I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Education, with a Major in Educational Psychology.

__________________________________________
Marlene Schommer-Aikins  Ph.D., Committee Chair

We have read this thesis and recommend its acceptance:

___________________________________________
Linda Bakken Ph.D., Committee Member

____________________________________________
Dennis Kear Ph.D., Committee Member
DEDICATION

This thesis is dedicated to the smartest, funniest, cutest, and most loved kids in this world, and
S.B.
Thanks for a great life!
ACKNOWLEDGEMENTS

Finishing my masters has been long in coming. When I started seven years ago I was a stay-home mother of two, wife of a law student, and trying to learn to juggle it all. I now end as a mother of five, wife of an attorney starting his own law firm, employed full-time, and desperately trying to find that delicate balance. It has been through these years that I have been challenged and have changed my own epistemological beliefs and have defied what I believed about my own academic ability.

First, thank you to God for giving me the perseverance, endurance, and the passion to press on. To my husband, my editor, for the encouragement and support. You never gave up on me even when I did. Next, a big thanks to my children, my study buddies, often falling asleep on the floor by my computer in the late hours of the night.

To the faculty and staff at Wichita State University I say thank you for being so patient. To Dr. Schommer-Aikins for not quitting on me, even when I was scatterbrained and all seemed hopeless. To my committee Dr. Bakken and Dr. Kear your input and expertise were invaluable.

Lastly, I thank Cowley College for allowing me to survey their students and to those students who made this research possible.
ABSTRACT

This study explored the relationship of epistemological beliefs, academic self-efficacy, and passage comprehension. Seventy-five community college students were asked to complete a series of in-class questionnaires, these students were asked to be as honest as possible to enhance future teaching styles. The final sample consisted of fifty-three students. Nothing of statically significance was found. Student participation and cooperation are in question, as well as the psychometricity of the measures themselves. Thus, the results are inconclusive and do not give support for the hypotheses. It is advised for future research that the sample size be enlarged, a longer reading passage be selected and a other measures be utilized.
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CHAPTER 1
INTRODUCTION

Of the 2.4 million students who started college in 1993, 1.1 million students withdrew before ever completing a degree (Tinto, 1993). This amounts to a 45% retention rate that has remained consistent for over 100 years (Braxton, 2000). Today as the growth of knowledge is increasing and the availability of technological learning opportunities continues to grow, the importance of accurate comprehension is imperative to the student who wants to succeed. At the core of students are two belief systems: epistemological beliefs, the nature of knowledge and learning (Schommer, 1994b), and academic self-efficacy beliefs, students’ belief in their ability to be active learners who regulate motivation and cognitive resources to attain a desired educational goal (Bandura, 1995).

Research has demonstrated the positive effects of epistemological beliefs on achievement (Kardash & Scholes, 1996; Schommer, 1990; Schommer, 1993b; Schommer, Calvert, Garigliette & Baja, 1997; Schommer-Aikins, Mau, Brookhart & Hutter, 2000) as well as on metacomprehension (Schommer, 1990) and comprehension (Ryan, 1984; Schommer, 1990; Schommer, Crouse, & Rhodes, 1992). Likewise research has demonstrated the positive effects of academic self-efficacy on achievement, (Chemers, Hu, & Garcia, 2002; Lane & Lane, 2001; Pajares, 2002; Pintrich & Schunk, 2002; Salamon, 1984, Schunk & Rice, 1993; Zimmerman, 2000). However, the interactions and relationships between epistemological beliefs and academic self-efficacy have only begun to be explored (Vrugt, Langereis, & Hoogstraten, 1997). The study of the relationships between epistemological beliefs and academic self-efficacy is essential to the understanding of students’ learning processes. More specifically, the question is
why do students who demonstrate high confidence in their abilities to succeed still fail (Pajares, 1996; Pajares & Miller, 1994)? Within the domain of reading comprehension this overconfidence is called an illusion of knowing (Glenberg, Wilkinson, & Epstein, 1982; Schommer & Suber, 1986). It has been hypothesized that students who suffer from an illusion of knowing allow their less sophisticated epistemological beliefs to cloud their reading comprehension judgment and interject erroneous information into their interpretations of the material (Schommer, 1990; Schommer, et al., 1986).

Purpose of the Study

The purpose of this study is to examine the relationships among epistemological beliefs, academic self-efficacy, and reading comprehension used by students. Both academic self-efficacy (Bean & Eaton, 2000; Stage & Hossler, 2000) and epistemological beliefs (Braxton, 2000) have been incorporated in models of college student retention but have not been examined together. Examining the relationships between academic self-efficacy and epistemological beliefs is especially important for community college students who often choose a community college over a four year university because of academic struggles (Silver, Smith Jr., & Green, 2001), and tend to hold less sophisticated epistemological beliefs compared to university students (Schommer, 1993b).

Definition of Terms

*Epistemological Beliefs*

Epistemological beliefs are a set of beliefs that a student possesses about the nature of knowledge and learning. In this proposed study epistemological beliefs include (a) the stability of knowledge, ranging from unchanging knowledge to tentative knowledge; (b) the structure of knowledge, ranging from isolated bits and pieces to
integrated concepts; (c) the source of knowledge, ranging from omniscient authority to reason and empirical evidence; (d) the speed of learning, ranging from quick or not at all to gradual; and (e) ability to learn, ranging from fixed at birth to improvable (Schommer, 2004). These beliefs are independent and are not necessarily at consistent levels of sophistication (Schommer, 1990; 1994b) nor are they consistent across domains (Schommer, 1994b; Schommer-Aikins, 2002; 2004).

*Academic Self-Efficacy*

Academic self-efficacy is defined as students’ belief in their abilities to activate and regulate motivation and cognitive resources needed to attain a desired educational goal (Bandura, 1995). Academic self-efficacy is defined and measured within the context of a specific behavior and situation, i.e., domain specific, rather than general traits or global self-concepts (Maddox, 1995; Pajares, 1996; Zimmerman & Schunk 2003).

*Calibration of Comprehension*

Calibration of Comprehension is a concept composed of self-regulation, self-monitoring, and self-evaluation skills in reading comprehension. It is students’ accuracy of monitoring their own comprehension. It includes overconfidence, under confidence, or accurate confidence of their actual comprehension. Operationally defined it is the relationship between students’ predicted levels of comprehension and their actual reading comprehension performance (Glenberg & Epstein, 1985; Lin, Moore & Sawbuck, 2001; Lin & Sawbuck, 1998 Weaver, 1990).

*Illusion of Knowing.* The illusion of knowing is a subset of the calibration of comprehension. It is overconfidence in the belief that comprehension has been attained when comprehension has failed (Glenberg, et al.,1982; 1985; Magliano, Little & Grasser,
1993; Schommer, et al., 1986). Operationally it is defined as students’ strong confidence in their comprehension while performing poorly on a comprehension measure by missing 2 or more questions (Schommer, 1986; Schommer, 1990).

