magazines as they did for books and the Internet.

The results from the interviews and art analysis indicating that the 9 students were non-competitive may confirm survey scores indicating the lack of other motivational styles (the .3 differential used from the survey scores in identifying informants; see Chapter 5, Data Collection Methods and Results section) as much as it confirms the dominance of intrinsic motivation in the students’ lives. In SDT, competition is

considered an extrinsic motivator because participation in an activity based on a focus of winning and/or not losing is comparison with someone or something outside of oneself (Deci & Ryan, 1985b). There were students who took the survey who scored high in more than one motivation style. Since competition is an extrinsic motivator, if I had identified informants who were high in intrinsic motivation and also high in another more extrinsic style, the trait of non-competitiveness might not have been salient in the interviews. In each case, the identified informants scored lower in external motivation than they did in any other motivational style. The alignment of the students' low external/high intrinsic motivation scores with the data collected from the interviews concerning non-competitiveness is another indication of the validity of the survey instrument.

#### *Theoretical Validity*

A third test of validity is theoretical validity. This is defined as the degree to which the theoretical paradigm rightly corresponds with the findings. Theoretical validity underlies apparent and instrumental validity. In the current research, the data was compared and contrasted with the study's theoretical and conceptual frameworks (see Chapter 4). The theory that comprises the theoretical framework is the Self-Determination Theory (SDT; Deci & Ryan, 1985b); the theories that make up the conceptual framework are A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a, 2006b), and the Taxonomy of Tasks (Bilal, 2002a).

*The Self-Determination Theory.* The SDT provided the basis for the development of the SRQ-IS, the survey used in the current study to identify informants. The SRQ-IS is an adaptation of the SRQ-A (Ryan & Connell, 1989), the original survey based on SDT.

It was developed to identify the motivational styles of children for the academic domain. Because SDT was the basis for the survey instrument for the current study, it underlies the instrument's theoretical validity. In addition, the findings confirm the theoretical validity of the study, particularly with regard to the mini-theory of SDT, the Cognitive Evaluation Theory (see Chapter 5, Data Analysis section).

*A Theoretical Model of Urban Teen Development.* A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a, 2006b) provided a means by which the informants' topics of interest could be classified. I first categorized the topics into a typology by academics, physical activities, reflective topics, fiction interests, video and Internet gaming, and creative activities (see Chapter 5, Data Collection Methods and Results section). These topics were then classified by the six independent variables as determined through adaptation of the Agosto Hughes-Hassell model (the social self, the emotional self, the reflective self, the physical self, the creative self, and the cognitive self). The model was used to illuminate the socio-cultural, as well as developmental, reasons behind the information seeking behaviors of the informants. The findings confirmed the theoretical validity of the model.

*Bilal's Taxonomy of Tasks.* The Taxonomy of Tasks (Bilal, 2002a) was the second theory comprising the conceptual framework of the study. Bilal's taxonomy was used to stratify context, with reference to task definition, of the informants' preferred information seeking experiences. It directed the collection and organization of the information seeking episodes as shared by the students. The episodes were classified by task type (open-ended versus closed), task nature (complex versus simple), and by task administration (fully assigned, semi- assigned, or fully self-generated). In addition, I

added another classification based on the students' descriptions of their information seeking experiences, that of task relationship (group versus individual). The taxonomy was a good "fit" with the information gleaned, though not all of Bilal's analysis corresponded with the data collected about the current study's informants (see Chapter 5, Data Analysis section).

### *Creswell's Strategies*

Creswell (1998) recommends that naturalistic researchers use at least two strategies in establishing the validity of their research. Creswell (2003) lists possible strategies as triangulation, member checking, rich and thick descriptions, clarifying bias, declaring negative or discrepant information, spending prolonged time in the field, peer debriefing, and using an external auditor. I highlight four strategies that were as used in the current study: triangulation, member-checking, rich and thick descriptions, and using an external auditor.

*Triangulation.* This strategy involves examining information from different data sources in order to "build a coherent justification for themes" (Creswell, 2003, p. 196). In the current study, I explored the data from the SRQ-IS, the interviews, and the art analysis in order to weave information threads into a tapestry of themes revolving around the informants' intrinsic motivation for information seeking. Themes that emerged were the diversity of the informants, the importance of play, the prevalence of creativity and non-competitiveness, and the information seeking styles and interests of the students (see Chapter 5, Data Collection Methods and Results).

The diversity of the informants, the importance of play, and the interests of the students emerged from the interviews and the art analysis. Students' responses in these

two data collection methods confirmed the information gleaned from each and both of them.

The surveys, interviews, and art analysis all corroborated the prevalence of creativity and non-competitiveness, as well as the information seeking styles of the informants. The purpose of the SRQ-IS was to identify students who were intrinsically motivated for information seeking. Because research has shown creativity to be linked to intrinsic motivation, the SRQ-IS provided subjects who would presumably be creative (though the link to intrinsic motivation for information seeking *per se* had not yet been made). The art analysis and interviews both corroborated this link, thus triangulating the data. In the same way, the external and intrinsic measures in the survey, as well as the information gleaned from the interview and picture analysis, corroborated the non-competitive nature of the informants. The data from the interviews and pictures also confirmed the information gathered from the surveys with regard to the information seeking styles of the students.

*Member-checking.* This strategy involves confirming information gleaned from the data collection with the informants themselves. It was not a formal process I used with students, but rather an informal strategy that I engaged in with students during interviews to clarify whether or not I understood what students had stated. In working with children, I knew the importance of being aware and careful not to read more into what they were saying, and also not to impose my own interpretations without verification into the interview. "A common concern for qualitative research with adults or children is not to impose the researcher's own view and to enable the research subjects to



express their perceptions freely” (Punch, 2002, p. 324-5). The following are a few examples illustrating the use of the member-checking strategy:

- So, you look there for information, so you can do better on the video games and make the video games more fun. Is that right? Am I getting what you’re saying here? (Researcher to Bob)
- But you like to go to the dictionary, is that right? Is that what I'm hearing? (Researcher to Victoria)
- But you didn’t want to do that. You wanted something new, right? And you wanted it so bad that it made you worry. Is that what you’re telling me? I’m just confirming (*Laughter*). (Researcher to Bailey)
- So you like it because of the story line and because of the animal? Is that right? Am I getting that right? (Researcher to Mickey)

By using member-checking, I was able to validate statements made by students immediately during the interviews. This enabled me to continue interviewing based on valid information.

*Rich and thick descriptions.* In reporting the results of my data collection (see Chapter 5, Data Collection Methods and Results section), I often included quotes by the informants and descriptions of the interview situations. I included these details in order to support my observations, but also to give the reader a sense of sharing the interviews, of “being in the room” with the students. In this way, I hoped to enable the reader “to transfer information to other settings and to determine whether the findings can be transferred” (Creswell, 1998, p. 203).

*Using an external auditor.* Creswell (1998) recommends that an outside auditor be used to validate information. The auditor should have no connection to the project, and his role is to “examine whether or not the findings. . . are supported by the data” (p. 203). Three external auditors were used in the art analysis. They were employed by the neighboring school district, and the first time I met each of them was when I delivered the pictures for evaluation. They were instrumental in evaluating the students’ art for creativity.

By using measures to determine instrumental and theoretical validity, and by engaging four of Creswell’s recommended strategies for qualitative researchers, the validity of the current study was established.

#### *Reliability*

Definitions for reliability include “the degree of consistency of measurement” (Littlejohn, 2002) and “the degree to which the study can be replicated” (Kirk & Miller, 1986). Since qualitative research emphasizes the individuality of the researcher and the informant and is set contextually (both historically and situationally), it would seem impossible to replicate a qualitative research study. There are authors, however, who believe reliability can be redefined to pertain to the qualitative research approach. Kirk and Miller (1996) define reliability as “the degree to which the finding is independent of the accidental circumstances of the research” (p. 20). They believe the only way a qualitative researcher can calculate reliability is through the careful documentation of the research process. They go on to advocate for a universal four-phase model to be implemented for qualitative researchers. This model is invention (research design), discovery (data collection), interpretation (analysis), and explanation (documentation).

### *The Four-Phase Model*

In the current study, Kirk and Miller's four-phase model was implemented in order to calculate and document the reliability of the study. In addition, quantitative reliability testing was conducted on the results of the SRQ-IS, the instrument that was used to select informants, as well as on the results of the art evaluations.

*Invention.* Invention is the preparation stage and involves producing a plan of action. For this study, the formal plan came in the form of a "proposal" after three years of doctoral study. In fact, however, the preparation also took place during the time I was a practicing librarian. During these years I grew to perceive (if not understand) the problem of children's lagging intrinsic motivation, and I learned about the organization and "modus operandi" of school systems. *Invention* also includes "getting in" and "getting along" (Kirk & Miller, 1996, p. 62). My associations and experience in my field school system were invaluable to "getting in" and "getting along." Even so, there were difficulties, such as the resignation of one of my school's principal and another school's library media specialist, and the change in the permission process for conducting research in the district. "Getting along" was easier because of my school experience, though one of the classroom teachers was difficult to work with, and I discovered that some art teachers are very sensitive about evaluating creativity.

*Discovery.* The discovery phase is the phase of "getting data" (Kirk & Miller, 1996, p. 65). It involves the work in the field collecting data, and is based on the plan developed in the invention phase. The plan for the current study proved to be adequate, and the data collection went smoothly and generally according to plan. For the most part, I found the students easy to talk with, and those who were shy at first warmed up in a

short time. I had to be inventive with regard to collecting informed consent forms and making schedule arrangements, and I did encounter some difficulty from a teacher who wanted to see the results of the survey for her class. However, these challenges did not impede the data collection process.

One aspect I had not considered was the information I would collect from the adults surrounding the children. Parents and teachers both made comments to me about the informants that added to the body of data. I also had not considered that I would need to “go back” to some students and ask new questions as I discovered information that was crystallizing into patterns with other students. As I was tying up these loose ends, I realized I was reaching a saturation point and shortly thereafter concluded the data collection phase.

*Interpretation.* Interpretation is “getting it straight” (Kirk & Miller, 1996, p. 67) as the researcher tries to make sense of the data he or she has gathered. He is “struggling to understand how the data he or she has amassed qualify as information (rather than noise), and how they are amenable to analysis” (p. 68). I began interpretation almost immediately after beginning interviews by trying to determine if the informants selected were identified correctly. Shortly thereafter, I began listening for patterns between the informants, but as previously stated, my first observation was how different the students’ living situations and circumstances were. I found that interpretation is immediate and on-going. I will probably be interpreting these findings months after the project is complete. Finally, interpretation is culminated (with regard to the dissertation, anyway) in data analysis (see Chapter 5, Data Analysis section).

*Explanation.* The explanation phase involves finishing the work and producing documentation of it. It may also involve returning to the research site and providing closure and satisfaction for the parties involved in the research. I returned to the schools to distribute bookmarks to the students in the classrooms that participated, as well as to give small gifts to the adults involved in the process. I have also committed to present my research to the library media specialists in the district. The documentation of the research will result in a completed dissertation.

The simple rules of the four-phase model are to complete one phase before going on to the next, and complete all the phases. I adhered to these rules in the current study. Kirk and Miller (1996) state that while implementing this model does not in itself “guarantee a respectable research project, [it does] provide structure and direction pertinent to this objective” (p. 73).

#### *Quantitative Reliability Measures*

Though the current study is naturalistic in nature and based on qualitative research methods, there were two quantitative instruments used in the data collection process (see Appendices B and Q). The SRQ-IS was used as the instrument to identify informants, and the art evaluation was used as a way to validate the interview results surrounding creativity. Steps were taken to test the reliability of both instruments.

*Reliability of the SRQ-IS.* A Cronbach’s alpha, perhaps the most popular measure of internal consistency, was calculated to test the reliability of the survey response items that propose to capture the student’s motivation style for information seeking along four dimensions: intrinsic, identified, introjected, and external.

It is conventional to accept an alpha of 0.7 or greater as indicating a reliable set of responses (Hinton, pp. 302-303). All findings were above that standard indicating that each group of survey responses for each of the motivation styles displayed an internal consistency across all subjects (see Table 1).

Table 1

*The Cronbach's Alpha Score for each of the SRQ-IS Response Items for Motivation Styles*

Motivation Style	Alpha Score
External	.89
Introjected	.77
Identified	.80
Intrinsic	.87

*Reliability of the Art Evaluation.* A Cronbach's alpha was also calculated to test the reliability of the judges' scores for each of the artistic dimensions in the art evaluation. Internal consistency was measured for all three judges' evaluation scores for each of the two drawings produced by the students.

The conventional score of alpha 0.7 or greater (indicating a reliable set of responses; Hinton, pp. 302-303) was found for all but the "novel idea" dimension for Picture A, and for all the dimensions for Picture B. The findings indicate that for all but one set of evaluations on one dimension for Picture A, the evaluation scores for the artistic dimensions displayed an internal consistency across all three judges (see Table 2).

Table 2

*The Cronbach's Alpha Score for the Judges' Evaluations of the Artistic Dimensions for Pictures A and B*

Artistic Dimension	Alpha Score for Picture A*	Alpha Score for Picture B**
Creativity Cluster		
Novel idea	.47	.90
Effort evident	.79	.90
Detail	.85	.90
Complexity	.84	.83
Variation of Shapes	.78	.90
Novel use of materials	.79	.96
----- Technical Cluster		
Organization	.77	.89
Neatness	.92	.82
Expression of Meaning	.74	.89

\*Picture A topic was "what makes a good day for me"

\*\*Picture B topic was "a time when I sought information"

### The Management of Access and Distance Issues

Lofland et al. (2006) make recommendations concerning the management of access and distance issues in qualitative research studies. First, they contend that negotiation of access and distance are not a one-time issue, but must be negotiated and renegotiated throughout the research process. In addition, they recommend considering three dimensions of access and distance.

#### *The Investigator's Relationship to Informants*

The investigator's relationship to informants can be crystallized in what is called the "Martian" vs. "Convert" (Davis, 1973) or the distance dilemma, and refers to the emotional closeness of the researcher to the informants. The researcher enters the

situation with an emotional stance relative to each informant, but that stance will most likely change and shift throughout the research process. The emotions range from the distance (Martian) side to the surrender (Convert) side, and include feelings of loathing, marginalization, sympathy, and identification. The researcher in the current study was aware of these changes of feelings and worked to balance the tension between them during the research process.

### *Ascriptive Categories*

Another area to manage is the “ascriptive” (Lofland et al., 2006, p. 23) categories of the researcher and the researched. These are identity categories (albeit socially constructed ones) and include age, gender, race, and ethnicity. While it was important to consider and be aware of these attributes, I did not overemphasize them. The fact that I, as a researcher, did not share all these characteristics with the informants (particularly age), did not mean that research was impossible, or even particularly difficult.

### *Difficult Settings*

Some difficult settings to consider are: dangerous settings, organizations that are complex, organizations with internal conflicts, settings that require gatekeepers (such as the higher reaches of an organization or an institution—the schools described in the current study are examples), and short-lived settings (such as events or panics). The difficult settings were not avoided, but did require care to manage and negotiate.

### *Special Considerations When Studying Children*

The areas of special concern when studying children are ability, power, and ethics.



### *Ability*

It is obvious that (most) children have ability levels different than those of adults, but less obvious is the fact that children of the same age also exhibit different ability levels. The researcher should treat children as individuals and be flexible when working with them. The following issues should be taken into consideration.

An important question for a researcher to answer when working with children is, “Is the method developmentally appropriate?” Most young children are primarily nonverbal (McDonald & Willett, 1990), but they understand more than they can express. A researcher will yield better results if he/she gives the child more than one way to express him- or herself. Ideas for allowing for this diversity include drawing, acting, and using objects such as dolls (Greene & Hogan, 2005; Punch, 2002).

Children have shorter attention spans than adults do, and they like to be busy. The researcher should plan methods and sessions accordingly. One tip would be to have manipulatives available for the children to occupy their hands (MacDonald & Willett, 1990). I provided manipulatives (Rubik’s Cube™, bobble-head doll) in a pilot interview and did so again for the students in the current study.

Are the questions developed with the ability level of the child in mind? Children will dutifully answer nonsense questions, especially if they call for “yes” or “no” answers (Waterman, Blades, & Spencer, 2001). For this reason, Waterman et al. suggest that the researcher use only open-ended questions, even in follow up. This approach allows the researcher to use the student’s answers to assess his or her level of understanding and can rephrase the questions as and when necessary.

*Power*

According to Punch (2002), the group “children” can be considered a marginalized group, so there are issues of power to consider when studying them. There are multiple layers of access to go through when working with children, particularly in a school situation. One must get district, school, principal, teacher, and parent permission. There are so many layers to penetrate; the child is in danger of losing his or her agency in the process. The child must be considered in the access process in order for him or her to have appropriate power in the situation (Hood, Kelley, & Mayall, 1996).

Another power issue is that of trust. Children may deceive when they do not trust, either from a need to please or a concern for retaliation. The wise researcher will take the time to get to know the child informant in order to build trust. Of course, the role of the researcher may also influence the child’s responses. Fine and Sandstrom (1988) address this issue in outlining four roles of a researcher when working with children that consider the authority level and positive relation aspects. They are supervisor (authority, no positive relation), leader (authority, positive relation), observer (neutral), and friend (no authority, positive relation). The child will respond differently based on which of these roles he or she thinks is being enacted.

In her research, Mandell (1988), suggests an additional stance or role, that of least-adult. In this role, the adult participates in complete involvement, suspending all “adult-like characteristics except physical size” (p. 435). She used this role with preschoolers, and while parents were suspicious and the children thought she was odd, she contends that it was the best role for yielding the results she sought in the situation.

*Ethics*

Academic and professional organizations generally do not specifically mention children in their research guidelines. Vulnerable groups are mentioned, and children can be considered as a part of these. The Ethical Guidelines for the Social Research Association, however, does specifically mention children as a vulnerable group. In addition, child advocacy organizations often mention research guidelines with children (the Society of Research in Child Development, for example; Greene & Hogan, 2005).

Informal ethical issues include involvement of the child, choice and consent, harm and distress, and privacy and confidentiality. The child should be involved in the research process as much as possible, from helping to set the time and place, to asking his or her ideas on what action to take based on the research. As for choice and consent, what age is appropriate to ask a child his consent? A rule of thumb is to ask the child's consent when he/she is able to understand the researcher's words, then adjust the consent language based on the child's understanding. Also, consideration must be made to all those layers of consent-asking, but the child should not be forgotten in the process. In the area of harm and distress, the researcher should not play the role of a therapist in interviewing a child, because it could cause harm. If questions may potentially cause emotional distress, it is the researcher's responsibility to see that a child is evaluated for emotional stability by a therapist, social worker, or teacher before an interview session begins. The researcher should take care to protect himself from harm and distress by reducing chances for accusations and suspicions. It is wise to keep the door slightly open and/or to conduct interviews in a room with a window onto a busy hallway (Greene, & Hogan, 2005). The Institutional Review Board process (the steps the researcher must take as required by his

or her educational institution to prove his or her practices are ethical) also provides a layer of protection for both the researcher and the informants.

### *Privacy and Confidentiality Issues*

While educators are legally bound to report suspected incidents of abuse, social science researchers (as of this writing) are not. However, it is ethical to do so. This creates a tension between keeping information confidential and being responsible to report suspected abuse. The informed consent form (see Appendix E) for interviewing in the current study has an added line: "This interview will be kept strictly confidential, except when information comes to light that may lead to the harm of the informant or others. In such cases, the informant, the researcher, and the adult guardian will decide on the best course of action." The line was also added to the consent form for the drawing activity (see Appendix F). Another issue to consider with regard to confidentiality is that many times the adults around a child think they are entitled to the information from research about the child. While it may be ethical to disclose certain information to interested parties (Daniels, Beaumont, & Doolin, 2002), the adults should be asked to read the confidentiality form and sign it, thereby acknowledging that the researcher will keep the information the child gives confidential. In a final report, information on many children should be bundled together and presented with pseudonyms.

### *Management of Access, Distance, and Field Issues in the Current Study*

The first step in the current study for gaining access was to find out the process for approaching students in a school district. It was logical to begin by contacting a school because it is a place where children congregate, has an administration that can be contacted, and has systems within which research can take place easily. The researcher in

the current study is a partial insider to a school district and began this process more than two years before actual data collection took place. The gatekeeper in the district was the Director of Learning Resource Services who was informed and approved of the research project from its inception. She was kept in the loop at all times. The district had a research department with an approval process for outside research. It was based mostly on an approved IRB, and the evaluation of the use of instructional time versus the value of the research to the district. The gatekeeper was particularly interested in the data I was to collect, and we arranged early in the research process for me to present it, along with my conclusions and recommendations, to the library media specialists in the district.

With regard to field and distance issues, the researcher began interviewing in a friendly, sympathetic role, knowing she could never fully identify with children (since she is an adult), but this may have been viewed differently by the students depending on their varied experiences with other adults. The role taken by the researcher was somewhere between “leader” and “friend”(as defined by Fine & Sandstrom, 1988) and was adjusted as needed for interactions with particular students during different sessions. Gender did not seem to be an influence in student interaction. It was important to negotiate and renegotiate role and access, as well as the tension between Martian and Convert, throughout the research process.

The abilities of the individual children were always kept in mind by the researcher. Effort was made to use only open-ended questions (see Appendix C for protocol), and various strategies were used to gather data in order to accommodate language issues. Information was translated into Spanish when needed (see Appendices G and M). Care was taken to not “lead” students in their answers. The attention span of the

participants were honored in sessions (approximately 30-60 minutes), and objects such as a Rubik's Cube™ and bobble head-doll for manipulation, and paper/pencil for doodling, were provided because children have shorter attention spans than adults do, and they like to be busy. MacDonald and Willet (1990) advise that manipulatives be available for children to occupy their hands during interviews.

Measures were taken to balance the power inequities and consider ethical issues by asking students their consent and by making sure they were included in arrangements. The SRQ-IS, all consent forms, protocols, and procedures were approved by the Emporia State University Institutional Review Board (see Appendix H) in order to ensure that all aspects of the study were ethical. An appropriate consent form was provided for "all" to view and sign, and measures taken to ensure that teachers, parents, and principals understood their limits in accessing the research results. There was, however, an emphasis placed on the usefulness of the research to education. Care was taken by the researcher not to become a therapist, making sure the students were protected with regard to emotional questions, and making sure to guard against accusations against the researcher herself.

#### Limitations

There are both methodological and theoretical limitations to the current study. Methodologically, limitations include: the use of a sample that is purposive (Miles & Huberman, 1994) and not random, the gathering of informants from one geographical area, and the limitation of the use of the SRQ-IS with children who are able to understand and respond to the questionnaire. The informants were chosen (through results of the SRQ-IS) from three, pre-selected sites in an attempt to gather information about children

from socio-economic and culturally diverse backgrounds. All of the schools are in Colorado Springs, Colorado for access issues. A student who was limited by his communication, social, and problem solving skills was not able to participate in the questionnaire, though attempts were made to include him (such as using an instructional aide to help him take the questionnaire). Because of these limitations, the results of the study cannot be generalized to all students in all situations. For a discussion of the theoretical limitations, see Chapter 4.

### Summary

The current study of the research question, “what are the experiences in the lives of upper elementary school children that foster an intrinsic motivation to seek information?” is based on the alternative paradigm (Littlejohn, 2002) and is non-positivist, voluntarist, nominalist, and value-conscious. The methodology chosen was ideographic in the phenomenological tradition. The rhetoric of the final project is in language and terms that developed as the research progressed.

Methods included an instrument to identify students intrinsically motivated for information seeking (the SRQ-IS), interviews of the identified informants, and drawing analysis. Data analysis was flexible, depended on the data collected, and included the concurrently occurring processes of data reduction, data display, and conclusion drawing/verification. Steps were taken to validate findings through instrument validity (SRQ-IS and art evaluation), theoretical validity, triangulation, member checking, and use of external auditors. Kirk and Miller’s four-phase model (1996) was implemented in order to calculate and document the reliability of the study, and statistical measures were used to test the reliability of the quantitative data.

The research took place in three schools of varying socio-economic and ethnic diversity in Colorado Springs, Colorado. The researcher assumed a role somewhere between a friend and a leader, and maintained flexibility based on the reactions and contributions of the informants. Since the informants were children, special consideration was given to the issues of ability, power, and ethics when working with this population.

What follows in Chapter 4, Theoretical and Conceptual Frameworks, is a full discussion of the decision to use SDT as the theoretical framework of the current study, along with the rationale for choosing the context-related information seeking models for the conceptual framework.



## CHAPTER 4

## THEORETICAL AND CONCEPTUAL FRAMEWORKS

Whether or not a qualitative study should have a theoretical framework is a question that has been hotly debated. Anfara and Mertz (2006) describe three positions on the issue: theory as nearly invisible, theory as related to methodology, and theory as more. Proponents of the *theory as nearly invisible* stance either do not mention theory as a part of their discussion of qualitative research (Gay & Airasian, 2003), or see it as merely useful in explaining cause and effect relationships or other similar operations (similar to its use in quantitative research; Best & Kahn, 2003). Still others in this camp suggest that some qualitative studies have the purpose of discovering theory (such as in grounded theory; Gall, Borg, & Gall, 1996). Supporters of the *theory as related to methodology* position view the researcher as coming to the inquiry with “certain epistemological, ontological and methodological premises” (Denzin & Lincoln, 2003, p. 33) that guide her actions. The “premises” to which these supporters refer are paradigms such as positivism, interpretivism, critical theory, and the like. Creswell (1994) suggests that the role of theory should vary with the research design, but still argues that the development of theory comes after the data gathering and analysis.

Proponents of the third stance, *theory as more*, see theory as influencing every phase of the research process, from research design, to choice of methodology, to analysis. Merriam (1998) sees theory as “the structure, the scaffolding, the frame of your study” (p. 45). Flinders and Mills (1993) emphatically avow that research without theory is impossible, quoting a phrase attributed to William James, “You can’t pick up rocks in a field without a theory” (p. xii). Miles and Huberman (1994) also suggest that theory plays

a critical role in qualitative research, stating that it identifies the main ideas to be studied and the way those ideas relate to each other.

*Theory as more* is the stance of the current study. That having been said, the researcher has held true to the ideographic approach to methodology by using an emerging research design based on the inductive process, allowing the data that are gathered to drive both research process and analysis (Lofland, et al., 2006). This is not antithetical to using a theoretical framework. Indeed, a theoretical framework has been used as a backdrop for designing the study, and as a lens through which to “see” the resulting data. In addition, a conceptual framework was used to address what data to collect and how to organize and understand them. Along the way it was determined that refinements and extensions to the theories used in the conceptual framework were necessary in order to explain observations and interpretations. In this way a limited (based on a few cases) picture of the experiences of the intrinsically motivated child has developed, both within and outside of the theoretical and conceptual frameworks as the findings have prescribed.

### The Theoretical Framework

The theoretical framework, or the theory that was used to analyze the data for the current study, is the Self-Determination Theory (SDT). SDT is based on an organismic/dialectical approach with differentiated conceptualizations of intrinsic and extrinsic motivation. The dialectical approach, simply stated, is an orientation that accounts for the “other side of the coin.” In its organismic approach to motivation, SDT proffers that environments and social contexts facilitate or undermine, elicit or subdue, sustain or diminish intrinsic motivation and the self-regulation of externally motivated

behaviors. Intrinsic motivation and self-regulation will flourish if conditions are conducive for it and will not flourish if conditions are not conducive. In fact, SDT goes further to suggest that social conditions that foster intrinsic motivation and self-regulation are crucial for well-being, and that environments that thwart intrinsic motivation and self-regulation contribute to issues of alienation and ill-being (Ryan & Deci, 2000b).

The definition of intrinsic motivation within Self-Determination Theory (Deci & Ryan, 1985b) is primarily based on the reactionary approaches to drive theory, particularly that of White (1959). In SDT, the construct of intrinsic motivation is differentiated from extrinsic motivation because the definition of intrinsic motivation both acknowledges the importance of the interest level of a given task (in the tradition of Koch, 1956), and emphasizes the organism's striving to satisfy its psychological needs (Murray, 1938), specifically the innate needs for competence, autonomy, and in a distal sense, relatedness (see section on Cognitive Evaluation Theory below; Ryan & Deci, 2000a).

SDT has evolved over the past three decades into a complex theory consisting of four mini-theories. Each of the mini-theories has developed inductively, that is, the approach has been "to research phenomena, construct mini-theories to account for them, and then derive hypotheses about related phenomena" (Deci & Ryan, 2002, p. 9). These logically coherent and readily integrated mini-theories are: cognitive evaluation theory, organismic integration theory, causality orientations theory, and basic needs theory.

#### *Cognitive Evaluation Theory*

Acknowledging that an organism makes choices and initiates action based on both innate interest in a task (Koch, 1956), and the psychological need to interact effectively in

his environment (White, 1959), *cognitive evaluation theory* (CET) was developed with the aim of specifying the factors that contribute to variation in intrinsic motivation (Ryan & Deci, 2000b). CET is a specific framework for the examination of social contexts that facilitate or undermine intrinsic motivation. The subtheory proposes that social conditions that produce a sense of *autonomy* and feelings of *competence* catalyze one's inherent tendency toward intrinsic motivation. *Relatedness* has also been found to be a significant factor (Ryan & Deci, 2000b).

### *Autonomy*

Autonomy means using free will, or acting on one's volition. It implies that an individual perceives himself to be the origin of his own behavior. There is a sense of initiation and value attached to the autonomous action. The autonomous person believes her behavior is an expression of her own will, or a concurrence with the will of others. "Autonomy" is not to be confused with "independence" (which indicates not relying on external influences or sources). Indeed, the autonomous person may initiate actions suggested or condoned by an external force, as long as that individual truly endorses them (Deci & Ryan, 2002).

Self-Determination Theory began with studies intended to explore the environmental factors that encroach on people's intrinsic motivation. The original, straightforward question was, "If a person is involved in an intrinsically interesting activity and begins to receive an extrinsic reward for doing it, what will happen to his or her intrinsic motivation for the activity?" (Ryan & Deci, 1985b, p. 43). In the first study (Deci, 1971), college-age subjects worked on block-building puzzles that had been tested as highly intrinsically motivating for college-age students. Students in the experimental

group were given \$1.00 for each of the puzzles they solved, whereas students in the control group were not. Students' intrinsic motivation was assessed through the free-choice measure, that is, the students' behavior was surreptitiously observed during a free-choice period conducted after the original session when other interesting activities, along with the puzzles, were available. It was reasoned that if students from either group spent their free time working on the puzzles for no reward they were intrinsically motivated to do so. It was found that after two sessions there was a decrease in the intrinsic motivation of the experimental group relative to the control group to continue doing the puzzles. This general paradigm was used in many studies, in and out of the laboratory, using a variety of activities set in a variety of circumstances (e.g., Anderson, Manoogian, & Reznick, 1976; Deci, 1972a; Eden, 1975; Pinder, 1976; Yoshimura, 1979). The evidence seems clear: when subjects were given monetary rewards for working on an activity, their intrinsic motivation for doing that activity decreased (Ryan & Deci, 1985b). Further studies using rewards such as "good-player awards" (Lepper, Greene, & Nisbett, 1973), toys (Lepper & Greene, 1975), and candy (Ross, Karnoil, & Rothstein, 1976) yielded similar results.

Deci (1971, 1972b) used the work of deCharms (1968; extending an idea introduced by Heider, 1958) to explain how extrinsic rewards decrease intrinsic motivation. The concept, *perceived locus of causality* (PLOC), is based on the premise that "man strives to be a causal agent, to be the primary locus of causation for, or the origin of, his behavior; he strives for personal causation" (deCharms, p. 269). deCharms explained it this way (using terminology attributed to Koch, 1956): when man perceives himself to be the Origin, he is intrinsically motivated to act; when he perceives himself to

be the Pawn, the locus of causality shifts, and he experiences a loss of self-initiation in the act (deCharms, 1968). When a person experiences an *internal perceived locus of causality* (I-PLOC) he is intrinsically motivated, but, when he experiences an *external perceived locus of causality* (E-PLOC), an instrumentality develops. The activity becomes an instrument he uses to achieve a goal or to avoid an undesirable consequence, a means to an end rather than an end to itself. Deci asserted that the money paid to the subjects had produced a change in their *perceived locus of causality* from internal (I-PLOC) to external (E-PLOC), resulting in decreased intrinsic motivation for the action (Ryan & Deci, 1985b).

Further studies indicate that rewards are not the only external factors that decrease intrinsic motivation. Threats (Deci & Cascio, 1972), surveillance (Lepper & Greene, 1975), deadlines (Amabile, DeJong, & Lepper, 1976), evaluation (Amabile, 1979), goal imposition (Mossholder, 1980), and competition (Deci, Betley, Kahle, Abrams, & Porac, 1981) have all been shown to undermine intrinsic motivation, presumably because people feel controlled by these circumstances and, therefore, experience a shift in their perceived locus of causality from internal to external. In addition, studies have indicated that externally controlling conditions not only affect intrinsic motivation for a task, but they also decrease creativity (Amabile, 1982a), deep conceptual processing of information (Grolnick & Ryan, 1987), and complex problem solving (McGraw & McCullers, 1979).

Pursuing the idea that a shift in the perceived locus of causality affects intrinsic motivation, Deci and Ryan (1980) tied deCharms' (1968) PLOC concept to people's need to feel autonomous. They proposed that contextual situations and environments affect

intrinsic motivation because they impact the extent to which a person feels autonomous in the situation.

### *Competence*

The need for competence is defined as “the need to experience oneself as capable of producing desired outcomes and avoiding negative outcomes” (Connell & Wellborn, 1991, p. 51). As aforementioned, White (1959) labeled this urge toward competence *effectance* and considered it a motive that when satisfied produces a feeling of *efficacy*. Environments and social contexts that promote a perceived sense of competence for a particular action enhance intrinsic motivation for that action (Ryan & Deci, 2000b).

Not only did early studies on the effects of rewards on intrinsic motivation show that externally controlling conditions (such rewards and constraints) have a tendency to decrease intrinsic motivation, they also showed a connection between the *feedback* subjects received and their intrinsic motivation. Positive feedback, relative to no feedback, was shown to enhance intrinsic motivation (Boggiano & Ruble, 1979), whereas negative feedback (relative to no feedback) decreased intrinsic motivation (Deci & Cascio, 1972). Deci and Ryan (1980) explained that this phenomenon occurred because of the innate need for competence (White, 1959). Positive feedback fosters a sense of efficacy, therefore satisfying the need for competence, and negative feedback causes feelings of inefficacy, therefore thwarting the need for competence and undermining intrinsic motivation.

Vallerand and Reid (1984) further explored feelings of competence/incompetence in their subjects, and found that it was *perceived* competence that was the mediator between feedback and intrinsic motivation. Miserandino (1996) confirmed these results



in a study of children with above average ability. The findings were that students who perceived themselves as incompetent (despite their high achievement) “reported feeling anxious, angry, and bored in school and reported avoiding, ignoring, and faking schoolwork” (p. 208), whereas those who perceived themselves as competent “reported feeling more curious and participated in, enjoyed, and persisted more at school tasks” (p. 208). In a recent study, Arnone, Reynolds, and Marshall (2008) found that “perceived competence in information skills, perceived competence in reading, and reading enjoyment contribute to information skills in 8<sup>th</sup> graders” (para. 46).

Does all positive feedback enhance intrinsic motivation and all negative feedback thwart it as this research seems to suggest? According to Deci and Ryan (1985b), the difference is in the degree of the *functional significance* of the feedback (or any contextual event/environment, for that matter). All social contexts, feedback events, or environments contain both *controlling* and *informational* aspects. It is the relative salience of these two factors that influence intrinsic motivation. Conditions that have *controlling* salience will undermine intrinsic motivation, whereas those with *informational* salience will support intrinsic motivation. This is because a controlling orientation thwarts the need for autonomy, and an informational orientation gives feedback that supports a person’s striving for competence. In SDT, events that generally have a controlling orientation (such as tangible rewards) are said to usually undermine intrinsic motivation, and events that generally have an informational orientation (such as positive feedback) are acknowledged as fostering intrinsic motivation. Negative feedback can also be considered informational as long as the controlling factor does not overshadow its informational aspects. One must bear in mind, however, that it is how the



*individual* construes the situation (dependant on their inner resources; see causality orientations theory section below) that will determine its controlling or informational orientation (Deci & Ryan, 2002).

