## A PHENOMENOLOGICAL STUDY: THE INFLUENCE OF NONCOGNITIVE FACTORS ON ACADEMICALLY UNPREPARED COLLEGE STUDENTS

by

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A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Education in Educational Leadership

UNIVERSITY OF PHOENIX

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#### UNPREPARED COLLEGE STUDENTS

by

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#### Abstract

This phenomenological research explored the influence of noncognitive factors in four areas: early educational factors, personal factors, affective factors, and noncognitive skill factors to understand the phenomenon of college students' academic underpreparedness. Findings related to textual categories indicated personal factors such as a broken home and family strife within their home, or personal issues such as drinking alcohol and making bad decisions were possible reasons for bad choices made by participants. As well, early educational factor findings suggested a lack of parental involvement but in reference to academic preparedness was questionable because the level of response between participants and parents were not accessible. Structural theme findings emerging from research sub-questions suggested the malleability of noncognitive skill factors such as creative and practical skills as well as affective factors were a positive influence on students' ability to continue their degree aspirations. The findings included a creative synthesis using cognitive/noncognitive distinctions to explore a deeper understanding discovered within textual categories and structural themes, which led to implications and recommendations for improving the academic preparedness of academically underprepared college students.

#### Dedication

The effort put forth into this study comes from the memory of my mother. The journey would not have been possible without her selfless giving of unconditional love. The memory of her support throughout the many periods of her own personal hardship remains not only as a source of personal strength but also as a power of example. Her patience, encouragement, and endless love throughout my childhood and adulthood will serve as a template for helping others and for personal growth.

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#### **Chapter 1: Introduction**

The United States community colleges do not consider noncognitive factors when assessing students' academic preparedness (Boylan, 2009). Lindqvist and Vestman (2011) suggested noncognitive factors are characteristics such as emotional stability, social skills, and persistence. Heckman (2008) noted policy discussions in the U.S. often underrate the relevance of noncognitive factors. Moreover, noncognitive factors added with cognitive factors can increase the assessment accuracy of students' academic preparedness (Schmitt et al., 2009; Sternberg, 2008). Assessing students' academic preparedness is part of determining whether students are ready for college-level or developmental (i.e., noncredit or for-credit below college level) courses.

This qualitative phenomenological study explored students' lived experiences at Northern New Mexico College (NNMC) to understand the ways that noncognitive factors influenced their academic preparedness. According to Romero (personal communication, June 2, 2011), the director of Educational Opportunity Center (EOC) at NNMC, entering college students receive the *computer placement assessment and support system* (COMPASS) assessment to evaluate if they need developmental courses. Academically underprepared college students (e.g., determined by COMPASS) are often lacking traditional cognitive skills like reading, writing, or the ability to do math at the college level (Boylan, 2009), and may also lack noncognitive skills (Araujo, Gottlieb, & Moreira, 2007). Romero (personal communication, June 2, 2011) reported because of negative connotations of referring to students as developmental or a remedial student, the name underprepared is a sufficient terminology in referring to students needing developmental non-credit or for-credit courses. Boylan (2009) noted noncognitive factors added to cognitive factors for assessment can provide a mechanism for targeted interventions in helping the academically underprepared (i.e., students needing below college level courses as determined by COMPASS). In this study, the operationalization of academic underpreparedness was based on whether a student had taken below college level courses to prepare for college level coursework. Academic underprepared students may face obstacles in many noncognitive areas, including the area of personal factors. Researchers at The Annie E. Casey Foundation found that many personal factors can contribute to academic underpreparedness including: (a) a missing parent, (b) transportation issues, (c) parental unemployment, (d) lack of health insurance, (e) and illiterate parents (Griffin, 2008). For this study, noncognitive factors included four areas: (a) personal factors (Griffin, 2008), (b) affective factors (Boylan, 2008b), (c) noncognitive skill factors (Sternberg, 2008), and (d) early educational factors (Fewell & Deutscher, 2004).

By focusing on these four noncognitive areas, the current research explored shared lived experiences related to the influence of noncognitive factors on college student's academic preparedness. Vygotsky's developmental law provided a framework for the study. When intelligence quotient (IQ) was thought to be unchanging, Vygotsky (1978) proposed intelligence is dynamic, influenced by noncognitive social-cultural experiences with the ability to imitate a more knowledgeable adult or peer as the measure of intelligence. Chapter 1 includes a background on noncognitive and cognitive factors including the problem, purpose, and significance to the problem with nature of study, the central question including the conceptual framework for the research. The chapter also includes a discussion of the assumptions, limitations, delimitations, and a summary.

#### **Background of the Problem**

The history relative to the problem and underprepared students within the U.S. dates back to Harvard giving extra help to students studying for the ministry in Greek and Latin (Mulvey, 2008). Doninger (2009) reported that in 1636 courses were created just 16 years after the landing on Plymouth Rock to help underprepared college students at Harvard. In the 1800s, the University of Wisconsin provided high-school level coursework to college students (Mulvey, 2008). During that same 1800s period, Mulvey noted universities were admitting many academically underprepared college students and were teaching them elementary school coursework and high-school coursework. In brief, academic underpreparedness always has been part of U.S. public higher-education (Doninger, 2009).

However, Moss and Yeaton (2006) noted the increase in underprepared college students was substantially higher because the implementation of open-access policies. Doninger (2009) reported the Higher Education Act (HEA), passed in 1965, reflected an American belief that everyone should have the opportunity for higher education. According to Bankston (2011), open-access policies allowed interest-free loans, part-time jobs, and need-based scholarships to encourage academically underprepared students to enter college. Open-access means to have accessibility to education regardless of students' academic underpreparedness (Mulvey, 2008; Salas, Portes, D'Amico, & Rios-Aguilar, 2011).

Doninger (2009) suggested a long-standing controversy exists in education about whether academic integrity and open-access policies can coexist. Sternberg and Coffin (2010) demonstrated that maintaining high-standards (i.e., based on academic preparedness standards) at a college was possible while introducing unconventional admissions strategies that allowed the admittance of diverse gender and ethnic populations. Additionally, Sternberg (2009) discovered creative skills (i.e., generating ideas) and practical skills (i.e., implementing ideas), when combined with standardize tests can increase the assessment accuracy of students' academic preparedness by as much as twice over standardized testing alone. Sternberg and Coffin (2010) noted the Kaleidoscope study at Tufts University used noncognitive factors (i.e., a creative & practical skills rubric) with standardized test scores along with students' high-school grades (i.e., grade point average or GPA) for admissions testing.

However, the overall design of public higher education has not changed much since the 1983 Nation at Risk report and the accountability movement (Reigeluth & Duffy, 2007). Boylan (2008a) noted neither the new population of students entering college nor college institutions is prepared for the educational challenges resulting from greater higher education access. Further, increasing SAT thresholds for college admission may reduce the enrollment potential of diverse ethnic groups while a holistic assessment may increase the applicant pool (Crisp, Horn, Dizinno, & Wang, 2010).

While this study does not focus on selective colleges, it was relevant to note that community colleges use a similar cognitive standardized test derived from COMPASS scores to determine students' academic preparedness. Just below in Table 1, the equivalence scores between COMPASS and two other cognitive assessments provided an indication of the similarities of standardized cognitive assessments. Boylan (2009) noted that many community colleges as well as universities use COMPASS for developmental placement.

#### Table 1

COMPASS	COMPASS	ACT	ACT	SAT	SAT	Below college level
ENG 108N	33-46	ENG 108N	12-13	ENG 108N	290-320	Noncredit
MATH	36-42	MATH 100N	15-16	MATH 100N	320-340	Noncredit
MATH 130	12-19	MATH 130	20-21	MATH 130	410-490	For-credit
MATH 145	20-26	MATH 145	22-24	MATH 145	500-530	College Level

Standardized Cognitive Assessments

Source: Hilario Romero (personal communication, June 2, 2011).

Fike and Fike (2008) reported two million underprepared students may not stay in college without receiving developmental education; their success is contingent on building both noncognitive and cognitive skills. Boylan (2008b) argued that collecting more information on underprepared students may help developmental education design a comprehensive strategy aimed at these students. Boylan (2009) suggested that the triangulation of cognitive and noncognitive indicators (i.e., personal and affective factors) may help to provide developmental education with an accurate assessment of students' academic preparedness. Noncognitive indicators are increasingly capturing the attention of developmental education and researchers, as these factors are associated with students' academic preparedness (Schmitt et al., 2009; Sternberg, 2008).

The implication is that investing in building noncognitive skills produces a better return on investment than solely investing in building cognitive skills for adolescents and adults (Cunha & Heckman, 2009). Presently, the placement assessment for students entering college consists of a cognitive test (i.e., Scholastic Aptitude Test also known as SAT) for testing basic skills on which this test determines students' academic preparedness (Mulvey, 2008). Cognitive tests focus on basic skills like reading, writing, and math (Mathews, 2010), and provide a combined score. Boylan (2009) implied this combined score may be efficient, but it is not effective for delivering targeted interventions. Boylan also found that most colleges are using SAT or American College Test (ACT) scores to measure basic cognitive skills in the assessment of students' academic preparedness. According to Syverson (2007), colleges began using SAT test scores in 1926 and ACT test scores in 1959. Syverson showed that the cognitive factors measured by SAT and ACT test scores can assess the academic preparedness of prospective students entering college. This cognitive testing is also an accurate assessment of future dropout rates (Burlison, Murphy, & Dwyer, 2009).

Contrary to these reports, Geiser (2009) reported that under more scrutiny, cognitive testing did not always provide an accurate assessment of students entering college, particularly when assessing academically underprepared students. Empirical evidence suggested that by adding the measurement of noncognitive factors to cognitive test scores may increase the assessment accuracy of these students' academic preparedness (Araujo et al., 2007; Schmitt et al., 2009; Sternberg, 2008, 2009). According to Heckman (2008), equally important as cognitive skills are noncognitive skills such as: personality, motivation, regulation of emotions (i.e., self regulation), and working with others. Heckman (2008) warned the influence of noncognitive factors in public higher education should not be underrated.

#### **Statement of the Problem**

Kaufman (2010) noted public higher education assessments in use do not reflect the full potential of underprepared students and recommended that noncognitive measures become part of college preparedness assessment. Standardize assessments presently in use for assessing college preparedness emphasize cognitive skills, such as:

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math, English, and reading (Engstrom & Tinto, 2008; Sternberg, 2009). Further, many academically underprepared college students were lacking both noncognitive as well as cognitive skills (Araujo et al., 2007; Boylan, 2009). Geiser (2009) and Kaufman (2010) both acknowledged the validity of standardized assessments but questioned whether these assessments are adequate for understanding every student such as the academic underprepared student.

Adams (2009) argued one such noncognitive factor such as self-efficacy (i.e., a belief in one's own ability) as an enhancement of motivation is essential for college preparedness. In brief, many underprepared students do not know they are not prepared for college as they often receive academic scholarships but find they need developmental noncredit courses when starting college (Moore, 2007). According to Moore, academically underprepared college students were far more influenced by course engagement and classroom attendance (i.e., motivation-based behaviors) than academic aptitude (i.e., based on SAT) in measuring their academic preparedness. Adams (2009) referred to these underprepared students as riding a roller coaster of emotional experiences affecting self-efficacy and motivation.

The Moore (2007) and Adams (2009) studies are excellent indicators of the importance of noncognitive factors on academic preparedness of students but have limitations in their singular scope on respectively motivation-based behaviors and self-efficacy. The current study expanded the scope of inquiry into four noncognitive areas, which included affective (i.e., motivation and self-efficacy), personal (e.g., at-risk factors) and early education (i.e., preK-12 through K-12), and noncognitive skills (i.e., creative and practical skills). Expanding the scope of inquiry into many noncognitive

areas that group noncognitive factors may give a more effective assessment of underprepared college students' preparedness than a single noncognitive factor. Weel (2008) noted "no single factor has emerged in the psychological literature and it is unlikely that one will be found" (p. 729). The issue is many noncognitive factors are affecting cognitive competencies and devising tests to measure students' preparedness are difficult (Weel, 2008).

The general problem is that although standardized assessments are efficient, they do not provide an accurate assessment of academic underprepared students (Boylan, 2009). Moore (2007) noted that high-performing underprepared college students in developmental education have a variety of noncognitive factors positively affecting their academic preparedness such as: self-efficacy, effort regulation, and willingness to work hard. The implication for higher education institutions is for admissions officers to develop profiles that emphasize not only cognitive abilities but also noncognitive abilities associated with academic preparedness (Moore, 2007). According to Boylan (2009), self-efficacy, effort regulation, and willingness to work hard are one noncognitive area named affective factors. In this study, an exploration of students' academic underpreparedness using four areas of noncognitive factors was to expand on earlier investigations.

The specific problem is that only 7% of community colleges in the U.S. use noncognitive factors in assessing the academic preparedness of students (Boylan, 2009). Bailey (2009) noted "developmental education as it is now practiced is not very effective in overcoming academic weaknesses" (p. 12). Without an accurate assessment in community college of a students' preparedness, it is impossible to design a targeted intervention to help these students (Boylan, 2009). The Boylan (2009) study is arguably the first research to expand the assessment criterion using two noncognitive areas such as affective factors and personal factors. However, this current study expanded Boylan's study as well as four other studies mentioned previously to obtain a deeper understanding of ways noncognitive factors may influence community college students' academic preparedness in the open-access situation.

In 2009, the McKinsey study, focusing on the unacceptable condition of education in the U.S., monetized the potential loss in future tax revenue based on educational outcomes between ethnic groups of students (Huffman, 2009). According to Huffman, the research findings on student underpreparedness are momentous because it has implications in associated lost tax revenues for the U.S. estimated at \$400 to \$670 billion annually. The study also showed a potential loss in the trillions of dollars when comparing the U.S. educational system to educational systems in top performing countries such as Finland and Singapore (Huffman). To understand the phenomenon of academic underpreparedness, this qualitative phenomenological study explored the influence of noncognitive factors on academically underprepared college students at NNMC. NNMC is a 4-year college that maintains a community college mission with open enrollment, and newly enrolling students are tested for their academic preparedness by using COMPASS.

