

Interest, Reading, and Learning: Theoretical and Practical Considerations

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After a brief historical overview of how interest and its role in learning had been conceptualized, the focus of the paper shifts to the specific relationship between interest and reading. The issues considered are the effect of interest on readers' comprehension and learning, the variables that determine readers' interests, and the specific processes such as attention that may mediate the effect of interest on learning. It is suggested that to allow researchers a better understanding of the mediating variables, dynamic measures of interest are needed in addition to the more traditional self-reports and questionnaires. In the final section of the paper the author discusses the importance of utilizing students' interest in classrooms.

KEY WORDS: interest; reading; attention; learning; motivation.

A HISTORICAL OVERVIEW OF SOME OF THE CRITICAL ISSUES

In the early Eighties, the advocates of the cognitive revolution dominated educational psychology in general, and research in reading, writing, and text-based learning in particular. The prevalent view was that proficient readers processed and recalled text according to its hierarchical structure. Thus it was believed that readers could recall best the more important ideas at the higher levels of text structures. The title of our first paper in the area "That's important, but is it interesting? Two factors in text processing" (Hidi *et al.*, 1982) reflected our research group's concern with the purely

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cognitive/structural view of how individuals comprehend, store and recall information. In that paper, we demonstrated that the affective factor of interestingness of ideas also had an important influence on how discourse was processed and recalled by middle-school children.

After we recognized that interest had an important role in readers' text processing, we focused on gaining a better understanding of the concept of interest and the ways in which it has been investigated. Following our review of the available literature on interest (e.g., Anderson, 1982; Asher, 1979, 1980; Dewey, 1913, 1916; Kintsch, 1980; Renninger and Wozniak, 1985; Schank, 1979) we realized that there were two distinct ways of investigating the role of interest in learning (Hidi and Baird, 1988). One approach focused on the impact of personal preferences; that is, on how individuals' already-formed interests affect their performance. For example, Renninger and Wozniak (1985) investigated the individual interests of young children in play. They found that although special interests varied widely among the children, they had nonetheless strong, stable and relatively well-focused individual interests (e.g., interest in cars, dolls, trains, etc.) that served as powerful determinants of children's attention, recognition, and recall. The other approach, which Hidi and Baird referred to as text-based, centered on how the interestingness of stimulus materials influenced subjects' performance. For instance, Schank (1979), one of first researchers to address the issue of how text-based interest affects discourse processing, identified conditions that elicit readers' interest in story processing and considered the cognitive and behavioral outcomes of interests. Kintsch (1980), who also addressed the issue of how interest is produced in various forms of discourse emphasized the cognitive aspects of interest. Others have focused on the role of interest in the processing and recall of expository texts and of single sentences. Examples of sentences that were found in some of these studies to generate students' interests were "The huge gorilla smashed the bus with its fist" (Anderson, 1982), "When a fly moves its wings about 200 times in a second, you hear a buzzing sound" (Garner *et al.*, 1989), and "The gorilla leader is called a silverback because of the grey hair that runs down his back" (Hidi and Baird, 1983).

In a later paper, Hidi (1990) noted that whereas individual interest research tended to focus on individual differences (e.g., Renninger, 1989; Schiefele and Krapp, 1988), research that dealt with the interestingness of a situation focused on the effect of interest across individuals (e.g., Anderson, 1982; Garner *et al.*, 1989; Hidi *et al.*, 1982; Wade and Adams, 1990). Hidi further acknowledged that interest may be elicited not only by text features, but by other aspects of a situation. Thus, a person's interest can also be triggered by a visual stimulus such as a play object, or viewing a picture, an auditory stimulus such as hearing a conversation, or a combination of

visual and auditory stimuli like a TV show. Recognizing that interest can be evoked by sources other than text characteristics, Hidi concluded that the term situational interest (Krapp, 1989) should be adopted to describe all environmentally-triggered interest of which text-based interest should be considered as one sub-type.