CET specifies that feelings of efficacy or competence are not enough to support intrinsic motivation. Studies have shown that perceived competence must be accompanied by a sense of autonomy in order for intrinsic motivation to be sustained (Fisher, 1978; Ryan, 1982). While a perception of competence is needed for any type of motivation, “perceived autonomy is *required* for the motivation to be intrinsic” (Deci & Ryan, 2000, p. 235).

#### *Relatedness*

The need for relatedness “encompasses the need to feel securely connected to the social surround and the need to experience oneself as worthy and capable of love and respect” (Connell & Wellborn, 1991, p. 51-52). SDT posits that while the needs for autonomy and competence are the most influential in maintaining intrinsic motivation, relatedness also plays an important role. Attachment theorists (e.g., Bowlby, 1979) suggest that infants exhibit more exploratory behavior when securely attached to a parent. Recent research points to *the need to belong*, or the desire for interpersonal attachments, as a fundamental human need. Theorists propose that the need to belong has two main attributes: a) frequent, primarily positive contacts with another person (or persons), and b) interpersonal bonds that are characterized by stability and affective concern (Baumeister & Leary, 1995).

CET postulates that this dynamic is important over the life span and that an individual’s sense of relatedness and security will contribute to his intrinsic motivation

(Ryan & Deci, 2000b). Anderson, Manoogian, and Reznick (1976) discovered serendipitously that children who were working on an interesting task in the presence of an adult who ignored them exhibited less intrinsic motivation for the task. Ryan and Grolnick (1986) found that students maintained lower levels of intrinsic motivation when they perceived their teachers as uncaring and cold.

Certainly, there exist situations in which the need for relatedness is not central, such as when people participate in solitary activities like hiking or painting, suggesting that relatedness is not a necessary component of intrinsic motivation. However, “a secure relational base appears to provide a needed backdrop—a distal support—for intrinsic motivation, a sense of security that makes the expression of this innate growth tendency more likely and more robust” (Deci & Ryan, 2000, p. 235).

The CET framework suggests that social contexts and environments either foster or undermine intrinsic motivation by their supporting or thwarting of the psychological needs of autonomy and competence, and in a distal sense, the need for relatedness. It is essential to understand, however, that the principles outlined by CET hold true only for activities that are intrinsically motivating, that appeal to individuals because of challenge, novelty, or aesthetic value (Ryan & Deci, 2000b). To understand the nature of *extrinsically* motivating activities and the individual’s capacity to regulate these activities requires examination of the next mini-theory, *organismic integration theory*.

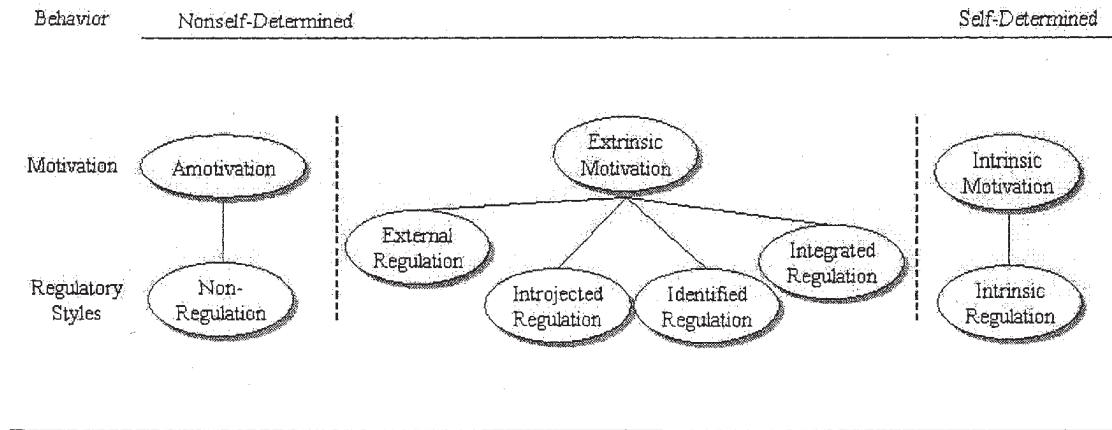
#### *Organismic Integration Theory*

CET was proposed with the aim of specifying the factors that contribute to variation in intrinsic motivation, and of establishing a framework for the examination of social contexts that facilitate or undermine intrinsic motivation (Ryan & Deci, 2000b). In

a similar way, *organismic integration theory* (OIT) was introduced to differentiate types of extrinsic motivation, and to provide a framework for examining social contexts that can either “promote or hinder internalization and integration of the regulation for these behaviors” (Ryan & Deci, 2000a, p. 61).

#### *Taxonomy of Motivation and Regulation*

In OIT, the states of motivation are not presented as dichotomous, with intrinsic motivation on one side and extrinsic on the other. Rather, extrinsic motivation is presented as a part of a continuum of behaviors that is sandwiched between amotivation and intrinsic motivation (see Figure 3). The determining factor between the types of motivation and regulatory styles is the level of autonomy perceived by the individual in a given situation.



*Figure 3.* The Self-Determination Continuum.

From “Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being,” by D. L. Deci and R. M. Ryan, 2000, *American Psychologist*, 55(1), p. 72. Copyright © 2000 by the American Psychological Association. Adapted with permission (see Appendix I). The use of APA information does not imply endorsement by APA.

In amotivation, people either do not act at all or act without intent. Non-action is caused by a lack of value for the activity (Ryan, 1995), a perceived lack of competence to complete the activity (Deci, 1975), or the lack of confidence that the outcome of the activity is desirable (Seligman, 1975). Intrinsic motivation, on the other hand, stems from the self and action is stimulated by interest, enjoyment, curiosity or pleasure (Ryan & Deci, 2000b).

The middle category, extrinsic motivation, is divided into four types. The first type, *external regulation*, refers to behaviors caused by an external demand or reward and is the least autonomous type of extrinsic motivation. Interestingly, it was the only type of motivation recognized by the operant theorists (e.g., Skinner, 1953). The second type, *introjected regulation*, is action caused by feelings of pressure and is executed to avoid guilt or anxiety, or to enhance ego, pride, or self-worth. The third type, *identified regulation*, is a more autonomous type of extrinsic motivation, and is action caused when one attaches personal importance to the behavior. The fourth type, *integrated regulation*, occurs when behaviors based on values are fully assimilated to the self. This is the most autonomous type of extrinsic motivation, but is still considered extrinsic, rather than intrinsic, because the activity is not done for its inherent satisfaction (Ryan & Deci, 2000b).

It is important to understand that the continuum is descriptive and not progressive. People do not necessarily pass through the different types of motivation and regulation in an advancing order. They may adopt a regulation at any point and move toward integration or even into intrinsic motivation if interest in the activity or topic becomes

salient. Conversely, regulation can move backwards if social conditions undermine the process toward integration (Deci & Ryan, 1985b).

### *Internalization and Self-regulation*

Although it is relatively easy to facilitate learning around activities and topics that are intrinsically interesting to a given individual or group if the interests of that person or group are known, there are many behaviors and topics people find uninteresting that society has deemed important and necessary to know and to learn (Deci & Ryan, 1985b). This is particularly true for children and educational activities and goals. A difficult question is how to move students toward motivation for and self-regulation of the educational activities that are not intrinsically motivating for them. SDT terms this movement as the “internalization and integration of values and behavioral regulations” (Ryan & Deci, 2000a, p. 60). Internalization and integration are the constructive processes whereby individuals become more self-determined in attaining goals that are not intrinsic, but are deemed valuable by others (Ryan & Deci, 2000a). The terms are differentiated in that internalization is defined as a person’s “taking in” or acceptance of a value or regulation, and integration assumes a deeper assimilation of that regulation into the person’s self (Ryan & Deci, 2000b).

The issue of human development is important to the concepts of internalization and self-regulation. The ease by which a person can self-regulate a new behavior depends on his prior experiences and the situational context. Because a child has few prior experiences, conventional wisdom would dictate that internalization would generally be difficult at first, but be more easily facilitated over time as he has more internalization experiences, providing those experiences are successful (Ryan & Deci, 2000b).

Increasing ego development and cognitive capacities would also seem to increase the capability to assimilate behaviors (Loevinger & Blasi, 1991). Research indicates that children do indeed adapt a more self-regulatory style over time (Chandler & Connell, 1987).

#### *Facilitating Integration of Extrinsic Motivation and Self-regulation*

As portrayed in OIT, the environments and social contexts that facilitate integration of extrinsic motivation and self-regulation are, not surprisingly, the same as those that foster intrinsic motivation (see section on CET)—conditions that promote feelings of competence, a sense of autonomy, and personal relatedness. However, the importance of the satisfaction of each of these needs is different for internalizing extrinsically motivated behaviors than for maintaining intrinsic motivation.

*Relatedness.* *Relatedness* seems to be the central psychological need to satisfy in order to achieve internalization. Because people do not find extrinsically motivated behaviors interesting, they must be externally prompted to do them. The reason most people are willing to do these behaviors is because the actions are valued by others with whom they feel connected (Ryan & Deci, 2000a). This suggestion is supported by studies indicating that greater internalization of school-related behaviors was associated with relatedness to teachers and parents (Ryan, Stiller, & Lynch, 1994).

*Competence.* Feelings of competence are also crucial to the internalization of extrinsically motivated activities. People are more likely to engage in any activity if they feel they have the skills to do it, and at the same time, are building upon previous skills (becoming more competent) by doing the activity. People are receptive to “challenges that are suited to their competencies, that are neither too easy nor too difficult,” or

*optimal challenges* (Ryan & Deci, 1985b). Supports for competence by way of optimal challenges and informational feedback (as with maintaining intrinsic motivation) facilitate internalization (Ryan & Deci, 2000a; Vallerand, 1997).

*Autonomy.* Finally, a sense of autonomy is important to internalization, and is an especially crucial element for movement from introjected (action caused by feelings of pressure) to integrated (action based on values that are fully assimilated to the self) regulation. When a person has performed an introjected behavior, she may very well feel competent and a sense of relatedness to someone in order to do it. However, in order to integrate a behavior to self, the individual must grasp its meaning and assimilate that meaning into her own values and goals. Studies indicate that this type of deep processing (Kuhl & Fuhrmann, 1998) is facilitated by a sense of autonomy (Deci, Eghrari, Patrick, & Leone, 1994; Grolnick & Ryan, 1989; Strahan, 1995).

#### *Causality Orientations Theory*

Throughout SDT it is postulated that a person's motivation is determined by the relative psychological need satisfaction afforded by his social contexts and environments. *Causality orientations theory* (COT) examines another factor in motivation determination, that is, "a person's inner resources that have developed over time as a function of prior interactions with social contexts" (Deci & Ryan, 2002, p. 21). SDT labels these inner resources a person's *causality orientation*. They are the relatively stable motivational orientations people develop that influence their interactions with the social world.

Deci (1980) first developed the three causality orientations based on Heider (1958) and deCharms (1968) vocabulary, using the terms, internal, external, and



impersonal; this reflected the PLOC inherent in each of the three orientations. Deci and Ryan (1985b) later changed the first two terms to *autonomy* and *controlled* to distinguish the terms to SDT, and also because (in the Heider-deCharms tradition) the terms “internal causality” and “external causality” describe behaviors that are determined by any event, either within (internal causality) or outside of (external causality) the person.

#### *Autonomy Orientation*

SDT defines the term *autonomy orientation* as “the tendency for behavior to be initiated and regulated by events internal to one’s sense of self” and also “by events in the environment that are interpreted as informational” (Deci & Ryan, 1985b, p. 153). A person of this orientation tends to regulate behavior based on personal interest and the values he endorses. He is likely to look for opportunities to be autonomous and construes environments as informational so he can make informed choices about future action. According to Rogers (1951), people with the autonomy orientation were most likely loved unconditionally as children and had parents who supported their agendas. Deci & Ryan (1985a) found the autonomy orientation to be positively related to ego development, self-actualization, and self-esteem, as well as other indicators of well-being.

#### *Controlling Orientation*

The person with a *controlling orientation* can be described as one whose “functioning is, to a large extent, determined by controls in the environment or by internally controlling imperatives, such as *should*, *have to*, *ought to*, and *must*” (Deci & Ryan, 1985b, p. 157). A person of this orientation regulates behavior based on controls and directives about how she should behave—operating primarily within the external and

introjected motivational realm (Deci & Ryan, 2002). The crux of the controlling orientation is a struggle for power between the controlled and the controller, which may be between two people or manifest as a conflict within an individual. The person with a controlling orientation may suppress the conflict but will never experience choice in its true sense because she is always striving to control or block someone else's control. A person of this orientation looks for controlling situations and seeks dominance, and she is likely to construe informational situations as controlling (Deci & Ryan, 1985b). She is often highly competent, but her sense of worth is usually hinged on high performance, a characteristic often developed in childhood as a result of parents or caregivers who conditioned their acceptance of this child on her achievement.

#### *Impersonal Orientation*

The *impersonal orientation* is defined as “based in a sense of one's being incompetent to deal with life's challenges” (Deci & Ryan, 1985b). It involves a focus on ineffectance and the inability to behave intentionally, and is concerned with the amotivational realm. People of this orientation experience feelings of helplessness, can become immobile, or behave in a passive-aggressive manner. They may engage in addictive behaviors and feel little control over them, and are likely to experience high anxiety. People of this orientation most likely did not learn to trust their environments as young children, and therefore did not develop a trust in themselves (Erikson, 1950).

It is important to understand that seemingly everyone has some of each orientation, but generally one is dominant. The General Causality Orientation Scale (Deci & Ryan, 1985a) was developed to measure the three orientation levels of an individual.

Studies have shown that people's dominant causality orientations relate to their regulatory styles, to behavioral outcomes, and to their well-being (Deci & Ryan, 2002).

### *Basic Needs Theory*

The fourth and final mini-theory that makes up the components of SDT is *basic needs theory*. This newly-formed theory explicitly states concepts that have been implied by much of SDT, but in the inductive tradition consistent with the rest of SDT, only recently has research led to the formalization of hypotheses and thus, a new mini-theory.

Just as CET relates social contexts and environments that foster the individual's need satisfaction to *intrinsic motivation*, and OIT connects experiences that support need satisfaction to *self-regulation of extrinsically motivated behaviors*, basic needs theory describes the dynamic relationship between need satisfaction and mental health and *well-being*. Basic needs theory postulates that the satisfaction of the needs for autonomy, competence and relatedness leads to eudaimonic well-being, and that this theory applies across genders, ages, and cultures (Deci & Ryan, 2002).

Well-being can be defined in two ways. The first approach is *hedonic* and is subjective to circumstances. It is generally equated with the term "happiness" (e.g., Kahneman, Diener, & Schwarz, 1999). The second approach is *eudaimonic*, or equates well-being with full functionality (e.g., Ryff & Singer, 1998). SDT conceptualizes well-being as eudaimonic. The studies in this area have focused on linking the satisfaction of the needs for competence, autonomy, and relatedness to eudaimonic well-being (Deci & Ryan, 2002).

Research in this arena has three focus areas. First is a consideration of within-person and between-person relations connected to need satisfaction and well-being over

time. Studies in this area show a prediction between daily variations in the satisfaction of the needs for competence, autonomy, and relatedness and daily changes in well-being (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Sheldon, Ryan, & Reis, 1996). Well-being was defined as “positive affect, vitality, and the inverse of negative affect and symptomatology” (Deci & Ryan, 20002). Second, studies have been conducted in the area of goal attainment, need satisfaction, and well-being. The findings of these studies suggest that there is a relationship between goal attainment and well-being only if attainment of the goal also satisfies basic psychological needs (competence, autonomy, and relatedness; Kasser & Ryan, 1993, 1996, 2001; Sheldon & Kasser, 1998). Finally, new research is pointing to the universality of the connection between need satisfaction and well-being, particularly with regard to culture (Chirkov & Ryan, 2001; Deci, Ryan, Gagne, Leone, Usunov, & Kornazheva, 2001, Hayamizu, 1997; Yamauchi & Tanaka, 1998).

To summarize, the key concepts and assumptions of SDT include an organismic/dialectical approach, with specific conceptualizations of intrinsic and extrinsic motivation. The theory has developed inductively over time within a framework of four mini-theories: cognitive evaluation theory, organismic integration theory, causality orientations theory, and basic needs theory.

#### *Using Self-Determination Theory as a Basis for a Study of Motivation in Children*

SDT has been the basis for many studies on motivation in children. Studies range from the effects of rewards and punishment on students' intrinsic motivation (Deci, Koestner, & Ryan, 1999) to the effects of intrinsic versus extrinsic motivation on children's creativity, performance, and persistence (Deci & Ryan, 1991; Sheldon, Ryan,

Rawsthorne, & Ilardi, 1997). SDT is also appropriate for the current study because of its epistemology, ontology, and axiology; its differentiation between intrinsic and extrinsic motivation; its framework for examining social contexts that facilitate or undermine intrinsic motivation and causality orientations; and its compatibility with accepted principles and practices of human development and learning. Limitations of the theory for use with the current study include its single-disciplinary focus and the use of nomothetic methodology (also known as experimental and quantitative; Burrell & Morgan, 1979; Creswell, 1998, 2003) in the majority of its supporting research.

#### *Appropriateness of SDT*

In determining the appropriateness of a theory for a particular research question, one is advised to first assess the epistemological, ontological, and axiological assumptions of the theory relative to the question (Littlejohn, 2002). The *epistemology* of SDT generally follows the assumptions of Worldview II (Littlejohn), or non-positivism, because it acknowledges that people take an active role in creating knowledge and emphasizes the interpretive and perceptual processes of the individual. It is constructionist, in that it emphasizes the experiences, social contexts and environments unique to the individual and believes that these influence the meaning people make of their realities in order to function pragmatically in the world (Littlejohn, 2002). SDT proposes general postulates, but is careful to qualify these in terms of the individual's interpretations and responses. In these ways, the theory matches the research question. By examining the experiences in the lives of upper elementary students that foster the intrinsic motivation to seek information, the researcher sought to understand how the students perceive, process and interpret those experiences into meaning and action.

The *ontological* stance of SDT is actional, as evidenced by its organismic approach, which assumes that organisms are active and oriented toward growth. This approach is compatible with the research question, which also assumes an actional ontology, presuming that the students under study are active in making choices and are intentional. The use of the phrase “experiences that foster” instead of “experiences that cause” implies the volitional nature of the students. The *axiology* of SDT is value-conscious. It is apparent throughout the SDT literature that the theory was designed on the premise that it is valuable for people to maintain intrinsic motivation and integrate regulation for socially-condoned extrinsically motivated behaviors, and that the findings of SDT research is intended and has been used to help improve people’s lives. For example, the *basic needs theory* points to the idea that meeting the three psychological needs outlined in SDT is crucial for a person’s feelings of well-being. The current research question is also value-conscious as has been previously discussed.

*The construct of intrinsic motivation.* Another important factor in considering the appropriateness of SDT to the research question at hand is its distinct treatment of the construct of intrinsic motivation. Most of the current motivational theories focus on outcomes (or goals) and the instrumentalities that would lead to achieving these desired outcomes (e.g., Bandura, 1977; Dweck, 1986; Eccles, 1983). These theories are concerned about the *direction* of behavior, but not why people choose to act in the first place, or their *energization* (Hunt, 1963, 1965). Because SDT proposes that people are moved to act in order to satisfy psychological needs, it portrays action as volitional (based on a perceived locus of causality), or *intrinsic* (Deci, Vallerand, Pelletier, & Ryan,

1991). Obviously, any theory appropriate for the study of intrinsic motivation would need to present it as a definitive construct, as does SDT.

*Cognitive evaluation theory.* The framework that SDT provides for examining the: a) social contexts, and b) causality orientations that facilitate or undermine people's intrinsic motivation is another contributing aspect of its appropriateness for a study on experiences that foster intrinsic motivation in children. The *cognitive evaluation theory* component of SDT aims to specify factors that contribute to variation in intrinsic motivation. It classifies social contexts into those that facilitate and those that undermine the psychological needs of competence, autonomy, and relatedness. The experiences of the students in the current study have been examined through the CET lens.

*Causality orientations theory.* Using the *causality orientations theory* in the current study has also proved to be enlightening. The causality orientations of teachers have been shown to have a connection with the intrinsic motivational levels of their students (Deci, Schwartz, Sheinman, & Ryan, 1981), and the causality orientations of older students and adults have been linked to intrinsic motivation, ease of internalization and integration of extrinsically motivated behaviors, and well-being (Deci & Ryan, 2002). The causality orientations of the adults surrounding the children in the current study were not determined; however, the general autonomy orientation of the students was considered. While the General Causality Orientation Scale (a scale developed to determine causality orientation) is not recommended for use with anyone under the age of 16 (personal communication with E. L. Deci; September 17, 2007), general trait information was gathered from data indicated by the interviews and drawings. Because of the emphasis on social contexts/environments, and the causality orientations to intrinsic



motivation, the cognitive evaluation theory and the causality orientations theory were the most appropriate of the mini-theories to the current study.

*Compatibility with accepted human development principles.* Finally, SDT is an appropriate theory for a study of the experiences of intrinsically motivated children because it is compatible with accepted principles and practices of human development and learning. Piaget (1959, as referenced by Mischel, 1971) believed that children are continually assimilating and accommodating aspects of the environment into their own cognitive structures because of an awareness of disequilibrium, or a discrepancy between an input and a preexisting cognitive structure. He believed that learning is simply a by-product of assimilation. He also contended that an emotional response to assimilation is interest (1981). SDT also purports that children “seek and conquer” based on interest (seek), and on a need for competence (conquer). Piaget, however, emphasizes the “conquer” part, and SDT emphasizes the “seek” part. In addition, SDT brings out a sense of intentionality or personal agency inherent in the growth orientation of children, which is not fully captured by Piaget (Deci & Ryan, 1985b). SDT is quite closely aligned with Elkind (1971), who suggested that “cognitive development is characterized by growth cycles” (Deci, 1975, p. 70) and that these growth cycles are intrinsically motivated. The cycles consist of stages: seeking challenge, repetition, grating (sorting through stimuli), storing, and playing. “Playing” by most definitions (and as described by Elkind) is an intrinsically motivated activity, and “seeking challenge” is consistent with the SDT concept of supporting the need for competence.

Several education specialists and psychologists, as well as the American Association of School Libraries (AASL), have suggested and condoned ways to maintain



and enhance children's intrinsic motivation for learning that are consistent with the principles of SDT. Bruner (1962) advocated for freeing children from controlling rewards and punishments. Neill (1960), founder of the Summerhill School in England, believed in trial-and-error learning (using informational feedback) and also advised the limited use of rewards and punishments, stating that the chief reward for one's accomplishments is one's intrinsic satisfaction. Holt (1964) and Montessori (1967) also disavowed rewards, and the Montessori system of education is based on students' innate sense of curiosity and wonder. Rogers (1969) emphasized the active learning process, discovery, and exploration, as well as focusing on the attitudes of the teacher (Deci & Ryan, 1985b). The Standards for the 21<sup>st</sup>-Century Learner, recently released by AASL (2007) encourages "an inquiry-based process in seeking knowledge" (p. 3) and emphasizes the importance of the disposition to use information literacy skills as an essential element of becoming an independent learner.

#### *Limitations of the Self-Determination Theory*

SDT is appropriate for use in a study of motivation in children, as has been shown through its use in many such studies in a variety of ways spanning three decades. It is also appropriate for the current study in several aspects, as previously discussed. SDT does, however, have limitations for the current study of the experiences of intrinsically motivated students. These limitations include: a) the primary use of nomothetic methodology in the majority of its supporting research, and b) its single-disciplinary focus.

*Use of nomothetic methodology.* In order to best identify and understand the experiences that foster intrinsic motivation, the researcher has chosen an ideographic

methodology. The ideographic methodological approach is consistent with the subjective, non-positivistic, actional, and value-conscious stance of the research question. SDT, as previously discussed, is a theory that is compatible with these stances and approaches. However, a limitation of SDT is that, while the theory itself was developed inductively, the vast majority of its supporting research is based on nomothetic methodology (also known as experimental and quantitative; Burrell & Morgan, 1979; Creswell, 1998, 2003). This approach seems inconsistent with the theory's basic assumptions and conceptualizations. Ryan and Deci expressly address this issue by explaining that the use of Baconian methods in SDT research has allowed them to manipulate social contextual variables in order to examine their effects on both behavior and internal processing. However, they explain that "we have used experimental methods without accepting the mechanistic or efficient causal meta-theories that have typically been associated with those methods" (2000b, p. 69). This clearly seems to be a conflict between SDT's theoretical and methodological approaches.

On one hand, this inconsistency has been a limitation to the current study because it provided little guidance and very few examples in conducting qualitative research based on SDT. On the other hand, it provided an open field for such studies to be conducted. Qualitative studies that use the SDT framework found in a preliminary search to date are: an interview-based study on people's strategies for coping with deadlines (Burgess, Enzle, & Schmaltz, 2004), two diary-based studies aimed at examining daily well-being (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Sheldon, Ryan, & Reis, 1996), a study of need satisfaction based on life story episodes (Fryer & Thrash, 2007), and an interview-based study of students' expectations as they relate to their interests in physics

(Terzi, & Seker, 2007). In addition to the wide-open possibilities for a qualitative study of the experiences of intrinsically motivated students based on SDT, its feasibility was confirmed through a conversation with R. M. Ryan at the 3<sup>rd</sup> International Self-Determination Conference. At the conference he expressed his belief that the time had come for such a study (personal communication, May 26, 2007).

*Single-disciplinary focus.* In choosing a theoretical framework appropriate for a particular study, one must be aware of the disciplinary roots of the framework and understand its limitations. SDT is a theory rooted in psychology, and as such its emphasis is on the individual's perceptions, interpretations, cognitive processing, and motivation. It is concerned with the social surround and culture only with regard to their influence on the individual's choice to act. It does not consider biology *per se*, except obscurely in its relationship to a person's ability to satisfy competence needs, and to internalize values and integrate regulation. Its focus does not include political, organizational, or administrative issues. The emphasis in SDT is squarely on the individual, or as is said in the library world, the "user."

While taking a single-disciplinary stance in research does limit one's perspective, there is value in taking such a stance, particularly in adopting a psychological approach in library information research. In aspiring to understand the experiences of students who are intrinsically motivated to seek information, the researcher has in essence asked a "why" question (in the naturalistic tradition of exploration, not in the positivistic sense of establishing causal factors). Why do these students maintain their intrinsic motivation to learn and seek information? "Why" and "how" questions are at the heart of behavioral research. The goal of such research is to understand "the nature and needs of human

beings” (Fine, 1984, p. 443), to go beyond “information 1” questions about the library collection, to “information 2” questions about the user (Dervin, 1977). Using a psychological viewpoint in school library research allows better understanding of users, and ultimately helps us achieve the goals of providing a more defined mission, more effective services, and more stimulating environments for those users. In the case of the current research question, a psychological perspective has furthered our understanding of the intrinsically motivated student, which in turn will enable us to better foster intrinsic motivation through the school library.

However, in order to get a more complete picture of the experiences of the intrinsically-motivated child, the use of SDT to analyze the data has been accompanied by the use of context-related theories of information seeking in data collection and organization. The use of these theories and how they “fit in” with SDT will be discussed in the following section on the conceptual framework of the current study.

In summary, the factors that make SDT an appropriate theoretical framework for a study of experiences that foster intrinsic motivation are the epistemological, ontological, and axiological assumptions of the theory relative to the research question, its distinct treatment of the construct of intrinsic motivation, SDT’s specific frameworks for examining social contexts and causality orientations that facilitate or undermine intrinsic motivation, and its compatibility with accepted principles and practices of human development and learning. The theory’s limitations—the use of nomothetic methodology in the majority of its supporting research and its single-disciplinary perspective—has not precluded its use in the current study, and can actually be seen as

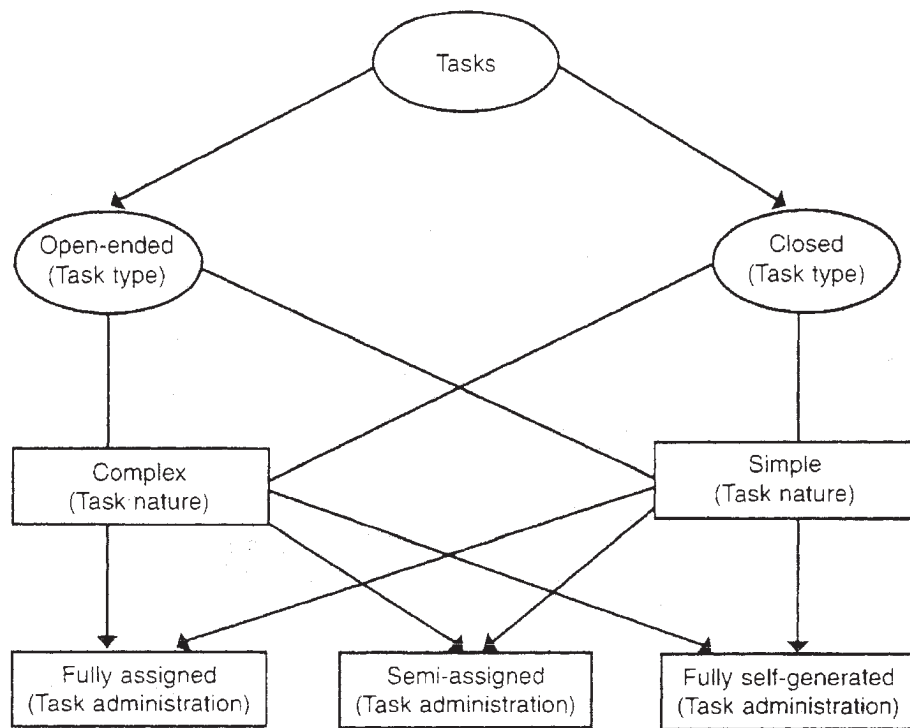
advantages, especially with augmentation from context-based information seeking theories.

### Conceptual Framework

The conceptual framework of a study provides a means by which the researcher can determine the data to collect and address how to organize and understand them. In the case of the current study, the conceptual framework defined and conceptualized the components of students' information seeking episodes that either fostered or hindered their intrinsic motivation to seek information. The conceptual framework is composed of two information seeking models: the Taxonomy of Tasks (Bilal, 2002a), and A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a, 2006b).

#### *The Taxonomy of Tasks*

Bilal developed the Taxonomy of Tasks (see Figure 4) after conducting a “three-part research project that examined the information seeking behavior and success of 22 seventh grade science students in using the Web” (Bilal, 2002b, p. 108).



*Figure 4.* Taxonomy of Tasks.

From "Children's Use of the Yahoo! Search Engine. III. Cognitive and Physical Behaviors on Fully Self-generated Search Tasks," by D. Bilal, 2002a, *Journal of the American Society for Information Science and Technology*, 53(13), p. 1171. Reprinted with permission of John Wiley & Sons, Inc. (see Appendix J).

In particular, she studied children who were asked to perform fact-based, research, and fully self-generated types of tasks using the Web. In particular she was looking for the success rate, the information seeking behavior, and students' preferences and affective states based on the three types of tasks in which the students were engaged.

Her findings of interest to the current study were that students were more successful on the fully self-generated tasks, and that they preferred these tasks over the fact-based or the research-oriented tasks. Possible reasons given for the higher success rate of the fully-self-generated tasks were: a) the assistance given the students by the researcher and the LMS in helping the students narrow their topics and identify their information needs, b) the simplicity of the topics they chose, c) ability to change or modify their topics when they changed their minds or were dissatisfied with the search results, d) their satisfaction with the search results, and e) their sense of control and motivation when searching on topics of interest to them. The reason students gave for their preference of the fully-self-generated tasks was their ability to find more information on this type of task than the other two. In fact, those students who preferred the fact-based and the research-oriented tasks gave the same reason: they preferred the tasks at which they were most successful.

The Taxonomy of Tasks addresses the context, with reference to task definition, of the particular questions students ask. For the current research, it directed the collection and organization of questions being asked by the students under study. Its use helps in understanding the task definition of students' questions and the reasons behind their success or failure, as well as their preferences, in answering these questions.

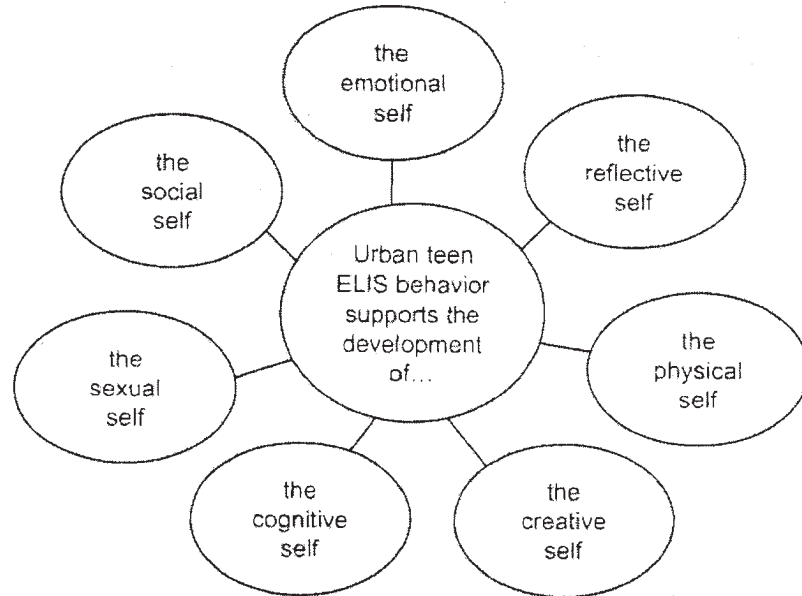
### *A Theoretical Model of Urban Teen Development*

Agosto and Hughes-Hassell (2006a, 2006b) developed their Theoretical Model of Urban Teen Development based on a combination of research into the everyday life information seeking of urban teens and developmental theory. First, they collected data through written surveys, audio journals, activity logs, and digital camera tours of the information seeking behavior of 27 urban high school students. The types of information they gathered were the people sources, communication media (2.0), media sources, and information needs topics of the teens. Then, concentrating on the fourth category, information needs topics, they attempted to sort the information needs topics into Havighurst's (1972) 11 developmental tasks of adolescence. Havighurst posited that adolescents engage in behavior to complete these tasks in order to successfully reach adult maturity. His topology is often used in the social sciences to examine the behavior of young people.

#### *Seven Areas of Teen Development*

The researchers found that Havighurst's topology was insufficient to categorize all of the information needs topics gathered from the urban teens; consequently, they combined the ideas from Havighurst's and the information needs lists and organized them into seven areas of teen development (see Figure 5). These areas represent the essence of teen everyday life information seeking. Agosto and Hughes-Hassell's model illustrates the concept that teens gather and process information in everyday life in order to facilitate their maturation into adulthood.





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*Figure 5.* A theoretical model of urban teen development.

From "Toward a Model of the Everyday Life Information Needs of Urban Teenagers, Part 1: Theoretical Model," by D. E. Agosto and S. Hughes-Hassell, 2006, *Journal of the American Society for Information Science and Technology*, 57(10), p. 1399. Reprinted with permission of John Wiley & Sons, Inc. (see Appendix J).

The current study used A Theoretical Model of Urban Teen Development to classify and sort the topics of interest generated by the intrinsically-motivated students under study. The independent variables in the Agosto Hughes-Hassell model are based on personal and cultural situations and settings. Use of the model illuminates the socio-cultural, as well as developmental, reasons behind the information seeking behaviors of the student participants.

#### *Age-appropriateness of the Agosto Hughes-Hassell Model*

An important issue to address is how appropriate the Agosto Hughes-Hassell model is for a study of upper elementary-aged students. The model is based on both the developmental tasks and the topics of information seeking interest of adolescents. In looking at Havighurst's (1972) Developmental Tasks of Middle Childhood, one finds that they can be sorted in a similar manner to the tasks of adolescence. However, there are two independent variables from the Agosto Hughes-Hassell model that are not addressed by Havighurst's tasks for this age group. The first is *the sexual self*, which is based on the developmental tasks for teens, "learning to manage his or her sexuality" and "learning to recognize and accept his or her sexuality" (Agosto & Hughes-Hassell, 2006b, p. 1424). It could be argued that task 4, "Learning appropriate masculine or feminine social role" (p. 23) from the tasks for middle childhood could be associated with *the sexual self*, but since the task is more related to social roles than sexuality *per se*, I determined it was better associated with *the social self* for the current study. The second variable not addressed by Havighurst for this age group is the same one not addressed in the model for teens—*the creative self*. Agosto and Hughes-Hassell derived the creative self category solely from the urban teens' topics of interest. Using a similar gauge of upper elementary students'

non-curriculum related topic of interests (Solomon, 1993), support for *the creative self* variable can also be found (see Table 3). Therefore, it appears to be logical to assume that A Theoretical Model of Urban Teen Development (with the exclusion of the sexual self variable) could be the basis for a similar model that would be appropriate for a study of upper elementary-aged students, the subjects of the current study.