#### **Study Purpose**

The purpose of the study was to discover through the exploration of lived experiences, the influence of noncognitive factors on college students' academic preparedness. By understanding the ways noncognitive factors influence academic preparedness, developmental leadership may better understand academic underpreparedness and understand ways to develop targeted interventions with improved assessments. The use of phenomenology as a research design allowed an exploration to discover through lived experiences the influence of noncognitive factors on students' academic preparedness. Phenomenology is appropriate for exploring lived experiences (Scroggins, 2010).

Qualitative research is appropriate for exploring what Majer (2009) called individuals' perceptions, as human actions are often the result of perceptions. Joyner (2009) described variables as inappropriate for qualitative research. However, thematic constructs may allow exploring the ambiguous, which may provide descriptive detail and a deeper understanding through thematic analysis (Creswell, 2007).

In this phenomenological investigation, the research was an exploration of participants' experiences to find what Hamill and Sinclair (2010) called "the essence of their description" (p. 23). Russell and Aquino-Russell (2010) noted phenomenology is an efficient way of discovering and uncovering a deeper meaning from prior experience of participants experiencing the phenomenon. Participants included 16 academically underprepared students, who seek higher education at NNMC, located in the North Central region of New Mexico.

#### Significance of the Study

The study has significance because the influence of noncognitive factors on academically underprepared college students may arguably be at the heart of academic preparedness for this subpopulation of college students. Most research on noncognitive factors influence on students' academic preparedness has a focus on one noncognitive

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factor such as apathy, motivation, and perseverance, to name a few. However, an attempt to understand students' academic preparedness from the perspective of many noncognitive factors to discover a deeper understanding of the phenomenon was the aim of this study.

Significance of the study to the problem. The exploration of noncognitive factors may provide a variety of viewpoints in which the participants' experienced the combined phenomenon (Creswell, 2007). Boylan (2009) showed that an assessment that includes both noncognitive and cognitive factors provides essential data to improve targeted interventions. In addition, Sternberg (2008) reported that including noncognitive abilities such as creative and practical skills with standardize assessment can increase the gender and ethnic diversity of entrants without lowering academic preparedness standards. Gottfredson and Saklofske (2009) suggested the trend in public education is to find ways that human development and standardize assessment can coincide. The current study was significant to the problem because adding to the knowledge base may result in community colleges using noncognitive factors as well as cognitive factors in assessing academic underprepared college students.

Empirical evidence is beginning to show the importance of noncognitive factors relative to the standardize assessment. Many students who under-perform on the SAT have successful personality traits such as high motivation; other students over-perform on the SAT and still they drop out, which may show a lack of motivation (Borghans, Meijers, & Weel, 2008). Empirical evidence suggested that high school dropouts who pass the general education diploma (GED) examination are cognitively equivalent to high school graduates; however, high school dropouts may lack noncognitive skill sets (Araujo et al., 2007). According to Heckman (2008), empirical evidence suggested that cognitive skill training with the adolescent and adult shows more improvement by focusing on improving noncognitive skills than cognitive skills alone.

Research conducted by Cunha and Heckman (2009) showed that the later cognitive training occurs with basic skills, the less effective it is for the adolescent or adult. This research study is significant because interventions with noncognitive skills and noncognitive personal factors can cause more improvement in adults than cognitive training alone (Cunha & Heckman, 2009). More research is necessary to understand the influence of noncognitive factors on academic underprepared college students.

**Significance of the study to leadership.** Educational professionals are asking for more research for implementing new programs, based on research findings, which address the educational achievement crisis (Sternberg, Kaplan, & Borck, 2007). The study results may help provide educational leaders with a better understanding of underpreparedness through the lived experiences of students to modify developmental programs. Hand and Payne (2008) noted students who feel supported were more likely to continue pursuing their academic goals. By focusing on students' noncognitive abilities and their cognitive abilities, community college leadership in developmental education can show students that they have the full support of the institution.

To offer this type of support, developmental education leadership may need to understand the ways that noncognitive factors influence students' academic preparedness. Cognitive skills testing are at the heart of an attempt to provide educational opportunities in the U.S. for every individual (Jackson, 2007). However, Lindqvist and Vestman (2011) noted that diverse gender and ethnic populations of students may benefit more by focusing on their noncognitive skills rather than on their cognitive skills. Exploring the ways noncognitive factors may shape cognitive skills is significant to community college leadership, for developing assessments and support systems that better help students' academic preparation.

#### Nature of the Study

In this phenomenological research study, an attempt was made to discover and understand ways noncognitive factors have influenced college students' academic preparedness. Research participants included 16 students from NNMC. Tape recorder and open-ended interviews provided relevant data that was analyzed thematically with integrated aspects of interpretive phenomelogical analysis (IPA) described by Pringle, Drummond, McLafferty, and Hendry (2011a), which allows phenomenological methods to fit the research study. By integrating aspects of IPA into the structural themes, a modified combination of Giorgi's (1985) and Moustakas's (1994) phenomenological methods were vital for discovering the essence of college students' academic underpreparedness. Additionally, noncognitive factors such as *personal factors, affective factors, noncognitive skill factors,* and *early educational factors* were vital in forming the interview questions to explore students' social-cultural lived experiences.

*Early educational factors* include the students' pre-kindergarten educational experiences (Fewell & Deutscher, 2004) and throughout their high school education (Mathews, 2010). The child's communicative and emotional abilities expanded through speech and modified through social norms provide the ability to overcome impulsive emotions, to execute a plan, and to control their own behavior (Vygotsky, 1978). In brief, as adults label actions verbally, children may repeat the label, which eventually

produces higher mental processes (Van Der Veer, 2007). Understanding early education experiences through a phenomenological exploration may reveal one aspect of the influence of noncognitive factors on college students' academic preparedness but several other aspects may also have a significant influence.

Sternberg (2008) discovered through research studies that *noncognitive skill factors* such as creativity and practical skills were just as important to academic preparedness of students as analytical skills. His studies have shown that teaching to match students' natural abilities may allow these students to outperform other students not educated to match their natural abilities (Sternberg, 2008). In addition to this noncognitive area, other noncognitive areas explored in this study included *affective factors* and *personal factors*.

Boylan (2009) defined *affective factors* as: students' attitude toward learning, willingness to make an extra effort, and willingness to seek help. Griffin (2008) described *personal factors* as a missing parent, parental unemployment, and having an illiterate parent. This exploratory study provided a comprehensive view of the many ways noncognitive factors may influence students' academic preparedness by exploring these previously mentioned four noncognitive areas.

**Overview of the research method.** Qualitative research is an exploratory approach to analyze the phenomenon (Creswell, 2007). According to Goretskaya (2006), the qualitative method is appropriate because it allows participants to discuss their learning experiences with descriptions and interpretations. Barbatis (2008) reported that a hallmark of using the qualitative method of analysis is the ability to explore real-world situations through open-ended questions, without predetermined constraints. According

to Farakish (2008), qualitative research becomes a reference for future studies, as opposed to the ultimate conclusion.

Qualitative research empowers individuals by allowing them to share their personal stories while permitting an understanding of complex social issues (Creswell, 2007). Goretskaya (2006) noted that the study of lived experiences is not permitted in quantitative research. The quantitative method is a way to examine causal relationships between variables, and it is not suitable for exploratory research (Joyner, 2009). The quantitative method is not appropriate for a deeper understanding of social phenomenon such as lived experiences of academically underprepared college students to explore ways noncognitive factors may influence their academic preparedness. A growing number of research professionals share a belief that qualitative methods provide perceptive knowledge of human phenomena more than from quantitative methods only (Williams & Gunter, 2006).

McClelland (2008) noted that qualitative research can make possible an inquiry into the minds of individuals within a community. According to Sternberg (2007b), a valid starting point is the influences that affect different views on what constitutes valuable learning. Qualitative phenomenological research was more appropriate for exploring students' lived experiences, personal circumstances, and the learning environment experienced by students in context to Vygotsky's notion of culturallymediated higher mental functions, also referred to as developmental law (Vygotsky, 1978). This developmental law is a transmission of skills with guidance from a more capable peer or adult into a potential future independent capability of problem solving demonstrated by the students' ability to imitate (Vygotsky). Phenomenology provides a qualitative design in which the primary focus is on the lived experiences of the individual and allows for an inquiry into their minds (McClelland, 2008).

**Overview of the design appropriateness.** For this study, the research design had an integrated interpretive phenomenological analysis, interpreted by Pringle et al. (2011a), as having a combination of interpretive and descriptive elements in establishing convergent perspective, divergent perspective, and shared commonalities. Commonalities shared across lived experiences can formulate into insights that arguably contribute toward theory; not theory with a capital-T but a lower-case t (Pringle et al., 2011a). According to Pringle et al. (2011a), when theoretical transferability, as opposed to empirical generalizing, is part of conceptualizing to a wider contribution; it is arguably

related to noncognitive factors. The study contributes to the research literature, which may contribute to a general theory of noncognitive factors in the future.

making a contribution toward theory. As well, Weel (2008) noted the lack of theory

Creswell (2007) noted phenomenology is one of several research designs in qualitative research that includes: case studies, ethnography, and grounded theory for examples of only a few. The phenomenological design provides a mechanism, in this study, for exploring the mind in reference to individuals' culturally lived experiences associated with noncognitive factors. As reported by Creswell (2007), qualitative research can appropriately combine with the phenomenological design, as the phenomenological approach is appropriate for collecting data from lived experiences.

Standing (2009) postulated phenomenology research design is relevant because of the personal interpretation derived from lived experiences, as opposed to empirical generalizing. Flood (2010) noted that phenomenology has extensive independence from ethnography with a focus on inner subjectivity. This study did not require active participation or observation used in ethnographic studies; therefore, the phenomenological design was more appropriate than the ethnographic design.

In another distinction of design appropriateness, qualitative data from a grounded theory research design includes hypotheses grounded within the collected data (Williams & Gunter, 2006). Creswell (2007) reported that grounded theory may use concepts from the collected data to build a resultant theory during the research process. In contrast, the phenomenological research design is not concerned with developing theory, instead, it is more of a reduction of the individual's consciousness to reflect the phenomenon through perceptions; thereby, finding meaning in the shared experience (Creswell, 2007; O'Murchadha, 2008). This study did not need a theory as the study was merely an attempt to establish meaning through participants' shared experiences.

In another example of design appropriateness, Rescigno (2009) noted that the case study allows analysis of the whole to see how the pieces fit together. The approach helps to explain the reasons behind a problem. However, in phenomenological research, Flood (2010) reported finding meaning is the main concern, not to solve a problem. Because the research did not involve problem solving, the phenomenological research design was more appropriate than the case study. These distinctions between qualitative designs were a necessary discussion in shaping the goal and research questions for the study.

#### **Central Research Question and Research Sub-Questions**

Mayer (2008) suggested that the research questions should have a theoretical grounding with educational implications to advance the field in addressing practical issues which may lead to improve learning. The noncognitive areas that may influence

college students' academic preparedness are: (a) personal factors, (b) affective factors, (c) noncognitive skill factors, and (d) early educational factors. Shown just below, Figure 1 is a compilation from three journal articles and two doctoral dissertations created to guide the study.





The challenge is to find a way to disclose the complexity hidden within what seems to be simple (Brough, 2008). Creswell (2007) recommended starting the investigation by using the central research question in the broadest way possible. Using this recommendation, the noncognitive areas in Figure 1 support the central research question: *In what ways do noncognitive factors influence lived experience relating to preparedness of academically underprepared students at Northern New Mexico College?* 

In this study, the central question was an effort to address the study's purpose to discover through the exploration of lived experiences, the influence of noncognitive factors on students' academic preparedness. To reveal the essence and meaning behind college students' academic underpreparedness, five research sub-questions helped to guide this phenomenological study:

- R1. How do academically underprepared college students perceive their college lived experience?
- R2. How do academically underprepared college students perceive their lived experience related to early educational factors before and during k-12?
- R3. How do academically underprepared students in college describe lived experience related to personal factors that may help or hinder their educational experiences?
- R4. In what ways do academically underprepared college students describe lived experience related to affective factors such as overcoming the challenges they face in obtaining a college degree?
- R5. What influences do creativity and practical skills have on participants' lived experience related to their academic preparedness?

These five research sub-questions provided guidance in discovering the influence of noncognitive factors on academic underpreparedness of college students using their perceptions, which ultimately connected to the theoretical framework.

#### **Theoretical Framework**

The theoretical framework encompassed students developing higher brain functions through social-cultural experiences that precedes their independent achievement by imitation of a more knowledgeable adult or peer as a learning developmental law (Vygotsky, 1978). Vygotsky stipulated that this social-culturally formulated developmental law integrates with behavioral development in which students subordinate their behavior externally through group interactions and later develop an internal self-regulation of their behavior on which allows for future planning. Sanagavarapu (2008) implied an individuals' self-regulation on which metacognitive skills such as planning may develop into problem solving skills was a social cultural phenomenon primarily emanating from an individuals' home environment.

According to Creswell (2007), the theoretical framework of a research study can involve the historic context of the problem. The historical context is that cognitive testing used for assessing college preparedness of students does not provide an accurate assessment of academically underprepared students (Moore, 2007; Schmitt et al., 2009; Sternberg, 2008). This involves human cognitive development beginning with social interaction before the individual internalizes knowledge (Eun, 2008). Research on the executive control system within the prefrontal cortex has indicated that cognitive inhibitory control (i.e., cognition and metacognition) and behavioral inhibitory control (i.e., self-regulation) are distinct functions within the same inhibitory area (Bierman, Nix, Greenberg, Blair, & Domitrovich, 2008). According to Bierman et al. (2008), their study suggested a neurobiological foundation to academic preparedness and that cognitive ability may become enhanced by learning to control noncognitive behaviors.

Gardner (2006) reported a limited portion of human potential (i.e., logicalmathematical intelligence) is assessed with the traditional SAT IQ test. Shavinina (2008) argued IQ test only measure descriptive knowledge, not intelligence nor ability to learn. Boylan (2009) noted more information is necessary to understand students' academic underpreparedness through noncognitive factors such as personal and affective factors to improve academic assessment accuracy and improve targeted interventions. To understand students' academic underpreparedness, Vygotsky's developmental law becomes foundational to this research, which may arguably be primary to educational development relative to students' self regulation, metacognition, and their cognitive academic underpreparedness.