The separate categories of individual and situational interest reflect not only how interest has been viewed and researched, but also the two different ways in which the psychological state of interest can occur in people (Hidi, 1990; Hidi and Anderson, 1992; Krapp *et al.*, 1992). Individual interest develops slowly, tends to be long lasting, and is associated with increased knowledge and value (Renninger, 1992, 2000). In contrast, situational interest is evoked by something in the immediate environment, and consequently may or may not have a long-term effect on individuals' knowledge and value (Murphy and Alexander, 2000). The nature of the generated affect may be another factor in regards to which individual and situational interests vary. Iran-Nejad (1987) argued that situational interest is not necessarily accompanied by positive affect. He noted that some animals (e.g., snakes) can be interesting although they elicit negative feelings. Hidi and Anderson (1992) expanded this view and proposed that whereas activities that involve well-developed individual interests are likely to be accompanied by positive affect, activities that are associated with situational interest might not have such positive affective correlates. Hidi and Harackiewicz (2000) suggested that for some medical students, dissecting cadavers may be an interesting and emotional experience, although the affective tone of the activity is negative, which further illustrates that interest and liking are not synonymous terms.

So far, I have emphasized the difference between situational and individual interest. However, they are not dichotomous phenomena and overlap in several areas. First, both situational and individual interest results in the psychological state of interest³ that involves increased attention and cognitive functioning, persistence and has an affective component (Hidi, 1990, 2000; Krapp *et al.*, 1992). Second, interest researchers agree that both individual and situational interest emerge from the interaction of the person and certain aspects of the environment and are content-specific (e.g., Krapp, 1999, 2000; Krapp *et al.*, 1992; Schiefele, 1981). Thus, "interest occurs only in the interaction of stimulus and person so that one can never stipulate its origin in one to the exclusion of the other" (Hidi and Baird, 1986, p. 184). Third, many investigators acknowledged that situational and individual interests may interact (Alexander, 1997; Alexander *et al.*, 1995; Bergin, 1999;

³The psychological state of interest has also been referred to as the actualized state of individual interest (e.g., Krapp *et al.*, 1992). However, because I believe that this state can be the outcome of various forms of interests, I prefer to use the term psychological state of interest.


Hidi, 1990; Hidi and Anderson, 1992). Hidi and Harackiewicz (2000) concluded ‘that, in each other’s absence, individual and situational interest may have especially important roles. Well-developed individual interest in an area may help individuals to cope with relevant but boring texts or presentations, and situational interest elicited by texts or presentations may maintain motivation and performance even when individuals have no initial interest in the topic. Furthermore situational interest may ultimately develop into individual interest (Alexander, 1997; Hidi, 1990; Hidi and Anderson, 1992; Hidi and Berndorff, 1998).

Whereas the distinction between individual and situational interest had not been acknowledged in the literature prior to 1990, researchers in the area since have adopted this categorization almost universally. Currently, individual interest is conceptualized as a relatively stable predisposition that develops over time and is associated with increased value, knowledge, and positive feelings (Krapp, 1999, 2000; Renninger, 2000; Schiefele, 1998). Situational interest is viewed as a potential reaction to environmental input that has two possible stages, one in which interest is triggered and a subsequent stage in which interest is maintained (Bergin, 1999; Harackiewicz *et al.*, 2000; Hidi, 2000, in press; Hidi and Baird, 1986; Mitchell, 1993). Underlying the differences of the conceptualizations of individual and situational interest is the assumption that once elicited, they both facilitate cognitive functioning and learning (Hidi, 1990).

In addition to the above two categories, researchers have also investigated topic interest, that is, interest triggered when a specific topic of theme is presented. In early studies, Hidi and McLaren (1990, 1991) have considered topic interest to be a form of situational interest. Others have viewed topic interest as a form of individual interest (e.g., Schiefele, 1996; Schiefele and Krapp, 1996). Ainley *et al.* (submitted) demonstrated the ambiguity of the concept by providing the following example. When students are presented with the title “Black Holes and Quasars,” those who have individual interest in astronomy will find the topic interesting because it is closely associated with their individual interest. In contrast, students who do not have interest in astronomy may also find the topic interesting. In such cases, the interest is mainly the outcome of situational interest factors like novelty or danger conveyed by the title. Ainley and colleagues investigated experimentally how situational and individual factors contribute to the topic interest that readers experience (Ainley and Hidi, in press; Ainley *et al.*, submitted). Using an interactive computer program, that is described in more detail later in this paper, Ainley *et al.* measured various forms of students’ interest and monitored their interactions with a set of texts. They recorded reader responses and compiled them into composite profiles of readers’ task choices, affective experiences, persistence with the texts, and learning outcomes. The results

indicated that (a) both situational and individual factors contributed significantly to topic interest and (b) topic interest influenced affect, which in turn influenced persistence, and persistence was significantly related to learning. Topic interest may have a critical role in reading as students usually encounter the topic (text-title) at the very beginning of their reading task.