Table 3

*A Comparison of the Independent Variables from A Theoretical Model of Urban Teen Development, Havighurst's Developmental Tasks of Middle Childhood, and Subject Terms used by Upper Elementary-aged Students on the OPAC for Non-curriculum Related Information Seeking*

Independent Variables from Agosto Hughes-Hassell Model	Havighurst's Developmental Tasks of Middle Childhood	Subject terms used by upper elementary-aged (3-6 grade) students on the OPAC for non-curriculum related information seeking
The emotional self	#2. Building wholesome attitudes toward oneself as a growing organism. #8. Achieving personal independence.	Ghosts Mystery Fiction Humor
The reflective self	#2. Building wholesome attitudes toward oneself as a growing organism. #7. Developing conscience, morality and a scale of values. #8. Achieving personal independence.	Fiction Babies Sex Christmas Fairy Tales Presidents
The physical self	#1. Learning physical skills necessary for ordinary games.	Baseball Karate Sports Basketball Football
The creative self		Poetry Drawing Magic Fiction Unicorns Fairy Tales Humor
The cognitive self	#6. Developing concepts necessary for everyday living. #5. Developing fundamental skills in reading, writing, and calculating.	Cats      Dolphins Dogs      Rocks Animals      War Weapons      Mice Horses      Motorcycles Marine      Presidents Science      Bears Trees      Butterflies Geography      History Nonfiction      Insects Dinosaurs      Lasers G. Washington      Birds
The social self	#3. Learning to get along with age mates. #4. Learning appropriate masculine or feminine social role. #9. Developing attitudes toward social groups and institutions.	Weapons Holidays War Christmas

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*Note.* Sources for: A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a), Havighurst's Developmental Tasks of Middle Childhood (1972), and subject terms used by upper elementary-aged students on the OPAC for non-curriculum related information seeking (Solomon, 1993).

### “Fit” of the Conceptual Framework with the Theoretical Framework

One of the basic tenets of SDT is that environments and social contexts facilitate or undermine intrinsic motivation. For the current study, SDT provided the analysis of the experiences in the lives of upper elementary-aged students who are intrinsically motivated to seek information; however, it is the information seeking models of the conceptual framework that conceptualized the information seeking experiences of the students. It is through these models that the researcher obtained direction as to what type of data to collect with regard to students' information seeking episodes.

Certainly, some of the experiences that the researcher examined were ones through which students' psychological needs were met (or not met) through daily interaction and activities that presented themselves in the lives of the student participants. Interaction with parents, teachers, and classmates; types of hobbies; household chores; and classroom activities all point to need fulfillment, and thus the social contextual support that either fosters or hinders students' intrinsic motivation. This type of data provides a lens for the general disposition toward intrinsic motivation in the informants. However, another consideration has been the context of the information seeking itself. Why does the intrinsic motivation to seek information manifest itself in certain types of questions? Do certain types of questions and/or certain topics foster intrinsic motivation to seek further information? These are the types of questions that have been addressed by coupling SDT with Bilal's Taxonomy of Tasks (2002a) and A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a, 2006b).

Chapter 5, Research Results and Analysis, reports the research results, including data collection methods and field experiences, as well as the data analysis.



## CHAPTER 5

### RESEARCH RESULTS AND ANALYSIS

My purpose in writing this dissertation was to address the following question, “what are the experiences in the lives of upper elementary school children that foster an intrinsic motivation to seek information?” Children’s experiences, both their life experiences in general and their information seeking experiences in particular, were explored using an inductive naturalistic approach with an emerging design. This chapter reports research results, including data collection methods and field experiences, and the data analysis.

#### Data Collection Methods and Results

The study began with the selection of the participants from a pool of fifth graders from three economically and ethnically diverse schools within a single community, a small city in south central Colorado. I chose it because it was my home community (distance and access issues; Lofland, et al., 2006), and because of its diversity in terms of socio-economic level and ethnicity. I used sampling that was both purposive and judgmental (Krathwohl, 1998). First, I ranked the 41 elementary schools from the district by the percentage of their students who were eligible for and who were receiving free/reduced lunch, a common method for determining the general socio-economic level of children in schools (National Research Council, 1999; Cruise & Powers, 2006). I then divided the list into thirds and used my judgment and that of my gatekeeper in determining one school from each third as research sites. The choice from each third was based on size of student population, and on judgment that the principals and library media specialists assigned to the schools would be amenable to working with me in the



research process. This method was used in an effort to tap into a cross-section of American school children in a single school district, allowing children from a broad range of socio-economic levels an equal chance at being recognized as intrinsically motivated for information seeking, and thus allowing for a higher likelihood of exploring a variety of children's experiences.

Another reason for the decision to use the specific district chosen was because I was a library media specialist in this district for many years. It was thought that the relationships that I had built over the years would make access easier, yet the distance obtained since I left (4 years) would provide the "buffer" I needed to be objective with the children participants. My role was ultimately that of a partial insider (Adler & Adler, 1987; see Chapter 3 for complete discussion). I did know some of the children from one of the schools (one class), but I had not seen them since their first grade year. The relationships with the adults proved to be critical, both in obtaining permission to do research and in working with the principals, teachers, and librarians in the day-to-day process of conducting data collection.

The final determination of children to include in the further research phase of the project was based on the results of the survey that was administered to all fifth grade children in the three schools who returned informed consent forms signed by both the students and their parent/guardians. The survey was especially developed to identify students who demonstrate intrinsic motivation for information seeking. Other methods of data collection—interview and drawing activity—were conducted with the child participants and served as the basis for analysis. What follows is a discussion of the results of the survey, interviews, and drawing activity.

*The Survey—SRQ-IS*

The survey used to identify students who were intrinsically motivated to seek information was the Information Seeking Self-Regulation Questionnaire (SRQ-IS). It was adapted from the Academic Self-Regulation Questionnaire (SRQ-A; Ryan & Connell, 1989), a similar instrument used with children to identify motivational regulation in academics. I consulted Dr. Ruth V. Small, known expert in the field of library science, instructional design, and motivation in the design of the questionnaire; and Richard Ryan, one of the originators of the original SRQ-A, served as an advisor to me in developing the survey.

The questionnaire asks respondents why they exhibit a certain behavior (or category of behavior), then provides several answers that represent different styles of motivation or regulation. Students are asked to circle the words (ranging from “very true” to “not at all true”) that best explain their responses to the answers. The questionnaire contains five questions with eight answers each. The questions are:

- A. Why do I look for information for a project or assignment?
- B. When I look for information about a new topic it is usually...
- C. Why do I look for information in books?
- D. Why do I look for information in magazines?
- E. Why do I look for information on the Internet?

Examples of the answers are (explanations in the parenthesis were not included on the survey):

Because I'll get in trouble if I don't (external regulation).

Because I'll be ashamed of myself if it didn't get done (introjected regulation).

Because it's important to me to [look for information in books] (identified regulation).

Because it's fun (intrinsic regulation).

The eight answers contained within each question represent two from the four regulatory styles: external, introjected, identified, and intrinsic (see Appendix B) for complete survey).

### *Administering the SRQ-IS*

I met first with the library media specialists to explain the project and to get their support. I used this time to ask for their help with scheduling, distributing surveys, and finding rooms for research. Then I met with teachers to explain the project. After that, I met with students to explain the project and the informed consent form (see Appendix L for protocol). A letter explaining the survey was attached to the informed consent form and sent home with each child (see Appendices K and M). I found that I needed to provide letters and informed consent forms in Spanish (all the students could speak English, but four sets of parents were Spanish speaking only; see Appendices M and G). The total number of informed consent forms given to students from the three schools was 178. The total return rate on the informed consent forms was 57% (73% from the highest third socio-economic school, 58% from the middle, and 32% from the lowest), giving a total of 102 students who were eligible and present to take the survey.

One hundred surveys were completed by the fifth graders in eight classes from the three selected schools. All teachers were asked if children in their classes had special needs that required accommodations in order for them to take the questionnaire. Since I would be reading the survey aloud to all students, seven of eight teachers responded that

this would be adequate for all their students to understand and take the survey. One teacher indicated that she had a special needs student that might need extra help, or who might not be able to take the survey. After consulting with the special education teacher and the child's daily instructional aide it was decided that it would not be detrimental to the child to let him attempt to take the survey, as long as his mood and comfort were monitored. Striving for inclusion in class activities was an important goal of the school for this student, and inclusion is an ethical goal in researching children (Greene & Hogan, 2005). An attempt was made to give the survey to the child who was accompanied by his daily instructional aide for help. After completing three questions, the instructional aide determined that the child was frustrated, and the session was terminated for him. After another consultation, the special education teacher, instructional aide, and myself all concluded that the child's frustration indicated that the survey was too advanced cognitively for the child.

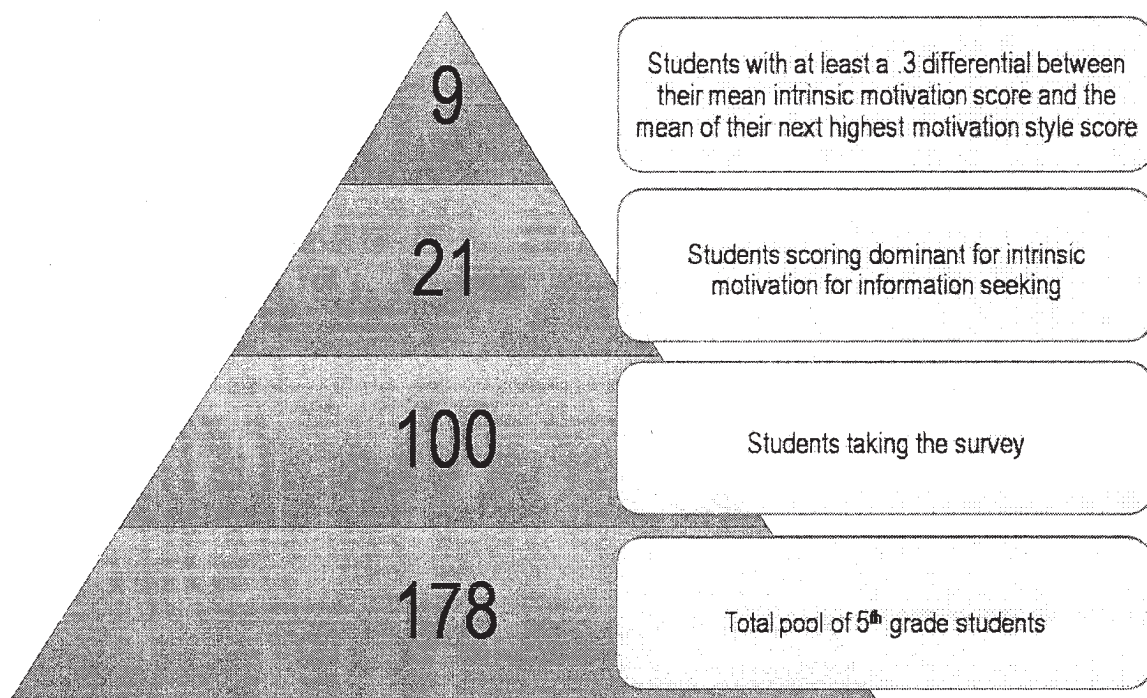
Another child withdrew from the survey. This child had asked questions about the withdrawal procedure before the questionnaire was distributed, so when he stood up during the survey and proclaimed, "withdraw!" the act was not surprising. The classroom teacher explained that this type of behavior was not unusual for this child.

The rest of the survey distribution and completion went without unusual incident. The types of questions asked and behaviors exhibited by the students were normal for this age group. For example, during the explanation that the questionnaires would be destroyed at the end of the project, a common question was, "how will they be destroyed?" The ensuing discussion in more than one class resulted in the group opinion that burning them would be preferable to shredding. Students seemed particularly

intrigued by the fact that they had confidentiality and privacy rights, and it may be that their high interest level resulted in a total higher than expected return rate for their consent to participate forms. The protocol for the discussion of the informed consent form as well as the administration of the SRQ-IS (which I followed as closely as possible, questions about destroying surveys aside), are included in Appendices L and N.

### *Identifying Informants*

The scores from the SRQ-IS determined the next step in identifying informants. Students' surveys were scored and the data entered in SPSS™, a statistical software. Twenty-one (21%) students were found to have a dominant intrinsic motivation style. These students were then sorted high to low by their composite subscale for intrinsic motivation. Because of the need to clarify and emphasize the salient aspect of the intrinsic motivation style, a differential of at least .3 points between the intrinsic motivation composite subscore and the next highest motivation style subscore for each student was used as a measure to determine informants. Of the 21 students with a dominant intrinsic motivational style, 9 were identified with scores that met this criterion. The results yielded a pool of 9 (9%) informants (see Figure 6).



*Figure 6.* Flow chart showing process of identifying informants.

There was a slightly higher percentage of survey takers from the high socio-economic school that were identified as informants for the study. 10% (7 students) of the survey takers at the high socio-economic school were identified as informants, 8% (1 student) of the survey takers at the middle socio-economic school were identified, and 6% (1 student) of the survey takers at the low socio-economic school were identified as informants for the project.

#### *Additional Information*

The survey, besides being the instrument for informant selection, also generated other interesting information. The dominant motivational style for the pool of 5<sup>th</sup> graders was Identified (36%), followed by Intrinsic (21%), Introjected (17%), and Extrinsic (12%). Fourteen percent of the students had no dominant motivation style (see Figure 7).

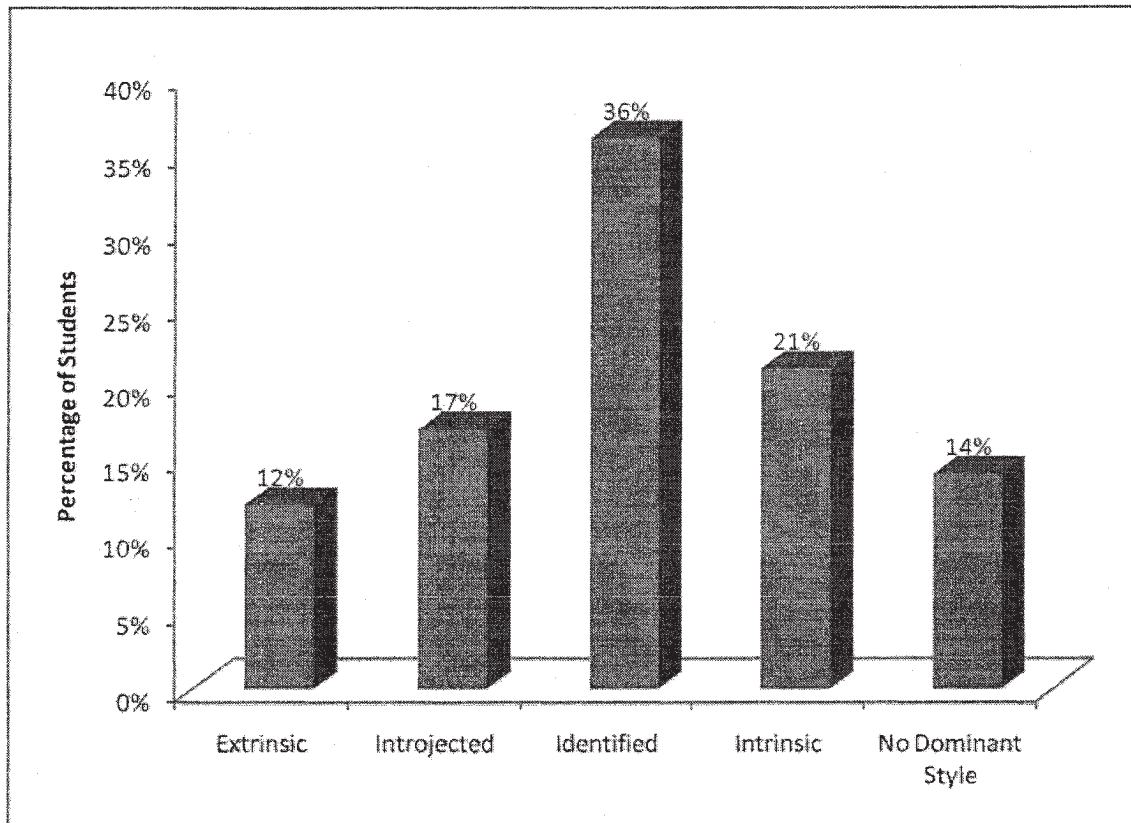
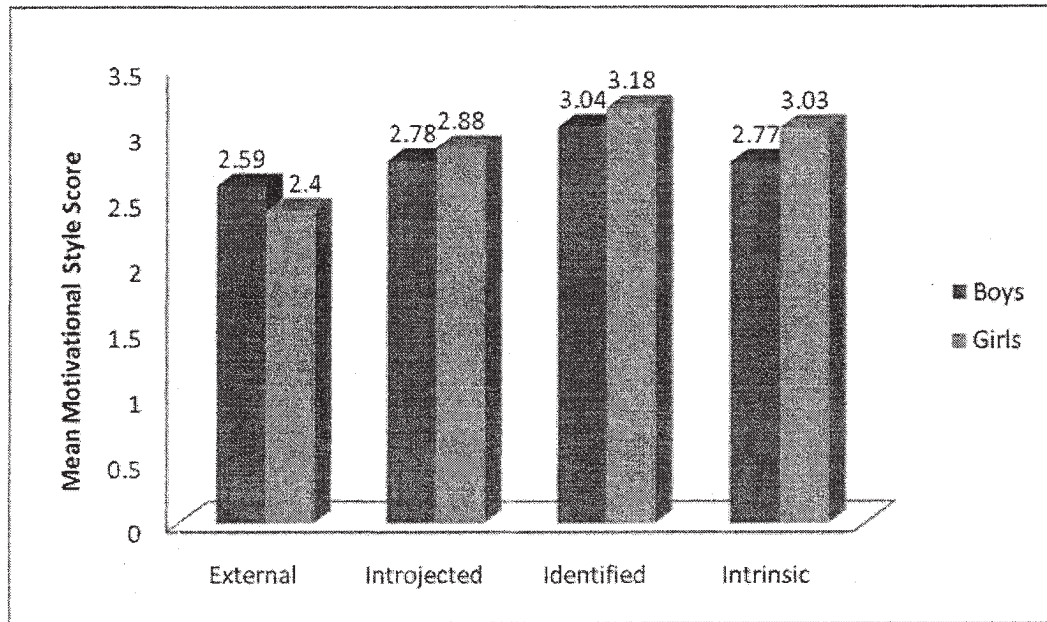


Figure 7. Dominant motivation styles.



With regard to gender, 56% of the 5<sup>th</sup> grade survey takers were boys and 44% were girls. Of the 9 identified informants, 6 were girls and 3 were boys. Of the boy survey takers, 5.3% were identified as informants compared to 13.6% of the girls. In comparing the mean answers on the motivation style items, there was no significant difference between the boys and the girls for the motivation styles of identified, introjected, and external; however, there was a significant difference between the boys' and the girls' mean composite score answers on the intrinsic motivation style items (sig. value is less than .05 at .04; see Figure 8).



*Figure 8.* Mean of students' composite motivation style scores by gender.

With regard to the questions about motivation for assigned projects, new topics, using books, using magazines, and using the Internet, the students' composite scores for intrinsic motivation were compared with their average composite scores for the various modalities. The figures show a significant relationship between students' intrinsic scores and their average scores for all of the questions under each modality. In other words, students who scored high in intrinsic motivation on the survey in general were very likely to show a high score for intrinsic motivation in each of the question categories, and the converse correlation was also found— students who scored low in intrinsic motivation in general were very likely to have a low score in intrinsic motivation in each of the question categories. Overall there was slight edge in favor of new topics, using books, and using the Internet, with the lowest correlation being using magazines (see Table 4).

Table 4

*Comparison of Students' Intrinsic Composite Scores with their Average Scores for Each Modality*

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Assigned Project	.587**
New Topic	.641**
Using Books	.647**
Using the Internet	.634**
Using Magazines	.551**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

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No significant difference was found when comparing the correlations across gender and across school type.

While these findings were interesting, the purpose of the survey for the current research was to serve as an instrument for identifying informants. The extraneous findings gleaned from survey data will no doubt provide the basis for analysis at a later date.

### *The Interviews*

The next step in the research process was to notify informants of further research steps and to explain their rights through the informed consent forms for each of the next data collection methods (see Appendix O for protocol). I prepared a folder for each child with a letter about the next steps, the informed consent forms, and my contact information. I met with each of the students one-on-one and discussed procedures for each of the next three data collection methods: the interview, the drawing activity, and the environment observation. At this meeting I discussed the need for an alias for the student since the interview conversations would be recorded, and asked the child if he or she wished to think of one to use. Most of the children created an alias on the spot, but four wanted to wait until our next meeting to make the decision. The children seemed intrigued by the possibility of doing the next research steps. I assured all students that I would get their input on the scheduling.

Getting students to return the informed consent forms for the next stage was a challenge. I found it was necessary to call the homes of several students. I actually picked up the forms from two homes and met one parent at a gas station to pick them up. Serendipitously, these contacts proved to be an important link to establishing trust with

some of the parents/guardians of the students, as well as another data-gathering method. The parents I talked with had a few questions about the research such as what the survey results meant and what I would do with the results. There was one guardian who was concerned with the effect the research process would have on her ward, Melissa (all children's names are aliases). Melissa had just been through an abuse incident and a difficult court appearance. I assured the guardian (who was also Melissa's aunt) that my first priority was to do no harm to the child, and we discussed the specific questions and activities I was proposing. She and I decided that I should not ask the question about what Melissa disliked about her family. Otherwise, the aunt thought the child was stable enough for the questions and activities and suggested that the positive attention given Melissa would actually be good for her. She also confided that one of her goals was to help Melissa make as many positive contacts with adults as possible. I was careful to make clear that my training was in teaching and library science and that I would in no way give counseling or therapy to the child. I also followed up the conversation with an email and discussion with Melissa's teacher, who concurred with the aunt's opinion that the child was stable enough for further research. The teacher's comment was, "She is really a great young lady."

Scheduling was a difficult task. The library media specialists were very helpful in setting up the initial meetings and the survey-taking time, but, once I began working with informants, I found it was necessary to do the scheduling through consultation among the teacher, the students, and myself. The scheduling was primarily conducted through email. Many of the informants were participants in band and orchestra, and some were receiving special services in gifted and talented, special reading, and speech. Juggling all these

schedules proved to be challenging. Although most of the teachers were willing to alter students' schedules to enable their participation in interviews, the reluctance of one teacher to rearrange her student's schedule to accommodate the interview process made it necessary to interview the child after school.

The interview process itself was very smooth. I used an Olympus DS-30 digital recorder and had no technical difficulties. I was able to maintain the role of leader and friend (as defined by Fine & Sandstrom, 1988) during each interview. Students were generally eager to talk, with two exceptions. One of the children, Carl, was painfully shy. After about 30 minutes he did get comfortable with me and discussed the questions with more than one-word answers. The other student, Bailey, was a child who had experienced speech problems. It took her awhile to express herself, but she answered most of the questions with clarity, and her speech was actually quite clear.

Once the one hour interviews were completed and the recordings transcribed, I read through them while listening to the recordings and made brief notes on the transcripts. Then, I imported the transcripts into NVivo 7™, a qualitative research software. Once imported, I began the process of coding the transcripts into free nodes, and then grouped the nodes into trees. "In order to make sense of the things we observe, we classify them as instances of some category of meaning" (Lofland, et al., 2006, p. 121). This process allowed me to examine and begin to make meaning of the experiences of the informants.

The information gleaned from the interviews was plentiful and rich. The children gave thoughtful and thorough answers, and when asked for clarification did so cheerfully.

After categorizing their answers, I found that the comments fell into three major categories: diversity, similarity, and information seeking behavior.

### *Diversity*

The objective of using a purposive and judgmental sample was to provide the best chance to tap into a cross-section of American school children in a single school district, and thus allowing for a higher likelihood of exploring a variety of children's experiences. One might assume that a group of children who are identified as intrinsically motivated for information seeking would exhibit the traits of what is traditionally thought of as the "advantaged"—white, rich, high achievers with doting parents who provide them with every asset needed for success. In fact, when conducting the interviews and coding the data, my first observation was how different from this pre-conceived notion some of the informants were. While a few of the informants did tend toward the advantaged profile (Alexandra, Nicole, Mickey, and Michael), most did not. Bob was a Filipino, Melissa was in foster care (Melissa), Bailey was reading two to three grade levels below 5<sup>th</sup> grade, Victoria was from a single-parent home, and both Bob and Carl struggled in school. The profiles of the 9 informants proved to paint a picture of diversity, specifically with regard to home and family life, school life, and style of communication.

There are two caveats to the "picture of diversity" portrayed by the informants: a) there was a difference in gender, and b) there was a difference in race with regard to dominance in intrinsic motivation within the sample population. Female students were more highly identified as informants than were males (13.6% of the girl survey takers as compared with 5.3% of the boys). One in 9 informants (11%) belonged to a minority race as compared with 40% of the children in the school district. While the purposive sample

of this study did yield a diverse set of informants, its purpose was not to provide a balanced representation of children for research into the experiences of intrinsically motivated students. However, such discrepancies should be noted and are worthy areas of further study.

*Home and family life.* While several students came from typical small city homes, there was variation in the informants' homes and family situations (see Table 5).



Table 5

*Data Based on Informants' Descriptions of Home and Family Life*

Student	Home/ Bedrooms	# of T.V.s	# of Computers	Parents at Home	Siblings	Special Relationships with Family
Alexandra	Single Fam./5	2	3	Mom and Dad	Youngest sibling at home	
Bailey	Single Fam./3	3	0	Mom and Dad	Oldest sibling at home	Close to Mom
Bob	Single Fam./3	3	2	Mom and Dad	Only child living at home	Close to both Mom & Dad
Carl	Single Fam./4	5	2	Mom and Dad	Youngest sibling at home	
Melissa	Single Fam. Foster /2	Not described	Not described	Neither	Oldest sibling at home	Close to Grandma Not allowed to see Mom Dad is active in life
Michael	Single Fam./4	5	1	Mom and Dad	Oldest sibling at home	
Mickey	Single Fam./3	2	1	Mom and Dad	Only child	
Nicole	Single Fam./3	4	2	Mom and Dad	Oldest sibling at home	Close to Grandma
Victoria	Apt./2	1	1	Mom	Youngest sibling at home	Good relationship with Dad, though not at home

Most lived in single family houses, but there were exceptions. Victoria lived in a two-bedroom apartment. Melissa, as mentioned before, was in foster care and indicated that her current home had two bedrooms, but preferred not to talk about it but instead to describe her father's home.

All of the children's homes had at least one television, and seven of the homes had two or more T.V.s. All but one student, Bailey, had at least one computer in their homes.

The family configurations for the informants were, for the most part, traditional two-parent families, but these also varied. Seven of 9 were in two-parent homes, while one (Victoria) was living with her mom only, and Melissa was living with her aunt.

Mickey was an only child, Bob was the only child living at home, and three informants were the youngest siblings at home (Alexandra, Carl, and Victoria). Four students were the oldest siblings living at home (Michael, Nicole, Melissa, and Bailey).

Children described their relationships with their families mostly in positive terms:

We never really have big family problems, where we're all getting into one big fight. And we always talk through our problems, and we make sure that everyone is still getting along in school, and with everyone else that is there at school. And they help me with my homework, and my sister helps me with my saxophone, and my dad helps me with computer problems. (Alexandra)

There were some squabbles with siblings mentioned, but only one student (Carl) described his siblings in very negative terms, stating that they were "sometimes mean." Bailey talked a lot about positive experiences with her mom, while Bob mentioned his mom and dad frequently and fondly throughout the interview. Victoria also mentioned good experiences with both her mom and dad, but especially those with her dad (who was not living at home). Melissa spoke positively about her dad's frequent visitations and about visiting her grandma. Nicole described very positive information seeking excursions with her grandma.

Students described their family lives primarily in tranquil terms, but there were some major family problems discussed in the interviews. Melissa mentioned how much she missed her younger siblings who were now living with her father, and she mentioned she had not been allowed to see her mother for "a long time" because of her mother's drug abuse. "My stepmom is also addicted to drugs, and so is my mom. . . . And when I was growing up, we always had cops in our house." Victoria described the difficult

housing situation since “my mom got divorced by one of her husbands and he took most of our money and then he moved to Texas.”

*School life.* The data gathered indicated varied experiences for the informants in school as well. Three students (Alexandra, Mickey, and Victoria) mentioned they were in the Gifted and Talented class. Michael discussed being called “smart” by one of his teachers. Melissa commented on how she always gets her work done in school and never has homework. Both Bob and his mother remarked that he has struggled to get his work done in school and as a result has a lot of homework. Carl’s teacher discussed Carl’s difficulty with getting his work done and mentioned the need for parent conferences on the topic. Bailey’s teacher informed me of the special services she needs for both speech and her low reading ability; however, this teacher also discussed the remarkable accountability Bailey has had in getting her work done, as well as the incredible support given her by her mother.

All the children commented on at least one area of their lives in which they felt competent, including non-academic areas (drawing, music, soccer, camping, video gaming, imagination, talking, dancing, football). Perceived competence in school also varied among the informants (see Figure 9).

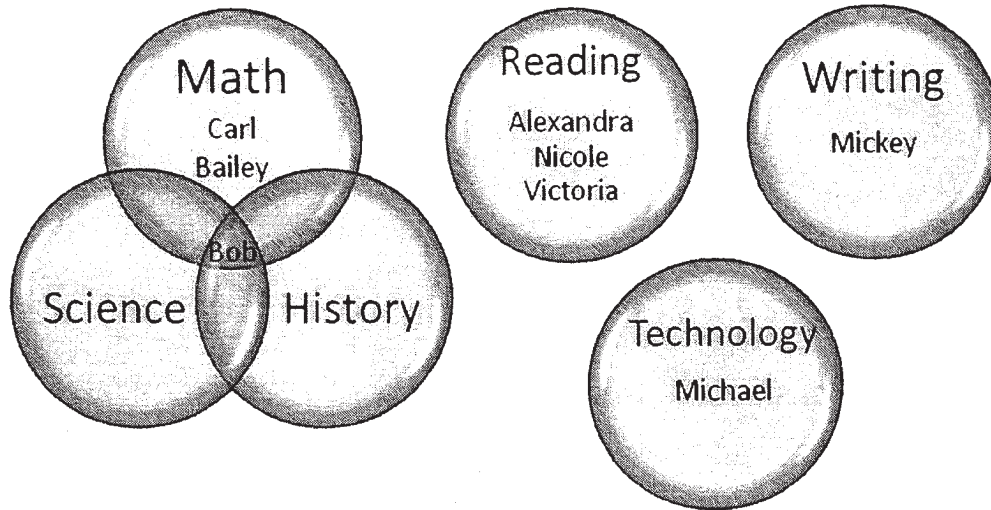


Figure 9. Informants' perceived competence in school areas.

Carl, Bob, and Bailey all felt good about their ability in math; Alexandra, Nicole, and Victoria expressed a talent for reading; Mickey discussed doing well in writing; and Michael told of his expertise in technology skills. Though Bob mentioned more than once that he thought he was the slowest in his class at getting his work done, he also pointed out that he thought he was good in science and history as well as in math. Only Melissa did not discuss competence in a particular school area.

*Style of communication.* The students' styles of communication varied also. Alexandra, Nicole, Michael, and Victoria spoke with clarity and poise, and used adult vocabulary. Bailey and Carl were shy and hesitant about speaking, using mostly short answers. Bob, Mickey, and Melissa were exuberant and expressive. For example when asked about what he didn't like about his family, Bob replied, "I don't like—I love. I don't really have anything I don't like about my family. I love them that much."

#### *Similarity*

In conducting a qualitative phenomenological study, the researcher is searching for "the meaning of the lived experiences for several individuals about a concept or *the phenomenon*" (Creswell, 1998, p. 51). The intention is to "search for the essential, invariant structure (or essence)" (p. 52) of a phenomenon based on the experiences of the persons as revealed to and interpreted by the researcher. In this case, the phenomenon was "being an upper elementary-aged student who is intrinsically motivated to seek information."

As stated and described in the previous section, I observed divergence from the pre-conceived profile among the students. My next task, then, was to discover whether or not there existed experiential life patterns common to the informants. This process was

done in order to “characterize the way of life or orientation of a set of similarly situated individuals . . . that distinguishes them from other groups or aggregations within or across other social units” (Loftland, et al., 2006, p. 131). What I observed in the process of categorizing the students’ comments was that not only was *diversity* evident in comparing their lives, but also a *similarity* of characteristics. In other words, the informants were different from each other with regard to demographics and situational circumstances, but their interview discussions pointed to similar essential qualities. These essential qualities are grouped into three traits as evidenced by the students’ experiences: a sense of play, creativity, and non-competitiveness.

*Sense of play.* The informants recounted a variety of play experiences. They described them mostly in social terms, and many with a variety of age groups, family members, and some with pets.

- My neighborhood’s filled with little kids, and kids that are my age. Ryan’s twelve, Dani’s nine, Spencer’s seven, Thatcher is also seven, and he’s another kid on my block. They are really fun to play with. We usually play football. My – another kid my age, Jacob, he’s my neighbor. He lives right across the street from me. The biggest kid that hangs out with me is called Ben. He’s really tall, six foot four, and we love playing a card game called Yu-Gi-Oh. He’s the one who got it started, and I passed it on to Ryan, then to Thatcher. . . . It’s like the best day in the world. Friends are awesome. (Bob)
- We play at recess. Sometimes we go down to the park and me and my friend walk our dogs together. (Nicole)



- Play with my dog. We usually—I usually play tag with him. . . . Play with my brother. We usually play hide and go seek. (Bailey)

Students discussed engaging in a variety of outdoor activities. The small Colorado city that was the site of the interviews is known for its beautiful scenery and weather, and these children have been encouraged by their families to take advantage of this regional asset. The children described biking, hiking, and camping. “I usually go by Seven Falls. It’s one, that’s my favorite trail there. . . .I think it was like rainy a few days before so it’s kind of hard getting up the bank but once you get to the top it’s beautiful” (Victoria). “Yeah, behind my house, there’s all kinds of trails and stuff and me and my friends will go up and ride” (Michael). Sports were mentioned as play, primarily neighborhood football (interviews took place in the fall). Children described engaging in outdoor activities mostly in pairs and groups, and often with siblings and other relatives.

A couple of students described pretend games and activities that use the imagination. “It’s sort of like a game where we pretend we’re like animals. I usually pretend I’m a dog. . . .Like once my friend acted like a wolf. Yeah, and then at the pool we pretend that we’re sea animals” (Mickey). “Sometimes I like to play teacher at my grandma’s, cause I have my own office at her house” (Melissa). These children indicated that they engage in these pretend games often and on a regular basis.

Some students talked about playing on the computer. They described playing video and Internet games, both with friends and alone. “I like to play video games and hang out with my friends” (Bob). “And I have like Zoo, like the vet, endangered species, where you have to – like you cure the animal's problem, and then they heal, and then you go on to different levels” (Alexandra).

Students discussed information seeking activities they do for fun. “I kind of just like to go on the Internet and type in anything just randomly like I can type in dinosaur or birds” (Victoria). “I like to observe—I like to catch bugs and observe them. . . .I do it in my spare time” (Carl). Self-initiated information seeking projects will be discussed more in the Information Seeking Behavior section of this paper. However, suffice it to say that with regard to play, the comments of these children indicated that they viewed information seeking as fun and as a regular part of their leisure time.

An essential quality exhibited by informants during the interviews was that they viewed play time as important (as evidenced by how many times it was mentioned and the long and enthusiastic descriptions they gave), and that they do what they can to protect it. “[I want to] make sure I have time to go out and play. Make sure I don’t have any homework that I didn’t finish in class. . . .I never had to do that, and I do not want to do it” (Melissa). When asked the question, “what makes a good day for you?” one of Carl’s responses was, “I would get all my homework turned in and I’d play outside a lot.” In our initial discussion about doing the interview, Mickey asked, “Will there be any like homework stuff on this?” I believe her intention was to not participate if there had been “homework stuff.”

Related to the informants’ sense of play was their sense of humor. Students repeatedly gave “because they are funny” as a reason why they liked their friends and other people with whom they had relationships, as well as why they used Internet sites, read books, and watched movies.