Significance of the Study

The significance of this study is identifying the relationships among epistemological beliefs, academic self-efficacy, and calibration of comprehension used by community college students in order to identify those students who may not succeed. It is particularly important for community colleges where attrition rates are as high as 47% (Tinton, 1993). With this knowledge community colleges can elect to provide interventions to these students, thus increasing their retention rates and providing a better education for these students.

Hypotheses

Therefore, it is hypothesized that within the domain of reading comprehension:

1. Community college students with a less sophisticated epistemological belief in the structure of knowledge and high academic self-efficacy will suffer from an illusion of knowing.

2. Community college students with a less sophisticated epistemological belief in the speed of knowledge and high academic self-efficacy will suffer from an illusion of knowing.

3. Community college students who exhibit a less sophisticated epistemological belief in the stability of knowledge and high academic self-efficacy will suffer from an illusion of knowing.
CHAPTER II
REVIEW OF LITERATURE

The overall goal of this study is to examine the influences of epistemological beliefs and academic self-efficacy on students’ comprehension. In this chapter literature on epistemological beliefs, the calibration of comprehension, the illusion of knowing, and academic self-efficacy will be presented. The first section will outline the evolution of epistemological belief research, strictly focusing on the psychological perspective of epistemological beliefs. Next, a review of the literature on the calibration of comprehension and the illusion of knowing will be examined. The last section will review the current literature on academic self-efficacy.

Epistemological Beliefs

The study of students’ views about the nature of knowledge was first conducted by William G. Perry Jr. at Harvard in 1968. Perry explored Harvard male undergraduates’ views about the nature of knowledge using questionnaires and interviews. Perry examined their perceptions of certainty, source and structure of knowledge. Being a pioneer in the field, Perry himself never labeled these beliefs as what are now referred to as epistemological beliefs. Through his research he concluded that students go through nine distinct stages beginning with a dualistic view of the world where knowledge is simple, certain, and handed down by authorities. As students move through their course work and encounter different points of view, they began to shift to a more uncertain view of knowledge. By their senior year they arrived at the final stage, a relativistic view, where they interpret knowledge as tentative, complex and derived from observation and reasoning.
Kitchener & King (1989; 1994) extended Perry’s research by proposing a seven stage epistemological belief theory that focused on students’ justification of knowledge, known as reflective judgment. In the beginning stages students believe that knowledge is absolute, concrete, and handed down by authorities. As students encounter different points of view they begin to experience temporary states where knowledge is uncertain. During this uncertainty students are still confident that authorities will discover the ultimate facts, but are open to the possibilities that there are multiple perspectives and solutions. In the final stages students justify knowledge by reason and experience and view knowledge as tentative, content dependent, and open to reevaluation depending on circumstances.

Baxter Magolda (1992) expanded Perry’s work by theorizing about the developmental patterns of the uncertainty of knowledge. Her epistemological reflective model focused on the students’ perception of learning and consisted of four distinct stages: absolute, transitional, independent, and contextual. Students begin as absolute knower where knowledge is certain and authorities have all the answers. As they encounter challenging beliefs they begin to question authority and value their own internal knowledge. In the final stage students construct their own view of knowledge from evidence within context.

Expanding further on Perry (1968), Kitchener and King (1989, 1994), and Baxter Magolda (1992) Schommer (1990) hypothesized a system of epistemological beliefs comprised of five distinct beliefs. These beliefs were first conceptualized as independent frequency distributions (Schommer, 1994b) and were labeled according to the lower extreme of their postulated development; certain knowledge, simple knowledge, source
of knowledge, quick learning, and fixed ability. Throughout her research she has expanded these labels to a more general and global characteristic of the belief (Schommer-Aikins, 2002). These beliefs are:

1. Certain Knowledge, now called the Stability of Knowledge,
   ranging from unchanging knowledge to tentative knowledge.
2. Simple Knowledge, now called the Structure of Knowledge,
   ranging from isolated bits and pieces to integrated concepts.
3. Source of Knowledge label has remained the same,
   ranging from omniscient authority to reason and empirical evidence.
4. Quick Learning, now called the Speed of Learning,
   ranging from quick to gradual.
5. Fixed Ability, now called the Ability to Learn,
   ranging from fixed at birth to improvable (Schommer, 2004, p. 20).

A very unique aspect of Schommer’s epistemological theory is the principle that individual as well as combinations of epistemological beliefs have different effects on learning and are essential to the learning process (Schommer, 1994a; Schommer & Walker, 1997; Schommer-Aikins, Mau, Brook hart & Hotter, 2000). Her research has revealed that epistemological beliefs become more sophisticated with education (Schommer, 1993a, 1993b, 1997, 1998; Schommer & Walker, 1997) and that age can be an effective predictor of students’ beliefs in fixed ability (Schommer, 1998). Students with a sophisticated belief in the speed of learning demonstrated higher meta-comprehension, and reading comprehension scores (Schommer, 1990) as well as grade point averages (Schommer, 1993a; Schommer, et al., 1997; Schommer-Aikins, et al.,
Students with a sophisticated belief in the structure of knowledge had higher comprehension, meta-comprehension, and predicted mastery test performance (Schommer, et al., 1992). Also students with a less sophisticated belief in the stability of knowledge demonstrated lower reading comprehension (Schommer, 1990), and were less able to draw accurate conclusions from tentative readings (Kardash & Scholes, 1996). The relationship between self-monitoring while reading and epistemological beliefs is of special interest in the study being reported.

Calibration of Comprehension & The Illusion of Knowing

The system of self-regulation, self-monitoring, and self-evaluation skills in reading comprehension is called calibration of comprehension. Specifically, it is the relationship between students’ predicted levels of understanding and their actual reading comprehension performance (Glenberg, et al., 1985; Lin, et al., 1998; Lin, et al., 2001; Weaver, 1990).

Calibration of comprehension can be accurate in that a student predicts low reading comprehension and actually performs at a low level. However the converse can be true in that a student underestimates or overestimates their actual reading comprehension and their calibration of comprehension is inaccurate (Lin, et al., 1998). Early research demonstrated that students are generally poor at calibrating their comprehension and often are overconfident in comprehension (Glenberg, et al., 1982, 1985; Schommer, et al., 1986). This overconfidence is defined as the illusion of knowing. Illusion of knowing is the belief that, “comprehension has been attained, when in fact, comprehension has failed” (Glenberg, et al., 1982, p. 597).

In their 1982 study Glenberg, Wilkinson, and Epstein asked college students to
read an expository text and rate the degree to which they understood the text. Their results showed that students who were instructed to search for textual errors prior to reading failed to detect 51% of the contradictions even in adjacent sentences.

In a series of studies conducted by Magliano, Little, and Graesser (1993) students were asked to read the same sections at different processing levels; deep conceptional, superficial decoding, and motivational. The research demonstrated that students who initially experienced low calibration of comprehension were able to increase their calibration by altering their selected reading strategies as they discovered that their instructed strategy was inappropriate for adequate comprehension.