#### **Definition of Terms**

*Affective factors:* Noncognitive factors relating to determination, attitudes, and willingness to accept help as well as autonomy and willingness to work hard on assignments (Boylan, 2009).

*Cognitive factors:* These are analytical skills such as reading, writing, and mathematics (Sternberg, 2008).

*Developmental education:* Support services designed as a comprehensive way to improve attitudes, habits, and skills of students in college (Boylan, 2008b; Boylan & Bonham, 2007).

*Developmental law:* Individuals develop higher brain functions starting within the social group, with an adult, or through a more knowledgeable peer on which independent achievement occurs through imitation (Vygotsky, 1978).

*Early educational factors:* This term refers to students' combined educational background experienced with the mother before kindergarten focusing on maternal responsivity (Fewell & Deutscher, 2004) and through their high-school education (Mathews, 2010).

*General factor of intelligence* (i.e., g-factor): A statistical factor analysis method used as a common source of variance within IQ testing and standardized cognitive tests, with each source possessing different loadings of *g*-factor (Kane & Brand, 2008). The notion of fixed intelligence, called general intelligence or *g*-factor, is the latent variable within standardized cognitive tests (Gardner, 2006; Kanazawa, 2009).
*Giorgi's phenomenology (i.e., one aspect used in this study):* Focus on the combining of participants' or co-researchers' experiences of a phenomenon with the imagination of the primary researcher by analyzing emotions and perceptions to discover the structure within the experience (Giorgi, 1985).

*Imaginative variation:* Giorgi (1985) described imaginative variation as considering many viewpoints surrounding descriptions of the phenomenon to understand participant's perceptions in construing themes, not necessarily from specific text but from participant's intentions found within the text.

*Interpretive phenomenological analysis:* A combination of descriptive and interpretive elements but focusing to seek examples of divergent perspectives, convergent perspectives, and commonalities and has flexibility to adapt to the needs of the study (Pringle et al., 2011a).

*Invariant constitutes:* This is the lowest level of structural hierarchy representing the closest accounts of participants' experiences (Scroggins, 2010).

*Maternal responsivity:* The care and communication that occurs between mother and child starting from birth but has a focus on an adult reading to the child (Fewell & Deutscher, 2004).

*Metacognition:* This is an individuals' conscious process of regulating their cognition (Efklides, 2008). Efklides described metacognitive skills as cognitive strategies such as planning strategies.

*Moustakas's phenomenology* (i.e., one aspect used in this study): A comprehensive depiction of shared experiences through a creative synthesis of participants' descriptions including personal knowledge (Moustakas, 1994).

*Multiple intelligences:* Pluralizes the concept of intelligence in which individuals have several intelligences (Gardner, 2006).

*Noncognitive skills:* This term refers to skills such as practical and creative skills routinely not included in the traditional SAT testing (Sternberg, 2010). These noncognitive skills are a set of skills that integrate analytical, practical, and creative ways of thinking (Sternberg, 2008).

*Open-access:* This means to have accessibility to education regardless of students' academic underpreparedness (Mulvey, 2008; Salas et al., 2011).

*Personal factors:* Personal factors are at risk factors like a missing parent, unemployment, or illiterate parents (Griffin, 2008).

*Prepared students:* Students who do well on cognitive tests such as: math, reading, and English (Engstrom & Tinto, 2008).

*Self-regulation:* Self-regulation is a balance between behavioral or emotional control and cognitive regulation for the attainment of personal goals (Blair & Diamond, 2008). Sitzmann and Ely (2011) implied self-regulation was a behavioral choice process of choosing a goal and how much resources to use for attainment of that goal.

*Successful intelligence theory:* Individuals have strengths and weaknesses in creative, practical, and analytical areas and individuals compensate for any weak areas making them successfully intelligent (Sternberg, 2008).

*Underprepared students:* This term refers to students lacking in traditional cognitive skills like math, reading, or English (Boylan, 2009); also called academically at-risk students (Henderson, 2009) who lack noncognitive skill sets (Araujo et al., 2007). The operationalization of academic underpreparedness was based on whether a student

had taken below college level courses to prepare for college level coursework. According to Romero (personal communication, June 2, 2011), low COMPASS scores identify students as academically underprepared.

## Assumptions

The assumption was that the criterion used to choose participants represents underprepared students and; therefore, are not succeeding in school. Another assumption was that noncognitive factors influence students' academic preparedness. The broad assumption was noncognitive factors are relevant to the choices that underprepared students make because these influences on their choices involve the formulation of meaning (Flood, 2010), which may affect their late forming abilities of self-regulation and metacognition. Because of the voluntary nature of the study, the assumption was also made that these students would respond honestly to interview questions. Creswell (2007) reported that in phenomenology, the assumption is that participants' lived experiences make enough sense to them for the experience to be expressed.

### Scope

The scope within this study involved the participants' lived experiences and their perceptions relative to four groups of noncognitive factors. This study involved research at NNMC using 16 participants. Permission to use the premises authorized the recruitment of participants and to use the name of the college in the study (see Appendix A). The recruitment of participants occurred using purposive sampling. As the research results were only generalizable to other colleges with similar populations of ethnic diversity, the small sample was not a concern (Joyner, 2009).

### Limitations

Flood (2010) noted that phenomenology is a research design focusing on the meaning of lived experience rather than abstract concepts or arguing a point. As well, Mathews (2010) reported that the phenomenological design can become a limitation only when the phenomenon entails an understanding without going deeper. The results of the study generalize only to other colleges that have similar diverse ethnic populations such as academically underprepared college students at NNMC.

Protecting the students' rights and privacy was part of the research design. The informed consent form included participants' rights and their privacy written as simply as possible (see Appendix B). A pseudonym used for each participant was a vital part of the research study, and the interview protocol (see Appendix C) guided the interview process. Participants' names locked in a cabinet were in a safe and after 3 years destroyed. The transcriber of the recorded interviews signed a nondisclosure agreement (see Appendix D) to ensure the protection of participants' identity.

### **Delimitations**

The study included a purposive sample of 16 students from NNMC in need of academic support in English or mathematics. Participants were at least 19 years in age taking or have taken below college level courses to prepare for college level coursework. Participants' COMPASS scores were not necessary but merely a verification of students' eligibility occurred by asking them if they had taken any below college level courses to prepare for college level courses to prepare for college level courses to mathematics. The study used a small sample size; however, the small sample size permits a broader exploration (Danko, 2010). No gender or ethnic exclusions were necessary.

### Summary

The difference between underprepared students who do not have higher education and prepared students who do have higher education continues to grow (Torraco, 2007). The problem is using only cognitive factors to assess both prepared and underprepared students are not a reliable assessment of academic preparedness for the underprepared students (Moore, 2007; Schmitt et al., 2009; Sternberg, 2008). Boylan (2009) noted that only 7% of colleges use noncognitive factors with cognitive factors to assess academic preparedness for inclusion into developmental coursework. United States educational policy primarily focuses on measuring cognitive skills using standardized tests (Heckman, 2008). According to Boylan (2009), triangulating cognitive factors with noncognitive factors (i.e., affective & personal factors) may provide a more accurate assessment of students' academic preparedness.

In this study, developmental law was the foundational framework in which socialcultural experiences are the foundation for higher mental functions in the human brain emanating from imitation of a more knowledgeable adult or peer (Vygotsky, 1978). Cunha and Heckman (2009) implied that because of the slow mental maturity of the brain, educational intervention with adults is more efficient and may provide a better ROI through the enhancement of noncognitive skills than cognitive training alone. Using research advances in knowledge about the brain and noncognitive factors, the creation and reproduction of successful programs are necessary, so leadership can reverse the educational crisis through the enhancement of much-needed programs (Sternberg et al., 2007). The research was an exploration into the influence of noncognitive factors on academically underprepared college students, in four distinct noncognitive areas, to discover the meaning of their shared experience.

Chapter 1 included the: (a) problem background, (b) problem, (c) purpose, (d) problem significance, (e) research questions, and (f) conceptual framework for the research. The study also entailed assumptions, limitations, and delimitations as well as a summary to form the basis for this exploratory study. The central research question and research sub-questions were to explore the influence of noncognitive factors on college students' academic preparedness.

Chapter 2 introduces the phenomenon of academic underpreparedness through a literature review of various topics such as: history of underpreparedness, influence of cognitive and noncognitive factors, developmental education, and Vygotsky's developmental law. The literature reviewed includes: studies surrounding the research problem, gaps in the literature, and key points relating to the central research question. This chapter includes a discussion of contrasting opinions, an analysis of the review, and a discussion of general key points.

### **Chapter 2: Literature Review**

Chapter 1 introduced the problem that cognitive assessment used to evaluate both prepared and underprepared students entering college is not a reliable assessment of underprepared students (Moore, 2007; Schmitt et al., 2009; Sternberg, 2008). Sternberg (2010) noted an accurate way to assess underprepared students is to use a variety of measures such as noncognitive (i.e., creative & practical skill) measures, Scholastic Aptitude Test (SAT) measures, and grade point average (GPA). Moreover, Heckman (2008) argued teaching noncognitive skills is a more cost-effective way to enhance cognitive skill training for underprepared students. The purpose of the study was to discover through the exploration of lived experiences, the influence of noncognitive factors on students' academic preparedness.

Chapter 2 involves a discussion of historical factors contributing to the research problem, present, and past studies relating to noncognitive factors, and opposing views concerning constructs of intelligence and the SAT assessment. The review includes issues primary to why noncognitive factors are not included for academic developmental assessment within community colleges, which may provide a better understanding of the present condition in public higher education. The literature review includes Vygotsky's developmental law to understand his viewpoint on intelligence. In Chapter 2, the review includes the topics of: (a) historical overview of the problem, (b) historical significance of noncognitive factors, (c) significance of intelligence theories, (d) developmental education, (e) and literature gaps.

### Title Searches, Articles, Research Documents, and Journals

Reference sources used for the literature review included: peer reviewed journals, electronic books, and electronic dissertations. Databases used from University of Phoenix online library, which included: ProQuest, ProQuest Dissertations and Theses, and Books24x7. Some keywords for search terms were: unprepared college students, noncognitive factors, general intelligence, multiple intelligences, successful intelligence, and Vygotsky. The keyword searches in Table 2 targeted a 5-year publication date (i.e., from 2006 through 2011).

Table 2

### List of Keyword Searches

Keywords	Peer Reviewed	Electronic	Electronic
	Journals	Dissertations	Books
Unprepared or	7991	14459	0
Underprepared			
College			
Students			
Noncognitive	542	1034	0
Factors			
General	33307	60917	59
Intelligence			
Multiple	23022	57228	2
Intelligences			
Successful	16911	51349	57
Intelligence			
Vygotsky	1784	6920	5
Metacognition	26446	5243	20
Self-Regulation	118359	17421	187

# **Historical Overview of the Problem**

The development of academically underprepared college students began in 1636 with Harvard offering preliminary support for Latin and Greek language students studying for the ministry (Doninger, 2009; Mulvey, 2008). During the 1800s, a small

proportion of the total population in the United States (U.S.) attended college with most students taking preparatory courses in high school to prepare for college (Syverson, 2007). The academic preparedness of students during this period was an indication of future success in college, and it was largely a measure of their GPA score (Geiser, 2009). Mulvey (2008) noted by the mid-1800s, admission requirements began to change and become more thorough because of an influx of underprepared students entering college as a result new federal laws. The federal Morrill Act of 1862 and 1890 created more access to diverse gender and ethnic students and more demand for academic help (Mulvey, 2008).

Mulvey (2008) explained by increasing federal funds to states that the Morrill Act of 1890 prohibited discrimination in states receiving these funds on which created an additional demand for academic help for the academically underprepared students. In 1900, 12 colleges began to standardize college entrance examinations creating the College Entrance Examination Board (Syverson, 2007). Sternberg (2010) reported that the name became the *College Board* in 1901, and the enterprise became better known with the introduction of the SAT in 1926. Geiser (2009) noted the focus before the SAT assessment was primarily on students' high-school achievement using their GPA. The SAT is an analytic ability (i.e., cognitive) test that has become an essential part of college admissions because it is meant to predict academic preparedness for future success in college (Geiser, 2009).

According to Geiser (2009), whereas achievement scores are the grades the students receive for their academic subjects, analytic scores (i.e., SAT) measure their potential ability to learn, known as academic preparedness. Gottfredson and Saklofske

(2009) confirmed the SAT is an assessment of academic preparedness for entry into college. The analytic or SAT assessment closely resembles the Intelligence Quotient (IQ) test (Gardner, 2006). In brief, according to Syverson (2007), the SAT uses similar questions. The correlation between the SAT and the IQ test suggest that the two tests are very similar (Sternberg, 2010).

Geiser (2009) argued that the SAT is not a valid indicator as a predictor of student achievement and may have an adverse result on underprepared students such as minorities and low-income students. Incidentally, these academically underprepared students such as minorities, the poor and single mothers, and immigrants were not considered for college in the past (Boylan, 2008a). Geiser (2009) argued that students' achievement associated with their GPA is more accurate for assessing these students' academic preparedness for college than using SAT testing. In 1959, Syverson (2007) explicated because SAT testing was seen as mainly for elite institutions that development of American College Test (ACT) was in response to this perception. Sternberg (2007b) argued colleges can reach academically underprepared college student populations by expanding the SAT and ACT to include noncognitive factors such as creative and practical skills.

Gottfredson and Saklofske (2009) noted the trend in research is to find ways to partner cognitive and noncognitive viewpoints to understand cognitive competencies. Heckman (2008) reported the ability to measure noncognitive skills are just occurring within the 21<sup>st</sup> century and evidence is beginning to confirm that college students can improve cognitive skills training by primarily focusing on their noncognitive skills. Heckman (2008) noted these noncognitive factors as social-emotional regulation, personality, and motivation as well as willingness to communicate with others. Moreover, because of open admission policies, the issue of academic underpreparedness has grown.