- What do I like about my friends? Most of them are funny. They’re really, really funny. (Victoria)



- I like to be in the library, it's nice and quiet, and helping kids, and – talking to Ms. L. [the library clerk], cause we're goofy balls. (Melissa)
- My favorite movie is Superhero movie. It's really funny. It's comedy so much. It's about—it's like making fun of Spiderman, X-Men, all the Marvel heroes. It's so funny. (Bob)

*Creativity.* A characteristic that was prominent among the informants during their interviews was creativity. All but one child (Bailey) described some creative experience during the conversations, and most mentioned several (see Table 6).

Table 6

*Types of Creative Activities Engaged in by Informants*

	Drawing	Writing	Music	Building	Dancing	Photography	Technology Creations	Imaginative Play
Alexandra	✓		✓	✓				
Bailey								
Bob	✓	✓						✓
Carl			✓				✓	
Melissa					✓			✓
Michael		✓				✓	✓	
Mickey	✓		✓					✓
Nicole	✓	✓				✓		
Victoria	✓	✓				✓	✓	

Three children described books they are currently writing (Michael, Bob, and Nicole), and 3 drew pictures or diagrams to explain a point or just doodled during the interview process (Melissa, Alexandra, and Bob).

Some students mentioned their creative activities as something they engage in for the pleasure of doing them, but several mentioned the activities as a way to express their interests, or as an information seeking behavior (see the Information Seeking Behavior section). For example, both Nicole and Victoria described the information seeking experience of taking photographs of wildlife and nature in order to draw and study them.

*Non-competitiveness.* Another characteristic exhibited by the student informants was a lack of competitiveness. This quality was revealed not so much by what the

children said, but by what they did not say. Many of the students were involved in competitive activities such as sports, but rarely did they say anything about competition or winning. Even when pressed on the issue, students did not seem to have a consciousness of competition. For example, Bailey discussed her activities in cross-country running, and when asked she could explain that there was some kind of award given for placements. However, she was not sure what her placements had been. When I asked her why she participated, she said she liked running and it made her happy. The following are two conversations I had with Carl about competitive activities:

#### Tag

*Researcher:* So when you play tag, do you win? Do they win?

*Carl:* Not really.

*Researcher:* And so what makes it fun for you?

*Carl:* Because I like to run around and stuff.

#### Bike Racing

*Carl:* Sometimes we do bike races.

*Researcher:* Who wins?

*Carl:* I don't really race my – well, usually – sometimes I win and sometimes they win.

A poignant example of participating in competitive activities but not being “mindful” of competition was Michael’s passion for football, specifically the Dallas Cowboys. Michael was his alias, and it was taken from his favorite player, Michael Irwin. He described a book he was writing about this player and mentioned specifically—twice—about how impressed he was with Irwin’s humble beginnings. Michael expressed

both through his words and actions a strong affiliation with the sport and the Dallas team. Michael's real name was taken from a famous Dallas Cowboys quarterback, and for both visits he wore a Cowboys jersey. I visited Michael's home to pick up consent forms and noticed a Cowboys banner flying in front of the house. When asked what would be a good vacation, he said he would really like to go to Dallas to "see other Dallas Cowboy fans," and if he could have anything he wanted, he said he would love to play with the team at their stadium. He did express that he thought he was quite competent in playing the game himself and loved playing with his friends. "I'm really good at it. I've been playing since I can remember. Like when I was two, my dad used to always tell me, 'Go Cowboys,' and when I was two, I would say that to him and stuff." However, in all of our conversations about football, the Dallas Cowboys, and Michael Irwin, Michael did not mention scoring, winning, or a score of a game. He did mention watching a Superbowl videotape, but only in reference to the first time he became interested in Michael Irwin. According to the descriptions Michael gave of his experiences with football his interest was based on affiliation and identity, perceived competence, relationships, and the joy of playing, but not winning and competition.

Another example of "what the students did not say" was a lack of comments about Accelerated Reader™, a computer-generated reading program that claims to help educators "build a lifelong love of reading and learning in every student" (Renaissance Learning, 2008, page heading; see Chapter 2 for discussion). Accelerated Reader™ (AR) has been in use in the high socio-economic school for many years; however, only two students from that school made a comment about the program (though several students did mention enjoyment of reading and other reading activities). Bailey discussed that in

order to go to the school library “we wait until we finish a book and take an AR test and then we go turn ‘em in.” She was under the impression that she was not allowed to go to the library unless she had passed the AR test for the book she had checked out. Bailey indicated a passion for books, almost to the point of fearing a time when she could be without. She mentioned a few times in her interview about going to the public library and bookstores so she would not be without a book to read. After consulting with the library media specialist, I discovered that Bailey’s impression of library AR policy was faulty information and that the students could visit the library for other reasons. Bailey did know that she had three points for AR, but was happy with that total. Apparently the AR program was not all that motivating to her, but it did not keep her from getting the books she craved, either. The other student who mentioned AR was Mickey, who commented that she had gotten the idea for questions that she used for a self-generated exploratory research project from taking AR quizzes.

Only one student talked about winning, but it was discussed as evidence of her competence. In the same context she discussed intrinsic reasons for her activities. “I think my drawing is pretty good, of nature’s pretty good. I entered the duck stamp competition and I won, I have a ribbon for it. And also I just like to draw because it’s really, really fun” (Victoria).

### *Information Seeking Behavior*

I gathered data about information seeking behavior from the students in two ways: through the initial questions about the students’ lives, and through a specific set of questions about their information seeking experiences. With the initial set of questions, it took some children a few questions to get “down” to their life experiences. For example,

when I asked Bailey, “What makes a good day for you?” she answered, “When everybody’s happy.” I then proceeded to ask whom she meant, and if she knew what makes them happy, and what makes her happy. Other children, however, included information seeking in their initial answers.

- A good day for me is like if I get to work on the computer a lot and also if I learn something new. I like to go home to my mom and if I don't really know a word I like to ask my mom. . . . Usually whenever I'm, whenever I'm like wandering in my mind when I have to ask information about nature and stuff because I love being a naturalist about what would usually this tree, like a regular spruce tree do in the summertime? Would it change colors? What kind of pine cones will it have? I would usually ask my dad. (Victoria)
- A good day at school is a good breakfast and getting ready, no one in a grumpy mood and get – if I get to research on my things that we're doing in class, play with my friends and – yeah. (Michael)
- Good day for me at school. If we get to do fun projects like science right now, we're doing ecosystems and we get to have fishies and bugs and snails and stuff, and, again, talking to my friends at recess and at lunch and stuff and Mr. Peterson gives out candy, so that's cool, too, and read aloud, he's reading *Holes* right now and I just like listening to that. I just like listening to books. I also like reading them but I like listening, too. (Mickey)
- Usually, it's a day of no learning or – I like learning, but I mean it gets kind of boring sometimes, but researching stuff is like the best, doing projects. Holy cow,

that's really fun. It's really fun. I love it, but we play football usually at school.

It's really fun. (Bob)

These types of answers indicate that information seeking is a part of these children's lives, a behavior they look forward to and, in Bob's case, do not even think of as "learning." It is one of the things on their lists that they consider fun; it is in the same class as playing football, talking to friends, and getting candy in class.

Along with general statements about information seeking, students also described specific information seeking experiences that occurred in the courses of their lives. These experiences, along with my specific questions about information seeking episodes, formed the data for this section of the research results. The results of the information seeking behavior data collection fell into three categories: the children's information seeking styles, their interests and passions, and their described information seeking experiences.

*Information seeking styles.* Students described engaging in a variety of information seeking styles based on the type of media they used (see Table 7).

Table 7

*Information Seeking Styles by Media Types as Described by Informants*


---

	Readers and Book Users	Computer Users	TV/ and Movie Watchers	Observers	People Askers	Magazine Users
Alexandra	✓*	✓	✓			
Bailey	✓*	✓			✓	
Bob	✓	✓*	✓		✓	
Carl		✓	✓	✓*		
Melissa		✓		✓*		
Michael	✓	✓	✓			✓
Mickey	✓*	✓	✓			
Nicole	✓*	✓	✓	✓		✓
Victoria	✓	✓	✓	✓	✓	

\*indicates primary information seeking style

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They used computers, books, and magazines, watched movies and television, and observed naturally occurring events. They also asked other people. The informants used media to find information and also as a means of entertainment, though it was often hard to differentiate between the two since they seek information for fun and enjoyment.

The book readers in the group (Alexandra, Bailey, Mickey, Nicole, and Victoria) brought up the terms *reading*, *reader*, *books*, and *read* often during their interviews, and indicated that they read books both for leisure and for information seeking. These



children know what they are currently reading, what books they have read, and the personal reading styles and title selections of their family members.

*Nicole:* They're really good books. I already have *The Golden Compass* and my dad's reading it.

*Researcher:* Your dad's reading it?

*Nicole:* Yeah.

*Researcher:* Does he read a lot?

*Nicole:* He's a slow reader but he likes to read. He's pretty far into it, though, and he just started like two weeks ago. When he likes a book, he'll read it but he had a book last time that he didn't like and it took him a while to like it. . . .

*Researcher:* Do you know what it was?

*Nicole:* I can't remember what it was called but it was like a fantasy killing book.

*Researcher:* What about your mom, does she read, too?

*Nicole:* Yeah, she reads a lot and she's a fast reader.

*Researcher:* What kind of things does she read?

*Nicole:* She likes James Patterson books. She loves those. She's like read every single one of his murder books.

*Researcher:* What about your sister?

*Nicole:* She reads little books but she tries to read bigger books like *Pony Pals*. She does pretty good with those books, though. But she's not very fluent with her reading 'cause she reads out loud.

These book readers liked both fiction (usually about their area of interest, such as dog stories) and non-fiction, and one indicated an affinity for the dictionary (Victoria). Two other students (Michael and Bob) described being book *users* but there was no indication that they were avid readers, and their interview comments indicated other primary information seeking styles. These students, along with the other 5, indicated that they regularly used books to find information. Neither Carl nor Melissa described using books for information nor leisure.

All 9 informants described using the computer for information seeking. They used the computer for entertainment, creating (drawing, writing, making a website, etc.), and used the online catalog to look up books. However, only one child (Bob) indicated that the Internet was his primary information source. Eight of 9 informants tended to begin with another source and then followed up with the Internet for additional information. An example of this is Melissa's episode with worms. She recounted that every time she goes to her grandma's house she looks under her bricks to see what she can find. One day she found worms, so she put the worms in a container along with the dirt they were in, and used the Internet to find what they needed to survive. "I was happy, cause then I [didn't] have to go buy anything from the store for them, it's right in there where they're living, cause they're living in their food." Another example was Alexandra, who after reading a historical fiction book about Anastasia (the Russian princess), went on an extensive search (in both books and on the Internet) about tsars and Russian history. Victoria and Michel were difficult informants to "pin down" to a source they used primarily, since their focus was mainly on their passions and they described using books, the Internet, and

observation methods extensively to find out whatever they could about it. Computer users specifically mentioned using Google, Ask.com, Yahoo, and Wikipedia.

The television watchers (Carl, Michael, and Mickey) and movie watchers (Alexandra, Bob, Michael, Mickey, Nicole, and Victoria) watched mostly for entertainment, but they were also spurred on by their individual interests. Students tended to use television viewing as a way to “graze” on information, choosing to view shows that focused on their interests. These students chose MythBusters, Planet Earth, sports shows, Growing Up Polar Bear, E-Vet Interns, and anything on the Discovery Channel, Discovery Pets, Discovery Kids, and Animal Planet. Movie watchers also chose based on their interests. None of the interviews indicated that television and/or movie watching was a primary information seeking behavior for the students; however, it is interesting to note that two children could trace their points of passion (the informants’ first remembered experience regarding an interest or fascination they have since pursued) to a particular movie they watched, and one student mentioned that a movie was the inspiration for a book she was writing.

Four children (Carl, Melissa, Nicole, and Victoria) were observers, falling into two types: opportunistic and intentional. Opportunistic observers looked at artifacts or objects when they presented themselves. They usually stumbled across objects, mostly crawling creatures such as insects, and took them inside to observe them. Carl and Melissa were opportunistic observers, typically observing and then checking other sources for more information on their observations. Nicole and Victoria were more intentional in their observing, such as planning excursions to take pictures of wildlife.

Three students mentioned asking people for information. Two—Bob and Victoria—described asking their parents information on a regular basis. Victoria knew what kinds of questions she should ask her mom and which to ask her dad. Bailey discussed asking the public librarian for help.

Two children (Michael and Nicole) discussed using magazines. They mentioned one episode each, both for assignments. Only one (Nicole) indicated success using magazines.

Informants indicated that they used libraries for information seeking and for finding books for leisure reading. Five (Alexandra, Bailey, Michael, Mickey, and Victoria) told of experiences with regard to finding both fiction and non-fiction at either the school or public library, while Michael only described incidents of finding non-fiction for specific information requests at the public library (and did so on a regular basis). One student (Melissa) discussed wanting to volunteer in the school library, primarily for the purpose of building a continuing relationship with the library clerk. Only two students (Bailey and Victoria) discussed books from home, and they also described buying books at bookstores.

*Interests.* Students expressed a variety of interests and information seeking behaviors related to those interests. As with the information seeking behaviors, it took some children (Bailey, Carl, and Melissa) a few questions to get to the essence of their interests, but most informants began discussing them from the beginning of the interviews and spoke of them at length and enthusiastically. For example, Victoria did the sound check for the recorder with, “I’m Victoria and I want to be a naturalist.” Research

results regarding interests are categorized into: a typology of interests (see Table 8), the special case of creative interests, and the *point of passion* experience.

Table 8

*Typology of Interests as Described by Informants*

- 
1. Academics
    - 1.1. Science\*
      - 1.1.1. Animals\*
      - 1.1.2. Bugs and other crawling things\*
      - 1.1.3. Nature other than animals/bugs\*
      - 1.1.4. Astronomy and Space\*
      - 1.1.5. Dinosaurs\*
      - 1.1.6. Human Body\*
      - 1.1.7. Plants\*
    - 1.2. Social Studies
      - 1.2.1. History\*
      - 1.2.2. Geography\*
    - 1.3. Math
  2. Physical Activities
    - 2.1. Sports
      - 2.1.1. Soccer
      - 2.1.2. Football\*
      - 2.1.3. Swimming
      - 2.1.5. Hockey\*
      - 2.1.6. Cross Country Running
    - 2.2. Other physical activities
      - 2.2.1. Jumping rope
      - 2.2.2. Trampoline jumping
      - 2.2.3. Bike riding
      - 2.2.4. Cheerleading
      - 2.2.5. Tumbling
      - 2.2.6. Skating
      - 2.2.7. Camping
      - 2.2.8. Hiking#
  3. Reflective Topics
    - 3.1. Careers
      - 3.1.1 Teacher\*
      - 3.1.2. Veterinarian\*
      - 3.1.3. Naturalist\*
      - 3.1.4. Animal Trainer\*
      - 3.1.5. Career in the NFL\*
    - 3.2. Family history and culture\*
  4. Fiction Interests
    - 4.1. Humor\*
    - 4.2. Social life\*

- 4.3. Animal fiction\*
- 4.4. Historical fiction\*
- 4.5. Fantasy\*
- 4.6. Mystery\*
- 4.7. Adventure\*
- 5. Video and Internet gaming\*
- 6. Creative Activities
  - 6.1. Imaginative play#
  - 6.2. Building\*
  - 6.3. Dancing
  - 6.4. Drawing\*#
  - 6.5. Technology Creation
    - 6.5.1. Website\*#
    - 6.5.2. Stencil drawing\*#
  - 6.6. Music\*
  - 6.7. Photography#
  - 6.8. Writing
    - 6.8.1. Fiction#
    - 6.8.2. Non-fiction#
    - 6.8.3. Poetry\*#

\*Indicates interest includes information seeking/grazing experiences (or an expressed desire or need for information seeking).

# Indicates use as an expression of another interest.

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The informants usually expressed interest in more than one topic, and discussed self-initiated information seeking experiences in academic, physical activity, reflective, fiction interest, and creative activity topics. Of the information seeking interest topics, more children showed interest in academic topics than any other. Only Michael did not show an interest in an academic topic. Within academics, science was the predominant interest, and within science, animals was the favorite topic. Six of 9 informants indicated an interest in animals (Alexandra, Bailey, Bob, Mickey, Nicole, and Victoria), 3 in bugs and other crawling things (Carl, Melissa, and Victoria), and 3 in astronomy and space (Bailey, Bob, and Victoria). Two students (Bob and Alexandra) discussed an interest in social studies topics and 2 expressed an interest in math (Carl and Bailey).

All of the children described experiences that involved physical activities, but only 2 (Michael and Bob) indicated any information seeking experiences surrounding them. Seven students (Melissa, Michael, Mickey, Nicole, Bailey, Victoria, and Alexandra) had reflected on their interests and talents and were seeking information on specific careers. Bob had expressed an interest, and had experienced episodes of information seeking about his family history and background.

The readers and television/movie watchers in the group discussed their fiction interests. Some of these were in their areas of academic interest (animal fiction and historical fiction), but they also branched out into humor, fantasy, mystery, adventure, and fiction about social life. The video and Internet gamers (Alexandra, Bob, Carl, and Victoria) had various reasons for their interest in these activities. Alexandra played games to learn about animals and about being a veterinarian, Bob both played for fun and



sought information about his games (called “cheats”), and Carl and Victoria did it just for fun.

Interest in creative activities proved to be a special case in relation to the other interest groupings. As previously mentioned, all but one of the students (Bailey) described personal creative experiences. However, the manner of the creative engagement fell into three categories: being creative for the enjoyment of the activity, seeking information about the creative activity, and using a creative activity as an expression of another interest. Dancing was the only creative activity done just for the enjoyment of it. Music was mentioned as both an interest and a topic for information seeking, as was building. Imaginative play, photography, fiction writing, and non-fiction writing were all activities used as expressions of an interest, but generated no information seeking on their own. Drawing, website creation, computerized stencil drawing, and poetry were all creative activities that both generated information seeking about the activities themselves, as well as were used by the students as creative expressions of other interests.

I observed an experience in one of the early interviews that I found was to be common to all 9 of the informants; in fact, after finding this experience to be true for 3 informants in succession I went back to the other informants to inquire as to whether they also had experienced it. The experience, which I’ve termed *point of passion*, is the informant’s first remembered experience regarding an interest or fascination they have since pursued. Not only were all of the informants able to remember a single interest-igniting experience, but 6 of them described having this experience at the age of four or

five. The other 3 informants had the experience between seven and nine years of age (see Table 9).

Table 9

*Point of Passion Experiences as Described by Informants*

Student	Point of Passion	Age	Others' Involvement	Others' Follow up
Alexandra	Got a dog as a personal pet.	7 years old	No discussion	No discussion
Bailey	Noticed book about Saturn at the bookstore.	9 years old	Accompanied by mother.	Mother purchased this book and encouraged purchase of another.
Bob	Teacher showed movie about the ice age and the people from the time.	9 years old	Teacher led discussions/lessons about the unit.	Parents took him to New Mexico and Washington DC. Allowed purchase of memorabilia. Discussed family history.
Carl	Caught bugs (Box Elder) at recess in preschool.	4 years old	Was with friends.	No discussion
Melissa1	Began playing teacher with brother as student.	5 years old	Parents and grandma told her she was good at it.	Grandma provided an office for Melissa.
Melissa2	Noticed lots of ladybugs in yard. Caught many and put in container.	5 years old	Parents also observed ladybugs and expressed excitement.	Parents and grandma allowed more creature hunts.
Michael	Watched movie of Cowboys 1995 Superbowl year.	4 years old	Dad suggested he watch it.	Dad also involved in interest. Grandpa took Michael to library for research.
Mickey	Got a goldfish and a dog. Dog was injured. Watched E-Vet Interns.	5 years old	No discussion	No discussion.
Nicole	Grew up with pets. Learned about careers in pre-school and decided to be a vet.	4 years old	Mother told stories of past pets.	involvement with mom's friends' pets. Training friend's dog.
Victoria	Played "dinosaur" in kindergarten. Watched movie on television about dinosaurs.	5 years old	Friends involved in kindergarten play. Dad purchased DVD of same movie.	Dad purchased more movies, games, books. Sister read dinosaur books to her. Mom enrolled her in naturalist classes. Dad took her on a "Dinosaur Road Trip."

Most of the children's point of passion experiences occurred at home, but 4 students (Bob, Carl, Nicole, and Victoria) described incidents at school. One child (Bailey) described an experience at a bookstore. Six informants described involvement by a parent, parents or a grandparent in the incident, 1 by a teacher, and 2 by friends. Six students discussed follow-up activities by the adults in their lives. Victoria described an elaborate "Dinosaur Road Trip" she took with her father:

I showed interest. . . . So my dad got into that and he started in Wyoming with the Wyoming Science and they were a lot listing kids, kids dig, but we had to start it soon because it was gonna end. . . . I'm like oh, I gotta do it, I gotta do it, I gotta do it! Yeah, there was a whole day and a half day. The half day is kind of, it's kind of like a full day but it's pulling the two parts first to go out and dig and then you go into the building and you actually start and you do all these activities with one, some of the scientists. . . . I found one bone and a whole bunch of plants. . . . See and then when we went to the museum I was real excited because I got to see the only apteroderox in the USA. (Victoria)

*Information seeking experiences.* The specific question I asked about information seeking episodes was, "Think of a time recently when you wanted or needed to find out information or learn something either for school or for your own interest. It might have been at home, at school or anywhere else. Could you tell me about what you remember of that time?" (adapted from Shenton & Dixon, 2007). The question I asked if students did not respond to the first question was, "Do you go anywhere or do anything to look up information? Where and what about?" After these initial questions I asked students if

they could think of another time that was different from the first. In this way, I attempted to capture at least two information seeking experiences from each informant.

Eight of 9 informants' responses to the first information seeking question was immediate, and sometimes students offered more than one experience without the follow-up questions. I had been concerned about this since the response from the non-identified intrinsically motivated student in my pilot had not been immediate, requiring explanation and extra questioning. There was only one student (Melissa) who hesitated, and I believe it was because she began discussing her family situation. I thought it best under the circumstances to steer the conversation in another direction, so I asked her the clarifying questions, "Do you go anywhere or do anything to look up information? Where and what about?" She was then able to focus quickly on other information seeking experiences. Again, the immediate and clear responses to this line of questioning were an indication of a mindset of information seeking, as well as an abundance of experiences from which to choose.

Once I collected the information seeking experiences from the transcripts into a free-standing node in NVivo 7™, I classified them according to the categories in Bilal's Taxonomy of Tasks (2002a). Those categories are task type (open-ended versus closed), task nature (complex versus simple), and task administration (fully assigned, semi-assigned, or fully self-generated). In addition, I added another dimension to the categorization: task relationship, or whether or not the episode was experienced with a group (more than one) or as an individual. I also recorded the students' determination of the success level of the experience, as well as their preference between the two experiences they had shared with me.



In the interview I had asked students to describe two information seeking experiences, and then asked them to choose the experience they liked best. It could be reasoned that since students were self-reporting their experiences that they would choose to report on those they enjoyed the most. Generally this was true, but in two cases students reported on memorable experiences that were at least partially unpleasant to them. Since the study focuses on intrinsic motivation, I chose to describe and analyze those experiences for which the students expressed a preference.

Though the pool of experiences was quite varied in structure and purpose, 6 of 9 students preferred school research assignments. In fact, 3 students preferred the same Colorado city assignment, and another 2 preferred a similar Colorado region assignment. These two assignments were conducted in different classrooms, and in the case of the regional assignment, in different schools. The structure of the assignments was very similar, however.

The following are brief descriptions of the six preferred assignments:

1. Colorado Cities—closed, simple, semi-assigned, and group.

This was an assignment required by all fourth grade students in the high socio-economic school. Students were assigned to work in groups. They were asked to choose a Colorado city, and then report on assigned aspects of it. They were allowed to govern their own groups and determine who would do which aspect. They could use any resource but were also required to write to the city's Chamber of Commerce. Some of the aspects required specific information, others were more flexible. All students were required to write a structured report and do a class presentation, but could choose whatever visual they wanted for the presentation.

Carl chose this as his preferred experience because he got to do a lot of information seeking and because he enjoyed making a pamphlet. Bob preferred it because he got to work in a group and choose his aspect. Nicole also chose this experience because she liked working in a group, but also mentioned that she had been to the city (it was relevant to her).

## 2. Colorado Regions—closed, simple, semi-assigned, and group.

The Colorado Region assignment was conducted in fifth grade and was very similar to the Colorado Cities assignment. Groups were assigned and members allowed to choose different aspects of the region. The fact-finding process was more open for this assignment than the city assignment, however, and students were allowed more choice in presentation style.

Alexandra preferred this experience because it was a group assignment, “because when you’re with a group, they give you more ideas and what they think about it.”

Victoria preferred it because she enjoyed creating the slide show and because she liked the topic.

## 3. Olympics Assignment—open, complex, semi-assigned, and individual.

Mickey was given an assignment by her physical education teacher to find information about a country participating in the Olympics. The teacher handed out flags that indicated to the child the country she was to research. Mickey was assigned Germany, and she could choose any information she wanted to report. She used the Internet and got information from watching the Olympics on television. She then turned in a written report on her findings. She preferred this assignment because she loves

looking for facts, the topic was interesting, and because the Olympics were on television at the time.

4. Teacher Experiment—open, complex, fully self-generated, and individual.

While playing teacher, Melissa wanted to find out how to keep her “student” (her brother) more focused during her lessons. She experimented with different strategies, and found that offering him a surprise if he did a good job worked. Melissa preferred this experience because “I have more interest in doing that, cause that’s been like my thing my whole life.”

5. Michael Irwin Book—open, complex, fully self-generated, and individual.

Michael was writing a book about his idol, Michael Irwin. When he came to the end of the third chapter, he decided he needed more information. He described his frustration at trying to find the right kind of information on the Internet, but then his grandfather took him to the public library. There Michael found a book about Michael Irwin that contained exactly the information he needed. He told how he put the information in his own words so that he would not be plagiarizing. He preferred this experience over a school assignment he had described because the Michael Irwin book experience had no time limit.

6. Finding a Book—open, complex, fully self-generated, and individual.

Bailey described a time when she needed a book to read. She went to the public library but did not have any ideas of what to read that day, so she asked the librarian if she knew of any good books. The librarian showed her a book about training dogs. Bailey chose that book, checked it out, and read it. She preferred this experience because she really loved the book. Bailey has had a long-time interest in dogs.



Students' preferences included both open and closed questions, both simple and complex experiences, and included both questions that were semi-assigned and some that were fully self-generated. None of the preferred information seeking experiences was fully assigned. Five students preferred group experiences, while four preferred individual.

The reasons students gave for preferring one experience over the other were (some children gave more than one reason):

- Relevance or interest in topic (5)
- Working in a group (3)
- The experience of the information seeking itself (2)
- Creating the final product (2)
- Choice of aspect within topic (1)
- No time limit (1).

### *The Drawing Activity*

I collected most of my data from the interviews; however, the drawing activity also provided some valuable information. Drawing is considered to be an effective means of inquiry for children because, especially for young children, drawing can be more comfortable than talking. By the same token, this type of data collection has been used as a measurement of intelligence and personality, as well as a means of communication, expression, and problem solving (Malchiodi, 1998).

Discussion of the art activity for this project includes the description and administration of the activity, the description of the art evaluation, and an account of the results.

*Description and Administration of the Art Activity*

Once the interviews were completed, I arranged for the art activity with the students, their teachers, and the library media specialists (who procured a room for the activity at two schools). The activity itself consisted of giving the students two topics to draw. The two topics were: “what makes a good day for me,” and “a time when I sought information.”

I administered the drawing activity four times at the three sites. The first administration was to 6 informants at one school, the second was to 1 student at the second school, and the third was a return to the first school to administer the activity to a student who was absent for the first visit. The fourth administration was at the final school to 1 informant. Students were led to a table(s) which contained a pre-labeled piece of cardstock for each student, a box of 96 crayons, a box of 12 colored pencils, a pack of 16 markers, 2 regular pencils, and 2 slim black markers. Students were told they would have 20 minutes for each drawing and that if they needed a little more time they would have it. Then, they were told the first topic. Once the student(s) were finished, they were given another pre-labeled piece of cardstock and told the second topic. After the second 20 minute period, I thanked the student(s) and walked them back to the classroom(s) (see Appendix P for protocol).

The administrations went smoothly and without incident, except in the case of one student, Melissa. Melissa was not finished at the end of the first 20 minutes, was given a few minutes extra time, but began the second topic picture without finishing the first picture. She hurriedly finished the second picture and asked to finish the first with the rest of the time. When given the opportunity to finish the second picture, she declined. Her

first picture was of her family all together at Christmas. Her second picture was of her teacher experiment with her brother. A few other students took a couple extra minutes to finish their drawings.

### *Art Evaluation*

The art evaluation process was adapted from a procedure established by Amabile (1982b) to evaluate creativity in authentic art. This procedure has been used in other studies concerned with children's art and creativity (Amabile, 1979, 1982a; Amabile, DeJong, & Lepper, 1976; Koestner, Ryan, Bernieri, & Holt, 1984). Amabile established three guidelines for the artistic task:

1. It should not depend heavily on specialized skills.
2. It should be based on an open-ended topic and allow for flexible responses.
3. It should lead to a product that can be evaluated.

The art tasks for the current study required students to draw and did not depend on specialized skills, were based on open-ended questions that allowed for flexible responses, and led to a product that could be evaluated.

Amabile (1982b) also established guidelines for the assessment procedure:

1. The judges should have experience in the domain of the study.
2. The judges should make evaluations independently.
3. The evaluations should be in other dimensions as well as in creativity.
4. The judges should not be asked to evaluate against some high, absolute standard as exhibited in similar "great works."
5. The judges should view the works in a different random order, and each judge should consider the artistic dimensions in different random orders.

The judges for the current study were three art teachers from a neighboring school district. They were all experienced in teaching art to this age group, as well as having received education themselves in the domain. I delivered the evaluation forms and the pictures to each evaluator separately, bringing the pieces to the first evaluator, picking them up from her, then delivering them with new forms to the second, etc. Each judge was paid \$50.00 for her evaluations.

The evaluation forms (see Appendix Q) that I prepared for the judges contained a scale for each of nine art dimensions. The scale range was very poor, poor, average, good, and very good. The dimensions were for creativity (novel idea, effort evident, detail, complexity, variation in shapes, and novel use of materials) and for technical goodness (organization, neatness, and expression of meaning). These dimensions were among those listed in the artistic clusters of creativity and technical goodness evaluated in other *creativity in art* studies (Amabile, 1979, 1982a; Amabile, DeJong, & Lepper, 1976; Koestner, Ryan, Bernieri, & Holt, 1984). They were chosen for this study based on their appropriateness for the age group and the particular art activity.

Judges were given the particulars regarding the administration of the art activity both in writing and verbally, but were not given specific information on the purpose of the activity nor of the study. On the forms and in the verbal instructions, the directions stated, "According to your professional judgment, please evaluate each student's work as it would compare with the average fifth grade student in the same situation." Judges were informed that the students would not see the evaluations. Each judge had a set of evaluation forms with the dimensions arranged in a different order from the other two judges' forms. The students' pictures were given to the three judges in a different order.

In these ways the art activity and evaluation were designed to meet the guidelines for authentic art evaluation as established by Amabile (1982b).

### *Results*

The results of the art activity are here presented in two categories: my observations of the drawings, and the art evaluations from the professional judges.

*My observations.* My observations of the drawings were not based on specialized art skills (I have none), but on my perspective as a researcher of the students' lived experiences. I observed the drawings to see if and how these experiences were depicted. My observations are arranged into the following categories: interests, information seeking styles, scenes of playfulness and non-competitiveness, people and animals, space and proportion, and colors.

The students' interests as indicated in their interviews were depicted in their drawings. Carl drew pictures of his favorite things to do in a circle around the page. Both Mickey and Nicole (interest in animals and being a vet) featured themselves with happy dogs. Michael showed himself and a friend playing catch. Some pictures, both the "good day" and the "information seeking episode" pictures showed books and computer screens displaying titles and pictures of students' passions and interests. An example is Victoria's computer screen featuring a dinosaur, and Alexandra's room containing a DVD with her favorite movie across the room from her favorite book.

The students' pictures also depicted their information seeking styles. Eight pictures depicted computer usage, 6 showed books, 2 pictured television sets, and 1 showed a nature hike. The pictures tended to illustrate the students' primary information seeking styles, though this was not always the case. For instance, Bailey's information

seeking picture shows a computer in the library though her primary information seeking style is using books as indicated from her comments in the interview.

Children's pictures depicted many play and leisure activity scenes, and none of the pictures illustrated competitive or winning/losing situations. In my pilot of the art activity I had an entire class of students draw "a good day." One of the students drew himself crossing the goal line of a football field. This could be an indication of a focus on winning, though it could also be a picture of the student's perceived competence or wish to be competent. Since the student had a high score in extrinsic motivation, it seems likely the picture reflected the extrinsic motivator of competition. In contrast, the informants' drawings illustrated activities such as playing catch (Michael and Bob), playing fetch (Mickey), reading (Alexandra, Mickey, and Nicole), hiking (Victoria), and using the computer (Victoria and Bob). The activities depicted were both individual and cooperative in nature.

The depiction of people and animals varied from picture to picture. Neither of Bailey's nor Carl's pictures contained people or animals. Both Nicole and Mickey pictured themselves with a dog. Four pictures were of the informant seeking information alone (Mickey, Alexandra, Bob, and Victoria). Three pictures showed the informant with friends (Alexandra, Michael, and Nicole). Four students (Victoria, Michael, Bob, and Melissa [2]) included family members in their pictures.

The use of space and proportion was noticeable in some pictures. Seven drawings (Bailey, Bob [2], Mickey, Michael, Alexandra, and Victoria) were arranged with a large amount of space between items. Victoria's picture contained a great deal space of around a small picture of herself using the computer. Proportion was also an interesting feature

in some pictures. Four students (Alexandra, Carl, Bob, and Bailey) showed disproportionately large computer screens, and Michael drew a very large picture of the public library.

The colors students used were generally bright and featured yellow suns and blue skies for outdoor scenes. Three students (Mickey, Bob, and Michael) drew outdoor scenes with several colors, while three students (Mickey, Alexandra, and Nicole) used bright colors to depict their bedrooms. Three students (Melissa, Bob and Carl) drew pictures with only pencil and one or two colors.

The pictures varied in style, but the scenes depicted were consistent with information retrieved from the interviews for each student.

*Art evaluations from the professional judges.* Once I collected the evaluation forms from the three art evaluators, I gave values to the scale scores, using 1 for *very poor* to 5 for *very good*. The dimensions were grouped by creativity and technical goodness, and the mean scores calculated. I found that there was a discrepancy in scores between the two pictures for 6 of the 9 students. I conjectured that the reasons for the discrepancies were: a) students were tired for the second picture (they did the drawings back to back), or b) because students were more inspired by one topic than the other. Because of the discrepancies and the reasons behind them, I decided to use the students' "best work" for the calculations. The "best work" was determined as the picture receiving the highest total score from all three judges for each student.

Using the score of 3.00 as average, 8 out of 9 informants scored above average in both creativity and technical goodness based on the composite mean scores for the students' "best work." The range for the 8 above average composite scores was 3.11-4.61

in creativity, and 3.22-4.44 in technical goodness. Bob was the only student who scored below average on either of the composite mean scores for creativity and technical goodness, and he scored below average for both (creativity 2.72, technical goodness 2.33).

A Cronbach's alpha was calculated to test the reliability of the judges' scores for each of the artistic dimensions in the art evaluation. Internal consistency was measured for all three judges' evaluation scores for each of the two drawings produced by the students. The conventional score of alpha 0.7 or greater (indicating a reliable set of responses; Hinton, pp. 302-303) was found for all but the "novel idea" dimension for Picture A, and for all the dimensions for Picture B. The findings indicate that for all but one set of evaluations on one dimension for Picture A, the evaluation scores for the artistic dimensions displayed an internal consistency across all three judges (see Table 2).

Upon conclusion of the drawing activity, I determined not to conduct the environment observation. I based my decision on two factors: a) the data collection had reached saturation, and b) the environment observations have proven to be an inconvenience in some classrooms. *Saturation* is the condition when "new observations cease to add much to previous ones" (Krathwohl, 1998, p. 260). Of course, more observations might have given me more described experiences; however, I believe they would have been of the same type, if not a repeat of the same experiences as those I had gleaned from the interviews and drawing activity. With regard to doing the environment observations in the classrooms, as mentioned previously one of the teachers was not amenable to giving up time for the research and I doubted that she would have welcomed my sitting in on her classroom. There were also two classrooms with more than one



student informant. Going through the contents of the students' desks as planned would have proven to be disruptive to those classes. Because of these reasons, I decided to not conduct the environment observations.