Schommer & Suber (1986) provided students with reading goals that required either shallow processing (i.e., determine if the passage is clearly written) or deep processing (i.e., prepare to teach the main point). Students were divided and asked to read either an easy passage, written at the undergraduate reading level, or a difficult passage, written at the college graduate level and then to write a summary of the passage.

The results revealed that with the easy passage comprehension was high and was not affected by the reading goal. In contrast, the students who read the difficult passage and used shallow processing demonstrated dramatic effects on comprehension monitoring and the quality of written summaries. The majority of these students had significantly lower reading comprehension and improvised summaries. While other students had inappropriate distortions in their summaries beyond just simple errors in the contextual understanding of the text, these students suffered from the illusion of knowing.

The impact of epistemological beliefs on reading comprehension was first explored by Ryan (1984). He theorized that, “One’s text comprehension standards will
reflect his or her conception of the desired outcome of the reading process. This conception, in turn, will reflect an individual’s implicit epistemological beliefs” (Ryan, 1984; p. 248). Using Perry’s one-dimensional stage theory Ryan classified epistemological beliefs as dualistic, absolute truth is expressed in right/wrong or true/false answers; or relativistic, the idea of contextual truth. When assessing comprehension strategies dualist thinkers reported attaining comprehension when they could recall pure facts from the reading. Relativist thinkers reported attaining comprehension when they could apply the learned facts and understand the connectiveness of ideas.

Glenberg and Epstein (1987) attempted to link epistemological beliefs to comprehension monitoring by examining the accuracy of self-perceptions in reading comprehension using Ryan’s dualistic scale. In other words, based on Ryan’s work Glenberg and Epstein tested the notion that students with dualistic beliefs will be inaccurate in assessing their reading comprehension. Glenberg and Epstein were unable to confirm Ryan’s findings.

Schommer (1990) proposed that these inconsistencies were due to conceptualizing epistemological beliefs as an unidimensional construct that progressed in fixed stages and asserted that epistemological beliefs were too complex to be characterized as a single dimension (Schommer, 1990; 1994a; Schommer-Aikins, 2000; Wood & Kardash, 2002). Rather, they were a system of independent beliefs that were not necessarily at consistent levels of sophistication (Schommer, 1990; Schommer, 1994b; Schommer-Aikins, 2002; 2004) and the development of epistemological beliefs evolve over a lifetime and serve to filter incoming information and mediate learning processes.
Schommer explored the illusion of knowing, further connecting it with her epistemological beliefs theory. In Schommer’s original epistemological beliefs study (1990) students were asked to read either a physical science passage or social science passage and imagine they were the author of the reading passage and write the concluding paragraph of the passage. Afterwards, students rated their confidence levels for comprehension and completed a comprehension mastery test. One month prior to the testing students completed the Schommer Epistemological Questionnaire where they self-rated their epistemological beliefs.

The results of this study indicated the impact of two epistemological beliefs on poor reading comprehension: stability of knowledge and speed of knowledge. Students’ written paragraphs were scored for the reflection of the degree of certainty, stability of knowledge. The more the student believed in the certainty of knowledge the more likely their concluding paragraphs contained inappropriate absolute conclusions. Students’ strong beliefs in certainty of knowledge shaded their perception of the reading and hindered their text comprehension; thus they were unable to integrate the reading into an accurate concluding summary (Schommer, 1990; Schommer, et al., 1992; Kardash & Scholes, 1997). The comprehension mastery tests were also scored for accuracy and compared to the self-assessed confidence level. The more students believed in quick learning the more likely they exhibited poor performance on the comprehension mastery test, had impoverished conclusions, and were over confident in their comprehension ability (Schommer 1990; Schommer, et al., 1992).
In summary the majority of the research has examined the relationship between epistemological beliefs and students’ comprehension but the intricate details of that relationship have yet to be fully explored with other cognitive variables such as academic self-efficacy. Delineating the relationship among epistemological beliefs, academic self-efficacy and their connecting construct of ability may allow for more accurate predictions of comprehension monitoring.

**Academic Self-efficacy**

Self-efficacy is a key component of Bandera’s Social Cognitive Theory (Bandera, 1986; 1995). It is one’s belief in their ability to organize and execute a course of action required to produce a given goal. More specifically academic self-efficacy is students’ belief in their ability to activate and regulate motivation and cognitive resources needed to attain a desired educational goal (Bandura, 1995). The focus is not on the academic skills an individual possesses, but on an individual’s belief of their ability to use those skills within a given task (Bandura, 1986, 1995; Maddux, 1995; Pajares, 1996; Zimmerman, 1995; Zimmerman, et al., 2003).

Academic self-efficacy is a multidimensional system that is influenced by past successes and failures, self-regulatory strategy, self-monitoring (Zimmerman & Bandura, 1994), and self-evaluation (Bandura, 1995). Self-efficacy has been shown as an effective predictor of students’ choice of academic activities (Lane, et al., 2001; Money, 1994; Pajares, 2002; Pintrich, et al., 2002; Zimmerman, 2000) and an accurate predictor for academic achievement (Chimers, Hun, & Garcia, 2001; Melton, Brown & Lent, 1991; Pintrich & De Grout, 1990; Shell, Murphy & Burning, 1989; Wood & Locke, 1987; Zimmerman, 2000), as well as motivation, and persistence (Bandera, 1995; Buford-
Bouchard, Parent, & Larvae, 1991; Deck & Leggett, 1988; Greene & Miller, 1996; Lent, Brown, & Larkin, 1984; Money, 1994; Pajares, 1996; Schunk, 1995). In Melton, Brown, and Lent’s (1991) meta-analysis of self-efficacy to academic performance and persistence they report that self-efficacy beliefs account for approximately 12% of the variance in academic persistence and approximately 14% of the variance in academic performance (p. 34).

When self-efficacy is low, students will underestimate their performance abilities. Students will select tasks that do not challenge them, thus not receiving corrective feedback regarding their performance, which could counter their negative self-efficacy perceptions (Bandura, 1995). These students often allow their doubts to undermine their concentration in turn causing them to give up easily during difficult tasks (Tuckman & Sexton, 1992).