INTEREST AND READING RESEARCH

Investigations into the role of interest in reading have centered on a few basic issues. Perhaps the most significant issue, and also the most frequently investigated one, concerns the effect of interest on reading performance. Hidi (1990) argued that interest is central in determining the ways in which we select and process certain types of information in preference to others. The empirical findings of the literature (which are discussed further in the following section) indicate that all types of interest tend to facilitate reader's comprehension and recall. A second major concern of researchers in the area has been to establish the variables that determine the level of situational interest that readers experience. Variables that have been found to have such an influence include text characteristics (e.g., novelty, intensity, and ease of comprehension), various types of modifications of the learning environment (e.g., presenting materials in more meaningful contexts) and individuals' own self-regulatory activities (Hidi and Harackiewicz, 2000). A third important question raised by investigators is how readers' interest, once elicited, results in behavioral, cognitive, and affective changes. However, there is little consensus among researchers regarding these processes. For example, some investigators argue that increased attention mediates the effect of interest on learning; others disagree with this assumption.

In the following sections, I first briefly review evidence that interest has a strong positive influence on readers' comprehension and recall and consider the factors that have been found to increase readers' situational interest. Next, I focus on the specific processes that may mediate how interest exerts its facilitative influence on readers' comprehension and learning. Finally, I discuss the utilization of interest in the classroom.



The Effects of Interest on Readers' Text Processing and Learning

Research conducted over the last 20 years has demonstrated that both readers' well-established individual interests and their situational interests (elicited by text segments, topics, and themes) contributed to increased comprehension and learning. A number of studies have shown that children's comprehension, inferencing and retention is facilitated by personally

interesting text segments as well as by passages written on high interest topics (e.g., Anderson, 1982; Asher, 1979, 1980; Bernstein, 1955; Estes and Vaughan, 1973; Hidi *et al.*, 1982; Hidi and Baird, 1986, 1988; Kintsch, 1980; Renninger, 1988; Schank, 1979; Schraw *et al.*, 1995). Similar findings were reported for college students (Fransson, 1977; Harp and Mayer, 1997; Ryan *et al.*, 1990; Sadoski and Quast, 1990; Shirey and Reynolds, 1988; Wade and Adams, 1990; Wade *et al.*, 1999). For example, Schraw *et al.* (1995) reported that college students who experienced situational interest while reading, demonstrated improved text recall. Specifically, these researchers found that interest accounted for 12% of the variance in text recall and that the higher a reader's interest was in a text, the more information he or she recalled.

In addition to the quantitative increases in learning due to interest documented in the above studies, some researchers suggested that interest may influence the type of learning that takes place. For example, Krapp (1999), Schiefele (1996, 1998), and Schiefele and Krapp (1996) found that interest was related to deep-comprehension questions, recall of main ideas, and to a higher degree of cognitive organization in college students' knowledge structures. They concluded that interest did not simply enhance the amount of recalled text information, but had a strong influence on the quality of learning. That is, interest seemed to motivate readers to go beyond the surface structure of the texts and focus on the main ideas and their underlying meaning (Krapp, 1999). Ryan *et al.* (1990) also concluded that interest leads to more elaborate and deeper processing of expository texts.

Factors That Contribute to Readers' Interest

The second major issue of text-based interest research has been to investigate how readers' situational interest can be increased. Most research in this area focused on text characteristics that make reading materials more interesting. Schank (1979) in his seminal paper suggested that some concepts (e.g., death, danger, power, violence, and sex) are "absolute interests" that elicit individuals' interest almost universally. Kintsch (1980) referred to these interests as emotional interests.  distinguished them from cognitive interests that result from events that  play a role in complex cognitive structures or hold surprise. Subsequent investigations indicated that a variety of text characteristics contribute positively to the interestingness and memorability of written materials.⁴ For example, novelty, unexpected or surprising

⁴One category of factors that influence text-based interest has been referred to as seductive details. This term refers to highly interesting and at the same time unimportant text segments. Since the research findings and controversial problems related to this concept are discussed in detail by several other contributors to this volume, I will not discuss them here.

information, intensity, concreteness, and visual imagery were features that were found in early studies to be sources of situational interest (Anderson *et al.*, 1987; Hidi and Baird, 1986, 1988).