**Open admission.** Open admission policies based on the assumption that academically underprepared students would do well in college if they had additional cognitive development in math, reading, and writing (Biegel, 2009). According to Doninger (2009), the Higher Education Act of 1965 was the result of a need for more access, which reflected an American belief that everyone should have the opportunity for higher education. Tinto (2007) reported before the 1970s students dropping out of school was an indication of low motivation, low willingness, and low abilities. After the 1970s, Tinto (2007) noted that this view shifted in recognition of the role of the educational institutions as well as the students' environment in making a decision to remain in or drop out of higher education.

Taylor-Mendoza (2010) and Dowd (2007) reported that open admission community colleges are the gateway through which most underprepared students reach higher education; nearly 40% of the population in 2006 or eight million undergraduate students enrolled in community colleges. However, Engstrom and Tinto (2008) argued that providing access to education without providing adequate support is, in essence, offering little opportunity. Boylan (2009) noted these students may perform better academically if community colleges used both cognitive and noncognitive factors in assessments to provide targeted interventions. Dowd (2007) reported that with minimal requirements for enrollment and low tuition community colleges serve as gateways of open access for 2-year degrees, 4-year college transfer, or developmental education. **Community colleges.** In 1901, the Joliet Junior College became the first community college, created by William Harper and Stanley Brown in response to the need for a trained workforce because of an increase in high-school graduations (Dobbins, 2008). During 1920, Jurgens (2010) reported 74 community colleges existed in the U.S. and by 1950 the number increased to 330 community colleges. Between the GI Bill in 1944 and the rise of community colleges throughout the 1970s, attendance at these colleges grew at a remarkable pace (Dobbins, 2008). According to Jurgens (2010), the community college enrollment in 1965 was nearly one million, increasing in 1970 to more than two million, and by 1980 the enrollment increased to more than four million students. Jurgens reported by 1990 there were 1106 community colleges, and by 2010 there were 11.6 million students attending 1202 community colleges.

Bueschel (2009) noted the community colleges were victims of a successful growth rate as open access policies encouraged an ever-growing underprepared population of students to attend college. Boylan and Bonham (2007) explained during the late 1970s that few policymakers at the federal or state levels were discussing how to improve developmental education policies, thus creating better services at community colleges. However, 21<sup>st</sup> century state legislatures and other policymakers started to recognize the importance of developmental education in community colleges as the path toward higher education for academically underprepared college students (Boylan & Bonham, 2007).

**First-generation college students.** Academically underprepared college students are at-risk to fail and mostly consist of first-generation students (Ramirez, 2009). According to Ramirez, first-generation students are students in which neither their

grandparents nor parents have obtained a college degree. First-generation students are thought to lack persistence because of unfamiliarity with the new environment and lack support from their parents who have no experience with the college environment (Hand & Payne, 2008). Henderson (2009) characterized first-generation underprepared students as having failure expectations, little family support, and limited understanding of what it takes to experience academic success before beginning college. Ramirez (2009) noted the developmental objectives should emphasize noncognitive factors like personal, emotional, and social development to help academically underprepared students.

Heckman (2008) reported through a study on social-economic outcomes emanating from educational attainment that both noncognitive and cognitive skills are important for educational outcomes. Schrader and Brown (2008) reported empirical researchers over several decades showed 50% of students in community college are not completing their degree attainment. Cragg (2009) noted "research in this area has found that first-generation college students are less likely to persist" (p. 397). Nevertheless, Hand and Payne (2008) suggested that 4-year institutions are reliant on students of firstgeneration and 4-year institutions should invest in their retention. Further, Jurgens (2010) reported nearly 50% of the graduates from 4-year institutions are students beginning their educational aspirations through community colleges.

Underpreparedness in the 21<sup>st</sup> century. Community colleges provide higher education opportunities through open access to students underprepared for college-level courses (Moss & Yeaton, 2006). Boylan (2008a) noted that providing opportunity is not sufficient to deal with academically underprepared students, who may require development and training to take advantage of the opportunity. The more integrated students are in activities at the college the more likelihood they may not drop of school (Barbatis, 2010). Boylan (2008a) reported nations around the world have the same problem as the U.S. (i.e., not enough educated citizens are available to handle 21<sup>st</sup> century challenges).

Bailey (2009) argued for removing the separation of underprepared college students from college-prepared students by incorporating support for every student. Bailey also argued rethinking assessments used to understand underprepared college students' needs. Bowman (2009) reported that by 2023, at least 50% of 18 year-old students in the U.S. may be from minority groups. Students may benefit from the knowledge that noncognitive factors like low self-perception and perceived lack of power in their lives are affective factors that can reduce their academic potential (Hall, Smith, & Chia, 2008).

#### **Historical Significance of Noncognitive Factors**

During the 21<sup>st</sup> century, researchers began finding ways to incorporate noncognitive factors with cognitive factors for assessment of underprepared college students. Sternberg (2007a) argued that intelligence is not localized to just within the brain but involves the ability to adapt to noncognitive environmental challenges. Sternberg (2007b) reported that many scholars have dealt in the past with the relationship between education, culture, and intelligence. However, Sternberg (2007b) also reported the theory of successful intelligence is a way to explain how students compensate for their weaknesses and adapt to their environmental challenges. Sternberg et al. (2010) suggested that diverse gender and ethnic groups of individuals may have challenging cultural environments to overcome; consequently students may develop practical and creative skills to survive their environment.

To measure noncognitive factors, researchers are incorporating self-report questionnaires. Schmitt et al. (2009) conducted a study in which self-report questionnaires (i.e., noncognitive assessment) was to augment the SAT assessment. Sternberg (2010) also conducted studies known as the Rainbow and Kaleidoscope on which self-report questionnaires was to augment the SAT assessment. Boylan (2009) incorporated noncognitive (i.e., affective & personal) factors with cognitive factors to develop targeting interventions. However, Lindqvist and Vestman (2011) noted noncognitive measures such as self-report assessments lack validity compared to the IQ tests.

The shifting interest from cognitive measures to noncognitive measures for tests is the result of a shifting focus from selection and placement toward educational practice such as instruction and counseling (Gottfredson & Saklofske, 2009). Boylan (2009) used affective factors to assess if the students had determination, autonomy, and the willingness to seek help as well as work hard on assignments. According to Boylan (2009), most community colleges in the U.S. consider these noncognitive factors as important as cognitive skills to obtain academic preparedness. Bailey (2009) argued "developmental education as it is now practiced is not very effective in overcoming academic weaknesses" (p. 12). Boylan (2009) urged community colleges to use assessments that triangulate affective factors with cognitive and personal factors for targeted interventions to help academically underprepared college students.

Sternberg (2008) focused on practical (i.e., implementing ideas) and creative skills (e.g., generating ideas) as noncognitive factors necessary for life-skills. For example of creativity, Sternberg (2010) asked students to write a short story about designing advertisements or creating a product, with a question focused on practical issues querying students about persuading someone else against an unpopular idea. He also noted that testing should include SAT scores, high school GPA, writing, and a faceto-face interview as a holistic assessment of academic preparedness.

Griffin (2008) focused on personal factors such as a missing, unemployed, or illiterate parent as risk factors for students dropping out of school. In this Griffin's study, the Annie Casey Foundation is the source for identifying these personal at-risk factors. This study focused on returning adult high-school dropouts and finding an effective way of providing them with a second chance (Griffin, 2008). As well, Boylan (2009) noted personal factors such as childcare responsibilities and language barriers can influence homework study habits.

Other researchers such as Fewell and Deutscher (2004) determined that early educational factors or maternal responsivity (i.e., the communication between mother and child starting from birth) are influential noncognitive factors toward academic preparedness. Fewell and Deutscher (2004) included four variables with four multiple regression analysis to determine if the mothers' early facilitation of their children's speech capability were salient to enhance academic preparedness. According to Fewell and Deutscher, early language formation was found to be the foundation of literacy, reading skills, and therefore academic preparedness. Additionally, Mathews (2010) explored early educational factors at the high school level to understand ways that apathy affected students. Mathews (2010) discovered many students were found to be bored for a variety of reasons.

McIntosh and Munk (2007) noted the attainment of an education can be a decisive factor in social settings and in determining an individual's economic potential. Heckman (2008) suggested that a lifetime of lost earnings is often relative to an individuals' home environment, which form an individual's potential by the age of 18 years. Schrader and Brown (2008) discerned that when underprepared students do not integrate successfully into education, this can decrease revenues and resources for the community. High-attrition rates are affecting colleges' economic vitality (Barbatis, 2010). According to Huffman (2009), the U.S. may have lost hundreds of billions of dollars annually directly related to the academic underprepared and academic prepared educational gap.

### **Noncognitive Factors**

Although cognitive abilities play a vital role in determining economic success, noncognitive factors such as persistence, self-confidence, and motivation are equally important in determining economic success (Heckman, 2008). In agreement, Boylan (2009) reported noncognitive factors are equally important to college students' academic preparedness as cognitive skills. When academic advisors expand cognitive assessment data with noncognitive information, the ability to focus interventions to help students also increases (Boylan, 2009). Research is beginning to indicate that the SAT used alone is a poor predictor of underprepared college students' academic preparedness (Deil-Amen & Tevis, 2010).

In studying the relationship between high IQ scores and noncognitive skills, Borghans et al. (2008) discovered the behaviors like self-discipline and motivation are essential noncognitive factors affecting cognitive test scores. Another study focusing on persistence suggested that an individuals' grit (i.e., perseverance) accounted for successful educational retention (Duckworth, Peterson, Matthews, & Kelly, 2007). The researchers determined that using one noncognitive aspect called grit can demonstrate predictive validity beyond the IQ test (Duckworth et al., 2007).

Using another vantage point to understand the influence of noncognitive factors, Dawson (2008) reported animal studies have demonstrated that attention such as licking by a maternal rat produce changes in deoxyribonucleic acid (DNA) and brain structure as a gene expression regulation. A similar occurrence within the human brain is sensitivity to traumatic events in early childhood causing emotional issues, lack of attention, and language delays (Bierman et al., 2008). In a genotype versus environment investigation of 839 twin pairs on cognitive aptitude, Harden, Turkheimer, and Loehlin (2007) suggested stronger environmental influences within low-income homes and stronger genetic influences within high-income homes. In essence, 21<sup>st</sup> century researchers using empirical evidence are beginning to demonstrate ways that noncognitive factors affect students' academic preparedness in low-income homes as a result of environmental influences.

#### **Cognitive Factors**

Burlison et al. (2009) noted the SAT and ACT entrance examinations are valid measures of academic preparedness taken during college placement. The IQ tests is a good cognitive assessment measure for assessing analytical skills and memory but these skills are only a small number of skills necessary for college preparedness (Sternberg, 2010). The creators of the IQ test in the U.S. (i.e., Terman, Goddard, Yerkes, and Thurstone) were among many researchers developing a theory of intelligence during the early 1900s (Van Der Veer, 2007). Van Der Veer noted most of these researchers believed that a combination of narrow and broad cognitive abilities contributed to a general factor of intelligence (*g*-factor). These theorized abilities were thought to remain relatively stable throughout the individuals' life (Kane, Oakland, & Brand, 2006).

However, other researchers are investigating the notion that these abilities are not stable over a lifetime and the foundational use of *g*-factor in education has adverse consequences. Sternberg (2010) noted the U.S. has a closed educational system (i.e., valuing analytical and memory abilities only) in which a limited set of skills is of value deprives society of individuals with other talents. Sternberg (2010) argued this closed system has a significant foundation in Charles Spearman's *g*-factor theory in which only abilities such as memory and analytical abilities are part of the resulting standardized testing. Gottfredson and Saklofske (2009) described these abilities in terms of psychological constructs based on latent traits such as intelligence and emotional stability.

According to Sternberg (2010), "there are two standardized tests that have a monopoly in the college admissions market in the United States-the SAT and the ACT" (p. 41). Originally developed by Binet, the IQ test was a questionnaire that helped teachers to discover the students needing more attention (Van Der Veer, 2007). The IQ testing developed from the Binet test was initially used for: improving curriculum, selection of textbooks, and improving student academics within the classroom (Van Der Veer). The theory underpinning the IQ measurement of cognitive ability was initially to identify promising students deserving of college admission, regardless of their poor

instructional background (Geiser, 2009). However, Geiser also noted under closer scrutiny that standardized testing was not giving an accurate assessment of academically underprepared students.

Surprisingly, researchers know little about the way noncognitive factors and cognitive intelligence work together to determine an individuals' academic preparedness (Duckworth et al., 2007). Vygotsky (1978) discovered many learning issues were the result of a mismatch between the dominant culture (i.e., cultural norms within public education) and the children's natural abilities (i.e., language & home cultural norms). The implication is that academically underprepared college students may have a mismatch between their natural noncognitive talents and the public education system that values cognitive abilities.

#### **Significance of Intelligence Theories**

The notion of intelligence is not a well defined concept; there are contradictory points of view (Gottfredson & Saklofske, 2009; Noruzi & Rahimi, 2010). According to Noruzi and Rahimi (2010), the notion of intelligence is an abstract concept with the psychometric view of *g*-factor as the traditional view. The *g*-factor intelligence theory originates from the heredity notion of a natural transfer of intelligence (Guvercin & Arda, 2008), which later developed into a theory of measurable fixed intelligence (Piovani, 2008). With the help of a colleague, Binet made a questionnaire to identify students who needed additional help, which later led to the IQ test. Binet strongly argued against a fixed measure of intelligence (Van Der Veer, 2007).

Sciences such as neurobiology, psychology, and behavioral genetics have established that intelligence may involve the interacting factors of environment and heredity (Gottfredson & Saklofske, 2009). Although some improvement is occurring, Shavinina (2008) noted the current development of intelligence theory is not sufficient to understand human intelligence. Helping the ever-growing population of academically underprepared college students may involve understanding the effects of noncognitive factors, which may also provide a more enlightened view of what constitutes intelligence (Sternberg, 2007b).

*G*-factor intelligence. Cognitive skills based on general intelligence or intelligence quotient (IQ) has one underlying aspect known as *g*-factor (Weel, 2008). In the tradition of Binet-Spearman, Gardner (2006) noted the prevalent thought was that cognitive knowledge is evident at birth and unchanging regardless of the individuals' environment. Gardner (2006) also reported that the IQ test grew into a more sophisticated test known as the SAT. Jolly (2010) reported that between the 1920s and 1940s a shift occurred after a bitter debate between two research groups that culminated in convincing evidence a stimulating environment could have a positive effect on intelligence.