When self-efficacy is high, students will challenge themselves to engage in tasks that develop their skills and knowledge. These students will feel confident in their performance and ability to succeed which in turn promotes competency for further tasks (Dweck & Leggett, 1988; Greene, et al., 1996; Lock & Latham, 1990). Tuckman and Sexton (1992) reported that students with high academic self-efficacy outperformed their own expectations by 22%, and were 10 times more productive as students with low academic self-efficacy, who fell below their expectation by 77%. On the other hand, students who are overly optimistic in their efficacy beliefs and miscalculate their ability can experience debilitating effects on their efficacy beliefs (Bandura, 1995; Pintrich, et al., 2002; Salomon, 1984; Schunk, et al., 1993).
It is the construct of ability that connects epistemological beliefs and academic self-efficacy. It could be argued that the epistemological belief of ability to learn is academic self-efficacy. Students with a fixed view of knowledge hold a global perspective that ability is beyond their control and is a stable trait (Bandura, 1995). Students with an incremental view of knowledge see ability as increasing with skills and experience, thus low ability can be improved through increased competence, persistence, and amount of effort (Schunk, 1995; Vrugt, Langereis & Hoogstraten, 1997). It is students’ views of their ability to learn that impacts their learning goals, and the amount of energy and persistence they will devote to the task (Dweck & Leggett, 1988; Greene, et al., 1996).

Hypotheses

The purpose of this study is to examine these relationships between epistemological beliefs, academic self-efficacy, and calibration of comprehension. Three hypothesis will be tested. It is hypothesized that within the domain of reading comprehension:

1. Community college students with a less sophisticated epistemological belief in the structure of knowledge and high academic self-efficacy will suffer from an illusion of knowing.

2. Community college students with a less sophisticated epistemological belief in the speed of knowledge and high academic self-efficacy will suffer from an illusion of knowing.

3. Community college students who exhibit a less sophisticated epistemological belief in the stability of knowledge and high academic self-efficacy will suffer from an illusion of knowing.
CHAPTER III

METHODOLOGY

Participants

The participants in this study were students from Cowley College. A total of 75 students participated in the study with one student opting not to participate. After analyzing the data the sample size was reduced to a total of 53 students. The demographics of the sample were 40 females and 13 males. The ages of the students ranged from 18 to 47 with a mean age of 25.38 years (SD = 9.00). The students had taken an average 30.5 hours of college credits, with many diverse programs of study represented (see Table 1).

Table 1. 

Program of Study of Students

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>Frequency</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Education</td>
<td>5</td>
<td>9.4</td>
</tr>
<tr>
<td>Health</td>
<td>14</td>
<td>26.4</td>
</tr>
<tr>
<td>Business</td>
<td>6</td>
<td>11.3</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>10</td>
<td>18.9</td>
</tr>
<tr>
<td>Computers/Engineering</td>
<td>8</td>
<td>15.1</td>
</tr>
<tr>
<td>Sciences</td>
<td>2</td>
<td>3.8</td>
</tr>
<tr>
<td>Liberal Arts Humanities</td>
<td>2</td>
<td>3.8</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>3.8</td>
</tr>
<tr>
<td>Undecided</td>
<td>4</td>
<td>7.5</td>
</tr>
</tbody>
</table>
A convenience sample was collected from four introductory Psychology classes and one introductory Sociology class. Psychology and Sociology classes were selected for the following reasons:

1. They are general requirements for most programs at Cowley College, allowing for diversity of disciplines and are more representative of the student body population.

2. These students would have limited background knowledge of the constructs under examination and would be unfamiliar with the terminology.

3. Reading passages selected for this study coincides with class content. As a cautionary procedure the class syllabus was examined prior to the study and the distribution of the questionnaires were timed accordingly to avoid unnecessary tainting and to minimize students’ prior knowledge.

Measures

Demographics Questionnaire

Demographic information and assessment of prior knowledge concerning theories of aggression was collected. The Demographics Questionnaire was a nine question survey design to be completed in five minutes. See survey in Appendix A.

Epistemological Beliefs Inventory

Epistemological beliefs were measured by the Epistemological Beliefs Inventory (EBI) (Schraw, Bendixen, & Dunkle, 2002). The EBI is a multidimensional inventory measuring Certain Knowledge, Simple Knowledge, Quick Learning, Omniscient Authority, and Innate Ability. This inventory was created to describe the development of epistemological beliefs scale modeled after Schommer’ Epistemological Questionnaire.
The EBI is a 28 item likert scale measure designed for college students to complete within 20 minutes. Cronbach alphas for items within each factor ranged from .63 to .87 (Duell & Schommer-Aikins, 2001). Validity was established using factor analysis (see Schraw, Bendixen, & Dunkie, 2002). Some items were revised to allow half of the items to be stated in such a way that a naïve person would likely agree and the remaining items stated in such a way that a naïve person would likely disagree.

Examples:

“If you don’t learn something quickly, you won’t ever learn it.” This item has a positive valence from a less sophisticated person’s perspective; that is, they will tend to agree with this item.

“How well you do in school does not depend on how smart you are.” This item has a negative valence for a less sophisticated person’s perspective; that is, they will tend to disagree with this item. See survey in Appendix B.

Self-Efficacy Scale

Academic self-efficacy was measured by the Self-Efficacy Scale (Greene, Miller, Crowson, Duke, & Akey, 2004). The reliability for the Self-Efficacy Scale is .91 Cronbach alpha. Validity was established with factor analysis, path analysis, and regression (Greene, et al., 2004). The Self-Efficacy Scale is a 7-item likert scale measure designed to be completed within 5 minutes. See survey in Appendix C.

Word Break Vocabulary Test

Vocabulary was measured using The French, Ekstrom & Price Word Break Vocabulary Test (French, Ekstrom, & Price, 1963). This test allows for statistical control of reading ability, since vocabulary is highly correlated with reading ability (Schommer,
et al., 1986). It is a 20-question survey and only takes five minutes to complete. See test in Appendix D.

Reading Test

Reading comprehension and comprehension monitoring were assessed using a reading passage and follow-up questions. The reading passage was taken from an introductory-level college psychology textbook on the topic of aggression containing 260 words in 13 sentences (Cammander & Stanwyck, 1997). The students were asked to:

Please read the following text once. You may take as much time as you like.

Your task is to determine if this is a clearly written passage that could be understood by the average college freshman.

Students were asked to assess their confidence in their comprehension of the passage and rate their confidence on a scale from 1 (low) to 4 (high). Comprehension monitoring was assessed using students’ confidence level of this task and their actual performance on each task. Students were informed that low confidence in understanding the passage may be a result of difficult vocabulary or a poorly written text and did not necessarily reflect the reader’s capabilities (Commaner & Stanwyck, 1997; Schommer, et al., 1986). Students were asked to summarize the reading passage using short answer bullet style format. Next, students were asked to complete a three-question mastery test that focused on main points of the passage to assess comprehension. Again, students assessed their confidence in their responses to the comprehension mastery test and rated their confidence on a scale from 1 (low) to 4 (high). See test in Appendix E.
Procedure

Consent forms were distributed, signed by the students, and collected prior to the distribution of any of the research materials. Questionnaire packets containing the Demographics Questionnaire, Epistemology Belief Inventory, The French, Ekstrom & Price Word Break Vocabulary Test, Self-Efficacy Scale, and Reading Test were distributed in class during the first half of the summer semester. All materials were distributed in closed packets that were numbered and were distributed only by the researcher. All materials were completed in class, collected during the assigned class period and no materials were allowed to be taken outside of the classroom.