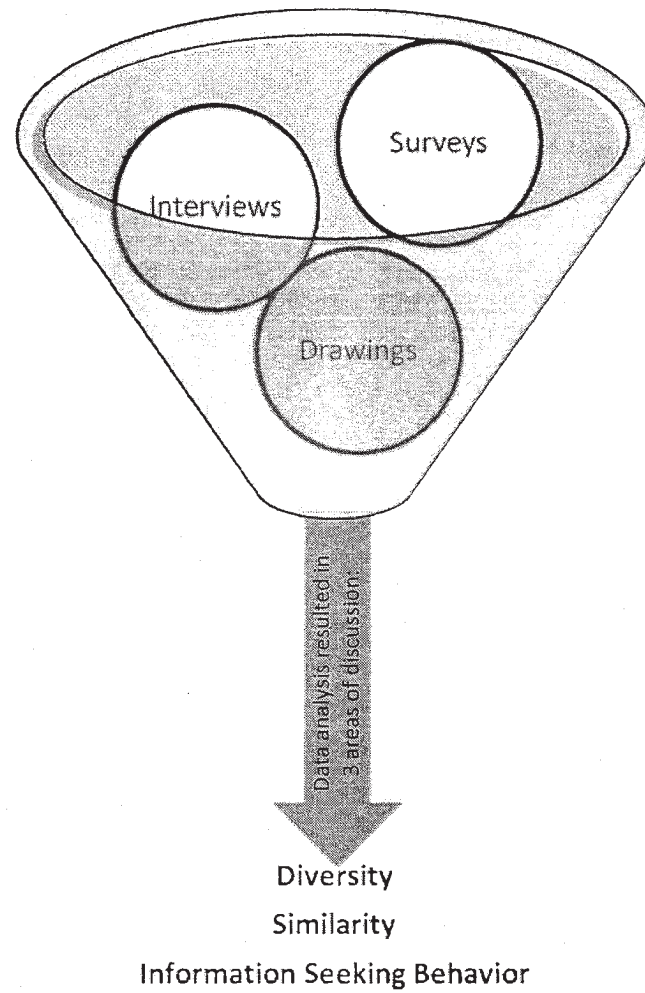
### Data Analysis

The Interactive Model of Data Analysis (Miles and Huberman, 1994) guided the process of analyzing the data for the current study. Miles and Huberman define data analysis in terms of three flows of activity all happening concurrently, even while the data are being collected (see Figure 2, Chapter 3). They are “data reduction, data display, and conclusion drawing/verification” (p. 10). *Data reduction* is the process of summarizing, selecting, simplifying, coding, or abstracting the data. This process happened from the beginning of data collection and occurred until the end of the project. I used various tools including a notebook for each informant, the interview transcriptions, field notes and outlines, as well as NVivo 7™ to perform data reduction. Care was taken to highlight or capture the reductions within the original notes (such as making notes in the margins of the transcripts) so as to not “strip the data at hand from the context in which they occur[red]” (p. 11). *Data display* is the visual representation of the information gathered that makes comparisons, contrasts, and conclusions easier to perform. I used tables, graphs, webs, and tree nodes. Most were handwritten, but some were developed in Excel™ and NVivo 7™. This step was concurrent with the others in addition to being performed at the conclusion of data collection. In this way it helped in the decision-making process of data reduction as well as in drawing conclusions and verification.

*Conclusion drawing and verification* is the third concurrently occurring activity in data analysis. Usually, it is thought that this step is performed at the end of the data analysis process, and of course it is among the final steps. However, I began noting possible patterns, propositions, and explanations as the data were being collected in order to begin deciding what they meant. I held loosely to these conclusions and changed them as more data were gathered. For example, the first couple of students I interviewed were the youngest children in homes with siblings who were considerably older. I originally thought this might be a pattern but later found it was not. Verification is, in the same way, a continuing activity. I manifested this process through note-checking, discussions with colleagues, going back and requestioning informants on new issues, and searching for similar results in other studies. The *point of passion* stories are an example of verifying a new issue by going back to informants to see if they had similar experiences, and by finding other *point of passion* stories among adults who are lifelong learners.

Weiss (1994) defines two approaches to qualitative analysis and reporting: issue-focused and case focused. *Issued-focused* analysis and reporting deals with the issues as revealed by information collected through the informants, whereas the *case-focused* approach hones in on the individual informants themselves. In the current study, I use an issue-focused approach. In this way I describe “what has been learned from all respondents about people in their situation” (p. 153). While I had theoretical questions in mind as I collected data, other issues emerged naturally as the students reflected on their lives and as I made observations. My analysis and reporting include discussions of these issues that emerged as well as the theoretical questions I originally considered. The

issues discussed are: informants' diversity, their similarity, and their information seeking behavior (see Figure 10).



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*Figure 10.* Data analysis resulted in three areas of discussion: diversity, similarity, and information seeking behavior.

### *Diversity*

As previously described, the issue of diversity was one of the first to emerge as I collected data. Through data reduction and data display this issue was confirmed and verified as a topic emerging from the study. The issues within the global area of diversity discussed here are home and family life, school life, and culture.

#### *Home and Family Life*

The informants lived in several different socio-economic situations, and in different family configurations. These two components of diversity provide the basis for the following discussion.

*Socio-economic issues.* With regard to socio-economic issues, was there a correlation between families with higher incomes and students who were identified as intrinsically motivated in the study? There was a higher percentage progression of students who returned informed consent forms from the highest socio-economic level school (73%), then the middle (58%), and finally the lowest (32%). It is reasonable to expect that households with a lower income may contain only one parent or parents who are working multiple jobs, creating a “complicated and imperfect patchwork of childcare” (Ascher, 1988, para. 3). This could have easily led to a “falling through the cracks” of returned informed consent forms for this project in the lowest socio-economic school. Far slighter, however, was the difference between the percentage of students taking the survey and those identified for further research from each of the three schools (highest socio-economic was 10%, middle was 8% and lowest was 6%). This would suggest that while the students from lower income homes were less likely to return their informed consent forms, they were only slightly less likely to be identified as distinctly intrinsically

motivated for information seeking. It is important to note, however, that neither the percentage of students taking free and reduced lunch in the three schools, nor the number of bedrooms and computers in students' homes are good indicators of the income level of the family of any individual student in the study. The use of the purposive sample was intended to provide as diverse a sample of students as possible from the targeted district, not to make conclusions about socio-economic levels with regard to intrinsic motivation for information seeking.

A different socio-economic question would be the correlation of material access at home to intrinsic motivation for information seeking. Only two students (Bailey and Victoria) mentioned books from home in their interviews, yet 7 of the students were identified as readers and book users. Students were asked about the number of computers and televisions in their homes. Answers ranged from 0 to 3 computers and 1 to 5 televisions, with most students having 1 or 2 computers, and 2 or 3 televisions. However, the number of computers in the home was not correlated with students who use the computer as their primary information source (e.g., Bob was indicated as a primary user of the computer and he described having 2 computers, but Alexandra was not indicated as a primary computer user and she discussed having 3), nor with the students who were indicated as television and movie watchers (e.g., Bailey described having 3 televisions at home but preferred not to watch them). There was no association found between access to materials at home and intrinsic motivation for information seeking in this study. If access to materials at home is an indicator of socio-economic level, then this finding reinforces the notion that socio-economic level was not a predictable indicator of intrinsic motivation for information seeking in the current study.

*Family and “anchor” relationships.* The family configurations of the informants varied in the study. While most of the students were living with both their mother and father (Alexandra, Bailey, Bob, Carl, Michael, Mickey, and Nicole), Victoria lived only with her mother and Melissa was living with neither. What the students did have in common, however, was at least one information seeking “anchor” relationship in their families. The 7 children with both mother and father at home spoke often and positively about their parents. Some mentioned special outings and occasions with them (as well as with grandparents) but all spoke of at least one parent as being active in their daily information seeking lives. Bailey mentioned her mother more than once with regard to her support of finding and/or buying books. Nicole described an elaborate “assignment” by her grandmother involving an information seeking excursion to find and photograph wild animals. Though Victoria lived only with her mother, she spoke of both her mother and father, and actually described more information seeking experiences with her father. While Melissa’s family life was described by her aunt as previously unstable, she described seeing her father regularly through the years and always at appointed visitations. Her information seeking “anchor” relationship, however, was with her grandmother. She was the one who provided Melissa with an office for her teacher role-playing, and it was at her house that Melissa checked under the bricks for crawling things. Melissa showed great concern that her grandmother might be moving out of state.

These results support the research that relatedness plays an important role in intrinsic motivation; in fact, is one of the three major psychological needs posited in Self-Determination Theory (in the Cognitive Evaluation Theory) as the basis for intrinsic motivation (Ryan & Deci, 2000b). While autonomy and competence are considered

essential, “a secure relational base appears to provide a needed backdrop—a distal support—for intrinsic motivation, a sense of security that makes the expression of this innate growth tendency more likely and more robust” (Deci & Ryan, 2000, p. 235). Not only did the students’ supportive family relationships provide a secure base for their autonomy orientation (closely associated with intrinsic motivation, see Self-Determination Theory—Causality Orientations Theory section, Chapter 4), their “anchor” relationships provided a support for their information seeking behavior in particular.

### *School Life*

Not only were there differences in the family and home lives of the students, their school lives varied as well. There were students who had been identified as Gifted and Talented (Alexandra, Mickey, and Victoria), while 1 child (Bailey) was receiving special services at school to help her with her reading disability. Most of the children did not describe problems with academics; however, the data indicated (student interviews and parent/teacher discussions) that 2 were struggling with school work (Bob and Carl). Three areas—perceived competence, getting along in school, and special services—are discussed.

*Perceived competence.* As reported earlier (see Data Collection Methods and Results section) informants perceived themselves as competent in a wide variety of non-academic as well as in academic areas, including describing success and competence in information seeking itself. Students were *not* all competent in reading, as one might expect of those students who are intrinsically motivated information seekers. Such a link has been suggested between perceived reading competence and information skills



(Arnone, Reynolds, & Marshall, 2008). Early SDT research shows that it is perceived competence (Vallerand & Reid, 1984) that fosters intrinsic motivation, and this study suggests that perhaps it is this *sense* of competence, rather than the *area* of competence, that has influenced the informants' autonomy orientation in general. It is the students' perceived competence with regard to information seeking specifically that has contributed to their intrinsic motivation in this particular domain as well.

*Getting along in school.* One might expect that students who are intrinsically motivated for information seeking would be situated to "get along" well in school. However, just how much information seeking do students actually do in school? Current standards and testing procedures often skew attention away from learning in the broad sense (often manifested through information seeking) and reduce education to what is being tested (Sheldon & Biddle, 1998). The more emphasis and use of testing and grades, the more extrinsic the classroom becomes. "In other words, reliance on tangible rewards or punishment in the classroom not only depresses important forms of learning but also thwarts the goal of creating self-motivated lifelong learners" (p. 170).

Carl, in the current study, had just gone through the ordeal of facing the consequences of not doing his homework. Carl's teacher, not Carl, related to me that she and Carl's parents had recently met and decided on a course of action to get Carl to do his work and improve his grades. The teacher also related to me that she would have guessed Carl to be the *least* intrinsically motivated student in her class. What I discovered in my data collection was that Carl was indeed *intrinsically*, but not *extrinsically* motivated. In other words, if the homework was not enjoyable to him he would not do it. His teacher also related to me how Carl did take part and participate in class whenever they did

certain activities, such as science experiments and math problems, but otherwise would keep silent. When coming and going from the classroom, I observed the teacher's interaction with Carl and found that she tended to badger and cajole him into answering, often using sarcasm to get him to respond. Yet, when Carl and I discussed what made a "good day" for him, he included school, saying, "I think I would get straight A's in school and I would get all my homework turned in and I'd play outside a lot." Carl's teacher related to me that the parent/teacher plan was working and that Carl was now doing his homework. Carl had apparently gotten the message that one of the things he valued the most, his play time, was influenced by his response to the extrinsic motivators of grades and doing homework.

Bob's experience was a bit different. He had trouble focusing on lessons, so could not complete the work in school and as a consequence had to do it at home. I suspect after interviewing Bob, his inability to focus resulted from a lack of interest in the topics covered in the classroom. He had not had the "revelation" Carl had experienced, but did express perplexity that though he was good in certain subjects (including information seeking) he was one of the slowest in his class in getting his work done. When I asked him how he felt about that, he said:

Kind of bad, but I still love looking up stuff. That's what my mom said. She said – I told her that I love looking up stuff, and she's like, "Yeah, of course. I mean, you are the slowest kid in the class of doing stuff, but you can still love looking up information."

The support of Bob's mom was helping him to maintain his sense of competence, though it seemed to me that it was beginning to wane, at least in the classroom.

In the few years I have been studying intrinsic motivation for information seeking I have talked with several adults that related stories like Carl's and Bob's to me. They eventually learned to do what was expected of them in school, then used their free time at home to explore topics of interest. In other words, they maintained their intrinsic motivation for information seeking by enduring school, and then looking for what they really wanted to know on their own time.

*Special services.* There have been studies with regard to intrinsic motivation and students who were identified either as gifted or as learning disabled, as were some of the students in the current study (Alexandra, Mickey, Victoria, and Bailey). The research indicates that the principles of Self-Determination Theory pertain to these special populations equally as well as they do to students in general (Deci, Hodges, Pierson, & Tomassone, 1992; Miserandino, 1996).

It is my experience that in some schools students in these special populations are sometimes excluded from information seeking experiences such as research projects and even library period, in order to make time in their schedules for special services. Students identified as learning disabled are sometimes considered incapable of these activities, and gifted students are considered not in need of these experiences. Information seeking experiences are sometimes deemed "extra and non-curricular." Evidence from the interviews and art activity in the current study indicate that informants who required special services were fully engaged in information seeking in their classrooms and libraries (though Bailey's book checkout habits were limited by her misunderstanding of the AR program). They all described school information seeking episodes in which they participated successfully. This is data that contributes to an understanding of the

experiences that have fostered the informants' intrinsic motivation for information seeking.

### *Culture*

Most of the students were homogeneous with regard to ethnicity and race; however, one informant was of Filipino descent (Bob). Bob's family and origins were important to him, as evidenced when he took the time to tell me how his paternal grandparents migrated from the Philippines to San Francisco where his father was born. One of his primary interests was history, including American history of the West and Southwest, which seemed to stem from the family stories he had heard. He spoke with loving emotion when describing his family. He also indicated the importance of relationships he has with friends, particularly two who had been lifelong companions.

Ethnicity and culture have been topics of study in the area of intrinsic motivation. In a project that compared the intrinsic and extrinsic motivational orientations in the classroom, Lepper, Corpus and Iyenger (2005) found that the line between intrinsic and extrinsic motivators, especially with regard to pleasing the teacher, was not as distinct for Asian American students as it was with the Caucasian children in the study. In other research, extrinsic motivators were found negatively to influence intrinsic motivation (Amabile, DeJong, & Lepper, 1976, Deci & Cascio, 1972, Lepper & Greene, 1975, Ryan & Deci, 1985b), presumably because people feel controlled by these circumstances and therefore experience a shift in their perceived locus of causality from internal to external. However, a positive correlation between intrinsic motivation and pleasing the teacher was indicated for the Asian American students (but not for the Caucasian students) in the Lepper, Corpus and Iyenger study. The researchers posited that "children in more

interdependent contexts may see useful supports that serve the needs of the family and society” (p. 193).

SDT research also indicates differences between cultures with regard to psychological needs satisfaction and intrinsic motivation. Research points to the *universality* of the connection between need satisfaction and intrinsic motivation, however with different emphasis depending on the culture. There seems to be a tension between the need for autonomy and relatedness. Autonomy is seemingly the dominant need for people to maintain intrinsic motivation in individualistic societies and relatedness is the dominant need in collective societies (Chirkov & Ryan, 2001; Deci, Ryan, Gagne, Leone, Usunov, & Kornazheva, 2001, Hayamizu, 1997; Yamauchi & Tanaka, 1998).

Bob described several close and supportive relationships in his life, as well as several information seeking episodes he experienced with his friends and his family. He also indicated that one of the reasons he chose the Colorado City assignment as his preferred information seeking experience was because he was able to work in a group. The close and supportive relationships Bob described, both in general and specifically in reference to information seeking, not only suggest that his psychological need of relatedness was being met, but also that it was the dominant force in fostering intrinsic motivation for information seeking in his life. It seems likely that his ethnicity and family culture played a part in this phenomenon.

By examining the diversity issues presented here, it is revealed that being an upper elementary school child who is intrinsically motivated for information seeking does not necessarily mean fitting the “mold” of being a wealthy, white, high-achieving

student with doting parents. While some children did fit this stereotype, others came from lower socio-economic and cultural backgrounds. Their family configurations also differed, but all informants described “anchor” relationships that helped to facilitate their information seeking behavior. All student perceived themselves to be competent, but in a variety of areas; and while some students received special services in school and some did not, these services did not appear to interrupt nor impair their information seeking experiences. Culture seemed to play a part in the importance of relatedness as the dominant need for intrinsic motivation in the life of the minority student.

#### *Similarity: Commonalities of Student Experiences*

In searching for experiences that illuminate the essence of being an upper elementary school student who is intrinsically motivated to seek information, I studied a small number of informants through interviews and art activities. During data collection and analysis there began to “develop patterns and relationships of meaning” (Creswell, 2003, p. 15) that led to the identification of three essential qualities exhibited by the students in the study: a sense of play, creativity, and non-competitiveness.

#### *Sense of Play*

During the process of interviewing, I was struck from the beginning by the amount of time students spent talking about play. My first question, “What makes a good day for you?” nearly always elicited a response about play. I pursued students’ responses in this area, and soon discovered that the love of play was a salient quality possessed by each of the informants. Students described many play experiences, mostly social, many outdoors, some taking place indoors using various types of media, and many involving information seeking. They also described protecting it, especially at school.

Research indicates that play is an important component in the development of healthy individuals. It “increases affiliation with peers, releases tension, advances cognitive development, increases exploration, and provides a safe haven in which to engage in potentially dangerous behavior” (Santrock, 2006, p. 281). Interestingly, aspects of play can also be associated with intrinsic motivation. For example, Berlyne (1960) described play as a way to satisfy curiosity and the need to explore, considering both to be at the root of intrinsic motivation.

SDT proposes that in order for an individual to be intrinsically motivated to do anything, he or she must have the psychological needs of competence and autonomy, and in a distal sense relatedness, met through contexts in his or her social surround. Through play, children can meet these psychological needs; in fact, play is considered a prototypical example of intrinsic motivation because it is action motivated by enjoyment (Ryan, Kuhl, & Deci, 1997).

*Autonomy.* Autonomy means using free will, or acting on one’s volition. It implies that an individual perceives himself to be the origin of his own behavior. There is a sense of initiation and value attached to the autonomous action (Deci & Ryan, 2002). In a child’s world, adults are the primary directors, the ones who usually determine not only the child’s day-to-day activities, but also how he or she should behave, think, and feel. While the control over their lives varies from child to child, children experience more freedom and autonomy during their play than at any other time. Children view play as an expression of themselves, a time when they are the originators of their own actions (Ryan, Kuhl, & Deci, 1997). Students in the study not only described many play activities, they also specifically indicated that they gave value to it. “Fifth grade is really



fun most of the time, [but] sometimes we have no recess, and when I forget to turn my homework in, it's not fun anymore, and then I lose my recess" (Bob). Informants also indicated a need to protect their play, especially in school.

While students related some play activities they participated in with their parents, most play occurred with friends; and other than organized sports, there was no indication that the play activities were controlled by adults. This aspect of the informants' play suggests the autonomy of it and may explain why they spoke of it often and with enthusiasm. When adults control the play, the child loses his or her sense of autonomy. "It seems that when heteronomous forces attempt to direct intrinsic motivation, the organism no longer wants to play" (Ryan, Kuhl, & Deci, 1997, p. 711). In this study, it was evident that autonomy was a need the informants satisfied through play.

*Competence.* The need for competence is defined as "the need to experience oneself as capable of producing desired outcomes and avoiding negative outcomes" (Connell & Wellborn, 1991, p. 51). As aforementioned, White (1959) labeled this urge toward competence *effectance* and considered it a motive that when satisfied produces a feeling of *efficacy*. Environments and social contexts that promote a perceived sense of competence for a particular action enhance intrinsic motivation (Ryan & Deci, 2000b).

Developmental theorists have contended that play is a way for individuals to advance cognitive development, and hence their intellectual competence. Piaget (1962) proposed that play allows children to practice various competencies and newly-acquired skills in a relaxed and comfortable environment. Vygotsky (1962) considered the context of play to be excellent for cognitive development. Students in the study expressed their sense of competence in play and free time activities:



- Well, when I was younger, I just liked – liked [fairies] a lot. So I just decided to draw them. And then I know how to draw them so well now. (Alexandra)
- Sometimes we play Trivial Pursuit. I'm good at it. (Carl)
- I'm really good at [football]. I've been playing since I can remember. (Michael)
- [Computerized stencil drawing] is a little harder than regular drawing, but I've mastered it. (Nicole)
- Well, I'm really good with computers and technology and stuff and then I'll just find this place and I'll start – and then I'll – it just takes you step by step on how to [create a website]. (Michael)

The informants' comments suggest that they have developed a sense of competence within their own niches, whether it be in artistic, cognitive, or physical realms through play.

*Relatedness.* The need for relatedness “encompasses the need to feel securely connected to the social surround and the need to experience oneself as worthy and capable of love and respect” (Connell & Wellborn, 1991, p. 51-52). SDT posits that while the needs for autonomy and competence are the most influential in maintaining intrinsic motivation, relatedness also plays an important role.

Learning to socialize and cooperate with others is connected to the need for relatedness and is an important function of play. Parten (1932) listed cooperative play as a major stage of play occurring in middle childhood. She contended that students engage in this type of play in order to develop group identity and skills of cooperation. Bergen (1988) listed social play and games as activities that result in children's increased ability to interact with peers.

All of the students described experiences of play with friends and family. "My friends are kind and they're fun to play with and they like to hang out with me and I like to play games with them" (Carl). Other students went to great lengths to describe their social play activities, including sleepovers with fifteen or more girls (Alexandra), and an extreme sports club he had founded called "The Tricksters" (Michael). One student described learning about social interaction and cooperation through play with in this way:

Okay, sometimes certain friends can get a little bit bossy and sometimes they can get me in trouble like last week, one of my friends threw a thing of mustard and got me in trouble for some strange reason, even though I didn't touch it.

Everything else, I pretty much like about my friends. Well, I guess I could say like when we have arguments on like if we do this game or not, like if I want to play this game but they don't and they want to play this game but I don't, and stuff like that. (Mickey)

It is important to note that children do not consciously engage in play with the purpose of meeting their psychological needs. They engage in it for fun and enjoyment. Researchers suggest, however, that the positive feelings that accompany intrinsically-motivated activities such as play are "selectively evolved features of human nature" (Ryan, Kuhl, & Deci, 1997, p. 721), which result in advantages such as increased knowledge, independence, and secure relationships with others (competence, autonomy, and relatedness) that in turn help the organism to survive. They contend that other species that "are hatched more or less fully developed and their survival depends less on acquired knowledge than on a functional design well fit for their niche" (p. 721) show less participation in intrinsically-motivated activities. These theorists suggest a connection

between the enjoyment of intrinsically motivated activities and the survival instinct. This connection may explain the penchant of the students to play and their tenacity in maintaining their play times. It may also point to an association between their robust sense of play, and their strong intrinsic motivation for information seeking.

### *Creativity*

Another salient quality exhibited by the informants was creativity. According to the National Association for Gifted Children (2008), creativity is “the process of developing new, uncommon, or unique ideas” (para. 15). Csikszentmihalyi (1997) posited that creative people experience a state of “flow,” which he believes can be achieved by anyone under the right conditions. Creativity is by definition intrinsic, or emanating from the self.

Creativity has been connected to intrinsic motivation. Research has shown that people who are intrinsically motivated for an artistic task exhibit higher levels of creativity than those who are not (Amabile, 1979), and that external conditions such as evaluations, competition, and behavior limits reduce intrinsic motivation for the artistic task (Amabile, 1979, 1982a, 1982b; Koestner, Ryan, Bernieri, & Holt, 1984).

Sheldon (1995) took this concept a step further when he posited that not only is intrinsic motivation associated with creativity on the task level, it is also connected on the trait level. He proposed that the measures of self-determination (as defined in Self-determination Theory, Deci & Ryan, 1985b) and creativity be linked. The significant psychological aspect is autonomy. “A long tradition of empirical research has established that personal autonomy is a core characteristic of the creative personality” (Sheldon, 1995, p. 25). The assumption is that creative, self-determined people are better able to

“resist the controlling situational and intrapersonal forces that can undermine creativity and are also better able to establish and maintain contact with intrinsic interests” (p. 25). Csikszentmihalyi (1997) echoed this sentiment when he suggested that the first step in maintaining creativity is to cultivate one’s curiosity and interests.

The students in the study exhibited creativity in several modes and for different purposes. All but one student (Bailey) mentioned and/or portrayed engaging in creative activities in the interviews and in their drawings, and all but one (Bob) scored above average in the creative dimensions on their “best work” as judged by the art teachers. The types of creative activities they described/portrayed were drawing, writing, music, building, dancing, photography, technical creations, and imaginative play. Students described engaging in creative activities for pleasure, as a way to express their interests, and as an information seeking behavior.

Based on the creativity/intrinsic motivation research (Amabile, 1979, 1982a, 1982b; Koestner, Ryan, Bernieri, & Holt, 1984), and on the assumption that creativity is connected to intrinsic motivation as a general trait (Sheldon, 1995), the data from the current study suggest that creativity was associated with intrinsic motivation for information seeking for the informants. As evidenced in their descriptions and drawings, it seems that creativity, as an outlet in itself, as a way to express interest, and as an object for information seeking, contributed to and was manifested in intrinsic motivation for information seeking in the students’ lives.

#### *Non-competitiveness*

Theorists have disagreed on the motivational orientation (intrinsic or extrinsic) of *competition*. Deutsch (1969) defined it in extrinsic terms as a circumstance whereby two

or more individuals or groups have opposing goals. Proponents of achievement motivation suggested that in order to be motivated toward achievement, one must compete against an extrinsic standard of excellence (McClelland, Atkinson, Clark, & Lowell, 1953). However, Csikszentmihalyi (1975) saw competition as a basic component of what he termed the autotelic (intrinsically motivated) activity. Because of the differences in definitions, it is difficult to examine the motivational foundations of competition.

Ross and Van den Haag's (1957) definition of competition may shed light on the debate. They divided competition into two categories: direct and indirect. *Direct* competition involves pitting oneself against an opponent and striving to out-perform him or her. *Indirect* competition is a situation in which the individual or group strives to perform well against a standard, either set personally by the performer or set by norms established for the performers' ability level. In SDT literature, the term *competition* refers solely to direct competition (as defined by Ross and Van den Haag) and is therefore considered extrinsic (Deci & Ryan, 1985b).

The studies on competition as defined as extrinsic, or based on the desire to win and/or not lose, show that it has a negative effect on intrinsic motivation (Deci, Betley, Kahle, Abrams, & Porac, 1981; Pritchard, Campbell, & Campbell, 1977). In other words, if an individual is intrinsically motivated to participate in an activity, changing the person's focus to winning and/or avoiding losing undermines that person's motivation to participate based on the pleasure of doing the activity itself. Research shows that this is particularly true for females (Deci, Betley, Kahle, Abrams, & Porac, 1981; Pritchard, Campbell, & Campbell, 1977). However, individuals can choose to focus either on the

controlling or informational aspects of an activity when participating. The activity produces controlling feedback when the person focuses on winning, but it produces informational feedback when the focus is on how the individual can perform better (Deci & Ryan, 1985b). Certainly outside influences such as a coach's or a parent's guidance will influence the perspective a child chooses, but one must bear in mind that it is how the *individual* construes the situation, (dependant on his or her inner resources; see Chapter 4, Causality Orientations Theory section) not the situation itself that will determine its controlling or informational orientation (Deci & Ryan, 2002).

Many informants in the current study discussed participating in activities that are typically competitive (e.g., sports), but in only one case did a child mention winning. The reasons informants gave for participating in such activities were: a) for the joy of doing it, and b) because they were proficient at it or in order to develop skill. The *joy of participation* indicates intrinsic reasons, and *being or becoming skillful* at an activity indicates competence or a striving for competence. *Competence* is one of the psychological needs required for intrinsic motivation, and so in essence, both reasons are tied to intrinsic motivation. The one child (Victoria) who mentioned winning a ribbon for drawing did so in reference to her competence, and in the same breath declared "And I also just like to draw because it's really, really fun" suggesting that she focused on the informational aspect of the competition and maintained her intrinsic motivation for drawing.

The non-competitiveness of the informants, their focus on competence, and the indications of their high intrinsic motivation would support the theory that participation in competition in order to improve skill, rather than for the purpose of winning and/or not

losing, does not decrease intrinsic motivation (Deci & Ryan, 1985b). In addition, based on Amabile's (1982a) research on negative effect of competition on artistic creativity, the students' tendency toward creativity may also be an indication of both their intrinsic motivation and their non-competitive nature. The three traits appear to go hand in hand.

The patterns indicating similarity in students were a sense of play, creativity, and non-competitiveness. Play appears to be a distinct and significant way the students cultivated and met their psychological needs of autonomy, competence and relatedness; these in turn fostered intrinsic motivation both as a developing trait of autonomous orientation, and also with regard to the domain of information seeking specifically. Creativity and non-competitiveness (as an informational feedback approach to activities) emerge as manifestations of satisfied psychological needs, as well as means by which students continued to meet them.

#### *Information Seeking Behavior*

The purpose of this study is to explore the experiences of upper elementary school children who are intrinsically motivated to seek information. The issues of diversity and similarity as previously discussed seem to point toward the development of an autonomous orientation as it was formed (and forming) through students' social surround, though there were indications of direct influence in information seeking behavior (such as that provided through the students' "anchor" relationships). This section will specifically examine the intrinsically motivating aspects of the students' information seeking behavior and experiences. The issues under discussion are the informants' information seeking styles, their interests, and their specific information seeking episodes.

### *Information Seeking Styles*

Students exhibited several and various information seeking styles. They were readers and book users, computer users, television and movie watchers, observers, people askers, and magazine users. All students described using at least two types of media in their information seeking, and eight described using at least three, data which seems to confirm the correlation between high overall intrinsic motivation scores and high scores for intrinsic motivation in each of the modality categories (as found in the survey data, see Table 4). Most students exhibited a preference, but for 2 students (Victoria and Michael) it was difficult to discern a bias toward a particular media. Four students exhibited a preference for reading and using books, 2 for observing, and 1 for using the computer (though all 9 students described using the computer for information seeking).

*Computer users.* In this day and age of flourishing technology, one would expect the use of computer technologies to be the dominant medium for young people seeking information. Students who have grown up with computers have made them “part of their cultural DNA” (Abram & Luther, 2004, p. 34) and, in one way, this study supports that assertion. All students in the study described using computer technologies for information seeking, a distinction not held by any of the other media. What is surprising is that the data indicated that only 1 student (Bob) used computer technologies as his *primary* information seeking medium. However, other research supports the idea that not all students prefer using the computer to find information. Latrobe and Havener (1997) found that books, magazines, and television all were used more by high school honor students in meeting their information needs than were electronic sources. Both Large and



Beheshti (2000) and Gross (1999) found that younger students did not have an affinity for using the computer for information seeking.

Why were computer technologies not preferred by most of the students in the study? One reason could be that they did not perceive themselves as competent in using the computer. Studies have shown that children do not use electronic resources as effectively as adults because most databases and web interfaces are not designed for children's use, and that those that are designed for students are frustrating to them (Bilal, 1999; Bilal, 2000; Bilal & Kirby, 2002; Spavold, 1990). Another study reported that children found the web to be "a confusing rather than a comforting reality" (Large & Beheshti, 2000, p. 1075).

Another reason most of the informants did not prefer to use the computer for information seeking may be that students did not find computer-based technologies to be as conducive to finding information, nor as familiar and comfortable as other media. In a study of the information seeking behaviors of sixth graders who were finding information for a class project, Large and Beheshti (2000) found that most of the students were "more irritated than interested by serendipitous encounters with information that was from their perspective irrelevant" (p. 1076) during their searches. Gross (1999) commented that in her study, teachers and librarians generally provided the elementary students with materials for class assignments, but when they looked for information on their own they gravitated toward "items they owned or already knew about" (p. 513). Conversely, Bilal (2005) found that 85% of the students in her study were motivated to use the Internet, but that for those who were not it was because of "being scared of using computers, difficulty in finding information, and unfamiliarity with Yahoo!igans!" (p. 202).

In studies about the motivational aspects of video gaming, Ryan, Rigby, and Przybylski (2006) found that “games are primarily motivating to the extent that players experience autonomy, competence, and relatedness while playing,” all pointing to the basic tenets of SDT. One of the students (Victoria) in the current study commented that the font on the computer was too small to read, which may point to a lack of “friendliness” of the computer interface for children. However, students in the current study showed no indication of difficulty in using the computer. The data simply indicated that they had preferences for other media. It is interesting to note that Bob, the only student indicated for using the computer as his primary information seeking style, described several experiences of playing video games and looking up information on the computer with a group of friends. He also indicated that they mentored him both in gaming and in information seeking. It could be that relatedness was the component in Bob’s information seeking experiences that fostered computer use as his primary information seeking style.

*Magazine users.* A medium not chosen by any of the students as their primary style of information seeking was using magazines. Two students (Nicole and Michael) mentioned using magazines for school assignments, but only 1 indicated a positive experience. Both students described leafing through random magazines trying to find pictures they could use in their projects. The lack of magazine use for information seeking by students of this age is not surprising since most instruction in magazine use begins in secondary school. Research seems to support this conjecture. In his study of the magazine use of children aged 3 to 18, Shenton (2004) indicated that there were no

reported instances of using magazines for information by children below middle-school age.

*Readers and book users.* Informants indicated that they were readers and book users more often than any other style. *Readers* were those students who began by reading about their interests in books (in both non-fiction and fiction genres), then often followed up by looking in other sources about questions that arose in their book reading. This progression is similar to observers, who began with their observations then continued research in other sources. The “readers” (Alexandra, Bailey, Mickey, Nicole, and Victoria) had a passion for reading itself, mentioning *reading*, *reader*, *books*, and *reading* several times in their interviews and depicting books and reading in their drawings. Two students (Bob and Michael) could be described as book *users* rather than readers. They indicated using books in their information seeking, but did not express passion for reading books and generally began with other information seeking sources. It is interesting to note that all of the passionate readers were girls, and the book users were boys. The data indicated that 4 students (Alexandra, Bailey, Mickey, and Nicole) used books as their primary information seeking medium. The reason for this could be that they were more comfortable with using books than any other medium. In explaining why she preferred books over using the Internet, Robin (a student in another study, Large & Beheshti, 2000) said, “Once you find the book you are looking for and it has like all the stuff, it won’t mix in anything that you don’t need” (p. 1075). Their interests also seemed to drive their book reading. Howard and Jin (2007) also found this to be true when they reported that their teen respondents “indicated that the major factor influencing their decision to read a book is their personal interest in the subject” (p. 153).

*Information seeking styles and intelligences.* With regard to their primary choices in media, the informants may have naturally gravitated to those sources that best fit their learning styles or intelligences. Gardner, in his theory of multiple intelligences, postulated that there is not just one type of construct known as “intelligence” but that people learn in different ways and exhibit various kinds of intelligences (Smith, 2008). The intelligences he identified were linguistic, logical-mathematical, musical, bodily-kinesthetic, spatial, interpersonal, intrapersonal, and most recently he added naturalist (Gardner, 1999). It is interesting to note that there is a naturalist intelligence, which “enables human beings to recognize, categorize and draw upon certain features of the environment” (p. 48). This type of intelligence may fit the learning style of the observers in the current study, who use the information seeking style of monitoring natural phenomenon (Carl, Melissa, Nicole, and Victoria).