The Iowa Child Welfare Research Station is one research group in the debate that believed stimulating environments can increase intelligence and the Stanford Group held the belief that intelligence is a genetic outcome (Jolly, 2010). According to Jolly, the results of the research showed that foster care environments was more influential toward children's intelligence than genetic biological parents. Decades later during the 1960s, this research result influenced both Head Start Project and the War on Poverty, which arose as a result of environmental-enrichment studies (Jolly, 2010). In another study, Sefcek and Figueredo (2010) confirmed *g*-factor evidence for measures of intelligence, but they also discovered, other executive-task behaviors like impulse-control and task-shifting behaviors were distinct from *g*-factor abilities. Executive-task behaviors are brain functions that regulate cognitive processes by regulating emotions toward different responses (Bierman et al., 2008). Research on intentional, mental training found significant evidence that neurobiological modifications can occur within the brain (Garland & Howard, 2009). More recently in the 21<sup>st</sup> century, chemical brain imaging and magnetic resonance spectroscopy imaging and experiments with rats that examined gene-environment influence indicated that the environment can play a vital role in brain and memory development (Dawson, 2008).

Imitation as intelligence. Vygotsky (1978) argued that an individuals' ability to imitate problem solving activity after skills demonstrated through a more knowledgeable peer or adult was a more accurate measure of intelligence than independent activity. Cognitive tests (i.e., based on IQ) measure the development of independent problem-solving but the ability to imitate problem-solving activities of a more knowledgeable adult or peer is the potential development of an individual (Vygotsky). Vygotsky argued this development measured through the ability to imitate was a dynamic measure of intelligence and gave a more accurate indication of an individuals' future academic preparedness than independent problem-solving activity measures. According to Vygotsky, the inner psychological mechanism of the learning process is largely hidden but is historically formed and culturally conveyed. However, Vygotsky revealed the prevailing psychological thought is that intelligence is a measure of an individuals'

independent activity on which current standardized cognitive testing has a foundation based on fixed intelligence.

**Standardized testing.** Jackson (2007) reported the concept of fixed intelligence eventually became part of the Army Alpha test. This was the first standardized test given on a national level beginning in 1917, propelling psychologists such as Terman into prominence (Jackson, 2007). Jackson also reported the Terman revised Binet-based questionnaire in 1916 had a focus on classifying students from one to five in categories ranging from the highest (i.e., gifted) to the lowest (i.e., special).

Atkinson and Geiser (2009) reported that the SAT has the assumption that an individuals' intelligence is genetically inherent and unchanging over a lifetime. The concept of fixed intelligence coincides with the concept of a fixed number of neurons within the brain as not growing; this was the general opinion held by most scientists into the 1960s (Lombardi, 2008). Since then, empirical evidence has shown that new neurons can develop within the adult brain (Von Bohlen Und Halbach, 2007).

**Behavioral and cognitive theories.** Behavioral theories dominant in the early 20<sup>th</sup> century implied that a learning environment can affect the stimuli-response of students (Schunk, 2004). The assumption was that cognitive development and teaching are conditioning processes in which the teacher creates the stimuli-response conditions for successful conditioning to facilitate the learning process (Van Der Veer, 2007). Schunk (2004) reported that connectionist theory and related experiments with humans and cats showed the learning connections increased, or decreased depending on the stimuli-response condition. Bush (2006) reported that primarily outward observable

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behavior was thought worthy of scientific research and the quantifiable analysis of change in behavior gave evidence of learning.

However, behavioral issues like whether students should wait to be stimulated or be active participants in the education environment were primary to cognitive theory (Alkeaid, 2007). Cognitive theory research had focus on individual constructivism as opposed to social constructivism (Pegues, 2007). Van Der Veer (2007) noted that social constructivism is a view that human cognition is the product of the individual's environment. Social-cultural cognition places individuals in significant activities that are a social construction of combining new knowledge with older knowledge (Tasker, Johnson, & Davis, 2010).

**Vygotsky's developmental law.** Developmental law is an assertion that social interaction is the origin of higher mental processes (Vygotsky, 1978). According to Vygotsky, the mind has a social formation through social-cultural tools (i.e., language & social norms) for the development of higher mental functions. Vygotsky noted that through speech individuals may form new relationships within their environment on which leads toward new behavior and this results in the forming of intellect. What appears to be independent learning is a formation not resulting from biological capabilities but from prior social experiences (Vygotsky). According to Vygotsky, the relationship between learning and development results from imitating what was shown by a more knowledgeable adult or peer and from this the child develops behavioral control (i.e., self regulation) and learns to plan (i.e., metacognitive skills).

**Metacognition and self-regulation.** Dunlosky and Metcalfe (2009) suggested metacognition and cognitive intelligence, as measured by IQ, are two independent

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entities on which students with a low IQ may compensate by using metacognitive strategies toward academic preparedness. Sanagavarapu (2008) reported two major aspects of metacognition are "knowledge of cognition and self-regulation of cognitive processes" (p. 304). Teaching self-regulation was thought to be an effective way to prevent academic underpreparedness and should begin as early as possible (Blair & Diamond, 2008).

According to Vukman and Licardo (2010), self-regulation was the result of a maturing prefrontal cortex and guidance from the social environment. Jurado and Rosselli (2007) acknowledged executive functions as the area of the brain such as the frontal lobes where intellectual activity was found as the apparatus for programming intellectual activity. Moreover, another apparatus in the executive function was self-regulation, which recent research studies indicated that an individual with an emotionally disregulated behavioral (i.e. self-regulation) system may experience a decrease in metacognitive functioning (Crooks & Kirkland, 2010).

**Brain-based research.** Gene expression experiments demonstrated that the social environment can alter the expression of genes via the nurturing behaviors of mother rats when grooming and licking babies (Garland & Howard, 2009). Garland and Howard reported before 1998 that the prevailing views was still that the brain uses a genetic code that rendered unchanging intelligence. However, epigenetic (i.e., the science of environmental influences on gene expression) is a research area indicting that the environment can cause genetic changes in both human behavior and in the human brain (Jensen, 2008). Willis (2007) explicated research on enriched environments using chimps in one experiment and rats in another both showed through neuroimaging that the

brain can grow within animals while demonstrating high intelligence performance in going through new mazes.

**Multiple intelligences.** A basic premise in the theory of multiple intelligences is that measuring intelligence with IQ or SAT does not give a complete view of existing ability (Gardner, 2006). Gardner described intelligence in terms of a bio-psychological potential for information processing is set in motion by the individuals' social-cultural setting. Gardner (2006) proposed that multiple intelligence theory suggests a brain-body function in which the reorganization of skills and physical structure of the brain is constantly evolving through social influences. The theory of multiple intelligences indicates that individuals have many autonomous capabilities of cognition, which are each separate forms of intelligence (Gardner, 2007). Gardner (2006) referred to these separate computational capabilities as language, spatial relations, and social relations.

**Successful intelligence.** Sternberg (2008) noted the individuals growing up within challenging environments may develop creative (i.e., generating ideas) as well as practical skills (i.e., implementing ideas) in an attempt to survive their environment. Sternberg (2009) reported the Rainbow Project study used both cognitive (i.e., analytical skills) as well as noncognitive measures (i.e., creative and practical skills), which increased a diverse gender and ethnic student population at Tufts University while SAT academic preparedness standards were not lowered. According to Sternberg (2008), successful intelligence has a framework that suggests cognitive tests of analytical skills are inadequate because of an embedded assumption, these individuals have fixed rather than flexible abilities. Successful intelligence theory incorporates a set of abilities (i.e.,

analytical, creative, and practical) in which the individual has flexibility to adjust to social cultural experiences (Sternberg, 2008).

Sternberg and Coffin (2010) revealed that a study at Tufts University called Kaleidoscope includes the use of the usual SAT assessment augmented with other unconventional exercises to assess practical, creative, cognitive, and wisdom abilities. During the Kaleidoscope project, introduced in 2006, the gender and ethnic mix of students entering Tufts University increased with statistically higher GPAs (Sternberg & Coffin). Research evidence showed the students who test at high-levels for creative and practical skills can achieve at higher academic levels, when taught in a manner that matches their skills (Sternberg, 2009).

Schmitt et al. (2009) also demonstrated that noncognitive measures incrementally increase the assessment accuracy of freshman students' academic preparedness during college admission when added to standard cognitive tests. Additionally, the Schmitt et al. (2009) 4-year longitudinal study sponsored by the College Board was an indication that noncognitive measures can increase the assessment accuracy of cognitive measures while increasing gender and ethnic diversity as well. As well, Kaufman and Dodge (2009) completed a study using 222 students to demonstrate that connectedness to teachers and importance of activities was positively related to intrinsic motivation. The Kaufman and Dodge results reflected that noncognitive factors like autonomy and understanding of goals affected students' feelings of connectedness and value. These noncognitive factors related to intrinsic motivation have a positive association with academic persistence (Kaufman & Dodge).

The indication that cognitive testing can assess every student's academic preparedness level has not become a reality, as many situations require other skills for the challenges of life (Westby, 2007). However, Gottfredson and Saklofske (2009) reported that the Gardner and Sternberg models of intelligence have not become part of any largescale testing in education. Basing on the premise that U.S. public education policy focuses only on cognitive testing, Heckman (2008) implied an education U.S. policy of underrating noncognitive abilities by focusing primarily on cognitive abilities. Huffman (2009) suggested the risk of maintaining a public higher education system that does not use effective practices is far too high. Huffman also suggested that although individual schools and teachers are incorporating innovations into the classroom, public education has not changed within the last 50 years.

#### **Significance of Home Environment**

Sanagavarapu (2008) implied cognition and metacognition was a social cultural phenomenon primarily emanating from an individuals' home environment. Jolivet (2012) reported high intensity inter-parental quarrels during divorce place children at-risk for long-term problems such as developmental vulnerability among boys and skipping school among girls. Jolivet also reported the primary issue was how the child perceived his or her relationship with each parent, as amicable divorces had little negative effect on the child. Further, Vygotsky (1978) implied the home environment provides tools in which children learn to control their impulses (i.e., self-regulation) and to plan (i.e., metacognitive skills) as the learning and development of children begins long before they enter school.

### **Developmental Education**

Engstrom and Tinto (2008) reported that while 56% of academically prepared students may achieve a 4-year degree within 6 years, academically underprepared students have a 26% completion rate within 6 years. In a longitudinal multi-institutional 4-year study comparing developmental learning communities to prepared students, Engstrom and Tinto (2008) established that the rate of completion improved for the underprepared developmental learning community of students. Results combining 19 institutions with learning communities and without learning communities indicated 4year colleges had a 10% difference and 2-year colleges had a 5% difference (Engstrom & Tinto, 2008).

Developmental education has a policy assumption that students have academic potential but are lacking appropriate academic preparation for college-level coursework (Parmer & Cutler, 2007). One example noted by Stuart (2009) is a high school student graduating with a 3.5 GPA could not pass the entrance examination into college. After receiving targeted developmental education to prepare for college the student began majoring in physics and maintains a 3.0 GPA (Stuart, 2009). Developmental education has services at different levels to prepare students to complete their coursework (Boylan & Bonham, 2007). However, Boylan (2009) noted only 7% of community colleges use noncognitive factors combined with cognitive factors for developmental education.

Boyer and Butner (2007) reported that developmental education is a hot topic for higher education policymakers at the state and institutional level. Colleges have little incentive to track the success rates of students because funding is exclusively on counting students at the beginning of each semester (Zachry & Orr, 2009). Often students possess skills that are above the requirement for high-school but fall below the entry-level college prerequisite (Bailey, 2009). Ostrove and Long (2007) reported that changing the higher education environment to understand underprepared students may play a key factor in the attrition rate of institutions.

#### **Institutional Failure**

Institutions have not made the necessary gains for increasing student graduation rates by translating information about student retention into action (Tinto, 2007). In a study to identify key practices of five California community colleges, the results revealed cohesion between employees, cooperation with students, connection with departments, and consistency between programs was vital (Levin, Cox, Cerven, & Haberler, 2010). However, the way educational institutions currently organize developmental education is not effective (Bailey, 2009). Martin and Meyer (2010) noted the responsibility of educational leadership to find solutions.

### **Giving Voice to Students**

Ramirez (2009) shared that informal and formal mentorship programs are one way to give voice to students. Adams (2009) suggested a democratic system is vital to ensure stakeholders are part of decision-making in the educational system. Understanding the phenomenon of academic underpreparedness is possible through giving students a voice (Adams). Greenfield and Jensen (2010) added that key stakeholder perspectives can include giving voice to stakeholder stories. The premise for this is that an authentic understanding can result from a discourse about an individuals' predicament (Greenfield & Jensen).

### **Literature Gaps**

This study used the voices of academically underprepared college students expressing their lived experiences at Northern New Mexico College (NNMC) to understand the ways noncognitive factors influenced their academic preparedness. Reid and Moore (2008) noted that research is available about academically underprepared college students but the perspective of the students is often missing. Reid and Moore also noted that these academically underprepared students are often 2 years behind starting in the fourth-grade, 3 years behind going into the eighth grade, and by the 12<sup>th</sup> grade they are 4 years behind. However, noticeably missing is a cohesive program to deal with the ever-growing population of underprepared adolescents and adults entering college.

The gap in the literature is noticeable when combining different areas of noncognitive factors and discovering the ways each area of noncognitive factors influence college students' academic preparedness. Academically underprepared college students may have an important story to tell in which a more accurate understanding may result regarding the ways noncognitive factors influenced their academic preparedness. Researchers examined specific noncognitive factors such as creative and practical skill factors relative to standardized testing (Sternberg, 2008) as well as affective factors and personal factors relative to cognitive assessments (Boylan, 2009). However, no research was found that combines many different areas of noncognitive factors to discover the influence on students' academic preparedness.

Although this literature review detailed the changing student population starting with open-access policies, the review also showed the assessment criterion, as part of the dominant culture experience, has not changed from the initial g-factor foundation of cognitive testing. Gottfredson and Saklofske (2009) reported that measuring intelligence does not require understanding how the brain works. However, Shavinina (2008) argued knowing the mental framework is necessary in developing a basis for intelligence testing. Vygotsky's developmental law may help to provide a mental framework to understand intelligence and the ways that many noncognitive factors may influence students' academic preparedness. The study results add to this mental framework knowledge base for future researchers by focusing on four areas of noncognitive factors to understand the phenomenon of academic underpreparedness.