The order of the materials within the questionnaire packets themselves were as follows: Demographics Questionnaire, The Epistemological Belief Inventory, The French, Ekstrom & Price Vocabulary Test, Self-Efficacy Scale, and the reading portion of the Reading Test in package one. To insure students’ responses to the Epistemological Belief Inventory and the Self-efficacy Test were not being influenced by one another the following techniques were used; first, the order of completing these assessments were counter balanced to control for order effect and secondly, the vocabulary test was taken between these two measures. Once students completed the questionnaire package one they returned the package to the researcher and received the second questionnaire package. The second questionnaire package contained the comprehension questions, summaries, and confidence assessments.
CHAPTER IV

RESULTS

Purpose of Analysis

*Calculating Scores* The first task was to develop a measure of comprehension monitoring, calibration of comprehension (see Table 2). This measure allows for the comparison of students’ confidence and comprehension which lead to an assessment of either accurate monitoring, under confidence monitoring, or the Illusion of Knowing.

Table 2 *Calibration of Comprehension Status and Frequencies*

<table>
<thead>
<tr>
<th>Confidence Score</th>
<th>Reading Passage Scores</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score of 3 or 2</td>
<td>Score of 1 or 0</td>
</tr>
<tr>
<td>4 or 3</td>
<td>Accurate = 17</td>
<td>Illusion of Knowing = 23</td>
</tr>
<tr>
<td>2 or 1</td>
<td>Under Confident = 2</td>
<td>Accurate = 11</td>
</tr>
</tbody>
</table>

If a student scored a 3 or 2 on the reading passage and a confidence score of 4 or 3 they demonstrated accurate calibration of comprehension. The same would be true for a student who scored a 1 or 0 on the reading passage and a confidence score of 2 or 1, again accurate calibration of comprehension. If a student scored a 3 or 2 on the reading passage and low, 2 or 1, on the confidence score they demonstrated a under confidence in their reading comprehension. Conversely, if a student scored a 1 or 0 on the reading passage and high, 4 or 3, on the confidence score they demonstrated an Illusion of Knowing.
Scores were calculated for all the major variables in these analyses. Passage scores were calculated by adding the number correct answers. Epistemological Belief scores were calculated by adding the items together and dividing by the number of items being added according to (Schraw, et al., 2002) which in turn generated scores for each of the five epistemological beliefs: quick learning, innate ability, certain knowledge, simple knowledge, and omniscient authority. Self-efficacy scores were simply the total scores added. Vocabulary scores and prior knowledge were also total scores added. The descriptive statistics for all of these scores are shown in the tables below. Passage monitoring status was scored as 0 for the Illusion of Knowing and 1 as all other forms of calibration.

Table 3

Descriptive Statistics Epistemological Beliefs

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Minimum</th>
<th>Maximum</th>
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</thead>
<tbody>
<tr>
<td>Quick</td>
<td>2.06</td>
<td>.31</td>
<td>.31</td>
<td>1.6</td>
<td>2.80</td>
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<tr>
<td>Innate</td>
<td>2.46</td>
<td>.35</td>
<td>-1.29</td>
<td>1.00</td>
<td>3.00</td>
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<tr>
<td>Certain</td>
<td>2.42</td>
<td>.45</td>
<td>.57</td>
<td>1.60</td>
<td>3.80</td>
</tr>
<tr>
<td>Simple</td>
<td>2.40</td>
<td>.29</td>
<td>-1.09</td>
<td>1.43</td>
<td>3.00</td>
</tr>
<tr>
<td>Omni</td>
<td>2.79</td>
<td>.36</td>
<td>.53</td>
<td>2.20</td>
<td>3.80</td>
</tr>
</tbody>
</table>
Table 4

Descriptive Statistics Self-Efficacy, Vocabulary Test, & Prior Knowledge

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Efficacy</td>
<td>24.58</td>
<td>3.28</td>
<td>-7.39</td>
<td>16</td>
<td>28</td>
</tr>
<tr>
<td>Vocabulary Test</td>
<td>11.63</td>
<td>3.73</td>
<td>.09</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>Prior Knowledge</td>
<td>1.57</td>
<td>.87</td>
<td>.25</td>
<td>0</td>
<td>3</td>
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Passage Comprehension Monitoring and Epistemological Beliefs

The first question addressed in these analyses was, “Is there a relationship between passage comprehension monitoring and epistemological beliefs?” This was analyzed using a multivariate analysis of covariance, MANCOVA, with passage comprehension monitoring status as the independent variable, epistemological beliefs as the dependent variable, and vocabulary and prior knowledge as the covariates. The multivariate statistic, Wilk’s Lambda, analysis was not significant, \( F(5, 42) = .756, \ n.s. \) and no further analysis were conducted to address this question. The descriptive statistics for these analyses are shown in Table 5.
Table 5

*Descriptive Statistics of Epistemological Beliefs*

<table>
<thead>
<tr>
<th>Passage Comprehension Monitoring Status</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
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</thead>
<tbody>
<tr>
<td>Quick 0</td>
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<td>.30</td>
<td>16</td>
</tr>
<tr>
<td>1</td>
<td>2.04</td>
<td>.32</td>
<td>34</td>
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<tr>
<td>Total</td>
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<td>50</td>
</tr>
<tr>
<td>Innate 0</td>
<td>2.40</td>
<td>.46</td>
<td>16</td>
</tr>
<tr>
<td>1</td>
<td>2.49</td>
<td>.29</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
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<td>.35</td>
<td>50</td>
</tr>
<tr>
<td>Certain 0</td>
<td>2.50</td>
<td>.49</td>
<td>16</td>
</tr>
<tr>
<td>1</td>
<td>2.40</td>
<td>.43</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>2.43</td>
<td>.45</td>
<td>50</td>
</tr>
<tr>
<td>Simple 0</td>
<td>2.42</td>
<td>.38</td>
<td>16</td>
</tr>
<tr>
<td>1</td>
<td>2.38</td>
<td>.24</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>2.39</td>
<td>.29</td>
<td>50</td>
</tr>
<tr>
<td>Omni 0</td>
<td>2.70</td>
<td>.45</td>
<td>16</td>
</tr>
<tr>
<td>1</td>
<td>2.83</td>
<td>.33</td>
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</tr>
<tr>
<td>Total</td>
<td>2.79</td>
<td>.38</td>
<td>50</td>
</tr>
</tbody>
</table>

Note: A passage comprehension monitoring score of 0 indicates the Illusion of Knowing.

A passage comprehension monitoring score of 1 indicates accurate monitoring.
Passage Comprehension Monitoring and Academic Self-Efficacy

The second question addressed in these analyses was “Is there a relationship between passage comprehension monitoring and academic self-efficacy?”. This was addressed with an analysis of covariance, ANCOVA, with passage comprehension monitoring status as the independent variable, academic self-efficacy as the dependent variable, and vocabulary and prior knowledge as covariates. No significant differences were found for calibration of comprehension status, $F(1, 49) = .171, n.s.$ The descriptive statistics for these analyses are shown in Table 6.