More recently, Schraw *et al.* (1995) found six different sources of text-based situational interest. These were as follows: ease of comprehension (Mitchell, 1993; Wade *et al.*, 1999), text cohesion (Kintsch, 1980; Wade, 1992), vividness (Sadoski *et al.*, 1993), reader engagement (Mitchell, 1993), evokative emotional reactions (Krapp *et al.*, 1992), and prior knowledge. (Alexander, 1997; Alexander *et al.*, 1995). The experimental findings of Schraw *et al.* further indicated that not all the six sources of interest were significantly related to the actual feeling of interest (referred to as perceived interest by the authors). Furthermore, the lack of interactions between the six sources of interest suggested that readers' situational interest is related to a number of individual factors rather than to complex interactive relationships between factors. Finally, the findings indicated that prior knowledge ratings were only marginally related to perceived interest, and as they were unrelated to recall, Schraw *et al.* noted that knowledge alone does not seem to be a sufficient factor to increase text-based interest and learning.

Wade *et al.* (1999) also studied the characteristics associated with self-reported interest in informational (science) texts. Their findings overlap with those of Schraw *et al.* (1995) in some areas such as comprehension and imagery. Other text characteristics that Wade *et al.* found to be associated with higher interest were novelty and importance/value. Harp and Mayer (1997) investigated how to utilize interest to help students learn scientific explanations from texts and found that texts that contribute to increased comprehension result in cognitive interest that facilitates learning.

In a recent paper, Hidi and Harackiewicz (2000) noted that text-based interest is promoted not only by various text characteristics, but also by changing certain aspects of the learning environment, such as task presentations, and teaching materials, as well as by variations in individuals' self-regulation. Schraw and Dennison (1994) assigned a particular purpose for reading to students and found that it led to changes in the interestingness and recall of text materials. The text segments that were perspective-relevant were rated as more interesting and were recalled better than the nonrelevant segments. The findings were replicated even when readers were assigned perspectives after they read the texts. Schraw and Dennison concluded that readers' interest is not only driven by their individual preferences for the text itself, but also can be elicited by external manipulations that alter the context in which reading occurs. In addition, research in a variety of areas demonstrated that interest can also be stimulated by presenting educational materials in more meaningful, challenging, or personally relevant contexts or in a combination of all the three contexts (Chabay and Sherwood, 1992; Cordova and Lepper,

1996; Hidi *et al.*, 1998; Mitchell, 1993; Ross, 1983), or by altering the presence of others in the learning environment, or both (Isaac *et al.*, 1999; Hoffman and Haussler, 1998). Finally, Sansone and colleagues (Sansone and Smith, 2000; Sansone *et al.*, 1992, 1999) demonstrated that individuals can self-regulate to make tasks more interesting and develop individual interest in initially uninteresting activities. For instance, when students were provided a reason to value an activity, they seemed particularly adept at generating strategies to make boring tasks more interesting. Wolters (1998) similarly found that students had self-regulated strategies to increase their academic interests. Whereas some of these studies did not deal specifically with interest in reading, they suggest that interest in this area could also be increased by similar methods.

Specific Processes Through Which Interest Influences Learning

Schraw *et al.* (1995) suggested that to build a theory of situational interest related to reading an extended text, interest should be considered as a complex cognitive phenomenon that is affected by multiple text and reader characteristic. A critical question is how the elicitation of interest results in improved recall. One possibility is that interest activates text-processing strategies that result in readers' engaging in deeper level processing (Schiefele, 1992; Schraw *et al.*, 1995). Wade (this volume) and Wade *et al.* (1999) reported that the connections readers made between information and their prior knowledge or previous experience increased their interest. However, whether such deeper level processing is the result of deliberate strategical planning or due to some more automatic functioning is a question that has not been resolved.

Sadoski and colleagues (Sadoski *et al.*, 1993a,b, in press) have argued that Dual Coding Theory, a general theory of cognition when applied to literacy, can explain complex sets of empirical research findings, such as the relation between interest, comprehension and recall. The theory is based on the assumption that we have two interacting but separate cognitive systems: verbal and nonverbal. When verbal materials are encoded through both systems, comprehension and memory are increased. Such encoding occurs when texts are concrete, with high visual imagery. Affect is nonverbal by definition and is expected to accompany mental imagery. This theoretical explanation seems to account for some sources of interest that are associated with increased comprehension and memory such as the processing of concrete, high imagery materials. However some highly concrete and easily imaginable information has been found to be more interesting than other similar information. For example, whereas Anderson (1982) generated many sentences that were concrete and had high image value, only some of these

were also interesting. In addition dual-coding theory cannot account for some interest effects. The informational significance of intensity, novelty, surprise, high personal relevance, and character identification reported in the literature cannot be explained by dual encoding prompted by concrete language and mental imagery.