### Conclusions

The literature reviewed on the influence of noncognitive factors on underprepared college students revealed the field has a variety of information on individual noncognitive factors, but little information on combining many noncognitive areas. The review revealed intelligence theory has a profound effect on public higher education and community college developmental placement. In essence, the public educational system is not ready for the opportunity afforded to students through open-access policies (Boylan, 2008b).

Gardner (2006) suggested that focusing on single intelligence ability in the school system is a neglect of many other abilities the students possess. The review focused on issues primary to why noncognitive factors are not included in academic developmental assessment within community colleges by exploring the significance of intelligence theories. The review revealed that both underprepared and prepared student populations in public higher education are subject to assessment for academic preparedness based on intelligence theory emanating from the 1900s with Spearman's g-factor. The review also

revealed the developing ways to improve the SAT and ACT (i.e., based on IQ) cognitivebased testing through the addition of noncognitive factors is only just beginning within the 21<sup>st</sup> century.

# Summary

Chapter 2 included a summary of the influence of noncognitive factors on unprepared college students and a discussion of why cognitive assessments may not accurately assess underprepared college students' academic preparedness. The historical overview of the problem included a discussion of: open admission policy, community colleges, and first-generation college students. The significance of intelligence theories discussed is to show that old intelligence assumption still ingrained in education may have a detrimental effect on academic underprepared college students. The chapter also included the suggestion that noncognitive factors added to cognitive testing may improve assessment accuracy of students' potential academic preparedness.

The possible cause of underpreparedness was part of the literature review. Intelligence theories illustrate how standardized cognitive testing evolved and remained as educational policy even though research shows this method of evaluating students is out-of-date. Using Vygotsky's developmental law that social-cultural interactions is fundamental to higher mental functions was instrumental in showing possible mismatch between noncognitive natural abilities of underprepared college students and the dominant educational culture use of standardized testing. The literature discussed also explored developmental education, the historical significance of noncognitive factors, and literature gaps. In chapter 3, a discussion includes the design of the research, design appropriateness as well as revisiting the research questions. The descriptions include the sample frame, data collection with data analysis plan. Chapter 3 includes an explanation of how participants' rights were a vital aspect of the research design. In chapter 3, a discussion on confirmability, dependability, transferability, and credibility were part of the logic behind validating the study.

#### **Chapter 3: Research Method**

The purpose of the study was to discover through the exploration of lived experiences, the influence of noncognitive factors on college students' academic preparedness. A total of 16 underprepared college students shared their lived experiences and perceptions of noncognitive factors in four areas: (a) affective factors, (b) personal factors, (c) skill factors, and (d) early educational factors. The issue is that little is known about how noncognitive factors combined from many areas can influence college students' academic preparedness.

Empirical evidence on brain malleability suggests that although cognitive skills may not influence noncognitive skills, noncognitive skills can influence cognitive skills (Cunha & Heckman, 2008; Heckman, 2008). According to Cunha and Heckman (2009), this empirical evidence is a reason that cognitive developmental training for adolescents is largely ineffective. Moreover, with a growing underprepared student population, the ability to understand noncognitive influences on academic preparedness may help leadership create better assessments and support systems.

In this chapter, a discussion entails the usage of qualitative research method with a phenomenological design that studies lived experiences of underprepared college students at Northern New Mexico College (NNMC). Chapter 3 includes a discussion of data collection, design appropriateness, and sample frame. The population, research questions, and method of analysis are more areas discussed. Internal validity, external validity, reliability, data analysis, and appropriateness of the research design are also discussed.

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### **Research Method and Design Appropriateness**

Scroggins (2010) noted that the phenomenological qualitative study is appropriate for exploring individuals' lived experiences. Scroggins also noted the quantitative methods focus on explaining trends within the data. Qualitative methods are appropriate for understanding the explicit and implicit complexities of human experience (Frank & Polkinghorne, 2010).

The study relied on participants' lived experiences and perceptions to understand the ways that noncognitive factors influence academically underprepared college students' academic preparedness. Adams (2009) reported that qualitative research is contingent on the understanding that meaning may come from a social construction of individuals interacting with their environment. The method of qualitative inquiry is appropriate, according to Creswell (2007), for an exploratory study to understand a phenomenon through lived experiences.

**Research method.** In this study, the phenomenon explored through data collection has a focus on noncognitive factors such as affective factors, personal factors, skill factors, and early educational factors. Qualitative research focuses on collecting information in the natural setting, data gathering, and using intuition for studying the interaction between individuals and their environment (Adams, 2009). Creswell (2007) noted that quantitative research may explain and predict while qualitative research attempts to understand through exploring a central phenomenon. The qualitative research method is appropriate for seeking an understanding (Joyner, 2009); therefore, this approach was appropriate for this study.
Informal open-ended interviews provide a conversational atmosphere for exploring the influence of noncognitive factors on academically underprepared college students. Qualitative research relying on descriptive insights may become a foundation for developing a deeper understanding (Griffin, 2008; Joyner, 2009). Conklin (2007) reported that because the objective in qualitative research is to understand rather than cause and effect generalization, qualitative research is a superior method for understanding a complex phenomenon. In essence, qualitative research has a focus on discovery, as opposed to verification or replication (Conklin, 2007). This qualitative study did not focus on generalizations or replications but focused on understanding the phenomenon through discovery.

Bannister (2009) noted that the qualitative approach is appropriate when one seeks to obtain a unique, detailed, and new perspective about a phenomenon. Greenfield and Jensen (2010) defined the concept of phenomenology as a study in which finding the meaning from lived experience is resulting from individuals' subjective perspectives. While research does exist concerning single noncognitive factors like locus of control, motivation, and perseverance, research is incomplete on the influence of several groups of noncognitive factors on academically underprepared students. The ways noncognitive factors influenced students' academic preparedness using many areas of noncognitive factors such as personal factors, affective factors, and noncognitive skill factors as well as early educational factors provided a comprehensive exploration using phenomenology.

**Design appropriateness.** Interpretive phenomenological research is a philosophical stance that participants' lived experiences make them the experts in co-constructing the research discoveries (McConnell-Henry, Chapman, & Francis, 2011).

Creswell (2007) noted that the research begins with a broad assumption central to the inquiry that guides the research design. The broad assumption is noncognitive factors are relevant to the choices that underprepared college students make because these influences on their choices involve the formulation of meaning (Flood, 2010). Theorizing, generalizing, or the predicting is not the intent of interpretive phenomenological research, but understanding the shared meaning is essential to the research design (McConnell-Henry et al., 2011).

Ryan-Nicholls and Will (2009) noted that phenomenology and ethnography are both exploratory research designs. However, ethnography has a focus on the individuals' culture (Frank & Polkinghorne, 2010). In one example, Creswell (2007) reported that the process of ethnography is often a participant observation with an extended observation of a group of participants by becoming immersed into their culture. Creswell also reported this may lead to an interpretation of the culture. An ethnographic study based on field observations of events may often include routine procedures found within the culture (Konecki, 2008), but phenomenology focuses on finding a shared meaning from lived experiences (Pringle, Hendry, & McLafferty, 2011b).

The phenomenological approach in this study focused on exploring the individuals' experiences, perceptions, and the interpretive phenomenological analysis aspect of both interpretive and descriptive stances incorporated into one approach (Pringle et al., 2011b). Creswell (2007) explained that ethnography is appropriate in describing an unfamiliar cultural group in exploring their beliefs, power structures, and patterns of behavior. Konecki (2008) noted that in ethnography a revisiting in the field may achieve triangulation of theory. The main emphasis in ethnography is the

relationship between local knowledge relative to a wider context, which Frank and Polkinghorne (2010) noted is an emphasis on cultural knowledge. Conversely, phenomenology is appropriate for focusing on individuals because of the personal significance of lived experiences (Standing, 2009).

Flood (2010) acknowledged that this may require the bracketing of personal knowledge to prevent preconceptions or bias that may influence the study. Creswell (2007) reported ethnography may have similarities to the case study except that the case study can focus on a site or multiple sites to study a program or even an individual. Uprety (2009) noted that case studies focusing on the individual often start with a life history of the social situation rather than on the individual. Case studies use the complex-interrelated factors within the social situation to understand a process or a person's life-cycle (Uprety, 2009). Creswell (2007) noted that while qualitative approaches are similar in collecting information, creating files, and making sense of the data, grounded theory generates much more detail in creating theory and generating propositions.

The grounded theory approaches has a focus on discovering social processes, which is fundamentally different from finding a shared meaning (Frank & Polkinghorne, 2010). In this study, no generation of theory or proposition was necessary but merely a deeper understanding of the phenomenon (Griffin, 2008; Joyner, 2009). Pringle et al. (2011a) noted that interpretive phenomenology is appropriate to inform, illustrate, and create themes using participants' direct quotes. To keep the research from becoming too subjective, Pringle et al. (2011a) stressed using divergent and convergent examples as well as commonalities. Moreover, rather than use a philosophical stance, convenience, or personal preference to make research decisions, the research questions can drive the methodological decisions (Barusch, Gringeri, & George, 2011).

### **Research Questions**

By focusing on the problem and purpose of the study, the central research question is a way to centralize the research focus: *In what ways do noncognitive factors influence lived experience relating to preparedness of academically underprepared students at Northern New Mexico College?* Five sub-questions helped to discover a variety of viewpoints to answer the central research question:

- R1. How do academically underprepared college students perceive their college lived experience?
- R2. How do academically underprepared college students perceive their lived experience related to early educational factors before and during k-12?
- R3. How do academically underprepared students in college describe lived experience related to personal factors that may help or hinder their educational experiences?
- R4. In what ways do academically underprepared college students describe lived experience related to affective factors such as overcoming the challenges they face in obtaining a college degree?
- R5. What influences do creativity and practical skills have on participants' lived experience related to their academic preparedness?

As a pilot study, four academically underprepared students were recruited using flyers placed throughout the college to review the interview questions before the main study and prior permission to use the college premises was obtained (see Appendix A). The participants' interviews only began after they understood their rights provided within the informed consent form (see Appendix B). The interview instrument followed an interview protocol (see Appendix C), which contains semi-structured open-ended questions allowing students to share freely and honestly.

## Population

The population of academically underprepared college students at NNMC was the study population. NNMC located within the north central region of New Mexico has approximately 2000 students per semester. The study did not require a specific subpopulation of academically underprepared students to discover a basic understanding of students' shared conscious experiences. Hopp (2009) noted that understanding conscious experiences is one major function of a phenomenological study. This study merely was to understand the conscious experiences of academically underprepared students by exploring the ways that noncognitive factors may have an influence on their academic preparedness discovered through their shared lived experiences.

A variety of ethnic groups such as Hispanic, White, Native American, and Black students take below college level courses at NNMC making their collective conscious experiences highly valuable. These participants were at least the age of 19 and they had taken below college level courses to prepare for college level coursework. The study included 16 underprepared students, who self identified by acknowledging taking a noncredit course (i.e., English 108 or Math 100) or a for-credit course (i.e., Math 130), which are all below college level courses. Recruiting participants with first-hand knowledge of below college level coursework was useful toward finding a purposive sample to inform about the phenomenon of academic underpreparedness.

# **Sampling Frame**

The study's sample frame did not involve randomization but involved a purposive sample, which according to Creswell (2007), provides participants that can inform about the phenomenon. Scroggins (2010) implied that a purposive sample is for selecting a specialized population for a particular purpose. Griffin (2008) described purposive sampling as making use of a fresh perspective. The first 16 self identified academically underprepared college students who showed willingness to participate and fit the eligibility requirements of at least 19 years of age became the sample frame. Purposive sampling permits selecting participants with required knowledge (Scroggins, 2010), such as lived experience with academic underpreparedness.

The small sampling provided a deeper exploration and ensured that recruitment at this small college may become successful. The process for recruiting participants took place using flyers containing a contact phone number throughout the college. Permission to use the premises was obtained (see Appendix: A) from the director of the Educational Opportunity Center (EOC) program. The flyer gave not only the contact number, but also the name of the study, and explained that student need only answer interview questions for no more than one hour.

### **Informed Consent**

Obtaining consent and informing participants about the purpose of the study is an ethical component of research (Khatib, 2010). At the beginning of each interview, participants received an informed consent form in which explained that they can refuse to answer any question or choose not to participate at any time without adverse consequence. The informed consent (see Appendix B) described in writing the minimal

risk, the option not to participate, and the ability of the participants to stop participating at any time without any detriment to their scholarly standing. Participants signed the consent form only after acknowledging an understanding of his or her rights and agreeing to participate willingly. Also, the purpose of the research explained to the participants occurred before their signing the consent form.

In addition, each participant was assigned a pseudonym, which became the only identifier of his or her participation within the study. The documents were placed in a secure, locked safe. Participants were given the researcher's phone number and e-mail for any concerns about participation or general questions about the study. No foreseeable risks to the participants were evident and confidentiality was maintained.

Participants received \$20 each in appreciation for their time and for their travel expenses. Head (2009) noted a long process of attempting to recruit participants and finally she was successful when offering cash payments. The practice in qualitative research of paying research participants for their participation has become common and provides easier access to obtain interviewees (Head). Head reported "other researchers have emphasized the role of money in providing an expression of thanks for the time given by the participants to the study" (p. 337).

### **Pilot Study**

Four eligible candidates were selected to participate in the pilot study. The operationalization of academic underpreparedness was based on if a student had taken below college level courses to prepare for college level coursework. Potential participants were screened by asking if they were at least 18 years and if they had taken a below college level course to prepare for college level coursework. Three pilot

participants were part of separate discussions and answered the interview questions to help improve the interview guide; the fourth participant was used to test the entire interview process.

**Participants' demographics.** Participants' demographics in the main study may provide some context, which entail gender, age, and ethnicity. Table 3 provides a summary of collected demographic characteristics, extrapolated from participants' raw data transcriptions and reflective note taking after each interview.