Table 6

Descriptive Statistics of Academic Self-efficacy

<table>
<thead>
<tr>
<th>Passage Comprehension Monitoring Status</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>25.06</td>
<td>2.70</td>
<td>17</td>
</tr>
<tr>
<td>1</td>
<td>24.36</td>
<td>3.53</td>
<td>36</td>
</tr>
<tr>
<td>Total</td>
<td>24.58</td>
<td>3.28</td>
<td>53</td>
</tr>
</tbody>
</table>

Note: A passage comprehension monitoring score of 0 indicates the Illusion of Knowing. A passage comprehension monitoring score of 1 indicates accurate monitoring.
CHAPTER V
DISCUSSION

This study explored the relationship of epistemological beliefs, academic self-efficacy, and passage comprehension. Examining the relationship of academic self-efficacy and epistemological beliefs is especially important for community college students who, as research has demonstrated, may hold more immature epistemological beliefs in structure of knowledge, speed of learning, and stability of knowledge compared to university students (Schommer, 1993b). Particularly in the domain of reading where, “reading is itself a way of knowing, epistemology is even more central to reading research and instruction than to most other areas of education” (Cunningham & Fitzgerald, 1996, p.39).

As of yet, the relationships among academic self-efficacy, epistemological beliefs, and calibration of comprehension has not been examined. Research has demonstrated the positive effects of epistemological beliefs on achievement (Kardash & Scholes, 1996; Schommer, 1990; 1993; Schommer, et al., 1997; Schommer, et al., 1992; Schommer-Aikins, et al., 2000) as well as the positive effects of academic self-efficacy on achievement, (Lane, et al., 2001; Pajares, 2002; Pintrich, et al., 2002; Salamon, 1984, Schunk, et al., 1993; Zimmerman, 2000). Further, research has demonstrated that students often are overconfident in their academic abilities (Pajares, 1996; Pajares, et al., 1994), but why? The study of the relationship among epistemological beliefs, academic self-efficacy, and calibration of comprehension is essential in developing an understanding of why some students fail despite their high confidence level in their own abilities to succeed (Glenberg, et al., 1982; Schommer & Surber, 1986).
Conclusion

The results of these analyses are inconclusive and do not support the hypotheses generated that students with high academic self-efficacy but naïve epistemological beliefs will display poor calibration of comprehension. More specifically it was hypothesized that within the domain of reading comprehension:

1. Community college students with a less sophisticated epistemological belief in the structure of knowledge and high academic self-efficacy will suffer from an illusion of knowing.

2. Community college students with a less sophisticated epistemological belief in the speed of knowledge and high academic self-efficacy will suffer from an illusion of knowing.

3. Community college students who exhibit a less sophisticated epistemological belief in the stability of knowledge and high academic self-efficacy will suffer from an illusion of knowing.

Any interpretation of these results will necessarily be tentative because one cannot accept the null hypothesis, they can merely retain it (Kachigan, 1991). One possible explanation for these results is that there really isn’t a relationship between epistemological beliefs and calibration of comprehension, and between academic self-efficacy and calibration of comprehension. However, this is very unlikely because other researchers have demonstrated a relationship between epistemological beliefs and comprehension monitoring (Schommer, 1990). What is interesting is that a different instrument was used to measure epistemological beliefs in this study. It is less clear about academic self-efficacy and calibration of comprehension because to date little
research has been published demonstrating the relationship between academic self-efficacy and passage monitoring specifically.

A second possible explanation could be procedure and student cooperation. Students were strongly encouraged by their teachers to participate and all questionnaire distribution was conducted at the beginning of each class by the researcher. The instructions given were to complete the first packet of questionnaires and then to raise their hand to receive the second package of materials after they returned the first. The order of the materials within the questionnaire packets themselves were as follows: Demographics Questionnaire, The Epistemological Belief Inventory, The French, Ekstrom & Price Vocabulary Test, Self-Efficacy Scale, and the reading portion of the Reading Test in package one. In order to insure students’ responses to the Epistemological Belief Inventory and the Self-efficacy Test were not being influenced by one another the following techniques were used; first, the order of completing these assessments were counter balanced to control for order effect and secondly, the vocabulary test was taken between the these two measures. Once students complete questionnaire package one they returned the package to the researcher and received the second questionnaire package. The second questionnaire package contained the comprehension questions, summaries and confidence assessments.

It was stressed to the students to be as honest as possible for the purpose of discovering more about students and their learning processes, thus equipping teachers to teach more effectively. There did not appear to be any blatantly uncooperative students simply marking random answers on the questionnaires. Given the fact that student cooperation is almost impossible to monitor with 100% accurately the possibility of
careless cooperation remains tenable.

Another possibility is that the instruments chosen were not sensitive enough to detect any relationship within this sample and/or that their psychometric integrity is in question. In this regard Schaw’s Epistemological Belief Inventory doesn’t appear to be a better alternative to Schommer-Aikins Epistemological Questionnaire. Epistemological beliefs remains to be a very challenging concept to capture with quantitative assessment.

The academic self-efficacy measure has modest support for predictability (Greene, et al., 2004). One problem within this study is that the self-efficacy scale measured academic self-efficacy within the specific class the questionnaires were taken. It is possible that the domain specificity of this measure is not a good assessment tool when also trying to assess the more domain general trait of epistemological beliefs.

Limitations

Two limitations of this study were the instruments used and the utilization of a small sample size. Further, it remains unclear whether student cooperation was genuine and if students were actively engaged in this research project.

Implication for Future Research

The results of this study are inconclusive regarding possible relationships among epistemological beliefs, academic self-efficacy, and calibration of comprehension. Those who choose to further explore the possible interactions between epistemological beliefs, academic self-efficacy, and calibration of comprehension status should be advised to select different measures than those chosen for this study. It would also be advisable to select a larger and more diverse sample and also utilize a longer reading passage that would allow students to become more engaged in the passage. Lastly, the
results of this study not withstanding, the question of calibration of comprehension is a critical one that should not be diminished. More specifically the exploration of possible relationships and interactions between academic self-efficacy, epistemological beliefs, and calibration of comprehension is a very important concept for which further research should be conducted.
REFERENCES
List of References


Appendix A

Demographics Questionnaire

Age: _______                          Gender:     Male   /  Female

Program of study: _________________________________________________________

Number of college credits to date: _______

Have you ever taken a Psychology or Sociology class before?   Yes   /   No
   If yes, Where? _____________________________________________________
   When? _____________________________________________________

Social leaning theory is?

   A. we learn from direct experiences with rewards and punishments.
   B. we learn from examples of others as well as direct experiences with rewards and punishments.
   C. we learn from indirect experiences with rewards and punishments.
   D. we learn only from examples of others.