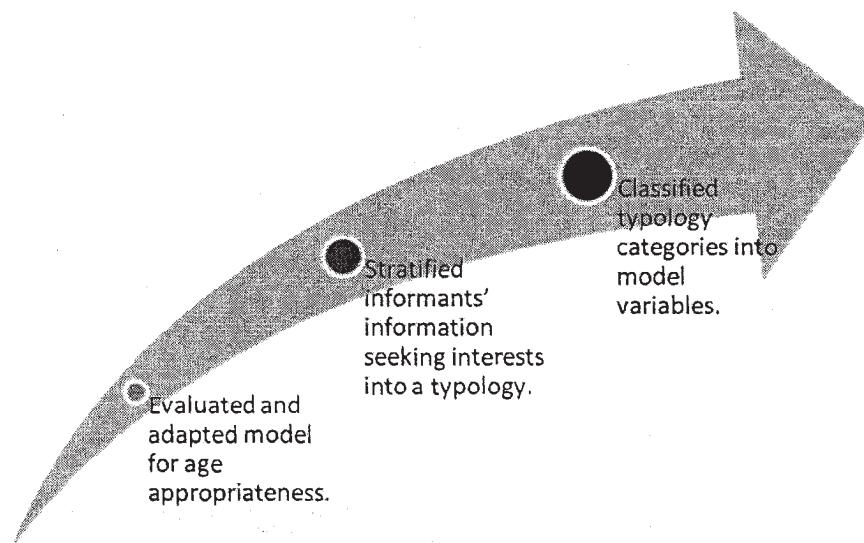
*Information seeking styles driven by interest.* There is one last group of students to be addressed with regard to their information seeking styles. These 2 students (Michael and Victoria) were difficult to “pin-down” to a preferred information seeking style. They did not seem to differentiate between media sources, but the data indicated that “their opinions [were] modified and influenced by an information ocean that does not differentiate between journals and books, network or cable television, or blogs or web sites” (Abram & Luther, 2004, p. 34). The experiences of these 2 students indicate that they were driven by their interests and would use any means they could to obtain information in order to fulfill their curiosity about them.

### *Interests*

Informants spoke often and enthusiastically about their interests during the interviews. In fact, other than their discussion of play, most students spoke more about their interests than any other topic. Interest “is involved whenever one orients toward an object, and it plays an important role in the amplification and direction of attention” (Deci & Ryan, 1985b). Interest is closely aligned with intrinsic motivation. Izard (1977) proposed that interest-excitement is the basis of behavior that is motivated intrinsically. The areas of discussion surrounding the students’ interests are: interests and developmental needs, and the *point of passion* experience.

*Interests and developmental needs.* As previously discussed, the current study used A Theoretical Model of Urban Teen Development to classify and sort the topics of interest generated by the intrinsically-motivated students under study (see Chapter 4, Conceptual Framework). Agosto and Hughes-Hassell (2006a, 2006b) developed their Theoretical Model of Urban Teen Development based on a combination of research into the everyday life information seeking of urban teens and developmental theory. They proposed that teens gather and process information in everyday life in order to facilitate their maturation into adulthood.

In the current study, I began by evaluating the Agosto and Hughes-Hassell (2006a, 2006b) model for age-appropriateness (see Figure 11) by comparing Havighurst’s (1972) Developmental Tasks of Middle Childhood with the independent variables from the Agosto Hughes-Hassell model (they had used the 11 Developmental Tasks of Adolescence; Havighurst, 1972).



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*Figure 11.* Process of adapting A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a, 2006b) for use in exploring the information seeking interests of upper elementary school children who are intrinsically motivated to seek information.

I found that five of the seven variables from the Agosto and Hughes-Hassell model could be supported by the Havighurst Developmental Tasks of Middle Childhood.

Of the two variables in the Agosto and Hughes-Hassell (2006a, 2006b) model not depicted by Havighurst's (1972) Developmental Tasks for Middle Childhood, the first is *the sexual self*, which in the original model is based on the developmental tasks for teens, "learning to manage his or her sexuality" and "learning to recognize and accept his or her sexuality" (Agosto & Hughes-Hassell, 2006b, p. 1424). Certainly, beginning fifth grade students (interviews were conducted in September) are starting to be concerned with sexuality as a few may be entering puberty, but Havighurst views this concern more as a social entity rather than a focus on "the sexual self" that is defined in the tasks for teens as listed above. Feldman (1999) seems to concur with this change in focus from childhood to the teen years when he defined adolescence as the "bridge between the asexual child and the sexual adult" (as paraphrased in Santrock, 2006, p. 369). Additionally, it was found that students in the study did not mention topics on *the sexual self*. One of the reasons for this could be that they did not feel comfortable discussing such topics with an interviewer they had just met, but another reason could be that Havighurst is correct in thinking that developmental tasks concerning sexuality (outside of masculine and feminine social roles) are not a major concern for children until they reach approximately twelve years of age.

The second variable not addressed by Havighurst for this age group is the same one not addressed in the model for teens—*the creative self*. Agosto and Hughes-Hassell

(2006a, 2006b) found it was necessary to add this variable in order to cover all the information seeking questions of the students in their study.

After I collected students' statements and pictures that depicted their interests, I sorted them into categories and stratified them into a typology (see Table 8, Data Collection Methods and Results section). Then, I sorted those interests for which students indicated they had had self-initiated information seeking episodes into the variables in the adapted model. I found that all of the self-initiated information seeking interests could be classified into this model, and that all of the variables from the adapted model contained at least one information seeking interest (see Figure 12).



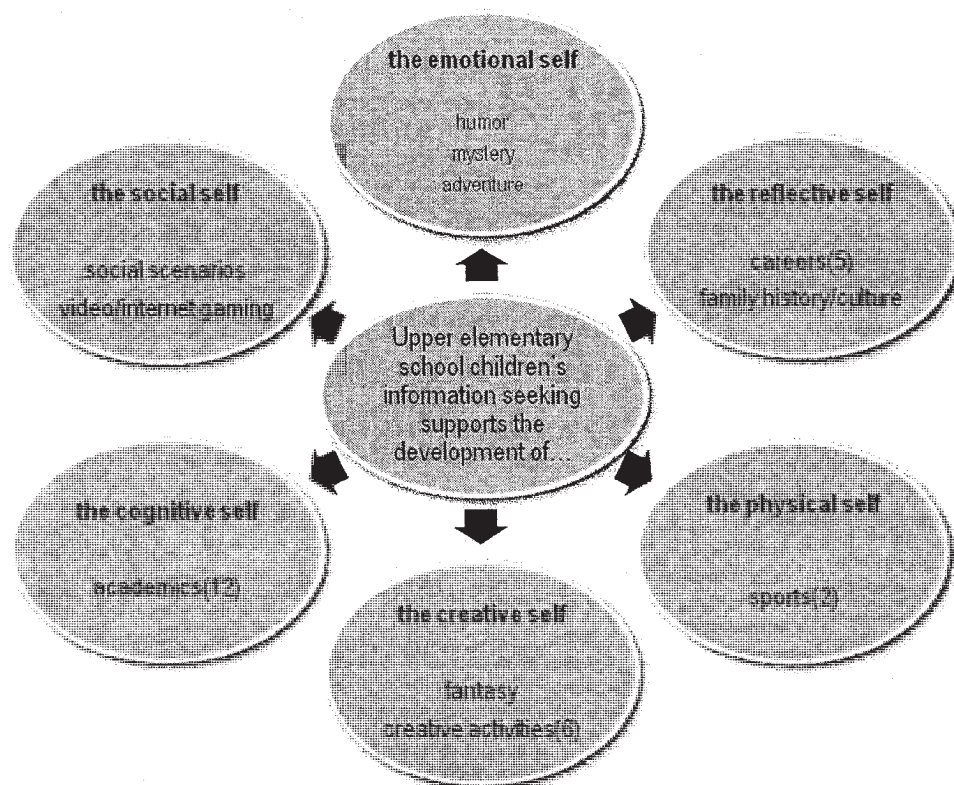


Figure 12. Adaptation of A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a, 2006b) used in exploring the information seeking interests of upper elementary school children who are intrinsically motivated to seek information.

What follows is a discussion of each of the variables from the current model. The discussion itself is modeled after one by Agosto and Hughes-Hassell (2006b).

- *Theoretical variable: the cognitive self.* Based on Havighurst's (1972) task # 6, "developing concepts necessary for everyday living" and task # 5, "developing fundamental skills in reading, writing, and calculating." The *cognitive self* was the variable containing the most interests by the students, all associated with academic subjects. It is important to understand that the term *academics* does not necessarily mean that the information seeking episodes related to school, but that the subjects of interest were within scholastic disciplines such as science or social studies. Students described self-initiated information seeking episodes about animals, bugs, trees, astronomy, dinosaurs, the human body, plants, history, and geography.
- *Theoretical variable: the creative self.* Not based on a Havighurst (1972) task. This was the area containing the second-highest number of interests. Students exhibited interest in this area through their preference for the fantasy reading genre. They also described information seeking experiences regarding the creative activities of building, drawing, website creation, electronic stencil drawing, music, and poetry.
- *Theoretical variable: the reflective self.* Based on task #2, "building wholesome attitudes toward oneself as a growing organism," and task #7, "developing conscience, morality and a scale of values." Students exhibited interest in this area through exploration of various careers (teacher, veterinarian, naturalist, animal

trainer, and a career in the NFL), as well as interest in their family history and culture.

- *Theoretical variable: the social self.* Based on task #3, “learning to get along with age mates,” task #4, “learning appropriate masculine or feminine social role,” and task #9, “developing attitudes toward social groups and institutions.” Students’ interests were manifested in information seeking regarding social scenarios and video/internet gaming.
- *Theoretical variable: the emotional self.* Based on task #2, “building wholesome attitudes toward oneself as a growing organism,” and task #8, “achieving personal independence.” Students showed their interests in this area through their reading the genres humor, mystery, and adventure.
- *Theoretical variable: the physical self.* Based on task #1, “learning physical skills necessary for ordinary games.” Students exhibited interest in this area through exploration of sports topics (football and hockey).

It is important to note that a difference between the Agosto and Hughes-Hassell’s (2006a, 2006b) research and the current study is the type of information gathered from the informants. Agosto and Hughes-Hassell examined the information seeking *needs* and behavior of teens, and the current study investigated the information seeking *interests* and behaviors of upper elementary students. Even so, the interests of the younger students, though not asking specific questions about their everyday living needs (such as the teens’ questions regarding how to make reservations at Red Lobster, and what to wear on prom night) may reflect a primal survival instinct (or need) to explore and conquer their surroundings (Ryan, Kuhl, & Deci, 1997). Agosto and Hughes-Hassell explain that

everyday life information seeking is “self-exploration and world exploration that helps teens understand themselves and the social and physical worlds in which they live” (p. 1394). They conclude that the teens in their study are facilitating “the teen-to adulthood maturation process” through their everyday life information seeking. The classification of the current informants’ self-initiated information seeking interests into variables based on Havighurst’s Developmental Tasks of Middle Childhood (1972) would also suggest that the fifth grade students in the current study are enacting maturational processes as they advance into their next developmental stage, adolescence, through their information seeking behavior.

*Point of passion.* In my data collection, I began to recognize a phenomenon early in the interview process that I found to be true for all the informants. The experience, which I have termed *point of passion*, is the students’ first remembered experience regarding an interest or fascination they have since pursued. For most of the informants (Carl, Melissa, Michael, Mickey, Nicole, and Victoria) this experience occurred at the age of four or five. For the other 3 informants (Alexandra, Bailey, and Bob) the experience occurred between the ages of seven and nine. It must be considered, however, that both children and adults usually do not have memory of events much before the age of four (Santrock, 2006), and early childhood experts report that parents can recall incidents of children beginning to show natural interests as early as eighteen months or two years of age (D. Mollenkopf, Ph.D., personal communication, October 31, 2008).

It may be developmentally significant that the majority of the informants’ *point of passion* experiences occurred during the preschool years. Piaget (1954), in his Stages of Cognitive Development, describes that at the age of four to seven years a child goes

through the *intuitive thought substage*. This substage is characterized by the beginning of primitive reasoning, and children begin asking questions about many topics. Children of this age also exhibit *centration*, or the “focusing, or centering, of attention on one characteristic to the exclusion of all others” (Santrock, 2006, p. 236).

*Passion* can be defined as “a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy” (Vallerand et al., 2003, p. 756). Vallerand et al. posited that there are two types of passion: harmonious passion (HP) and obsessive passion (OP). HP is the pursuance of an interest or activity by choice and “is in harmony with other aspects of the person’s life” (p. 757). HP results in positive outcomes. OP, on the other hand, results from an internal pressure that compels a person to engage in the interest or activity, and which is in conflict with other aspects of the individual’s life. It is linked to negative outcomes. Some of the informants in the current study exhibited a stronger inclination than others to pursue their passions (Michael, Nicole, and Victoria); however, none showed signs of obsessive passion. There were indications also that informants had assimilated positive aspects of their passions into their self identity, such as the students who wore clothing featuring their passion (Michael and Victoria), and others who had begun to explore careers based on their passions (Melissa, Nicole, Mickey, Victoria, Bailey, and Michael). Self-identity is an outcome of both HP and OP, but the self-identification does not conflict with the individual’s other activities in HP as it does with OP (Vallerand et al., 2003). No conflict with other activities was indicated by the informants’ self-identification with their passions.

Do the passions for specific topics or activities demonstrated by young children persist into adulthood? Research by Hidi and McLaren (1990) suggests that they do not. They reported that “children in grades 4 and 6 had interest ratings of topics and themes only moderately correlated with adult’s ratings” (p. 18). However, adults have reported having *points of passion* experiences when they were young children, and then maintaining that passion into adulthood and even throughout their lives.

On an airplane ride I had the good fortune of meeting and talking with Betty Birney, award-winning children’s author. We engaged in conversation and, as is common with doctoral students working on their dissertations, the topic changed to the *point of passion* experience I had discovered with my informants. Birney revealed that she too had had such an experience. This sparked a series of email conversations in which she related the following story:

When I was about four, I had an “aha” moment when my sister came home from school and showed my mother a story she’d written. It was about mermaids and mermen in a kingdom beneath the sea and was vividly illustrated with colored pencil drawings. I was enthralled by the beauty of this thing my sister had created. I couldn’t read yet, much less write, but I understood that a person could create a story just like the ones in books and I set that as a future goal for myself when I could read and write.

At seven, when I had reading and writing well in hand, I sat down and wrote my own book. It was called *Teddy Bear in the Woods* and it had chapters and illustrations, though my drawings were not as beautiful as the ones my sister had drawn. I gave it to my parents and announced that I was going to be a writer.



They were surprised but enthusiastic. I, in turn, was surprised when shortly afterwards, my father presented me with a delightful shoebox diorama of Teddy Bear's house exactly as described in the book, with furniture and cut-out figures. I sat down and wrote a sequel to the book and I haven't stopped writing since. (B. Birney, personal communication, October 26, 2008)

Another such story is that of Eric Carle, world-renown illustrator of children's picture books. Carle tells the story of a visit his mother made to his kindergarten teacher at the teacher's request. His mother was worried Eric was in trouble, so was surprised when the teacher pointed to several pictures on display in the room, all signed by Eric. The teacher told Eric's mother that he had indicated to her that he liked art, and she felt he was good at it. She encouraged Eric's mother to "nurture this talent and respect it." Carle related how his parents always did nurture his talent, providing him with art materials, encouraging him, and "showing off" his work whenever possible. He considers this single experience the most important "door" that opened for his future career as a children's book illustrator (Fulton, 1993).

Like the author and artist in the previous stories, most of the informants in the current study also experienced support for their passions from others in their lives. They described experiences of support from parents, teachers, friends, and grandparents. Some of the support was elaborate, some just simple help in giving students what they needed to further their passions. Victoria described media her parents bought for her about her passion—dinosaurs—and also related the details about an elaborate "Dinosaur Road Trip." Michel told about the ride he received from his grandfather when he needed to go to the library for more information about his idol, Michael Irwin. Melissa talked about the

special “office” her grandmother set up so she could play teacher. Nicole described an experience of getting a job training the dog of her mother’s friend. It is also interesting to note that besides the support of others in fostering students’ passions, the children in the current study also have creativity in common with Birney and Carle, both of whom have chosen careers in the creative arts.

The *point of passion* stories raise questions. Are such experiences unusual, or do all children have *points of passion* experiences? How does the support from adults affect the longevity of the interest kindled by the *point of passion* experience? One might conjecture that the *point of passion* experience, as well as the support by others, are significant contributions to fostering an interest that will last into adulthood. More study is required to answer such questions, and time will tell if the interests ignited by students’ *point of passion* experiences in the current study will last a lifetime.

#### *Specific Information Seeking Episodes*

In the interviews’ second line of questioning, I asked students to describe specific information seeking episodes. They all described at least two episodes, explaining to me upon further questioning the type of questions or topics addressed in each episode, how the episode came to be, the circumstances surrounding the information seeking, and whether or not they thought the experience was successful. In all cases, the students described their preferred experiences as successful. Then, I asked them which of the episodes they liked the best and why. Since the current study focuses on intrinsic motivation, I chose to describe and analyze those experiences for which the students expressed a preference. Using NVivo 7™, I sorted the episodes into a node, then classified the “favorite” experiences according to the categories in Bilal’s Taxonomy of

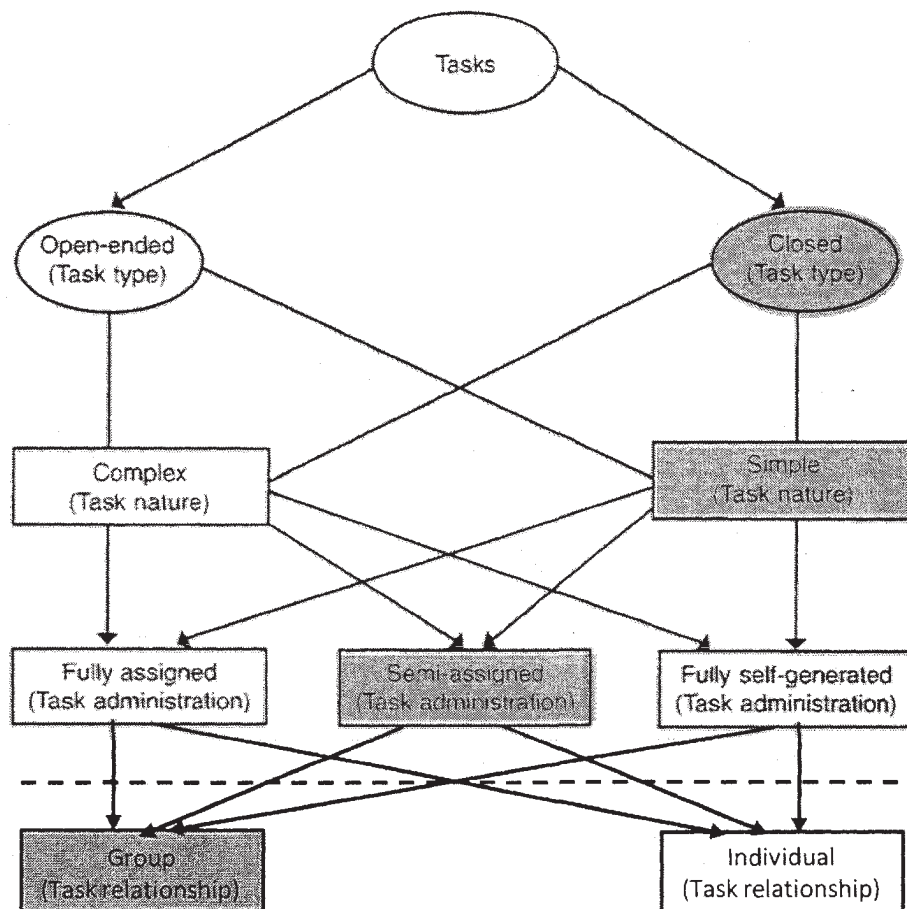


Tasks (see Chapter 4, Conceptual Frameworks). In addition, I added another dimension to the categorization: task relationship, or how the episode was experienced in relation to others (with a group of more than one or as an individual). The purpose of the classification was to determine the context, with reference to task definition, of the preferred episodes described by the students.

Students described experiences that were varied in structure and purpose; however, 3 students preferred the same Colorado city assignment, and another 2 preferred a similar Colorado region assignment. Because of this duplication, there were actually only six preferred assignments. Once I classified these six assignments, I found that they were arrayed into three patterns in the adapted Taxonomy of Tasks (based on Bilal, 2002a with the additional category of task relationships). What follows is an analysis of the context with reference to the task definition of these six episodes.

1. Colorado Cities—closed, simple, semi-assigned, and group (see Figure 13).

This was an assignment required by all fourth grade students in the high socio-economic school. Students were assigned to work in groups. They were asked to choose a Colorado city, and then report on assigned aspects of it. They were allowed to govern their own groups and determine who would do which aspect. They could use any resource but were also required to write to the city's Chamber of Commerce. Some of the aspects required specific information, others were more flexible. All students were required to write a structured report and do a class presentation, but could choose whatever visual they wanted for the presentation.



*Figure 13.* Pattern #1 representing preferred assignment #1, Colorado Cities, and preferred assignment #2, Colorado Regions, as classified into the adapted Taxonomy of Tasks (based on Bilal, 2002a).

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2. Colorado Regions—closed, simple, semi-assigned, and group (see Figure 13).

The Colorado Region assignment was conducted in fifth grade and was very similar to the Colorado Cities assignment. Groups were assigned and members allowed to choose different aspects of the region. The fact-finding process was more open for this assignment than the city assignment, however, and students were allowed more choice in presentation style.

3. Olympics Assignment—open, complex, semi-assigned, and individual (see Figure 14).

Fifth grade students were given an assignment by their physical education teacher to find information about a country participating in the Olympics. The teacher handed out flags that indicated to each child the country he or she was to research. Mickey was assigned Germany, and she could choose any information she wanted to report. She used the Internet and got information from watching the Olympics on television. She then turned in a written report on her findings.

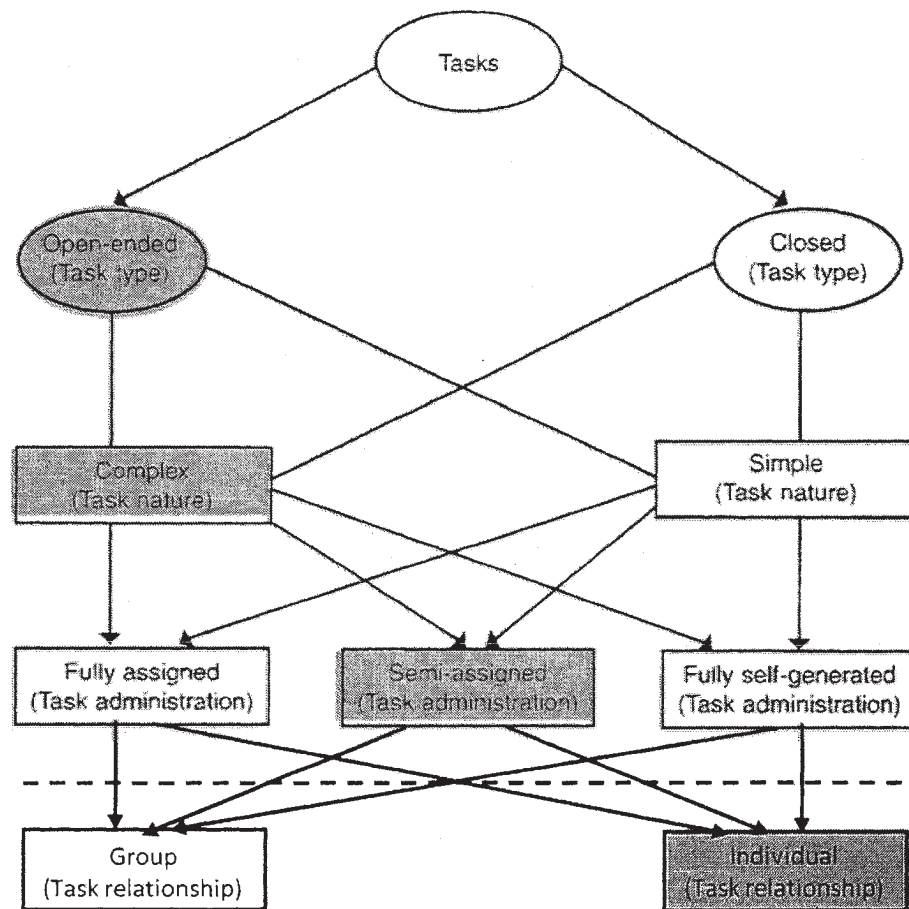


Figure 14. Pattern # 2 representing preferred assignment #3, Olympics Assignment, as classified into the adapted Taxonomy of Tasks (based on Bilal, 2002a).

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4. Teacher Experiment—open, complex, fully self-generated, and individual (see Figure 15).

While playing teacher, Melissa wanted to find out how to keep her “student” (her brother) more focused during her lessons. She experimented with different strategies, and found that offering him a surprise if he did a good job worked. Melissa preferred this experience because “I have more interest in doing that, cause that’s been like my thing my whole life.”

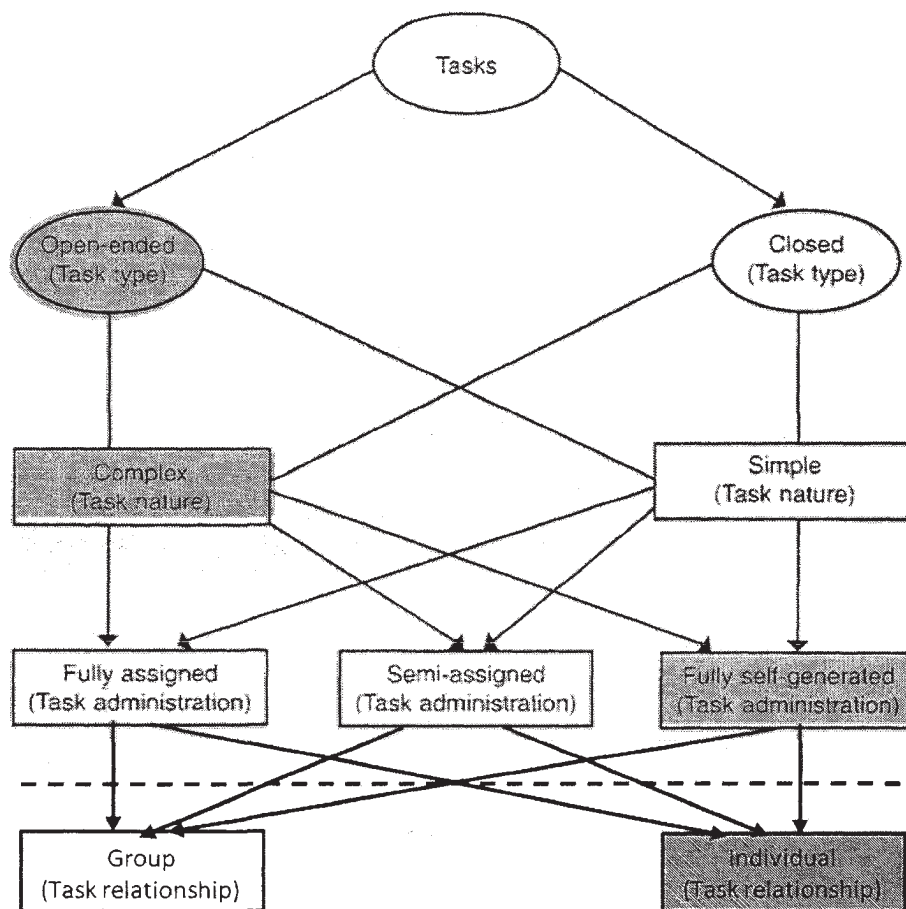


Figure 15. Pattern #3 representing preferred assignment #4, Teacher Experiment, preferred assignment #5, Michael Irwin Book, and preferred assignment #6, Finding a Book as classified into the adapted Taxonomy of Tasks (based on Bilal, 2002a).

From "Children's Use of the Yahoooligans! Web Search Engine. III. Cognitive and Physical Behaviors on Fully Self-generated Search Tasks," by D. Bilal, 2002a, *Journal of the American Society for Information Science and Technology*, 53(13), p. 1171. Reprinted with permission of John Wiley & Sons, Inc. (see Appendix J).

5. Michael Irwin Book—open, complex, fully self-generated, and individual (see Figure 15).

Michael was writing a book about his idol, Michael Irwin. When he came to the end of the third chapter, he decided he needed more information. He described his frustration at trying to find the right kind of information on the Internet, but then his grandfather took him to the public library. There Michael found a book about Michael Irwin that contained exactly the information he needed. He told how he put the information in his own words so that he would not be plagiarizing. He preferred this experience over a school assignment he had described because the Michael Irwin book experience had no time limit.

6. Finding a Book—open, complex, fully self-generated, and individual (see Figure 15).

Bailey described a time when she needed a book to read. She went to the public library but did not have any ideas of what to read that day, so she asked the librarian if she knew of any good books. The librarian showed her a book about training dogs. Bailey chose that book, checked it out, and read it.

*Task type and task nature.* There are two task types represented in the Taxonomy of Tasks (Bilal, 2002a), as well as two task natures. “Typically, closed tasks (also known as fact finding) are simple, well defined, and have structured problems” (Bilal, 2002a, p. 1171). Open-ended tasks “(also known as research oriented) are complex” (p. 1171) with ill-structured problems requiring information that cannot be known in advance.

Generally, closed-ended tasks are simple, and open-ended tasks are complex. Studies have had mixed results with regard to which type of task and task nature yields more student success. Schacter, Chung, and Dorr (1998) found that students were significantly

more successful on the open-ended than they were on the closed-ended task. Hirsh (1997) found that children were more successful on simple tasks than they were on complex tasks. Bilal (2001) reported more success for students on the research, or open-ended tasks than for the fact-based, or closed-ended tasks, though students indicated having more difficulty with the research task. Marchionini (1989) also found that students were more successful on the open, complex task than they were on the closed, simple task when searching on a CD-ROM encyclopedia. Variables that may affect a students' success on the these two task types/natures are the student's knowledge of the question domain, and their understanding of how much information is required to complete an open-ended task successfully (Bilal, 2001). While the literature is unclear about which type/nature of task students prefer, Bilal reported that in her study "satisfaction with the search results was the driving force behind children's task preference rather the task in itself" (p. 1179), indicating that since students felt more successful on the open-ended, complex task they also preferred it.

The first task pattern in the current study (see Figure 14) represents two closed-ended, simple assignments—Colorado Cities and Colorado Regions—that were preferred by a total of 4 informants (Carl, Bob, Alexandra, and Victoria). Students were asked to find specific information on their particular cities and regions. The remaining two patterns were open-ended tasks that were complex in nature. They represent four episodes—the Olympics Assignment Teacher Experiment, Michal Irwin Book, and Finding a Book. Since the patterns represent equal numbers of students who preferred both closed-ended, simple tasks and open-ended, complex tasks, and since none of the students mentioned either task type or task nature in the reasons they gave for choosing



their preferred episodes, the data indicates that neither the task type nor the task nature were influential aspects of the informants' preferences.

*Task administration.* There are three types of task administration: fully assigned, semi-assigned, and fully self-generated. In fully assigned tasks, someone other than the information seeker assigns the task, both the main topic and specific aspects of the topic. In semi-assigned tasks, the main topic is assigned but the information seeker may choose an aspect of the topic to pursue. In fully self-assigned tasks, the information seeker chooses both the main topic and the specific aspects of that topic (Bilal, 2002a). Several studies point to students' greater success on self-initiated information seeking than on assigned tasks (Bilal; Bilal & Bachir, 2006; Hirsh, 1999; Moore, 1995; Shenton, 2007). Reasons researchers give for this success are greater interest (Shenton) and more control (Farmer, 2007; Moore, 1995). However, Gross (1999) in her study of assignments given to students in school (imposed queries), found that "children who are able to accept the imposed query as their own and feel their honest response will be accepted will voluntarily engage in the process, [and] have a positive experience" (p. 518). With regard to preference, Bilal (2002) found that most of the children in her study preferred the fully self-generated task, though not overwhelmingly so. As mentioned previously, their preferences seemed to stem primarily from their success rather than any task definition.

In the current study, two task patterns (#1 and #2) included semi-assigned episodes, and one pattern represented fully self-generated experiences. The semi-assigned episodes were all school assignments. They were: a) the Colorado Cities assignment (students were able to choose a city within their groups, and decide who would report on which aspect), b) the Colorado Region assignment (groups were assigned a region, but

could choose aspects within the topic to research), and c) the Olympic Assignment (students were assigned the topic, but could choose any aspect for information seeking). The fully self-generated episodes were represented in pattern #3. They were all self-initiated information seeking episodes that were not school assignments. They were: a) the Teacher Experience (child experimented with ways to improve subject's focus), b) the Michael Irwin Book (child sought information for book-writing project), and c) Finding a Book (child sought a book to read). It is important to note that none of the preferred episodes were fully assigned. Choice, even in a partial sense, seems to have played a part in the informants' preferences for information seeking episodes.

*Task relationship.* In the current study, I added the component of task relationship to the Taxonomy of Tasks (Bilal, 2002a) based on the data gathered in the second line of questioning about information seeking experiences. Several children mentioned the group experience in talking about their information seeking episodes. The two assignments that involved group work were the Colorado Cities and the Colorado Regions episodes. There was no mention of how the groups were chosen, but students indicated knowing and for the most part, liking the students in their groups for these two assignments.

Learning from peers is an important educational concept. Vygotsky, a social constructivist, emphasized the "social contexts of learning and the construction of knowledge through social interaction" (Santrock, 2006, p. 239). Research on the social interaction of students educated in traditional versus collaborative environments suggests that children from the collaborative environments build on each other's ideas and work better together than those students from traditional schools (Matusov, Bell, & Rogott, 2001). Library media specialists also have employed group activities to engage and

motivate students in information seeking (Wright, 2008; “When I Grow Up,” 2008). The students in the current study indicated that they both succeeded in their preferred information seeking tasks and enjoyed them when they involved working in a group. As a caveat, 4 informants (Mickey, Michael, Bailey, and Melissa) chose individual information seeking episodes as their “favorite” which may indicate that they prefer individual information seeking experiences to those involving group work; however, none of the students mentioned “working individually” as a reason for their preferences.

*Students’ reasons for preferring episodes.* Informants in the current study gave several reasons for choosing their “favorite” information seeking episodes. The reasons they gave were:

- Relevance of/ interest in topic (5)
- Working in a group (3)
- The experience of the information seeking itself (2)
- Creating the final product (2)
- Choice of aspect within topic (1)
- No time limit (1).

*Relevance of/interest in topic* was the primary reason students gave for choosing their “favorite” information seeking episode. Interest, as discussed previously, is at the basis of intrinsic motivation (see Chapter 2, Intrinsic Motivation and Youth section; also Interests section of this chapter). Research confirms the importance of interest in information seeking, both to student success and to their motivation for information seeking (Branch, 2003; Garland, 1995; Gross, 1997; Hirsch, 1999, Small, 1999; Watson,

2001). Context, or relevance, has also been found to be an important consideration to student motivation for information seeking (Gross, 1999; Oliver & Oliver, 1997).

*Working in a group* (task relationship), and *choice of aspect within a topic* (task administration), as previously discussed, both coincide with components revealed through the adapted Taxonomy of Tasks (Bilal, 2002a). *The experience of information seeking itself* seem to confirm the nature of the informants, children who are intrinsically motivated for information seeking; and *creating the final product* would also seem confirm the creative inclination of the students in the study. Finally, *no time limit* concurs with an SDT principal that extrinsic motivators such as threats (Deci & Cascio, 1972), surveillance (Lepper & Greene, 1975), deadlines (Amabile, DeJong, & Lepper, 1976), evaluation (Amabile, 1979), goal imposition (Mossholder, 1980), and competition (Deci, Betley, Kahle, Abrams, & Porac, 1981) have all been shown to undermine intrinsic motivation.

The preferences informants indicated in both the adapted Taxonomy of Tasks categories and the reasons they gave for their “favorite” information seeking episodes support principles of SDT (Deci & Ryan, 1985b). *Interest*, as indicated earlier, is at the basis of intrinsic motivation, the “kick-start” of the human exploratory inclination (Ryan, Kuhl, & Deci, 1997). Since all of the students chose successful episodes, they confirmed a sense of *competence* in their information seeking experiences. They preferred fully self-generated and semi-assigned tasks, supporting the fulfillment for the need of *autonomy*. I propose that *relatedness* was indicated as the need fulfilled in some of the students’ preference for group activities. As previously explained (see Chapter 4, Theoretical Framework), relatedness is not a requirement for intrinsic motivation, as are autonomy

and competence, but rather is a support that fosters it. In some cultures, however, it plays a more important role. It is not surprising then, that of the students who indicated group work as a reason for their preference, that Bob (a Filipino), who had shown affinity for relationships, was one of these students.