Recognizing that the path from arousal of interest to specific learning outcomes is not well documented, Schiefele (1996, 1998) argued that we need to focus on various mediating variables that link interest and learning. Hidi (1990, 1995) suggested that as interest is associated with automatic attention, it is one of the variables that mediates the relation between interest and learning. I now turn to discuss this issue.

ATTENTION AND INTEREST

Research over the last two decades has shown that interest has a powerful influence on children's as well as adults' learning, (see Hoffman *et al.*, 1998; Renninger *et al.*, 1992; Schiefele, 1998 for reviews). Many historically important papers in this area have assumed that attentional factors make a major contribution to the profound effect that interest has on learning (e.g., Berlyne, 1960; Dewey, 1913; James, 1890; Schank, 1979; Simon, 1967; Thorndike, 1935), as well as more recent research (e.g., Izard, 1997; Renninger, 1990). However, in a series of widely cited studies, Anderson (1982) and Shirey and Reynolds (1988) concluded that attention is not causally related to the learning of interesting information. Hidi (1990, 1995) argued that neither of these studies have shown conclusively that attentional factors are not associated with the superior learning of interesting text segments that has been demonstrated by subjects. According to Hidi, the problem with the studies was the adoption of the same attention model to explain the recall of interesting information that has been used successfully in the literature to explain the recall of structurally important information. This model has been called the Selective Attention Model and it has been formulated by Anderson and his colleagues (Anderson, 1982; Reynolds and Anderson, 1982; Reynolds *et al.*, 1979). The model assumes that text elements are initially processed at some minimal level and are graded for importance. Subsequently, readers selectively allocate more attention to the processing of important segments, and as such, their increased selective attention results in longer reading time and secondary task reaction time. Anderson (1982) and Shirey and Reynolds (1988) assumed that the Selective Attention Model could also be used to test whether or not the superior recall of interesting information involves attentional factors resulting in longer reading and secondary task reaction times. The empirical studies reported confusing results (Hidi, 1995, McDaniel, *et al.*, 2000). For example, Shirey and

Reynolds unexpectedly found that adults read interesting sentences faster than less interesting ones.

Hidi and colleagues (Hidi, 1990, 1995; Hidi and Anderson, 1992) suggested that the attentional processes involved in the early stages of reading important information may differ from those involved in reading interesting information. To establish structural importance, readers first have to evaluate text segments either relative to previously processed, stored and retrieved information or to some self-generated standard. Only when rated importance has been established, can readers selectively focus their attention on what has been judged to be important information. Thus both operations (i.e., establishing importance and comprehending information) may require intensive attention allocations that may add significantly to reading and secondary reaction times.

Establishing interestingness of text does not require the same kind of evaluation and decision making process as establishing structural importance. Readers tend to instantaneously recognize interesting information and spontaneously allocate attention as they process it. Thus at least in the first attentional phase which involves evaluation, the processing of interesting information may be more efficient and faster than that of important information. The second attentional phase involved in processing and learning interesting information may depend on how the interesting text segments fit in with preceding materials. On one hand, reading seductive details involves topical shifts which may require very particular, attentional focus and multi-level processing (see Hidi, 1995, p. 326–327, for more detailed discussion of this point). In such cases, it may take longer to read the text segments and to react to secondary stimuli. Fitting in with this hypothesis were research findings that showed slower reading of seductive details. For example, Wade (1992) reported that readers spent over 50% more time reading seductive details than reading other interesting text segments. On the other hand, interesting information that stands on its own or is well integrated with preceding information may result in faster reading and secondary task reaction times. The reading materials in Shirey and Reynolds (1998) study were individual sentences, thus they did not have to be integrated and thus interest resulted in more efficient processing.