Aggression is?

   A. a combination of anger and hostility.
   B. only violent behaviors.
   C. all behavior that harms another individual.
   D. behavior that is intended to harm another individual.

Attribution theory is?

   A. the excuse of why some students fail or succeed.
   B. said to not to effect success and failures of students.
   C. the explanations students give for why some students fail or succeed.
   D. said to effect only the students perceptions of success of failure.
## Students’ Opinions About Education

Directions: These questions reflect opinions about learning. Please indicate how much you agree or disagree about knowledge and learning focusing on just this class. There are no right or wrong answers we just want your honest opinions.

1. Most things worth knowing are hard to understand.
   - 1: strongly disagree
   - 2: disagree
   - 3: somewhat agree
   - 4: strongly agree

2. What is true is a matter of opinion.
   - 1: strongly disagree
   - 2: disagree
   - 3: somewhat agree
   - 4: strongly agree

3. Students who learn things slowly are the most successful.
   - 1: strongly disagree
   - 2: disagree
   - 3: somewhat agree
   - 4: strongly agree

4. People should always obey the law.
   - 1: strongly disagree
   - 2: disagree
   - 3: somewhat agree
   - 4: strongly agree

5. People’s intellectual potential is not fixed at birth.
   - 1: strongly disagree
   - 2: disagree
   - 3: somewhat agree
   - 4: strongly agree

6. Absolute moral truth does not exist.
   - 1: strongly disagree
   - 2: disagree
   - 3: somewhat agree
   - 4: strongly agree

7. Parents should not teach their children all there is to know about life.
   - 1: strongly disagree
   - 2: disagree
   - 3: somewhat agree
   - 4: strongly agree

8. Really smart students do have to work as hard to do well in school.
   - 1: strongly disagree
   - 2: disagree
   - 3: somewhat agree
   - 4: strongly agree
9. If a person tries too hard to understand a problem, they will most likely end up being confused.

   1   2   3   4
strongly somewhat somewhat strongly
disagree disagree agree agree

10. Too many theories just complicate things.

   1   2   3   4
strongly somewhat somewhat strongly
disagree disagree agree agree

11. The best ideas are often the most complex.

   1   2   3   4
strongly somewhat somewhat strongly
disagree disagree agree agree

12. Instructors should focus on facts instead of theories.

   1   2   3   4
strongly somewhat somewhat strongly
disagree disagree agree agree

13. Some people are born with special gifts and talents.

   1   2   3   4
strongly somewhat somewhat strongly
disagree disagree agree agree

14. How well you do in school does not depend on how smart you are.

   1   2   3   4
strongly somewhat somewhat strongly
disagree disagree agree agree

15. If you don’t learn something quickly, you won’t ever learn it.

   1   2   3   4
strongly somewhat somewhat strongly
disagree disagree agree agree

16. Some people just have a knack for learning and others don’t.

   1   2   3   4
strongly somewhat somewhat strongly
disagree disagree agree agree

17. Things are more complex than most professors would have you believe.

   1   2   3   4
strongly somewhat somewhat strongly
disagree disagree agree agree
18. If two people are arguing about something, at least one of the must be wrong.

   1   2       3   4
strongly disagree  somewhat disagree  somewhat agree  strongly agree

19. Children should not be allowed to question their parents’ authority.

   1   2       3   4
strongly disagree  somewhat disagree  somewhat agree  strongly agree

20. If you haven’t understood a chapter the first time through, going back over it will help.

   1   2       3   4
strongly disagree  somewhat disagree  somewhat agree  strongly agree

21. Science is easy to understand because it contains so many facts.

   1   2       3   4
strongly disagree  somewhat disagree  somewhat agree  strongly agree

22. The more you know about a topic, the more there is to know.

   1   2       3   4
strongly disagree  somewhat disagree  somewhat agree  strongly agree

23. What is true today may not be true tomorrow.

   1   2       3   4
strongly disagree  somewhat disagree  somewhat agree  strongly agree

24. Smart people are not born that way.

   1   2       3   4
strongly disagree  somewhat disagree  somewhat agree  strongly agree

25. When someone in authority tells me what to do, I usually do it.

   1   2       3   4
strongly disagree  somewhat disagree  somewhat agree  strongly agree

26. People should question authority.

   1   2       3   4
strongly disagree  somewhat disagree  somewhat agree  strongly agree
27. Working on a problem with no quick solution is a waste of time.

1 2 3 4
strongly somewhat somewhat strongly
disagree disagree agree agree

28. There are always right answers to life’s big problems.

1 2 3 4
strongly somewhat somewhat strongly
disagree disagree agree agree
Appendix C

What I Honestly Feel About Study Skills

Directions: These questions reflect opinions about study skills. Please indicate how much confidence you have in doing the specific behavior in this class. There are no right or wrong answers we just want your honest opinions.

1. I am sure about my ability to do the assignments in this class.

   1   2   3    4
   strongly        somewhat               somewhat                  strongly
   disagree         disagree            agree            agree

2. Compared to others in this class, I think I am poor at learning this material.

   1   2   3    4
   strongly        somewhat               somewhat                  strongly
   disagree         disagree            agree            agree

3. I am certain I can understand the material presented in this class.

   1   2   3    4
   strongly        somewhat               somewhat                  strongly
   disagree                     disagree            agree            agree

4. I am sure I can do as well as, or better than, other students in this class on exams.

   1   2   3    4
   strongly        somewhat               somewhat                  strongly
   disagree         disagree            agree            agree

5. I am sure I have the ability to understand the ideas and skills taught in this course.

   1   2   3    4
   strongly        somewhat               somewhat                  strongly
   disagree         disagree            agree            agree

6. Compared to other students in this class my learning and study skills are weak.

   1   2   3    4
   strongly        somewhat               somewhat                  strongly
   disagree         disagree            agree            agree

7. I am certain I can learn the ideas and skills taught in this class.

   1   2   3    4
   strongly        somewhat               somewhat                  strongly
   disagree         disagree            agree            agree
### Appendix D

**Word Break**

For each item, choose the answer that most closely matches the definition of the numbered word.