#### Limitations of the Study

There are both methodological and theoretical limitations to the current study. Methodologically, limitations include: the use of a sample that is purposive and judgmental (Krathwohl, 1998) and not random, the gathering of informants from one geographical area, the limitation of the population through a lower rate of collected consent forms from one school, and the limitation of the use of the SRQ-IS with children who are able to understand and respond to the questionnaire. The informants were chosen (through results of the SRQ-IS) from three, pre-selected sites in an attempt to gather information about children from socio-economic and culturally diverse backgrounds. However, the low return rate on the informed consent forms limited the number of students from the lowest socio-economic school. It is important to note that the differential between those students at each school who returned consent forms was higher than the differential between students who actually took the survey and those chosen as informants from each school. Another inclusion issue concerns the student who was limited by his communication, social, and problem solving skills. He was not able to participate in the questionnaire, though attempts were made to include him in the process (such as using an instructional aide to help him take the questionnaire). Other communication issues were minimized, however, since teachers indicated that students with reading problems were able to participate due to the fact that I read the questionnaire

out loud to all students. Though attempts were made to minimize limitations, the results of the study are not generalizable to all students in all situations.

The theoretical limitation of the study is its single-disciplinary focus. SDT (Deci & Ryan, 1985b) is a theory rooted in psychology, and as such its emphasis is on the individual's perceptions, interpretations, cognitive processing, and motivation. The emphasis in SDT is squarely on the individual, or as is said in the library world, the "user." While taking a single-disciplinary stance in research does limit one's perspective, there is value in taking such a stance, particularly in adopting a psychological approach in library information research. Using a psychological viewpoint in school library research allows better understanding of individual users. In the case of the current research question, a psychological perspective has furthered our understanding of the intrinsically motivated student, which in turn will enable us to better foster intrinsic motivation through the school library. However, in order to get a more complete picture of the experiences of the intrinsically-motivated child, the use of SDT to analyze the data has been accompanied by the use of context-related theories of information seeking (A Theoretical Model of Urban Teen Development, Agosto & Hughes-Hassell, 2006a, 2006b; The Taxonomy of Tasks, Bilal, 2002a) that were used as the conceptual frameworks for data collection, organization, and analysis of information seeking behavior.

#### Progression from Results to Analysis to Conclusions

The stories of the informants began to unfold through the results of the data collection, were brought into focus through analysis, and are connected to broader issues through conclusions that I drew from the results and analysis. The process used was a

logical progression from one component to the next (Bloomberg & Volpe, 2008). What follows is a consistency chart (see Table 10) illustrating this process and presenting the outcomes. It is important to note the limitations listed in the section above when viewing the chart. Because of these limitations, the results of the study cannot be generalized to all students in all situations. They are arranged by the categories of diversity, similarity, and information seeking behavior.



Table 10

*Consistency Chart of Results, Analysis, and Conclusions*

Results	Analysis	Conclusions
1. Students came from various family situations, socio-economic backgrounds, represented more than one race and both genders, exhibited different communication styles and described varied school experiences.	<p>*While some of the children tended toward the "advantaged" profile, most did not.</p> <p>*The lack of collected consent forms from one school accounted for most of the socio-economic differential.</p> <p>*No correlation was found between access to materials at home and intrinsic motivation for information seeking.</p> <p>*Family relationships were different, but all students had an "anchor" relationship.</p> <p>*All children perceived themselves as competent in some area, but not always in school subjects.</p> <p>* Students' communication styles varied from shy, to articulate, to expressive.</p> <p>*Most of the children "got along" well in school, but not all.</p> <p>*The special services some students received in school did not interrupt "extra curricular" information seeking activities.</p> <p>*Ethnicity and family culture may have played a part in the dominant force of relatedness in the minority student.</p>	<p>Students who are intrinsically motivated to seek information come from many family situations and backgrounds. They need not be "advantaged" in the traditional sense.</p> <p>While they have various family configurations, "anchor" relationships are the norm and are vital in fostering intrinsic motivation for information seeking.</p> <p>Students perceive themselves as competent in various arenas, but their competencies and communication styles may or may not help them "get along" in school.</p> <p>Students receiving special services enjoy and benefit from information seeking experiences in school.</p> <p>Students' ethnic culture influences which need fulfillment contributes most to fostering their intrinsic motivation.</p>
2. Students exhibited an affinity for play, a tendency toward creativity, and the disposition of non-competitiveness.	<p>*The play experiences students described were indicated to contribute to the fulfillment of their needs for competence, autonomy, and relatedness.</p> <p>*Creativity was an outlet in itself, a way to express interest, and an object for information seeking in the lives of the informants.</p>	<p>Play contributes to individuals' intrinsic motivation for information seeking.</p> <p>Creativity both contributes to and manifests itself in intrinsic motivation for information seeking.</p> <p>The diminishing of intrinsic motivation through the extrinsic motivator,</p>



	<p>* Children rarely mentioned winning, losing or competition, and when they described participating in competitive activities, they indicated that they did so for the joy of participation, and because they were competent or were striving to become competent.</p>	<p>competition, is decreased through a focus on the intrinsic reasons for participation and the functional feedback of personal performance.</p>
<p>3. Students indicated having a variety of information seeking styles and interests, and recounted diverse and successful information seeking episodes.</p>	<p>*All students used computer technology in their information seeking.</p> <p>*Fewer students gravitated to computer technology than books as their preferred information seeking medium.</p> <p>*It was difficult to "pin down" the information seeking style preference of some children because they were driven more by their desire for information than by the medium.</p> <p>*Students' self-initiated information seeking interests were classified into a model based on developmental tasks.</p> <p>*All students described a <i>point of passion</i> experience, most at the age of four or five. Most students also indicated support from others, generally an adult relative, for the interest ignited by the experience.</p> <p>*Students' "favorite" information seeking episodes were classified into three patterns based on an adapted taxonomy of task definition. These patterns represented both open and closed task types, simple and complex task natures, semi-assigned and fully self-generated task administration, and both group and individual task relationships. They did not include tasks that were fully assigned.</p> <p>*Students gave the following reasons for choosing their "favorite" information seeking episodes: relevance of/ interest in topic, working in a group, the experience of information seeking itself, creating the final product, choice of aspect, and no time limit.</p>	<p>Information seeking styles seem to be determined by learning styles and/or intelligences, and by those sources for which students have more access, or with which they feel most comfortable.</p> <p>For some, interest drives information seeking and style "takes a back seat" to the desire for more information.</p> <p>Upper elementary school students who are intrinsically motivated to seek information facilitate maturation into their next developmental stage, adolescence, through their information seeking behavior.</p> <p><i>Point of passion</i> experiences generally occur during the pre-school years, and if fostered by others, may last until adulthood.</p> <p>Interest/relevance of topic, working in a group, at least some choice in the task, creating a final product, and fewer time constraints are all components of intrinsically motivating information seeking episodes.</p>

## Review

The purpose of this chapter was to report on the research results, including data collection methods and field experiences, as well as to document the data analysis, limitations, and conclusions of the study. Chapter 6 will discuss the conclusions, implications and recommendations resulting from the research. In addition, suggestions for future research will be presented.

## CHAPTER 6

### CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this study was to address the question, “what are the experiences in the lives of upper elementary school children that foster an intrinsic motivation to seek information?” In my quest to find answers to this query, I began by surveying fifth grade students from three socio-economically and ethnically diverse elementary schools using the Information Seeking Self-Regulation Questionnaire (SRQ-IS; adapted from Ryan & Connell, 1989). I continued research with the 9 informants identified through the survey by conducting interviews and collecting student drawings. The data gleaned from these two methods was analyzed using three flows of activity all happening concurrently: data reduction, data display, and conclusion drawing/verification. The drawings were also evaluated by art teachers. From this process, three major schematic categories emerged: diversity, similarity, and information seeking behavior as noted in Chapter 5. Limitations of the study, such as the gathering of students from one geographic area and the use of a purposive sample, preclude generalizability of the results and conclusions to all students in all situations.

Chapter 6 presents the research conclusions, discusses the current study’s alignment with motivation and information seeking literature, presents implications and recommendations, and provides suggestions for future research.

#### Research Conclusions

The purpose of conducting qualitative research is to gain understanding of an issue or phenomenon. The purpose is not to determine a single causal explanation, to generalize, nor to predict. The aim is “to tell a richly detailed story that takes into account

and respects a context and that connects participants, events, processes, activities, and experiences to larger issues or phenomena” (Bloomberg & Volpe, 2008, p. 134-5). In this way, I hoped to develop an understanding of the students in the study, upper elementary school children who were identified to be intrinsically motivated to seek information. I attempted to accomplish this goal through the garnering of some quantitative data (the survey results and the art evaluations), but primarily I used naturalistic research to examine the pertinent experiences in the lives of the informants. While the observations drawn from this exercise are applicable only to the study’s pool of informants, the following conclusions may shed light on issues surrounding the general topic of intrinsic motivation within the framework of information seeking.

#### *Diversity*

Students in the study who were identified as intrinsically motivated to seek information came from many family situations and backgrounds. The typical assumption is that these children fit an “advantaged” profile—white, rich, high achievers with doting parents who provide them with every asset needed for success. However, the fact is that while some of the children in the study tended toward the “advantaged” profile, most did not.

#### *Anchor Relationships*

Informants’ family configurations and situations varied (though most were living with both their mother and father), but all described “anchor” relationships, people who supported their interests and information seeking behavior. The conclusion is that these “anchor” relationships foster intrinsic motivation for information seeking, and that

though these relationships are usually adult relatives, they need not be. Others can and have stepped into the “anchor” relationship role.

### *Cultural Influences*

The data suggest that the minority student’s cultural and ethnic background influenced which need fulfillment contributed most to fostering his intrinsic motivation for information seeking. The tension lies between the need for *autonomy*, which appears to be salient for people from individualistic cultures, and *relatedness*, which seems to be the most prominent need for people from collectivist countries (Chirkov & Ryanan, 2001; Deci, Ryan, Gagne, Leone, Usunov, & Kornazheva, 2001, Hayamizu, 1997; Yamauchi & Tanaka, 1998). The conclusion is that allowing for student choice with regard to working with others or working individually fosters intrinsic motivation for information seeking for more students, regardless of their ethnic and cultural backgrounds.

### *Success in School*

Although all of the children perceived themselves as competent in at least one area, these were not necessarily competencies that would help them succeed in school. Couple this with the varying communication styles of the students, and it leads to the conclusion that educators may not easily recognize children who are intrinsically motivated for information seeking in their classrooms and libraries. While it is common in some schools to reduce, limit, or eliminate information seeking experiences such as research projects and even library sessions in order to provide time for students to receive special services (e.g., remedial reading, help for learning disabilities, and gifted instruction), as well as to neglect those who do not seem competent or do not communicate their information needs well, these “special” students can and do benefit

from school-related information seeking experiences, as do students who fit the “normal” profile. The indication is that research and library-related experiences contribute to intrinsic motivation for information seeking for many types of students, both within and outside of what might be considered the “norm.”

### *Similarity*

Students in the study who were identified as intrinsically motivated for information seeking exhibited an affinity for play, a tendency toward creativity, and the disposition of non-competiveness.

### *Affinity for Play*

The play experiences the informants described were indicated to contribute to the fulfillment of students’ needs for competence, autonomy, and relatedness, all principles espoused by SDT (Deci & Ryan, 1985b) to foster intrinsic motivation. While it may or may not be true that most students—intrinsically motivated for information seeking or not—enjoy and thrive on play, based on my experiences working with children the students in the study seemed to have a particular affinity for it. In fact, not only did they discuss play often and enthusiastically, students also connected play with information seeking. Informants described incidents of play that involved information seeking, and information seeking was indicated as play for many of the students. It is my conclusion that the play life of children is an important contributor to their intrinsic motivation for information seeking. However, further study is required to determine if the affinity for play is more poignant for students who are intrinsically motivated for information seeking than it is for other children.

### *Creativity*

Students in the study exhibited a tendency toward creativity, which was indicated by statements in their interviews as well as by the evaluations of the art teachers. They described creativity as an outlet in itself, a way to express interest, and as an object for information seeking. The data suggest that creativity both contributed to and manifested itself in intrinsic motivation for information seeking in the lives of the informants. The assumption is that students who engage in information seeking experiences that include the use of creativity are more likely to be intrinsically motivated for both the information seeking and the creative aspects of the activity, and that the inclusion of each enhances the intrinsically motivating aspects of the other.

### *Non-competitiveness*

Informants in the current study exhibited a disposition of non-competitiveness. They rarely mentioned winning, losing, or competition in any domain. The reasons they gave for engaging in competitive activities was for the joy of participation and because they were competent or were striving for competence—both intrinsic reasons. I conclude from the data that the effect of the extrinsic motivator, competition, to diminish intrinsic motivation is decreased through a focus on the intrinsic reasons for participation in an activity as well as on the functional feedback of personal performance. Since research indicates that extrinsic motivators decrease intrinsic motivation (Deci, Betley, Kahle, Abrams, & Porac, 1981), it would be logical to conclude that students who focus on participating in competitive activities for intrinsic reasons are less likely to be affected negatively with regard to intrinsic motivation, particularly in the domain of information seeking, as is the case in the current study.



### *Information Seeking Behavior*

The informants indicated having a variety of information seeking styles and interests, and recounted diverse and successful information seeking episodes.

#### *Information Seeking Styles*

All of the students recounted experiences using computer technology for information seeking. However, considerably fewer students gravitated to computer technology as their primary information seeking medium (1), compared with those who did so for books (4). This finding might be considered surprising in this day and age of increasingly abundant technology. Notwithstanding, studies have shown that children are not as successful nor as motivated by computer use as the conventional wisdom would suggest when one considers the popularity of computer games in contemporary society and assumptions drawn about youth and technology (Bilal, 1999; Bilal, 2000; Bilal & Kirby, 2002; Spavold, 1990). At the same time, one must remember that this group of children was identified as intrinsically motivated for information seeking and as such may not represent patterns from the general population. The data did not indicate that they were unsuccessful nor that they disliked using the computer; it simply indicated that they had chosen other media as their primary information seeking sources, media for which they had more access, or presumably with which they felt more comfortable.

The styles they did choose more often—using books and observing—could indicate inclination toward their own particular learning styles (Gardner, 1999). It is also important to consider that 2 students could not be “pinned down” to specific information seeking styles because they tended to focus on their interests and sought information regarding those interests using any medium they could find. In fact, all of the students



indicated using at least two media types for information seeking, and 8 of the students indicated using at least three. The students use of their primary information seeking sources, and their versatility in using secondary sources would lead one to conclude that students who are intrinsically motivated to seek information a) begin with the media for which they have more access, for which they are best suited, and/or with which they are most comfortable; b) then they develop more questions from that experience; and then c) expand the focus to other sources as the need or desire for more information arises. It would be logical to conclude that students who are exposed to various media types and who are allowed/encouraged to use them at will would be more successful as well as more intrinsically motivated to seek information.

#### *The Point of Passion Experience*

All of the students in the study described a *point of passion* experience, a particular event they remember that ignited an interest they have since pursued. Most of the students (6 of 9) described having this experience at the age of four or five. In the same vein, a majority of the students also indicated support from others, generally an adult relative, for pursuing the interest. While the research on the long-lasting effects of interests cultivated in childhood is inconclusive, anecdotal evidence points to the possibility that *point of passion* experiences fostered by others may last until adulthood and, in fact, may affect a child's decisions for life. Combine this with the universal presence of the "anchor" relationship (who may or may not have been the person who supported them after the *point of passion* experience) in the lives of the informants, and the data point to the importance of an influential person(s) who fosters intrinsic motivation for information seeking in the life of each child.

### *Developmental Basis for Information Seeking*

Students in the study shared their many different interests during the interviews and depicted them in their drawings. During the analysis of the data, I sorted these interests into a typology, then classified them into an adapted model based on A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a, 2006b). Instead of using Havighurst's Developmental Tasks of Adolence (1972), I used Havighurst's Developmental Tasks of Middle Childhood (1972) as the basis of the model. Based on the interests indicated by the children, a variable, *the creative self*, was added to the model (the same variable added by Agosto and Hughes-Hassell as indicated by the data they gathered from the teens in their study). The conclusion from this process is that upper elementary students who are intrinsically motivated to seek information facilitate maturation into their next developmental stage, adolescence, through their information seeking behavior. It could be presumed that upper elementary students outside of the profile of the informants in the study also seek information for the same developmental reasons, but more study is required to confirm this conclusion.

### *The Task Definition of "Favorite" Information Seeking Episodes*

Students were asked about their "favorite" information seeking episodes. These were recorded and stratified into an adapted Taxonomy of Tasks (Bilal, 2002a). The Taxonomy of Tasks provides a framework into which the researcher can classify tasks into three categories: *task type*, *task nature*, and *task administration*. I added a fourth category, *task relationship*, based on the information gathered from the students. While the three task patterns representing students' "favorite" information seeking episodes included both open and closed task types, simple and complex task natures, semi-

assigned and fully self-generated task administration, and both group and individual task relationships, the salient feature of the episodes was that none of them included tasks that were fully assigned. Since the “favorites” were the most intrinsically motivating episodes of students identified as intrinsically motivated for information seeking, the assumption is that fully assigned tasks are least likely to be intrinsically motivating to students.

Similarly, when students were asked why they chose their “favorite” episodes, one of their responses was *choice of aspect* in information seeking. This element in the information seeking episodes aligns with the SDT (Deci & Ryan, 1985b) principle that autonomy is an essential component for intrinsic motivation. Other reasons students gave for choosing their “favorite” information seeking episodes also coincide with SDT principles. They are (given in order of frequency): relevance of/interest in topic (interest as the basis of intrinsic motivation), working in a group (relatedness), the experience of information seeking itself (indication of intrinsic motivation for information seeking), creating the final product (creativity), and no time limit (extrinsic motivators decrease intrinsic motivation). I conclude that students who participate in information seeking tasks that incorporate principles of intrinsic motivation (e.g., as outlined by SDT) in their design, are more likely to be intrinsically motivated by those experiences, and are more likely to engage in information seeking on their own.

#### Alignment with Motivation and Information Seeking Literature

The literature surrounding the research question, “what are the experiences in the lives of upper elementary school children that foster an intrinsic motivation to seek information?” can be found in the fields of information seeking behaviors of youth and intrinsic motivation and children. Chapter 2 reviews the relevant literature in these fields,

with special consideration to an LIS frame of reference. What follows is a discussion of how the current study aligns with the literature from these two fields.

### *Information Seeking and Youth*

This study has a *user-centered*, rather than a system-centered focus, a direction suggested by Dervin and Nilan in their seminal article published in 1986. It is based on the assumptions of the subjective meaning of information, the active role of users, and the situational dynamics of information seeking (Todd, 2003). Within the user-centered arena, the current study extends the LIS literature concerning information seeking in context in two ways. First, it adds to the literature examining task definition (Bilal, 2001; Gross, 1999; Hirsh, 1997; Marchionini, 1989; Schacter, Chung, & Dorr, 1998) and builds on the work of Bilal (2002a) by extending her Taxonomy of Tasks to include task relationship. The second addition to LIS literature about information seeking in context is in the area of everyday life information seeking. Through exploration of students' interests and Havighurst's Developmental Tasks of Middle Childhood (1972), A Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a, 2006b) was adapted for upper elementary school students who are intrinsically motivated for information seeking. The current study also adds to the LIS information seeking literature about students' use of computer technology and the Internet (Akin, 1998; Bilal, 2000, 2001, 2003; Bilal & Kirby, 2002; Dresang, E., Gross, M., & Holt, L., 2007; Hirsh, 1997, 1999; Kafai & Bates, 1997; Large, Beheshti, & Rahman, 2002; Lazonder, Biemans, & Wopereis, 2000; McNicholas & Todd, 1996).

By basing the study on informants who were identified as intrinsically motivated for information seeking, the examination of information seeking behavior in the current

study provides a set of descriptors that emphasizes the intrinsically motivating characteristics of particular information seeking episodes and experiences. Further, it is hoped that the instrument developed, the Self-Regulation Questionnaire for Information Seeking (adapted from the SRQ-A; Ryan & Connell, 1989) used in identifying students who are intrinsically motivated for information seeking will prove useful to researchers and practitioners in the school library field.

### *Intrinsic Motivation and Youth*

The current study can be classified as research based on *organismic motivation theory*. The organismic perspective within the motivation literature realm presumes an active role for the organism, one that is volitional and involves initiating behaviors. This view does not see outside stimuli as causes of behavior, but as opportunities or affordances for the organism to satisfy its needs (Deci & Ryan, 1985b). *Interest* is involved whenever an organism orients itself toward an object, which in turn “plays an important role in the amplification and direction of attention” (p. 28). Because this study found interest to be central to the intrinsically motivated informants’ information seeking behavior, it adds to the literature that emphasizes the importance of interest to the individual’s motivation and performance (Asher, 1980; Brown, 1988; Csikszentmihalyi, 1975, 1990, Dewey, 1913; Entwistle, 1988; Nolen, 1988; Schiefele, 1991; Schiefele, Winteler, & Krapp, 1991).

With regard to research based on the Self-Determination Theory (Deci & Ryan, 1985b), this research adds to the plethora of studies confirming the importance of psychological needs satisfaction to intrinsic motivation. It also adds support to the studies linking creativity and intrinsic motivation (Amabile, 1979, 1982a; Amabile, DeJong, &

Lepper, 1976; Koestner, Ryan, Bernieri, & Holt, 1984), and also adds the dimension of connecting creativity to intrinsic motivation for the particular domain of information seeking. This may suggest support for Sheldon's (1995) assertion that not only is intrinsic motivation associated with creativity on the task level, it is also connected on the trait level. In addition, this research adds to the small group of studies based on SDT that have used qualitative research methods (Burgess, Enzle, & Schmaltz, 2004; Fryer & Thrash, 2007; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Sheldon, Ryan, & Reis, 1996; Terzi, & Seker, 2007). This study also adds to the research on SDT and culture (Chirkov & Ryan, 2001; Deci, Ryan, Gagne, Leone, Usunov, & Kornazheva, 2001, Hayamizu, 1997; Yamauchi & Tanaka, 1998), particularly those concerning children (Chirkov & Ryan, 2001).

#### *Motivation and Youth in LIS*

Most of the literature that combines both youth information seeking and motivation primarily focuses on the information seeking behavior of youth, and secondarily touches on the topic of motivation. However, there is a body of LIS research that more directly addresses motivation and youth. The current research contributes to the literature concerning Accelerated Reader's<sup>TM</sup> motivational aspects only in that informants barely mentioned it, and gave no indication of interest nor concern for the program. This, however, may be pertinent to the motivating characteristics of AR, since 7 of 9 students attended a school fully operating AR. Regarding other literature about youth information seeking and motivation, the current study's suggestion that students strive to meet their developmental needs by seeking information extends ideas presented by Fourie and

Kruger (1995), who focused on the psychosocial, cognitive, and affective needs behind the information seeking behavior of secondary school students.

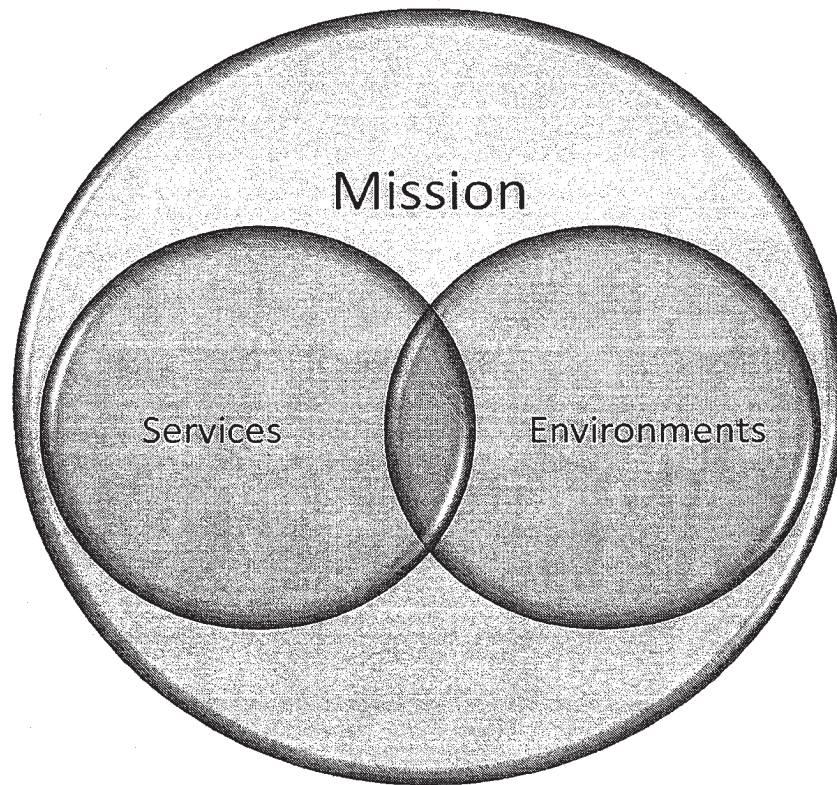
The LIS literature perhaps most influential to this study is the work of Dr. Ruth V. Small. Her early studies were concerned with library media specialists' and community college librarians' use of motivational strategies in the instruction of information literacy (Small, 1998, 1999; Small, Zakaria, & El-Figuigui, 2004). The current study builds on the foundational principles of these studies (as well as on Small's continuing work in this area) in that it examines LIS issues through the lens of motivational theory. However, it differs from Small's work in that it explores how various life experiences affect students' intrinsic motivation for information seeking, whereas Small's work focuses on the motivational aspects of multimedia software, the World Wide Web, information systems, telecommuting, instructional design, and information literacy instruction (e.g., Small, 2005; Small & Arnone, 2000).

#### Implications and Recommendations

Qualitative research methods “allow rich descriptions of everyday practice which allow practitioner audiences imaginatively to juxtapose their own everyday practices with the research description” (Bloor, 2004, p. 321). This comparison affords opportunity for practitioners to evaluate their own practices and begin to consider adopting new approaches suggested from the research findings (Bloor, 2004). When I first began this study it was for the purpose of developing a clearer understanding of children who are intrinsically motivated to seek information. Through this understanding, I hoped to inform practice in school librarianship—both for myself and for others in the profession—in order to better foster the internal desire for information seeking in our

young patrons. Implications and recommendations toward this goal include suggestions in defining our missions, directing our services, and structuring our environments. These are three interconnected entities (see Figure 16). *Mission* is the overarching and foundational goal; *services* and *environments* are the intertwining building blocks directed by and utilized to achieve the mission.





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*Figure 16.* Interconnecting nature of mission, services, and environments.

### *Defining Our Mission*

A *mission* is defined as “an inner calling to pursue an activity or perform a service” (*American Heritage Dictionary of the English Language*, 2008, para. 6). Library media specialists, for the most part, have long held the mission of helping students become lifelong learners (American Association of School Librarians & the Association for Educational Communications and Technology, 1998). Not only do many of us possess the “inner calling” of this mission, but we as professionals are commissioned to enable students to use skills and resources in order to “share knowledge and participate ethically and productively as members of our democratic society” (AASL, 2007, p. 3). The AASL Standards for the 21<sup>st</sup>-Century Learner profess that in order “to become independent learners, students must gain not only the skills but also the disposition to use those skills, along with an understanding of their own responsibilities and self-assessment strategies” (p.2). The disposition to use information seeking skills on a personal level is made plain in the fourth standard, *Pursue personal and aesthetic growth*, particularly in indicator 4.2.2, which states that students should “demonstrate motivation by seeking information to answer personal questions and interests, trying a variety of formats and genres, and displaying a willingness to go beyond academic requirements” (p. 7). This indicator describes intrinsic motivation for information seeking, and implies the importance of this trait to the student’s life outside of school both now and in the future. Thus, fostering intrinsic motivation for information seeking is a part of our mission as a profession and should be an integral part of our practice as library media specialists.

Based on the descriptions of the informants (students in the current study, all of whom possess the intrinsic motivation for information seeking) children who are

intrinsically motivated for information seeking do not see searching for information as a chore, but as an enjoyable and fun pursuit. It is as much a part of their daily lives as eating and sleeping. They do not limit their information seeking to class assignments, but extend it to include their passions, interests, and activities. For these children, information seeking is not only a means of enrichment and entertainment; it is also a means of meeting their needs, a way of developing skills necessary to facilitate maturation into their next life stage. We would wish these to be characteristics evident in every child we help launch into adulthood.

My research supports the assertion that children who are intrinsically motivated to seek information may or may not come from affluent homes, they may or may not show competencies typical for the academically successful child, and they may or may not have an affinity for traditional information sources. Since children who are intrinsically motivated to seek information do not appear to fit any single profile, they may well be “hiding” in our schools. Therefore, we cannot abide by a one-size-fits-all attitude in our approach to library service, but instead should strive to provide each child with an individualized opportunity that will be most effective in helping him or her develop the internal desire to seek information. Fostering the intrinsic motivation for information seeking should not only be a part of our mission and a part of our practice, it should also be a part of our mindset in our daily interaction with children.

#### *Directing Our Services and Structuring Our Environments*

The remaining two entities in this discussion of implications and recommendations for school library practice are *services* and *environments*. *Services*, for the purpose of this dissertation, refer to teaching, leadership, and one-on-one guidance to

patrons (students, staff, and community). *Environments* refer to the physical and virtual, as well as the affective surroundings of our libraries as “place.” The two components are intertwined: the goals and outcomes of one affect those of the other. What follows is a discussion of the implications and recommendations for services and environments based upon conclusions from this study.

- *Play contributes to individuals’ intrinsic motivation for information seeking.*

Play can be incorporated into both the service aspects and environments we create in our libraries. By using strategies that are playful, and by exhibiting an attitude based on play, the library professional helps fulfill the needs of competence, autonomy, and relatedness (SDT, Deci & Ryan, 1985b) and, therefore, fosters intrinsic motivation in his or her young patrons. Using teaching strategies that include whimsical situations, role playing, and imaginative activities builds play into instruction. With regard to environment, the attitudes of the library media specialist and other library personnel are central to the atmosphere in the library. By exhibiting a sense of humor and enjoyment in the company of their patrons, library personnel provide an atmosphere of acceptance, likability, and approachability (Radford, 1993, 1998). The physical and virtual environments can also contribute to the sense of play in our libraries. By using bright colors, humorous signs and displays, and by designing our websites with children in mind as the primary audience, we can convey this sense. When children see that information seeking is like play, they will be more likely to maintain or develop intrinsic motivation for it.

The importance of play can also be addressed through the issue of students’ shrinking recess time. The urgency school personnel feel in the testing society of today is

reflected in the rushed and crowded schedules that are not only crammed with high-stakes testing, pre and post testing, but also with instruction that has been added to directly address student preparation for test items. In many schools, the time to fit in more of these test-related activities is being skimmed from time gained by reducing or eliminating instruction in the arts, non-tested subjects such as science and history, and recess (Henley, McBride, Milligan, & Nichols, 2007; Manzo, 2008; Phillips, 2004). Educators suggest that recess gives students time to expel pent-up energy and to form social relationships (Henley et al., 2007). The data from this study suggest that recess, as a form of play, also contributes to the need fulfillment that is foundational to children's intrinsic motivation for information seeking. Library media specialists, as leaders in their schools, can advocate for restoring recess time, stressing it as an important component in fostering intrinsic motivation in our students.

- *Creativity both contributes to and manifests itself in intrinsic motivation for information seeking.*

Creativity can also be infused into our services and environments. In particular, creative outlets can be provided through choice in project completion and fulfillment. Library media specialists who use strategies based on brainstorming, flexible problem solving, and divergent thinking promote student creativity (Santrock, 2006). Students should be encouraged to engage in the research process through use of creative organizational strategies, and exhibit their research results and conclusions through fresh, original formats based on their individual creative inclinations and strengths. Collaborating with art and music teachers is one way to incorporate creativity into instructional design. Setting up areas in the library where students can participate in

creative activities, and providing materials in the library about creative pursuits and people is another way creativity can be encouraged.

- *Information seeking styles seem to be determined by learning styles and/or intelligences, and by those sources for which students have more access, or with which they feel more comfortable.*

The reasonable recommendation for this conclusion would be to provide and give students choice in the use of as many media as possible in library experience. Most schools provide adequate books and computers for student use (though this is certainly not always the case), but some children are more intrinsically motivated by items they can see and observe first hand. Displays of “real” observable objects and creatures provide interest and stimulate inquiry, as well as provide opportunities for those children who are naturally inclined for this information seeking style.

A movement today in information literacy instruction is the use of primary sources (Callison & Sanders-Brunner, 2006). *Primary sources* are “artifacts such as official documents (birth certificates, marriage licenses, and property contracts), journals (diaries and letters), clothing, toys, tools, visuals (sketches, paintings, and photographs), and more” (p. 483). In the absence of real artifacts, many historical documents, as well as other realia (e.g., American Memory: Historical Collections for the National Digital Library, 2008; Field Museum, 2008) are available on the Internet. When students use these kinds of information sources, they think like naturalists and historians, giving them new contexts and perspectives. In addition, by providing an environment with observable stimuli, we are meeting the needs of students for whom this type of media best fits their learning style.



- *While students who are intrinsically motivated for information seeking have various family configurations, “anchor” relationships are the norm and are vital in fostering intrinsic motivation for information seeking.*

It may seem that “anchor” relationships either exist for a child or they don’t. This may be one realm we, as library media specialists, cannot influence. However, there *are* ways we in the library profession can assist in this area. First, we can work to educate parents and guardians in their role as information seeking “anchors.” We do this by parent/guardian education, and by helping families get library cards and news about other information-rich environments such as zoos and museums. Grandparents also can play an important role, and arranging for “grandfriends” (older citizens to volunteer to show interest in children; Grandfriends101.com, 2008) can help fill that gap for children without their own. We can be “on the alert” to students’ interests and talents and notify such to students’ primary caregivers. This may be particularly important with regard to very young patrons. The library media specialist who cultivates relationships with preschool and kindergarten students may be one of the first to notice a *point of passion* experience. It was a teacher who notified Eric Carle’s parents about his artistic talent, and it was she who urged them to respect and encourage it (Fulton, 1993). Library professionals are in an ideal place to observe students pursuing their interests and talents as we monitor their interaction with media. Paying attention and being proactive in connecting students to resources is one way to serve as supportive relationships ourselves.

Mentoring is another way to help provide “anchor” relationships. In my years as a library media specialist at an International Baccalaureate© (IB) Primary Years

Programme school, I helped to implement an event called *the exhibition*. The exhibition is “an extended, collaborative inquiry project [students carry out in the last year of the Primary Years Programme] under the guidance of their teachers” (International Baccalaureate© Organization, 2008). At our school, students were connected with staff and community members who shared the same interests or concerns and were willing to mentor a student with the project. The relationships built through this type of program not only helped to meet the SDT (Deci & Ryan, 1985b) principle need of relatedness, it also helped students develop and hone their information seeking skills, thus also building their competence. Non-IB schools could also implement an exhibition-type project and follow through by connecting students with mentors.

- *Point of passion experiences generally occur during the pre-school years, and if fostered by others, may last until adulthood.*

It has long been best practice in education and parenting to prepare students to read from infancy through the early school years (e.g., Gunderson, 1964). Yet, in many schools information literacy instruction for preschool, kindergarten, and even primary age students is limited to short check-out periods and storytimes. The conclusion based on the results of the current study is that children who develop passions and interests early, and who are supported by others in their information seeking regarding those interests and passions, are likely to cultivate and maintain the intrinsic motivation for information seeking at least through the elementary years; and anecdotal evidence points to retention for some individuals throughout life (B. Birney, personal communication, October 26, 2008; Fulton, 1993). The recommendation based on this conclusion is to purposefully provide opportunities and instruction for young children in information seeking.



Some library media specialists have made a foray into providing research experiences for the very young (Christian, 2004; Fisher, Heath, & Price, 2004). Heath describes a project she implemented in collaboration with teachers involving kindergarten students. The project began with a mini-lesson about curiosity and how our inner questions can be answered through information seeking (primarily through gaining information through pictures). The library media specialist then proceeded to meet with each individual student for three lessons about information seeking based on a topic chosen by the student. They were low-key, low-pressure sessions differentiated to meet students' individual skills and abilities. Students spent about a total of an hour in the library with the library media specialist, and the projects for the kindergarten students were spread out over the course of a year with the library media specialist meeting with each kindergartener for three sessions, then moving on to the next student until they all had a turn. Heath found that the project was met with enthusiasm by both students and teachers, and that students continued to use the skills they developed over the ensuing years.