McDaniel *et al.* (2000) tested Anderson's position that interest may foster greater selective allocation of attention resulting in slower text processing and secondary time reaction versus Hidi and colleagues' position that increased interest results in automatic allocation of attention, freeing up of cognitive resources in the process, and allowing for more rapid processing of information. McDaniel *et al.* used stories that differed globally in how much interest they generated rather than texts that varied the interest value of individual sentences (e.g., Wade, Schraw, Buxton, and Hayes, 1993). Since the

beginning of stories tend to have similar levels of interest and only as stories develop can one expect differences in the interest levels that they generate, one would not expect the effect of interest to show up in the processing of the early sections of the stories. Thus, the authors presented secondary task probes at various points in the stories. This procedure allowed them to obtain and compare secondary task reaction times during the first and second halves of the stories. The results showed that whereas the reaction times for the early portion of the texts did not differ across high and low interest stories, reaction times for the second half of the narratives showed significant differences. More specifically, readers of less interesting narratives took significantly longer time to respond than those reading more interesting texts. In addition, for low interest stories reaction times were significantly lower during the later parts than during earlier parts. No such differences were found for the more interesting stories. The authors concluded that the readers allocated more attention to the latter half of the low interest stories while they maintained a fairly consistent level of attention allocation in the case of high interest stories. McDaniel *et al.* concluded that their findings support Hidi's hypothesis that interest generates spontaneous (automatic) attention resulting in more efficient and faster processing of information.

As our review shows, past studies that examined the association between attention and interest tended to rely on reading and secondary reaction times. These measures are complex and are greatly influenced by text characteristics and alternative methodologies may be helpful in resolving some of the issues. I now turn to a study that used a novel methodology to examine interest, attention and the reading process.

DYNAMIC MEASURES OF READERS' RESPONSES

Methodological limitations of interest research not only affected the evaluation of the mediating role attentional factors play in the reading process, but also the measures of interest. Ainley and Hidi (in press) recently have considered the problem of timing related to interest questionnaires and self-rating scales that have been widely used to measure interest. When students are asked to rate their interest prior to reading, they provide an expectancy measure. When ratings of interest are made after reading, participants are asked to remember what they felt back in time. As they have completed their reading at this point, students' recollections of how interesting they found the text can be influenced by the knowledge they gained from reading the texts.

Ainley and colleagues (Ainley and Hidi, in press; Ainley *et al.*, submitted, in press) concluded that one way to avoid the current methodological limitations and to expand our understanding of the path from arousal of

interest to learning outcomes is to develop dynamic measures of students' responses in real time. This need has been noted by others and is currently being addressed in various ways by a number of researchers (e.g., Alexander, 1997; Alexander and Jetton, this volume; Hickey, 1997; Pintrich, 2000; Vollmeyer *et al.*, 1999). The focus of Ainley *et al.* studies has been the examination of the dynamics of students' experience of a specific reading/learning episode. Tracking students' reactions across the course of a specific learning activity in real time is important because student interest initially triggered by aspects of a learning task may not be maintained as they proceed through the task (Hidi and Baird, 1986; Mitchell, 1993). Dealing specifically with reading tasks, Ainley and Hidi (in press) argued that some students may have their interest triggered by a text-title, but as they go on reading the text, their interest may dissipate. Other students reading the same text with similar levels of initial interest may find that their interest is maintained or even intensified as they process their text.

Both the presentation of the learning task and the recording of students' responses were computerized by Ainley and colleagues. The student responses that were recorded included self-reported individual and topic interest ratings, the order in which students chose to read four texts, the length of time they persisted reading various text segments, self-reported affective responses (i.e., feelings associated with reading episodes), and a learning measure. The methodology and subsequent analyses allowed the evaluation of the separate contributions of topic interest, affect and persistence. Persistence involves focussed attention and can be considered as an indirect measure of attention. The results showed that the level of interest reported when the topics (text-titles) were first encountered contributed significantly to the emotions students reported and to their persistence with the task. More specifically, students who rated a topic as interesting were more likely to report feeling interested as they read on and to persist in reading. In contrast, students who reported less initial interest in a given text-title were more likely to report having been bored while reading and were more likely to choose to quit reading. An additional important finding was that students' persistence with each text was significantly and positively related to their recall.