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<td>A. theorist</td>
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</tr>
<tr>
<td>B. liberator</td>
<td>B. identity</td>
<td>B. conjunctive</td>
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<tr>
<td>C. prophet</td>
<td>C. contrast</td>
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<tr>
<td>D. spy</td>
<td>D. coming forth</td>
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<td>B. expulsion</td>
<td>B. gloominess</td>
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<tr>
<td>C. reformation</td>
<td>C. keenness</td>
<td>C. carouse</td>
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<tr>
<td>D. bisection</td>
<td>D. gluttony</td>
<td>D. sailboat</td>
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<td>E. exposition</td>
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<td>A. betray</td>
<td>A. clamorous</td>
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<tr>
<td>B. deaden</td>
<td>B. transgress</td>
<td>B. discontented</td>
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<td>C. soften</td>
<td>C. exult</td>
<td>C. disastrous</td>
</tr>
<tr>
<td>D. wave</td>
<td>D. vindicate</td>
<td>D. uncouth</td>
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<th>74. listless</th>
<th>79. handicraft</th>
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<td>A. aggressive</td>
<td>A. cunning</td>
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<tr>
<td>B. massage</td>
<td>B. adaptable</td>
<td>B. fast boat</td>
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<tr>
<td>C. manufacture</td>
<td>C. indifferent</td>
<td>C. utility</td>
</tr>
<tr>
<td>D. create</td>
<td>D. sorrowful</td>
<td>D. manual skill</td>
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<tr>
<td>E. pollute</td>
<td>E. ugly</td>
<td>E. guild</td>
</tr>
</tbody>
</table>
80. incubate
A. inform
B. anticipate
C. burn
D. brood

81. ungainly
A. cheap
B. stupid
C. clumsy
D. hazardous

82. furlough
A. leave of absence
B. garden
C. foot soldier
D. timberland

83. ignoramus
A. monster
B. gossip
C. dandy
D. dunce

84. decadence
A. decline
B. decision
C. color
D. joy
Appendix E

Please read the following text. You may take as much time as you like. Your task is to determine if this is a clearly written passage that could be understood by the average college freshman.
An example of a theory of behavior can be illustrated by examining the theory of aggressive behavior suggested by Dollard and Miller. The basic assumption of the theory is that aggression is always a consequence of frustration. Frustration was defined as “the condition which exists when a goal-response suffers interference”. That is, when an individual attempts to achieve a goal and someone prevents the attainment of that goal, the individual will experience a feeling described as frustration. Aggression is defined as “an act whose goal-response is injury to an organism.” That is, the aim of one’s behavior is to cause harm to another individual. According to the theory, frustration most naturally leads to acts of aggression against the agent (person) perceived to be the source of frustration. However, if the individual anticipates punishment, he may inhibit his act of aggression.

One hypothesis derived from this theory is that inhibited aggression will be displaced to different objects (rather than to the original source of frustration) and expressed in modified forms.

Dollard’s theory went on to predict what would occur if there was a conflict between motivation toward aggressive behavior and fear of punishment. For example, strong instigation to aggression and weak fear of punishment will increase the likelihood of expression of aggression to objects very dissimilar from the original source of frustration.

Another hypothesis derived from Dollard’s theory concerns what type of stimuli will elicit aggressive responses. The theory implies that the stronger the instigation to aggression, the less the potential for increasingly similar stimuli to elicit displaced responses.
Please return all questionnaires to the original envelope and raise your hand.

You are now ready for the next packet.
Please complete the following questionnaires.
Comprehension Rating Scale

INSTRUCTIONS: Some passages are more difficult to understand than others. There are many reasons for this. Some reasons include difficult vocabulary, poorly written text, or perhaps the reader does not have enough background information. Thus, understanding will vary from text to text and from person to person. We would like you to rate your comprehension of this text. Do not rate the passage per se. Rather, rate your understanding of this passage.

Circle the appropriate number.

1. I understood very little of this passage. I could not answer questions on this material.

2. I understood parts of this passage. I would have difficulty answering questions on this material.

3. I generally understood this passage. I could answer questions fairly well on this material.

4. I understood this passage very well. I could explain the main points of this material to another person.
Summary of the Reading

Please list the main points of the reading.

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Comprehension Questions for Reading Passage

1. The main idea that underlies the theory of aggressive behavior in this article is that:
   
   A. an individual who demonstrates aggressive behavior will become easily frustrated.
   
   B. frustrated behavior is one example of aggressive behavior displayed without self-control.
   
   C. aggression should not be equated with frustration because they are two entirely different concepts.
   
   D. a flair-up of temper is elicited as a result of a situation in which an individual is restrained from obtaining an objective.

2. According to the hypothesis in this text, if an individual is concerned about the consequences of his aggressive behavior then:
   
   A. frustration will most naturally lead to acts of aggression.
   
   B. the goal-response will be to cause injury to an organism.
   
   C. frustration will be inhibited and aggressive behavior will not be elicited.
   
   D. display of aggressive behavior will be toward a different target and in a different form.

3. Joe had been wanting to ask Mary for a date for weeks. When he finally got the nerve, Bill, a bad-tempered-football player, pushed Joe to the side and asked Mary first. This greatly upset Joe, yet Joe feared Bill might punch him in the face if he confronted him about his rudeness. According to the theory in this article what would Joe most likely do now?
   
   A. Joe would probably walk up to Bill and challenge him to a fight.
   
   B. Joe would probably walk away and ask Mary for a date at another time.
   
   C. Joe would probably get angry, walk away, and pound his fist against a wall.
   
   D. Joe would probably push Bill to the side and proceed to ask Mary for a date.
INSTRUCTIONS: Please rate your confidence in the answers you chose for the previous set of questions. Use the scale provided below.

1. I’m not at all sure of my answer. I guessed at the answer.

2. I’m not very sure in my answer. I just eliminated those answers I thought couldn’t be right.

3. I’m fairly sure of my answer. I chose what seemed logically correct to me.

4. I’m very sure of my answer. I chose the best answer among the choices.

Question 1 ______
Question 2 ______
Question 3 ______
Appendix F

Consent Form

You are invited to participate in a study where we are trying to assess students’ attitudes towards learning. Our research goals are to better understand junior college students’ perspectives on learning, studying, and reading.

You were randomly selected as a possible participate in this study because you are a junior college student. Everyone in this class has been asked to participate. If you decide to participate, you will be asked to complete several short questionnaires that ask your opinion about knowledge, learning and read a short passage. For the opinion questionnaires please understand there are no right or wrong answers, we just want to know what students really believe.

There are no risks in this study. In order to encourage participation in this study we will be careful to separate participants names from the data. All information will remain completely confidential and anonymous.

Participation in this study is entirely voluntary. Your decision whether or not to participate will not affect your future relations with Wichita State University and/or Cowley College. If you agree to participate in this study, you may withdraw from the study at any time without affecting your status as a student. If you have any question about this research please ask us. If you have any additional questions or concerns during this study you may contact us at:

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PO Box 211
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Counseling, Educational, and School Psychology Dept. W.S.U.
(316) 978-3326

If you have any questions pertaining to your rights as a research subject, or about research-related injury, you can contact the Office of Research Administration at Wichita State University, Wichita, KS 67260-0007, (316) 978-3285.

You will be offered a copy of this consent form for you to keep. You are making a decision to participate in this study. Your signature indicates that you have read the information provided above and have voluntarily decided to participate.

____________________________________   __________________
Signature of Subject       Date

____________________________________   __________________
Signature of Researcher      Date

____________________________________   __________________
Signature of Researcher      Date