- *Interest/relevance of topic, working in a group, at least some choice in the task, creating a final product, and few time constraints are all components of intrinsically motivating information seeking episodes.*

The reasons (listed above) given by students for choosing their “favorite” information seeking episodes align with principles of SDT (Deci & Ryan, 1985b). These episodes provided opportunities for students to meet their needs of autonomy, competence, and relatedness. By using constructivist learning environments that are

designed with these principles in mind, library media specialists can foster intrinsic motivation for information seeking.

*Constructivism* is the belief that “phenomena in the world can be fruitfully understood many different ways and the knowledge is what the person has made of the world” (Littlejohn, 2002, p. 27). The characteristics of constructivist learning environments are: a) “they are student-centered and instructor-facilitated”, and b) “they provide meaningful, authentic learning tasks” (Small, 2005, p. 23). Within constructivist learning environments, authentic learning tasks require use of higher order thinking skills, provide for collaboration, and “foster responsibility for learning” (p. 23). The constructivist approach not only fosters intrinsic motivation for information seeking, it also works well with information-literacy skills instruction by promoting individual, lifelong learning strategies (Robins, 2005).

Types of teaching methodologies that promote constructivist and SDT (Deci & Ryan, 1985b) principles of intrinsic motivation are *problem-based learning* (Barrows & Tamblyn, 1980), *intentional learning environments* (Resnick, 1989), and *cognitive apprenticeships* (Collins, Brown, & Newman, 1989). All of these instructional methods incorporate authentic learning tasks, lending relevance to the learning situation. They also include elements of collaboration, which serves to meet the need of relatedness for students. Another approach to learning that fosters intrinsic motivation is *inquiry*, a method that has been widely accepted in the school library field (e.g., Callison & Preddy, 2006; Kuhlthau, 2001, Kuhlthau, Maniotes, & Caspari, 2007; Robins, 2005). Inquiry-based learning “takes advantage of information-rich environments by promoting a student’s natural inquisitiveness” (Robins, 2005, p. 9). The inquiry approach encourages

students to ask questions, investigate, explore, search, quest, and study. It can be used as a strategy for individuals, or it can be implemented as a collaborative strategy (Kuhlthau, Maniotes, & Caspari, 2007). The option of implementing inquiry strategies in individual or group settings enables accommodation of the individual needs of autonomy or relatedness, which are influenced by an individual's culture (as suggested by the current study and others, e.g., Chirkov & Ryan, 2001). Giving students choice in this matter helps to differentiate according to their individual needs.

A caveat to this discussion of instructional design is the important consideration of the use of extrinsic motivators. Seeking information on topics of interest is usually a natural, pleasant experience for children (Ryan, Kuhl, & Deci, 1997), a phenomenon this study supports. However, placing extrinsic motivators on intrinsically motivating experiences reduces intrinsic motivation for those activities (Amabile, DeJong, & Lepper, 1976, Deci & Cascio, 1972, Lepper & Greene, 1975, Ryan & Deci, 1985b). Many of the activities “we ask children to attempt in school may be of some initial intrinsic interest to at least some of the children, [however,] the effect of presenting these activities in the context of a system of extrinsic incentives and adult surveillance may [serve] to undermine that intrinsic interest in those activities” (Lepper & Greene, 1975, p. 484). The bottom line is to give students choice and as much control as is feasible/age-appropriate in their information seeking projects, then keep feedback on the functional rather than on the controlling level. This means emphasizing better ways to accomplish learning goals, rather than emphasizing grades, competition, and rewards.

### Suggestions for Future Research

One of this study's primary contributions to the body of knowledge is its development and validation of a survey to identify students who are intrinsically motivated to seek information (SRQ-IS). It also began a pool of results and conclusions based on the experiences of the identified students, and gave suggestions for practice based on those conclusions. Questions raised in the current study provide areas for future research. They are:

1. In comparing the mean answers on the motivation style items on the SRQ-IS, there was no significant difference between the boys and girls for the motivation styles of identified, introjected, and external; however, there was a significant difference between the boys' and the girls' mean composite score answers on the intrinsic motivation style items. In addition, a higher percentage of girls (13.6%) were identified as highly and distinctly intrinsically motivated for information seeking than boys (5.3%). What are the experiences of students that contribute to the gender differences observed in the current study?
2. One in 9 informants (11%) belonged to a minority race as compared with 40% of the children in the school district. What are the experiences of students that contribute to these discrepancies with regard to race as found in the current study? Are these discrepancies representative of other populations?
3. Is the affinity for play more poignant for students who are intrinsically motivated for information seeking than it is for extrinsically motivated children?

4. How long do the interests ignited by children's *point of passion* experiences typically last? How influential is the support provided by others to this lastingness?
5. Do elementary children outside of the profile of this study (upper elementary school students who are intrinsically motivated for information seeking) seek information for developmental reasons?
6. Are "anchor" relationships that are arranged by educators effective in fostering intrinsic motivation for information seeking?
7. Which specific teaching strategies/methodologies/philosophies are conducive to fostering intrinsic motivation for information seeking?
8. What are the experiences that foster intrinsic motivation for information seeking for children from various other geographic locations, cultures, and socio-economic conditions?

#### Reflection

Bernier, in the introduction to *Youth Information-Seeking Behavior II: Context, Theories, Models, and Issues* (Chelton & Cool, 2007), bemoans the extent to which youth information seeking research focuses on students' connection to information seeking through their academic curriculum. He is concerned that these studies do not address "the intrinsic interest of the young people involved" (p. xvi), portrays students in a negative light, and is focused less on information seeking than on improving student achievement. Bernier calls for research that is more youth-centric—studies that ask the "why questions," and that take young people "more on their own terms than exclusively on terms dictated to them" (p. xiv). By using a naturalistic approach, and a conceptual

framework based on information seeking models (Agosto & Hughes-Hassell, 2006a, 2006b; Bilal, 2002a) in conjunction with the theoretical framework of SDT (Deci & Ryan, 1985b) to study the research question, “what are the experiences in the lives of upper elementary students that foster the intrinsic motivation to seek information?” I have attempted to fulfill the call for new research regarding the information seeking behavior of youth. It is my desire that through the current study this call for new research has been partially answered and that behind it more research will follow. It is also my hope that this study has lent means of evaluative enlightenment to the way school libraries and their personnel define their missions, provide services, and structure their environments toward the goal of fostering students who are on their way to becoming lifelong learners.

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## Appendix A

## Letter of Permission to Use Figure: Mean Levels of Intrinsic and Extrinsic Motivation by Grade Level



**Title:** Intrinsic and Extrinsic Motivational Orientations in the Classroom: Age Differences and Academic Correlates.

**Author:** Lepper, Mark R.; Corpus, Jennifer Henderlong; Iyengar, Sheena S.

**Publication:** Journal of Educational Psychology

**Publisher:** American Psychological Association

**Date:** May 1, 2005

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## Appendix B

**Information Seeking Self-Regulation Questionnaire (SRQ-IS)**

## Why I Look for Information

Name: \_\_\_\_\_ Age: \_\_\_\_\_

Grade: \_\_\_\_\_ Boy ( ) or Girl ( ) Teacher: \_\_\_\_\_

## A. Why do I look for information for a project or assignment?

- |    |   |              |               |                 |  |
|----|---|--------------|---------------|-----------------|--|
| 1. | Because I want to learn new things.                                   |              |               |                 |  |
|    | Very true   | Sort of true | Not very true | Not at all true |  |
| 2. | Because I want my teacher to think I'm a good student.                |              |               |                 |  |
|    | Very true   | Sort of true | Not very true | Not at all true |  |
| 3. | So that the adults won't yell at me.                                  |              |               |                 |  |
|    | Very true   | Sort of true | Not very true | Not at all true |  |
| 4. | Because I'll be ashamed of myself if it didn't get done.              |              |               |                 |  |
|    | Very true   | Sort of true | Not very true | Not at all true |  |
| 5. | Because it's fun.   |              |               |                 |  |
|    | Very true   | Sort of true | Not very true | Not at all true |  |
| 6. | Because that's the rule.  |              |               |                 |  |
|    | Very true   | Sort of true | Not very true | Not at all true |  |
| 7. | Because I enjoy looking for information for projects and assignments. |              |               |                 |  |
|    | Very true   | Sort of true | Not very true | Not at all true |  |

8. Because it's important to me to look for information for projects and assignments.

Very true      Sort of true      Not very true      Not at all true

B. When I look for information about a new topic it is usually. . .

9. Because I want adults to think I'm a good student.

Very true      Sort of true      Not very true      Not at all true

10. Because I'll get in trouble if I don't.

Very true      Sort of true      Not very true      Not at all true

11. Because it's fun.

Very true      Sort of true      Not very true      Not at all true

12. Because I will feel bad about myself if I don't do it.

Very true      Sort of true      Not very true      Not at all true

13. Because I want to understand the subject.

Very true      Sort of true      Not very true      Not at all true

14. Because that's what I'm supposed to do.

Very true      Sort of true      Not very true      Not at all true

15. Because I enjoy looking for information on new topics.

Very true      Sort of true      Not very true      Not at all true

16. Because it's important to me to look for information about new topics.

Very true      Sort of true      Not very true      Not at all true



## C. Why do I look for information in books?

17. To find out if I'm right or wrong.

Very true	Sort of true	Not very true	Not at all true
-----------	--------------	---------------	-----------------

18. Because I want the adults to say nice things about me.

Very true	Sort of true	Not very true	Not at all true
-----------	--------------	---------------	-----------------

19. Because it's fun.

Very true	Sort of true	Not very true	Not at all true
-----------	--------------	---------------	-----------------

20. Because I want the other students to think I'm smart.

Very true	Sort of true	Not very true	Not at all true
-----------	--------------	---------------	-----------------

21. Because I enjoy looking for information in books.

Very true	Sort of true	Not very true	Not at all true
-----------	--------------	---------------	-----------------

22. Because it's important to me to look for information in books.

Very true	Sort of true	Not very true	Not at all true
-----------	--------------	---------------	-----------------

23. Because that's what I'm supposed to do.

Very true	Sort of true	Not very true	Not at all true
-----------	--------------	---------------	-----------------

24. Because I feel really proud of myself when I find information.

Very true	Sort of true	Not very true	Not at all true
-----------	--------------	---------------	-----------------

## D. Why do I look for information in magazines?

25. Because it's fun.

Very true	Sort of true	Not very true	Not at all true
-----------	--------------	---------------	-----------------

26. Because I enjoy looking for information in magazines.

Very true	Sort of true	Not very true	Not at all true
-----------	--------------	---------------	-----------------

27. To find out if I'm right or wrong.
- Very true    Sort of true    Not very true    Not at all true
28. Because that's what I'm supposed to do.
- Very true    Sort of true    Not very true    Not at all true
29. Because I want the adults to say nice things about me.
- Very true    Sort of true    Not very true    Not at all true
30. Because I feel really proud of myself when I find information.
- Very true    Sort of true    Not very true    Not at all true
31. Because I want the other students to think I'm smart.
- Very true    Sort of true    Not very true    Not at all true
32. Because it's important to me to look for information in magazines.
- Very true    Sort of true    Not very true    Not at all true

E. Why do I look for information on the Internet?

33. Because it's important to me to look for information on the Internet.
- Very true    Sort of true    Not very true    Not at all true
34. Because I want the other students to think I'm smart.
- Very true    Sort of true    Not very true    Not at all true
35. Because I feel really proud of myself when I find information.
- Very true    Sort of true    Not very true    Not at all true
36. Because I want the adults to say nice things about me.
- Very true    Sort of true    Not very true    Not at all true

37. Because that's what I'm supposed to do.
- |           |              |               |                 |
|-----------|--------------|---------------|-----------------|
| Very true | Sort of true | Not very true | Not at all true |
|-----------|--------------|---------------|-----------------|
38. To find out if I'm right or wrong.
- |           |              |               |                 |
|-----------|--------------|---------------|-----------------|
| Very true | Sort of true | Not very true | Not at all true |
|-----------|--------------|---------------|-----------------|
39. Because I enjoy looking for information on the Internet.
- |           |              |               |                 |
|-----------|--------------|---------------|-----------------|
| Very true | Sort of true | Not very true | Not at all true |
|-----------|--------------|---------------|-----------------|
40. Because it's fun.
- |           |              |               |                 |
|-----------|--------------|---------------|-----------------|
| Very true | Sort of true | Not very true | Not at all true |
|-----------|--------------|---------------|-----------------|

## Appendix C

**Interview Protocol Sheet**

Time of interview:

Date:

Place:

Interviewee:

Age:

School:

1. Introductions (We each give a brief description of who we are. For an ice-breaker, I will name one unusual thing about myself. Student will be asked to name one unusual thing about him or herself.)
2. Go over protocol sheet and time constraints. Ask student's opinion on the timing today and the order of things we will do. Change if student has suggestions.
3. Go over "Consent and Information Sheet" again (student and parent will have already read and signed sheet).
4. Test recorder and make sure student feels comfortable being recorded.
5. Do interview. Begin with Q1-1, then proceed with follow up questions based on the information the student gives. Q2-1 begins the second set of questions. This would be a good time for a break, or if the time is up or the student appears tired, save this line of questioning for another interview.

This is an interview for a research project about the experiences of upper elementary students who are intrinsically motivated to seek information. "Intrinsically motivated" means to do something for pleasure, enjoyment, or satisfaction. "Seeking information" means to look for more data, facts, or ideas in any source (book, internet, television, other people, etc.).

Discuss briefly.

I will be asking you questions about your life experiences. Please answer as honestly as you can, and feel free to add information if you wish to. Of course, you

may ask me questions if you don't understand or want for me to clarify something I've said. I will do the same with you. 😊 What questions or comments do you have?

Question 1-1:

What makes a good day for you?

Follow up: At school? At home? Somewhere else?

Question 1-2:

What do you like to do?

Follow up: At school? At home? Somewhere else?

Question 1-3:  
What would be a good vacation for you?

Question 1-4:

What do you like about your friends? Your family?

What don't you like about your friends? Your family?



Question 2-1:

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

What did you think? What did you do? How did you feel?

If needed:

Do you go anywhere or do anything to look up information? Where and what about?

Think of a time recently when you needed help, when you needed to decide what to do, or when you were worried about something. What did you think? What did you do? How did you feel?

(adapted from Shenton & Dixon, 2007, p. 9; Question adapted for age group).

Question 2-2:

Could you tell me about another time that was different than the first you described?

What did you think? What did you do? How did you feel?

(Thank informant for participating. Tell him or her you will be getting in touch soon [give time frame] about the next step in the research project).

## Appendix D

Letter of Permission to Use Figure: Components of Data Analysis: Interactive Model

---

**From:** "sagepub permissions (US)"  
**Sent:** Tuesday, December 02, 2008 9:33 AM  
**To:** "Sheryl R Crow"  
**Subject:** RE: Requesting permission to use figure in my dissertation

---

Dear Ms. Crow,

Thank you for your request. Please consider this written permission to use the material detailed below in your dissertation. Proper attribution to the original source should be included. This permission does not include any 3<sup>rd</sup> party material found within the work. Please contact us for any future usage or publication (excluding the 8 printings) of your dissertation.

Best,  
Adele

---

**From:** Sheryl R Crow [mailto:crowsr@unk.edu]  
**Sent:** Tuesday, December 02, 2008 8:11 AM  
**To:** sagepub permissions (US)  
**Subject:** Requesting permission to use figure in my dissertation

Dear Permissions Department,

I am a doctoral student at Emporia State University in Emporia, KS. I am writing a dissertation entitled, *Exploring the Experiences of Upper Elementary School Children who are Intrinsically Motivated to Seek Information*.

I am requesting permission to duplicate a figure in my dissertation from *Qualitative Data Analysis: An Expanded Sourcebook* by Miles and Huberman, 1994. ISBN 0-8039-5540-5. The figure is labeled Figure 1.4, Components of Data Analysis: Interactive Model and is on p. 12 of the book.

The dissertation will have a maximum of 8 printings, and will be scanned electronically for the ESU dissertation database.

I am to provide documentation of permission to use this figure. An email is sufficient.

Thank you very much for your attention to the matter.

Sherry R. Crow  
Assistant Professor of School Library Science/Educational Media  
College of Education  
Department of Teacher Education  
University of Nebraska Kearney

School Library Media Research Editorial Board

## Appendix E

**INTERVIEW**  
INFORMED CONSENT SHEET

My name is Sherry Crow. I am a graduate student at Emporia State University's School of Library and Information Management and am currently conducting research for a dissertation. The dissertation is about the experiences of upper elementary students who are motivated to seek information on their own. As part of this research, I will be using a method called "interviewing."

In the interview activity, I will ask you questions about your experiences and will be asked to answer honestly. This activity will be approximately 60 minutes in length.

I appreciate your willingness to participate in this project. It is hoped that the information gleaned from this observation will help teachers and librarians foster experiences similar to yours for students in the future.

Before I start the interview, I would like to reassure you that you have several very definite rights. These include the following:

- Your participation in this interview is entirely voluntary;
- You are free to refuse to answer any question at any time;
- You are free to withdraw from the interview at any time;
- You will not be penalized for withdrawing from the interview or refusing to answer a question.

If you are uncomfortable at any time during the interview, either physically (for example, if you are too hot or too cold), or emotionally (for example, a question I ask makes you uneasy) please let me know and I will do my best to change the circumstances in order to make you comfortable.

Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation resulting from this interview. This interview will be kept strictly confidential, except when information comes to light that may lead to your harm or the harm of others. In such cases, the informant (you), the researcher (I), and the adult guardian will decide on the best course of action.

Any information from the interview will be available only for teaching and research purposes. Any tape recording/notes of the interview will be permanently erased at the conclusion of the project.

**"I have read (or heard) the above statements and have been fully advised of the procedures to be used in this project. I have been given sufficient opportunity to ask any questions I had concerning the procedures and possible risks involved. I understand the potential risks involved and I assume them voluntarily. I likewise understand that I can withdraw from the study at any time without being subjected to reproach."**

\_\_\_\_\_  
Student

\_\_\_\_\_  
Date

\_\_\_\_\_  
Parent or Guardian

\_\_\_\_\_  
Date

If you have any further questions, or if you sustain a research related injury, please contact Sherry Crow at (719) 440-1196 or [crowsr@unk.edu](mailto:crowsr@unk.edu).

## Appendix F

DRAWING ANALYSIS  
INFORMED CONSENT SHEET

My name is Sherry Crow. I am a graduate student at Emporia State University's School of Library and Information Management and am currently conducting research for a dissertation. The dissertation is about the experiences of upper elementary students who are motivated to seek information on their own. As part of this research, I will be using a method called "drawing analysis."

In the drawing analysis activity, you will be asked to draw a picture based on a subject I give you. You will be provided with paper and drawing instruments (pencils, crayons, and markers). This activity will be approximately 30 to 60 minutes in length. In the event that you cannot draw manually, an alternative procedure, a computer generated drawing program, will be used.

I appreciate your willingness to participate in this project. It is hoped that the information gleaned from this observation will help teachers and librarians foster experiences similar to yours for students in the future.

Before I start the activity, I would like to reassure you that you have several very definite rights. These include the following:

- Your participation is entirely voluntary;
- You are free to refuse to draw at any time;
- You are free to withdraw from the activity at any time;
- You will not be penalized for withdrawing from the activity or refusing to answer a question.

If you are uncomfortable at any time during the activities either physically (for example, if you are too hot or too cold), or emotionally (for example, a question I ask makes you uneasy) please let me know and I will do my best to change the circumstances in order to make you comfortable.

Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation resulting from these activities. Information you give me will be kept strictly confidential, except when information comes to light that may lead to your harm or the harm of others. In such cases, the informant (you), the researcher (I), and the adult guardian will decide on the best course of action.

Any information from this activity will be available only for teaching and research purposes. Your drawing will be permanently erased or destroyed at the conclusion of the project.

**"I have read (or heard) the above statements and have been fully advised of the procedures to be used in this project. I have been given sufficient opportunity to ask any questions I had concerning the procedures and possible risks involved. I understand the potential risks involved and I assume them voluntarily. I likewise understand that I can withdraw from the study at any time without being subjected to reproach."**

---

 Student

---

 Date

---

 Parent or Guardian

---

 Date

If you have any further questions, or if you sustain a research related injury, please contact Sherry Crow at (719) 440-1196 or [crowsr@unk.edu](mailto:crowsr@unk.edu).

## Appendix G

**CUESTIONARIO DE LA AUTOREGULACIÓN DEL COMPORTAMIENTO  
QUE BUSCA DE LA INFORMACIÓN  
HOJA INFORMADA DEL CONSENTIMIENTO**

*Fecha:* Sept. 3, 2008

*Grados:* Cinco

*Actividad:* Cuestionario de la autoregulación del comportamiento que busca de la información

*Resumen:* Los quinto estudiantes del grado tomarán preguntas que consisten en de un cuestionario sobre su comportamiento que busca de la información. La actividad del cuestionario tomará aproximadamente 30 minutos. La información será utilizada para recopilar los datos para una disertación en las experiencias de los estudiantes elementales superiores que se motivan para buscar la información sobre sus el propios. Darán los estudiantes un cuestionario escrito que también sea leído en voz alta a ellos, y les pedirán circundar las respuestas que describen lo más mejor posible las razones que buscan la información. Se espera que los datos espigados de esta voluntad del cuestionario ayudan a profesores y los bibliotecarios fomentan las experiencias que buscan de la información positiva para los estudiantes futuros.

Los estudiantes tienen varias derechos muy definidas (las estas derechos serán leídas a los estudiantes antes de comenzar el cuestionario):

- La participación del estudiante es enteramente voluntaria;
- El estudiante está libre rechazar contestar a cualquier pregunta en cualquier momento;
- El estudiante está libre retirarse del cuestionario en cualquier momento
- No penalizarán al estudiante para que el retirarse del cuestionario o el rechazo conteste a una pregunta.

Si el estudiante es incómodo en cualquier momento durante la actividad, físicamente (por ejemplo, si el estudiante es demasiado caliente o demasiado frío), o (por ejemplo, una pregunta hace a estudiante inquieto) cada esfuerzo será hecho emocionalmente de cambiar las circunstancias para hacer al estudiante cómodo.

Bajo ningunas circunstancias quiera el nombre del estudiante o las características que identifican personales se incluyan en la disertación o cualquier otro informe o presentación resultando de este cuestionario. La información de este cuestionario será mantenida terminantemente confidencial.

Cualquier información del cuestionario estará disponible solamente para los propósitos de la enseñanza y de la investigación. Los cuestionarios terminados serán destruidos permanentemente en la conclusión del proyecto.

**“He leído (u oído) las declaraciones antedichas y me he aconsejado completamente de los procedimientos para ser utilizado en este proyecto. Me han dado suficiente oportunidad de hacer cualquier pregunta que tuviera referente los procedimientos y a los riesgos posibles implicados. Entiendo que los riesgos potenciales implicados y yo los asumimos voluntariamente. Entiendo además que puedo retirarme del estudio en cualquier momento sin ser sujetado a la reprobación.”**

\_\_\_\_\_  
Estudiante

\_\_\_\_\_  
Fecha

\_\_\_\_\_  
Padre o guarda

\_\_\_\_\_  
Fecha

Si usted tiene cualquier pregunta más otra, o si usted sostiene lesión relacionada investigación, entre en contacto con por favor el cuervo del jerez en 719-440-1196 o [crowsr@unk.edu](mailto:crowsr@unk.edu) .

## Appendix H

## Letter from ESU Institutional Review Board



May 28, 2008

Sherry Crow  
SLIM  
5741 E. Wells Fargo Dr.  
Colorado Springs, CO 80918

Dear Ms. Crow:

Your application for approval to use human subjects, entitled "Exploring the Experiences of upper Elementary School Children who are Intrinsically Motivated to Seek Information," has been reviewed. I am pleased to inform you that your application was approved and you may begin your research as outlined in your application materials.

The identification number for this research protocol is 08094 and it has been approved for the period August 1, 2008 to August 1, 2009.

If it is necessary to conduct research with subjects past this expiration date, it will be necessary to submit a request for a time extension. If the time period is longer than one year, you must submit an annual update. If there are any modifications to the original approved protocol, such as changes in survey instruments, changes in procedures, or changes to possible risks to subjects, you must submit a request for approval for modifications. The above requests should be submitted on the form Request for Time Extension, Annual Update, or Modification to Research Protocol. This form is available at [www.emporia.edu/research/docs/irbmod.doc](http://www.emporia.edu/research/docs/irbmod.doc).

Requests for extensions should be submitted at least 30 days before the expiration date. Annual updates should be submitted within 30 days after each 12-month period. Modifications should be submitted as soon as it becomes evident that changes have occurred or will need to be made.

On behalf of the Institutional Review Board, I wish you success with your research project. If I can help you in any way, do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Joella Mehrhof', is written over a horizontal line.

Joella Mehrhof  
Chair, Institutional Review Board

pf

cc: Nancy Thomas

## Appendix I

## Letter of Permission to Use Figure: The Self-Determination Continuum



**Title:** Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being.

**Author:** Ryan, Richard M.; Deci, Edward L.

**Publication:** American Psychologist

**Publisher:** American Psychological Association

**Date:** Jan 1, 2000

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\*Copyright © 2000 by the American Psychological Association. Adapted with permission. The official citation that should be used in referencing this material is "Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being," by D. L. Deci and R. M. Ryan, 2000, *American Psychologist*, 55(1), p. 72. The use of APA information does not imply endorsement by APA.



## Appendix J

Letter of Permission to Use Figures: A Taxonomy of Tasks and  
A Theoretical Model of Urban Teen Development

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**From:** BJohns@wiley.com  
**Sent:** Thursday, December 04, 2008 02:18PM  
**To:** crowsr@unk.edu, s4crows@msn.com  
**Subject:** FW: Republication/Electronic Request Form

---

Dear Ms. Crow:

Please be advise permission is granted to reuse figure 1, pg. 1171 from Journal of the American Society for Information Science and Technology 2002, 53(13): and figure 1, pg. 1399 from Journal of the American Society for Information Science and Technology 2006, 57(10) in your forthcoming Thesis which will be published by Emporia State University. Credit must appear on every copy using the material and must include the title; the author (s); and/or editor (s); Copyright (year and owner); and the statement "Reprinted with permission of John Wiley & Sons, Inc." Please Note: No rights are granted to use content that appears in the work with credit to another source.

Good luck with your thesis

Sincerely,

Brad Johnson, Permissions Assistant Ì John Wiley & Sons Inc. Ì 111  
River St. Ì Hoboken, NJ 07030 Ì Mail Stop: 4-006B (4-02) Ì Ph: 201-748-  
6786 Ì Fax: 201-748.6008 Ì bjohns@wiley.com

## Appendix K

## Letter Attached to Informed Consent Form

Sept. 2, 2008

Dear Parents:

Sherry Crow, former Library Technology Educator in D-X, is conducting research in the area of intrinsic motivation and information seeking. Our school and grade 5 have been chosen for this project.

The project will consist of the administration of a 5-question questionnaire, with 8 choices per question. The whole process should take between 20 and 30 minutes.

Please take a look at the attached consent form, sign it, have your child sign it, and send it back to me by Sept. 5 if you are willing for your student to participate in the survey. Sherry will read the consent form to your child ahead of time so he/she completely understands the process.

Thanks,

Ms. W.

## Appendix L

**Informed Consent Form Protocol Sheet****SRQ-IS Questionnaire**

## 1. Introductions

My name is Sherry Crow. I am a Ph.D. student at Emporia State University's School of Library and Information Management and am doing research about upper elementary students and their motivation to seek information. I used be an LTE in District 11.

I would like to give a questionnaire about motivation and information seeking to this class. However, when a researcher gives a questionnaire, the informants (you) must first understand their rights and give their permission, and since you are all under the age of 18, your parents/guardians must also give their permission. Today I would like to make sure you understand the questionnaire process and go over the consent form with you.

2. Read the Self-Regulation Questionnaire of Information Seeking Behavior Informed Consent Sheet to the class, pausing after the first section to explain what "information" is, and asking if there are any questions as we go along.
3. Ask them to return the consent forms by Wed. Sept. 10.
4. "Thank you for considering participation in this questionnaire."

## Appendix M

## Letter Attached to Informed Consent Form (Spanish)

el 3 de septiembre de 2008

Estimados Padres y Tutores,

Yo soy profesora universitaria y antes trabajaba como maestra de tecnología bibliotecaria en el distrito 11 (D11). Voy a estar investigando por qué están motivados los niños a enterarse del mundo. Se escogieron los niños del grado 5 en la escuela Twain. El proyecto se consiste en una encuesta de 5 preguntas con 8 opciones. Este proceso debe durar 20 a 30 minutos.

Favor de leer la hoja de permiso adjunta. Si Ud. está de acuerdo con permitir que su niño participe en mi investigación, le pido que Ud. y su niño/a firmen el permiso y que su niño/a lo entregue a su maestro/a para el 10 de septiembre. Además, yo misma leeré el permiso a su hijo/a para que él/ella lo entienda completamente.

Si Ud. tiene alguna pregunta o desea hablar más, favor de comunicarse con la Ms. G. (la maestra de ESL) al 328 77 11.

Atentamente,

Sherry Crow y el maestro/a del grado 5

## Appendix N

**SRQ-IS Questionnaire Protocol Sheet**

1. "Hello again! It's good to see you! In case you forgot, my name is Sherry Crow. I am a graduate student at Emporia State University's School of Library and Information Management and am doing research about upper elementary students and their motivation to seek information. I used be an LTE in District 11.

Today I will administer the questionnaire we talked about the last time I was here. Anyone who returned their consent form with both their signature and their parent/guardian signature may take it.

2. Let me go over your rights again as an informant. They are:
  - Your participation is entirely voluntary;
  - You are free to refuse to answer any question at any time;
  - You are free to withdraw from the questionnaire at any time
  - You will not be penalized for withdrawing from the questionnaire or refusing to answer a question.

If you are uncomfortable at any time during the activity, either physically (for example, if you are too hot or too cold), or emotionally (for example, a question makes you uneasy) every effort will be made to change the circumstances in order to make you comfortable.

Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation resulting from this questionnaire. Information from this questionnaire will be kept strictly confidential.

Any information from the questionnaire will be available only for teaching and research purposes. The completed questionnaires will be permanently destroyed at the conclusion of the project.

I appreciate your willingness to participate in this project."

3. Pass out the SRQ-IS.
4. Give the SRQ-IS.

- Read top portion of questionnaire, discussing again what information is. Give time to fill out blanks.
- Say, "I will read each question and answer to you and give you time to circle the best answer. If you have difficulty with an answer, mark the side by the number (or circle the number), then I'll give you time to look at those again at the end. If you have any questions or trouble, raise your hand."
- Do questionnaire, reading each question to the students and allowing them time to answer.
- Give time at the end for those who marked questions.

5. Thank class again for their participation.

## Appendix O

**Informed Consent Form Protocol Sheet****Interview/Environment Observation/Drawing Analysis**

## 1. Introductions

Hello again! My name is Sherry Crow. I am a Ph.D. student at Emporia State University's School of Library and Information Management and am doing research about upper elementary students and their motivation to seek information. I used be an LTE in District 11.

I would like to do [an interview, environment observation, or drawing analysis]\* activity with you. However, when a researcher does this kind of research, the informant (you) must first understand his or her rights and give permission, and since you are under the age of 18, your parent/guardian must also give his or her permission. Today I would like to make sure you understand the activity process and go over the consent form with you.

2. Read the consent form to the student, pausing after the first section to explain what "information" is (and "environment" for the environment observation), and asking if there are any questions as we go along.
3. Ask them to return the consent forms by Friday, Sept. 26.
4. "Thank you for considering participation in this activity."

\*Fill in correct activity

## Appendix P

**Art Activity Protocol Sheet**

1. "Hello again! It's good to see you! In case you forgot, my name is Sherry Crow. I am a graduate student at Emporia State University's School of Library and Information Management and am doing research about upper elementary students and their motivation to seek information. I used be an LTE in District 11.

Today we will do the drawing analysis activity we talked about the last time I was here.

2. Let me go over your rights again as an informant. They are:
  - Your participation is entirely voluntary;
  - You are free to refuse to draw at any time;
  - You are free to withdraw from the activity at any time
  - You will not be penalized for withdrawing from the activity or refusing to answer a question.

If you are uncomfortable at any time during the activity, either physically (for example, if you are too hot or too cold), or emotionally (for example, a question makes you uneasy) every effort will be made to change the circumstances in order to make you comfortable.

Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation resulting from this activity. Information you give me will be kept strictly confidential.

Any information from this activity will be available only for teaching and research purposes. Your drawing will be permanently destroyed at the conclusion of the project.

I appreciate your willingness to participate in this project."

3. Pass out a pre-labeled, blank sheet of art paper (size will be standard for all students).
4. Present student with pencils, markers, and crayons.
5. Say, "You will be asked to do two drawings today. For the first, please draw a picture of 'what makes a good day for me.' I mean for you to draw this picture about yourself, not me! I will set the timer for 20 min. 20 min. is a long time, so take your time. I will give you a 5 min. warning. If you finish early, that is okay. If you need a little more time you will get it."
6. Do other things, like read or look at a magazine, while student draws.
7. After the student is finished or the timer goes off, give the student another pre-labeled piece of paper.
8. Say, "For this second drawing, please draw a picture of a time when you sought information. By 'sought information' I mean 'looked for' or 'went after' data, facts, or ideas



in any source. I will set the timer for 20 min. 20 min. is a long time, so take your time. I will give you a 5 min. warning. If you finish early, that is okay. If you need a little more time you will get it."

9. Do other things, like read or look at a magazine, while student draws.
10. After the student is finished or the timer goes off, thank the student for his or her participation.

## Appendix Q

## Judge's Evaluation Form

Student # \_\_\_\_\_ Judge Name \_\_\_\_\_ Date \_\_\_\_\_

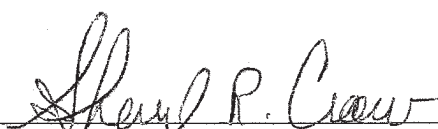
Selected 5<sup>th</sup> grade students were presented with pencils, markers, and crayons. They were then asked to draw a picture of "what makes a good day for me." They were given 20 min. with a 5 min. warning to complete the picture. While the students were working I read or looked at a magazine. This picture is marked with an "A" beside the student number on the back. The process was continued in the same way for the second drawing with the direction, "please draw a picture of a time when you sought information." These pictures are marked with a "B" beside the student number on the back.

According to your professional judgment, please evaluate each student's work as it would compare with the average 5<sup>th</sup> grade student in the same situation.

Artistic Dimension	Scale					Comments (optional)
A. Effort Evident	Very Poor	Poor	Average	Good	Very Good	
B. Expression of Meaning	Very Poor	Poor	Average	Good	Very Good	
C. Novel idea	Very Poor	Poor	Average	Good	Very Good	
D. Complexity	Very Poor	Poor	Average	Good	Very Good	
E. Organization	Very Poor	Poor	Average	Good	Very Good	
F. Detail	Very Poor	Poor	Average	Good	Very Good	
G. Novel use of Materials	Very Poor	Poor	Average	Good	Very Good	
H. Neatness	Very Poor	Poor	Average	Good	Very Good	
I. Variation of Shapes	Very Poor	Poor	Average	Good	Very Good	

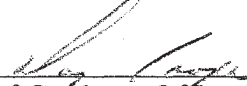
**PERMISSION TO COPY STATEMENT**

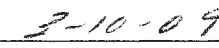
I, Sherry R. Crow, hereby submit this dissertation to Emporia State University as partial fulfillment of the requirements for a doctoral degree. I agree that the Library of the University may make it available for use in accordance with its regulations governing materials of this type. I further agree that quoting, photocopying, or other reproduction of this document is allowed for private study, scholarship (including teaching) and research purposes of a nonprofit nature. No copying which involves potential financial gain will be allowed without written permission of the author.

  
\_\_\_\_\_  
Signature of Author

  
\_\_\_\_\_  
Date

Exploring the Experiences of Upper  
Elementary School Children who are  
Intrinsically Motivated to Seek Information  
Title of Dissertation

  
\_\_\_\_\_  
Signature of Graduate Office Staff Member

  
\_\_\_\_\_  
Date Received