Table 3

Characteristics	Frequency	Percentage
Gender		
Females	9.0	56%
Males	7.0	44%
Age		
19 to 29	9.0	56%
30 to 39	4.0	25%
40 to 49	2.0	13%
50 to 60		
60+	1.0	6%
Ethnicity		
White	3	19%
Hispanic	9	56%
Native American	3	19%
Black	1	6%

#### Demographic Characteristics

The demographic characteristic of main study participants indicates an almost equal number of females and males with a variety of ages ranging from 19 years to well over 60 years of age and a variety of ethnic groups. The names used to describe each participant were pseudonyms. The researcher acknowledges having preconceptions from personal experiences with the phenomenon of academic underpreparedness and attempted to describe participants' experiences without personal bias by using verbatim statements for analysis.

**Participants' identified issues with initial questions.** Pilot participants discovered an inconsistency with the first question, which was "In general; tell me about the experiences, good or bad, you have had during your education." This question was changed to" In general, tell me about the experiences, good or bad in college, you have had during your education." Pilot participants also discovered an inconsistency with question four, which led to the addition of the phrase, "this question does not relate to previous questions" to question four. Question four became, "this question does not relate to previous questions; describe how you will overcome the challenges you face in obtaining a college degree." Base on the pilot study, the result was that two of the five original questions had inconsistencies. The final version of the interview protocol reflected these changes (see Appendix C).

### Confidentiality

When the participants' confidentiality is secure, according to Joyner (2009), responses from participants may include the highest honesty during interview sessions. The study abided by the *Protection of Human Research Subjects Standards* and no students under the age of 18 years were allowed to participate. No one other than the Internal Review Board at University of Phoenix, had access to the identity of the participants. The use of a pseudonym for each participant provided additional confidentiality of participants' identity.

The participants' interviews were face-to-face interviews. Interviews were audio recorded with no one having access to these recordings, except for a transcriber. The

transcriber signed a nondisclosure form (see Appendix D) before verbatim transcriptions of audio recordings took place. After 3-years, electronic files, recordings, and hard copies are to become nonexistent, by shredding of hard copies and deletion of electronic files.

Although no questions entail students' possible drug use or criminal activity, if this information was part of participants' experience; the information became part of the data collection and results of the study. However, the data collection did not use any identifiers except a pseudonym to protect participants' identity. Signing the confidentiality statement (see Appendix: E) and nondisclosure agreement (see Appendix: D) legally ensured protecting the identity of research participants.

### **Geographic Location**

NNMC was the location of this phenomenological qualitative study. NNMC has an annual population of 2000 students during each spring and fall semester. This rural college is the only college serving the north central New Mexico area. The rural 4-year college was a community college and maintains a community college mission. A signed copy of permission to use the premises can be found in Appendix A.

#### **Data Collection**

Sixteen candidates were recruited for the main study by posting a flyer at the college, which included a contact phone number and a request to participate in the primary segment of the study. Using the revised interview protocol, participants were asked five primary questions and participant responses were probed as needed. The audio recorded semi-structured one-on-one interviews were used to capture of

participants' descriptions precisely as spoken, which reduced the chance of imprecise transcription.

Most of the interviews lasted between 30-45 minutes. However, others lasted nearly a full hour due to the participants sharing more information. The audio recorded interviews stored in a safe were also in a password protected computer and subsequently transcribed into verbatim digital text. The verbatim transcripts as well as reflective notes written after each interview were both part of the data collection process.

Flood (2010) noted the interview as the data collection method allows participants' perceptions and experiences to be probed, explored, and illuminated. Three potential participants were held in abeyance if needed to replace participants wanting to end their involvement in the study; however, no participants ended their involvement. Participants in the study received transcripts of their interviews for ensuring accurate representation of their transcripts as well as the resulting textual categories. The six participants returning to review their transcripts for accuracy acknowledged the accuracy of their digital transcripts and textual categories.

### **Transcription, Coding, and Data Analysis**

The initial interview transcriptions and resulting coding emanated from the research sub-questions and consisted of five preconfigured categories:

- 1. College experiences,
- 2. Early educational factors,
- 3. Personal factors,
- 4. Affective factors, and
- 5. Noncognitive skill factors.

The preconfigured categories were collection points for descriptions taken from participants' responses to the interview questions. After placing similar participants' significant statements into the preconfigured categories, a repetitive reading of statements within each preconfigured category occurred and using NVivo 8 software query function to cluster and streamline significant statements further, which provided 24 new categories. The 24 new categories were then useful for two purposes: (a) condensing similar categories using NVivo 8 software query function into four textual categories and (b) also using the 24 categories as invariant constitutes within each textual category. The resulting four textual categories developed after many reflective and NVivo 8 software query iterations in clustering participants' words and phrases were:

- 1. Lived experiences before k-12,
- 2. Lived experiences during k-12,
- 3. Lived experiences during college, and
- 4. Noncognitive factors.

## Instrumentation

In the main study, participants were asked open-ended questions as a starting point to obtain perceptions of their lived experience with the phenomenon of academic underpreparedness. Creswell (2007) recommended the following protocol for openended questions: (a) review the study purpose, confidentiality, and consent form with participants, (b) take notes, (c) develop verbal transitions between questions, and (d) have a prepared closing comment. These recommendations became part of the instrumentation for the interview protocol (see Appendix C). Referencing the central research question and sub-questions, the instrumentation had open-ended questions that addressed the four noncognitive areas: early educational factors, personal factors, affective factors, and noncognitive skill factors as well as participants' perception of college. The instrument creation is the result of several other studies in which the studies were using one noncognitive factor, except Sternberg (2008) who uses two noncognitive skill factors, and the Boylan (2009) study that uses two noncognitive areas. The study expanded these previous studies using four noncognitive areas with probing questions like "tell me more, describe the environment, or how did you feel," on which may clarify and improve understanding (McConnell-Henry et al., 2011).

The first interview question was a general question about their college experience intended to relax and open up the participant by talking about any experience that came to their mind, which was followed by probing questions. This interview question was: in general; tell me about the experiences, good or bad in college, you have had during your education. Depending on the participants' line of discussion, a follow up probing question may start such as: tell me a little more about \_\_\_\_\_, or tell me what you mean when you stated \_\_\_\_\_\_. In general, this type of probing was to take place for every interview question within the instrumentation.

The second interview question within the instrumentation had a focus on *early educational factors* such as participants' educational experience before and during k-12, with probing questions dependent on their line of discussion. This interview question was: describe any experience you have with someone reading to you as a child, or if no recollection, describe your k-12 experience. Because the intent partially was to find out about the maternal responsivity they experienced such as reading experiences before they entered k-12, the probing may commence with tell me more about your reading experiences before k-12. However, if they did not remember this part of their life, then the second part of the question was a method to find out about participants' experience during k-12. The probing into this part of the question was to explore participants' early educational experience before college such as during elementary school, middle school, and high school.

The third interview question within the instrumentation was a general question that had a focus on *personal factors*, which was: describe any personal issue that may help or hinder your ability to obtain a college degree. Several probing questions were to follow to discover ways that this noncognitive area was to influence participants' academic preparedness. Depending on the line of discussion taken by the participant, the probing may entail questions such as: tell me more about your relationship with each parents, or what did you mean when you stated \_\_\_\_\_\_ about your father.

The fourth interview question had a focus on *affective factors* on which the question was: this question does not relate to previous questions, describe how you will overcome the challenges you face in obtaining a college degree. The intent of this question was to discover what the influence of affective factors such as motivation, perseverance, or self confidence had on participants' academic preparedness. Several follow up probing questions were to explore these affective factors depending on participants' line of discussion.

The fifth and final interview question was: describe an educational situation in which a teacher inspired you to think creatively or use practical skills. The question was

an attempt to explore the noncognitive area of *noncognitive skill factors* to discover the influence on participants' academic preparedness. Follow up probing questions were to follow allowing participants to expand on their line of discussions.

# **Qualitative Validity**

Pringle et al. (2011a) noted obtaining validity within qualitative studies as leaving an audit path of decisions made to ensure the analysis given has a foundation in participants' descriptions. Additionally, qualitative terms such as confirmability, dependability, transferability, and credibility are respectively parallel to quantitative terms such as objectivity, reliability, external validity, and internal validity (Barusch et al., 2011; Russell & Aquino-Russell, 2010). The qualitative terms for validity such as dependability, transferability, credibility, and confirmability were an essential facet of the study.

**Confirmability.** By keeping accurate records of the steps within the qualitative process, an audit trail is one technique for establishing confirmability (Barusch et al., 2011). Barusch et al. noted qualitative strategies for confirmability entail the following: (a) bias clarification, (b) thick descriptions, (c) triangulation, (d) peer review, (e) negative case analysis, (f) member-checking, (g) external audits, and (h) persistent observation. In this current study, verbatim interviews and note taking provided a triangulation of data, and participants coming back to verify their verbatim transcripts and textual categories provided member-checking.

**Dependability.** Dependability is a qualitative parallel term for the quantitative term of reliability (Frank & Polkinghorne, 2010). Using this parallel term for reliability, the quality recording of interview conversations with verbatim transcription and detailed

notes provided dependability (Creswell, 2007). In this study, detailed notes were part of the data collection procedure after every interview with quality recordings using a professional transcription service provided dependability.

**Transferability.** Barusch et al. (2011) reported that transferability is a parallel term for external validity and that transferability can involve thick descriptions to achieve an overview. This study involved thick descriptions of participants' lived experiences using their direct quotes for communicating discoveries within textual categories, structural themes, and within the creative synthesis. Danko (2010) reported that external validity is beyond the scope of qualitative phenomenological research except by communication of research discoveries through participants lived experiences.

**Credibility.** Connecting the conclusion to the research question is a method to establish credibility and to provide trustworthiness and confidence in research discoveries (Frank & Polkinghorne, 2010). In addition, Barusch et al. (2011) recommended seeking clarification or probing questions during the interview to ensure a co-constructed understanding. A co-constructed understanding is the result of merging interpretations, interactions, and clarifications (Frank & Polkinghorne), which provides additional credibility to a study. In this study, the conclusion connected to the research questions and probing questions provided a co-constructed understanding.

### **Data Analysis Procedure**

Data analysis included acknowledging bias at appropriate moments during the analysis. The analysis process included integrating aspects of interpretive phenomenological analysis (IPA) such as commonalities, divergent perspective, and convergent perspective as explicated by Pringle et al. (2011a), which included aspects of Moustakas's (1994) and Giorgi's (1985) phenomenological methods. In essence the analysis included:

- 1. Acknowledging bias at appropriate moments;
- 2. Using NVivo 8 software to develop preconfigured categories;
- 3. Developing textual categories;
- 4. Developing structural themes with IPA aspects; and
- 5. A creative synthesis.

In some detail before data analysis occurred, Microsoft Word digital text of transcripts were inserted into the NVivo 8 software and labeled with each participant's pseudonym. NVivo 8 software was essential for storage of similar participants' significant statements in manually created preconfigured categories such as college experiences, early educational factors, personal factors, affective factors, and noncognitive skill factors, which aligned with the research sub-questions. Iterative readings of key phrases within every preconfigured category followed by thoughtful reflection and using NVivo 8 software queries were the method of clustering together similar significant statements. Using NVivo 8 software, textual categories were manually created with a hierarchy of lower level groups of similar participant's statements on which became the invariant constitutes within each category.

Structural themes were to emerge through a similar inductive process of manually relating significant statements to the research questions in a discovery process. Johnson (2008) described the process of relating significant statements to the research questions as an inductive process. Giorgi (1985) referred to significant statements as meaning units that do not actually exist as text but become a summation of participants' perceptions and

intentions to form structural themes. Additionally, aspects of IPA such as commonalities, divergent perspective, and convergent perspective were sought and found within significant statements to become themes as well.

Through iterative readings of textual categories and structural themes, a creative synthesis adapted to the study was an attempt to make visible what was previously invisible (Moustakas, 1994). Giorgi (1985) described the final analysis as transforming implicit meanings to integrate insights as one reliable account of many possibilities but based on participants' significant statements. In this study, four distinctions of combining cognitive and noncognitive preparedness and underpreparedness became the invisible made visible by transforming implicit meanings based on participants.

In summary, the data analysis included bracketing biases at appropriate moments within the analysis as well as reading transcripts many times to obtain what Giorgi (1985) called a "sense of the whole" (p.10). Then establishing preconfigured categories as storage units for similar participants' significant statements on which emerged textual categories with invariant constitutes to provide what Moustakas (1994) called narrative descriptions into a comprehensive whole. Using research sub-questions and invariant constitutes structural themes formed from what Giorgi called meaning units to derive insights relevant to the phenomenon. Using textual categories, structural themes, and integrated aspects of interpretive phenomenological analysis, a cohesive analysis of academic underpreparedness was to evolve using four cognitive/noncognitive distinctions of preparedness and underpreparedness into what Moustakas described as a creative synthesis.

# **Summary**

The location of the study was at NNMC. Chapter 3 included a description of the qualitative phenomenological design and rationale for exploring the lived experiences of academically underprepared college students to discover ways that noncognitive factors influence their academic preparedness. The topics discussed in this chapter included: (a) the data collection technique, (b) confidentiality, (c) instrumentation, (d) credibility, transferability, dependability, and confirmability, and (e) the data analysis plan.

A purposive sample included 16 participants experiencing the phenomenon of academic underpreparedness. The results and data analysis emanating from the collected and analyzed data can be found in Chapter 4. Using the NVivo 8 software, the patterns and themes that emerged from the data represented the perceptions of participants' lived experiences and these perceptions were used to answer the research sub-questions.

### **Chapter 4: Analysis and Results**

The purpose of the study was to discover through the exploration of lived experiences, the influence of noncognitive factors on college students' academic preparedness. Chapter 4 includes a discussion of the study results and data analysis. The results and data analysis are presented using raw data collected from 16 participants to describe the influence of noncognitive factors on students' academic preparedness.

# **Textual Categories**

To avoid bias, participants' textual descriptions (i.e., significant statements) provided a substantial portion of the narrative descriptions. Table 4 illustrates the first textual category, *lived experiences before k-12*. In this study, tables merely provided a visual representation of participants' significant statements within each textual category.