UTILIZING INTEREST IN THE CLASSROOM

The literature has shown that individual interest is an important if not a critical factor of academic motivation and learning (see Renninger, 1998, 2000; Schiefele, 1998; Schiefele, 1992). Children as well as adults who have individual interests in activities or topics focus their attention, persist for longer periods of time, and enjoy their engagements more, are more likely to

use strategic processing and tend to learn and write better than those without such interests (e.g., Ainley, 1994, 1998; Albin *et al.*, 1996; Alexander *et al.*, 1995, 1997; Benton *et al.*, 1995; Schiefele, 1998). Whereas ideally, catering to students' individual interests seems to be the most appealing way to promote learning in the classroom, utilizing individual interest in educational settings may be a very time consuming and effortful task (Hidi and Anderson, 1992; Lepper and Hodell, 1989). Teachers may also have problems providing each student with individualized programs as not all children have interests that are adoptable within school settings. Hidi and colleagues (Hidi, 1990; Hidi and Anderson, 1992; Hidi and Berndorff, 1998; Hidi and Harackiewicz, 2000) argued that as we can not always utilize individual interest in the educational process, the elicitation and maintenance of situational interest could make a significant contribution to the motivation of students. Stimulating situational interest may be one way for schools to motivate those who do not have preexisting individual interests in academic activities, content areas or topics, and to help them make academic gains.

Although some investigators have explored how situational interest can be utilized in schools (e.g., Bergin, 1999; Hidi and Baird, 1988; Hoffman and Haussler, 1998; Lepper, 1985; Mitchell, 1993; Schraw and Dennison, 1994), our knowledge in the area is just starting to accumulate. Given the important role that situational interest could play in promoting learning, one might question why so few researchers have explored the area.

Hidi and Berndorff (1998) suggested, that individual interest has been associated with intrinsic motivation (e.g., Deci, 1992) and in contrast situational interest has been viewed as a form of externally controlled motivation. In the past we have been socialized to believe that promoting intrinsic motivation is highly desirable, whereas promoting extrinsic motivation is not a worthy endeavor. More recently, researchers have been calling for a more balanced view that combines intrinsic and extrinsic factors (see Sansone and Harackiewicz, 2000). Hidi and Harackiewicz (2000) argued that to help academically unmotivated children, we must deal with the multidimensional⁵ nature of motivational forces that impact on individuals' academic performance. More specifically, they argued that the polarization of more extrinsic motivational factors such as situational interest and performance goals, and the more intrinsic factors of individual interest and mastery goals needs to be reconsidered. In addition, they urged educators and researchers to recognize the potential benefits of externally triggered motivation such as situational interest.

⁵The term multidimensional in this paper refers to external and internal aspects of motivation. Others have used the term to refer to cognitive and affective factors (e.g., Alexander, 1997; Alexander and Murphy, 1997) and to various clusters of motivational concepts like goal orientation and interests.

The utilization of interest in the classroom is especially critical as evidence continues to accumulate showing that as children age, their motivation, interests and attitudes toward school in general and learning in specific subjects deteriorate (Eccles and Midgley, 1990; Fay, 1998; Haladyna and Thomas, 1979; Hoffmann and Haussler, 1998; Sansone and Morgan, 1992; Wigfield and Eccles, 1992). Whereas the literature shows that children's academic motivation tends to decrease, their motivation in sports/recreational activities shows increases (Ainley *et al.*, submitted; Eccles and Midgley, 1990; Follings-Albers and Hartinger, 1998). This change in children's academic motivation is not only due to activities that are increasing routine and repetitive in nature or to societal and cultural influences or both. Rather, "as children advance in school, the content they are trying to learn gets more complex and harder to master, more information needs to be retained and reviewed. Students need to further develop reflective thought and an ability to integrate new information into existing knowledge structures. Engagements are longer and students must develop strategies to deal with tasks that are not necessarily interesting" (Hidi, 2000; p. 322). Examples of complex tasks that require hardwork, perseverance and effort, include learning a second language and acquiring writing revision skills (Zimmerman and Kitsantas, 1999). Although these tasks are not simply dealing with reading, they have a reading component.

In addition to the increased complexity of academic tasks, developing social relationships may also undermine older children's academic motivation. Whereas younger children's play activities and learning tends to subsume social relation, with increasing age, social activities start to separate from academic ones and compete for students' interests and choices (Hidi, 2000; Sansone and Smith, 2000; Schernoff *et al.*, 1999; Urdan and Maehr, 1995).

The changes observed between young children's motivation to play and older students' academic interests suggest that these changes may be inevitable and we need to consider what could be done to increase older students' motivation to learn. Utilizing all forms of interest in classrooms may be one way to achieve such an increase. As we know more about how we can contribute to readers' interest than to students' interest in many other content areas, increasing students' motivation to read should be an achievable primary educational goal.

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