Textual category 1: Lived experiences before k-12. As seen in Table 4, a

substantial portion of participants remembered someone reading to them before they entered elementary school. Several exemplar quotes for the textual category are presented below to understand what the participants experienced.

#### Table 4

# Textual Category 1: Lived Experiences before K-12

Invariant Constitutes	Participants	Coded Refs.	Text %
Relationship W/Parents before K-	7	10	15%
Kindergarten Experience	6	9	19%
Reading Experiences before K-12	11	14	66%

*Note.* Coded references (i.e. Coded Refs) were quotes taken from participants' transcripts, and the text % was the combined text count within each invariant constitutes.

Phil stated, "Yes, my mother always read to me." However, David noted "I know when I was really young, before kindergarten, my sister used to read to me every night from a certain series of books." Tanya responded,

I was read to quite a bit by my older siblings. I remember my, uh, sister having certain projects that she would go over, and I would be snoopy and curious. And she would tell me what she was doing. I remember her doing reports, like, on the Salem Witch Trials or her reading *The Hobbit* to me, things like that. So probably more advanced reading than for a preschooler you'd – I would say.

As indicated by these statements, although some participants were read to by their mother, most participants were read to by their siblings or someone else, which may suggest a lack of parental involvement.

Of the eight participants with two-parent families, five participants were read to before entering elementary school. Six of eight participants from broken families were read to as children before entering elementary school. In this study, the majority of participants were read to as children before elementary school and whether they came from broken homes or two-parent families did not matter. However, the data results concerning early educational factors before elementary school were not definitive with regard to participants' academic preparedness because the level of interactive responses between parent and child was not accessible. The next subsection introduces the textual category *lived experiences during k-12*.

**Textual category 2: Lived experiences during k-12.** Table 5 illustrates the participants' shared experiences within the textual category *lived experiences during k-12.* 

## Table 5

Invariant Constitutes	Participants	Coded Refs.	Text %
Time between High School/College	14	28	6%
Relationship w/Parents during K-12	15	39	5%
Middle School Experience	15	44	13%
Home Experience during K-12	14	64	23%
High School Experience	15	62	23%
Family & Friend Support	15	45	14%
Elementary School Experience	16	51	16%

Textural Category 2: Lived Experiences during K-12

Serena noted "I was with my godparents since I was one and my brother since he was two." Josephine stated "My mom and my father were divorced. I had a stepfather, which my in home wasn't all that great, because there was a little bit of abuse but it wasn't a lot." Rachel reported "my, growing up in my house was very dysfunctional. Um, it was not an easy, to go home to."

The common experience was broken families and alcohol use by either the participant or a parent. However, the common implicit experience was the lack of guidance, the lack of academic encouragement, and bad choices made by participants during k-12. As examples, Serena acknowledged "we weren't guided very well and were making a lot of mistakes." When asked how home-life was during k-12, Lydia indicated "Sort of difficult because my mom and my dad were going through a divorce and we were going back and forth between – I had to live with my grandparents."

Laura also noted,

That was a nightmare for me because things at home were bad, and nobody helped me with work, and I never understood it and the teachers did not care to help. So I just don't – now I see that I could understand it, but back then, no, there was no one at all to help me understand.

These negative examples of lived experiences were common within invariant constitute *home experience during k-12*. Most participants, whether coming to college directly from high school or returning to school as an adult, reported negative family circumstances, which may suggest a lack of encouragement leading to procrastination and lack of effort. For instance, James, a high school adult, noted "my father was an alcoholic, so he was never around...my mom worked two jobs...she didn't have time to like sit there and help me with homework." David reported "I think a lot of people my age, uh, have problems with procrastination... and so I guess that would probably be one of my hindrances." Rachel wished "I wish I would have had somebody to, to push me or encourage me."

According to James, family issues affected his attitude and motivation to achieve academically until he met his girlfriend in his senior year of high school. In his own words James noted,

I wanted to achieve more because while I was in high school and stuff, be – all the way up to my junior year, I didn't see myself going to college. I didn't see myself actually passing. I got very, very lucky every single year, actually, up until my senior year, because I barely passed.

James further noted "as soon as my senior came and I met my girlfriend, my attitude changed drastically. And I actually felt like I wanted to achieve more, and actually go to college." In brief, James is an example of how one individual can influence students' behavioral choices, attitude, and motivation. The shared experience within the second textual category was that drinking alcohol, lack of guidance, and participants' unfortunate choices potentially contributed toward their becoming academically underprepared during k-12. These negative experiences were common regardless of whether the participant entered directly into college from high school or was a returning adult. By searching deeper into the transcripts and overlapping the invariant constitutes, the only discernible difference between these students was that eight participants had two-parent families during k-12 and the other eight participants were from broken homes. From the two-parent families, five participants (i.e., John, Frank, Tanya, Henry, and Phil) reported relatively few negative experiences in their homes or k-12 schools, which suggest some positive influence on their behavioral choices.

**Textual category 3: Lived experiences during college.** Table 6 shows textual category 3, which was about participants' *lived experiences during college* and several exemplar quotes from this category were helpful toward understanding the phenomenon of academic underpreparedness.

### Table 6

Invariant Constitutes	Participant	Coded Refs.	Text %
Home Life while in College	16	59	12%
General College Experience	16	147	50%
College Support Services	13	74	23%
Below College Level Courses	15	61	15%

Textural Category 3: Lived Experiences during College

Frank, a returning adult, noted "...it was a culture shock because I was actually on my own and got to make decisions and that's why I never finished, because I made some

wrong choices in my life." The wrong choices Frank discussed were 2 years after his initial entrance into a university when he started drinking alcohol and eventually dropped out of college. However, Frank had no academic underpreparedness issues or negative family issues during his k-12 experience. The data suggested that even with a stable two-parent family and no academic issues during k-12, if a personal issue develops during college, academic underpreparedness issues may also develop.

Another of Frank's personal issues was that his instructors used a different teaching method from the teaching method Frank had during his k-12 experience. The university atmosphere was impersonal consisting of mainly lectures and classroom with hundreds of students. Frank reported,

Like in my Psychology class there was over 200 of us in there, and the only way you got anything out of it was to network through your friends, and I was an introvert at that time, so I did not have the personality to talk to people or the self confidence to do that at that time.

Frank also reported "It was like you were in a factory. There were tons and tons of you being pushed through to get your degree and I just didn't learn very much."

Frank began to drink alcohol and eventually dropped out of school, and he did not return to college for over 20 years until enrolling at Northern New Mexico College (NNMC). Frank revealed,

When I first went to college, the last year that I attended in '91, it started as a weekend thing and then it went on to almost an every night thing. I couldn't study without having a beer or I couldn't do anything or be with friends because

the only friends I knew drank, so it was hard for me to associate college and not drinking.

Frank's personal issues with drinking and the teaching methods at the university may have compounded as negative influences on Frank's lived experience during college, which may have influenced his academic underpreparedness.

Frank's whole persona transformed after coming back to school; he is no longer an introvert and he has stopped drinking alcohol. Frank reported,

I'm also president of a student organization here on campus, so we help each other out that way by talking and keeping ourselves busy for my part, so that way I don't want to start drinking again, so that's what helped me so far.

Frank added "I'm more outgoing and outspoken and I have self confidence and that is one thing I would always tell a young college student, is to make sure you get your self confidence and know what you can do."

Tanya was another example of coming from a two-parent family and experiencing few negative issues during k-12. She tested out of high school at 16 years of age and went to college and received an associate's degree directly afterwards. However, she did not return to receive a bachelor's degree until 14 years later and she developed some personal issues. More specifically, Tanya developed a physical disability, married an alcoholic, and had children, which created scheduling issues. Tanya's compounding personal issues with 14 years away from college negatively influenced her academic preparedness.

Phil was another participant with a two-parent family. He did well in k-12 even with a learning disability, apparently because of family support and the high school

accommodating his disability with appropriate teaching methods. However, the university he attended directly after high school did not accommodate his learning disability with a teaching method conducive to his learning style. The result was that Phil dropped out of the university and started going to NNMC where his needs were met.

The results indicated that participants from two-parent families, who also do well in k-12, may develop a variety of personal issues that negatively influence their academic preparedness during college. Participants such as Frank, Tanya, and Phil encountered negative experiences after k-12 that influenced their academic underpreparedness. However, these three participants and the other participants reported largely positive experiences during college at NNMC, mostly because of college support services.

The second largest qualitative invariant constitute within textual category 3 was *college support services*. NNMC combined below college level courses with college level courses as part of college support services. Phil noted,

Link courses are you take two different classes. They are supposed to – link is – I'm taking English and a biology course. So the English – our first semester is Basic English. We write our essays. The second semester we move to a different book that has essays in science. Then in biology, our papers have to be in MLA format like English. So that's how it's supposed to work together. Both teachers talk to each other. Its two days a week right after each other.

In another example about linked courses, Henry noted,

That's a really good class because they help me; well they help us a lot with everything. They explain us how we have to do it, how we do it, and the teachers are really good. They always helping out, I was like for me like, I don't speak really good English. They put me like in the writing center, so I have to go, and it really helps me a lot.

In brief, the data suggested the majority of participants believe *college support services* were a positive aspect of their academic preparedness.

As a summary of the first three textual categories, the first textual category suggested a possible lack of parental involvement in the lives of most participants. The second textual category reflects participants' negative experiences at home and at school during their k-12 lived experiences. However, within the third textual category, some participants had negative experiences at the start of their college experience and positive college experiences as a result of college support services at NNMC. During the interviews, participants revealed their growth in maturity, the ability to make better decisions, and a change in motivation for obtaining a college degree. An example of this was James, as he reported "I was becoming more mature and actually sitting there and actually learning things."

James was a very interesting interviewee, as he revealed a surprising form of data that was not initially recognized as important. James revealed "...I actually finally and actually had somebody to impress in school because no one really actually did care how I did in school, so." The perception that no one cares along with a previous statement from Rachel that she wished someone had pushed or encouraged her to perform well academically was implicit within the data. The data was implicit because the reasons for academic underpreparedness may not always have obvious implications for participants' behavioral choices. **Textual category 4: Noncognitive factors.** Table 7 lists invariant constitutes concerning a variety of noncognitive factors within the textual category. Several exemplar quotes from this category were helpful in understanding participants' lived experiences.

Rachel noted,

I think it's very important for, for teachers to, to teach education wise but also to keep in mind that uh it's important to give life skills, so that students will be able to compete in the real world. Um, and I think that that should be important to, for the teachers to remember that a lot of the students that, that are high risk, will have the challenge of having to learn skills and life skills.

Table 7

Invariant Constitutes	Participant	Coded Refs.	Text %
Willingness to Accept Help	15	28	5%
Reason for Pursuing a Degree	15	47	12%
Personal Issues	15	47	11%
Motivation to Overcome Challenges	16	61	13%
Inspiring Teachers	16	64	15%
Education Boring or Inspiring	14	69	17%
Creative, Practical, & Cognitive Skills	15	58	14%
Control of Educational Direction	14	21	3%
Attitude Changes	10	20	5%
Affiliates W/Peers & Instructors	13	26	5%

Textual Category 4: Noncognitive Factors

Frank noted a story about his teacher in high school,

He had a little calculator that played musical notes and we used to play the song La Bamba. Well I took his calculator and I played La Bamba for him on the

calculator just from listening to the notes...it was the math, because notes are like

math, steps in math, and that's how I figured it out.

Participants wanted a combination of practical, creative, and cognitive skills to make education fun and provide a balance of life skills.

For the invariant constitute *creative, practical, and cognitive skills,* most participants acknowledged the importance of creative and practical skills combined with cognitive skills. For instance, John acknowledged "Well, they help you and they're very important because they actually solve problems for you – your own creativity can solve a problem. However, John also acknowledged "I think it's important, yeah. Math is very important, too." Josephine argued,

If we don't have an imagination, how could we write? How could we deal with life if we don't have any creating or any imagination or nothing to be proud of because I created that and I was part of creating that.

Delores added "I think being creative is very important. I think it helps the cognitive skills along, whereas if you just have the cognitive without the creation, then it doesn't come together."

Most participants found some courses stimulating but they also believed that something was missing. Using Rachel as an example of an adult returning to school, she acknowledged that some courses were fun because these courses allowed students to work together. She acknowledged "one of the things that I do like is when the teachers allow other students to work together and um, and that helps a lot of the stress and anxiety that the students go, go through." Rachel added that she wanted to obtain a sense of self-esteem by completing a college degree. However, the most important aspect she noted was "I think that it's important for teachers to inspire their students, to figure out a way for our students to stay in school."

For the invariant constitute *inspiring teachers*, most of the participants remembered teachers creating positive educational results by inspiring them to learn. Frank noted "My sixth grade teacher, he was awesome. He always inspired me to be myself and encouraged me to go further in education." Serena replied,

Because she was strict in the way we did our writing, but yet made it fun, I think that more people were willing to – especially the younger ones – were more willing to participate and try harder. Read out lout. Probably kids that wouldn't do it in high school were doing it in her class. She was my favorite teacher and I would take another course just to take another course with her.

Josephine responded "My mathematics teacher inspired me. He was one tough – he taught us what we need to know to go into college, and he pushed us to learn it."

The data suggested that a tough teacher may become inspiring to the class if the students achieve positive educational results. Other participants experienced an inspiring teacher. Serena noted "Something that they're actually going to use, it can be very inspiring." Serena further remarked "there are some people that just walk into a room and you know it's going to be fun or inspiring." Josephine remarked "my mathematics teacher inspired me." Phil added "my 5<sup>th</sup> grade and my 7<sup>th</sup> grade substitute science teachers. Those two were awesome."

The results also suggested that these participants had a high level of motivation and perseverance. The invariant constitute *motivation to overcome challenges* included a large amount of data in which participants discussed college support services positively. As an example, Rachel indicated,

I'm on financial aid so without those, without the ability with financial aid I would have never been able to go... Sometimes it takes me longer to understand. But, I, but, uh, so I am determined to, to finish this education, even if it takes me longer than the 4 years that they have.

In another example, Jane explained "I have set my mind to finish up what I started... I'm up till all hours trying to study."

An unexpected result was the mention of having fun during education. Apollo noted his early school experience as fun, and Serena noted, "There's some people that just walk into a room and you know it's going to be fun or inspiring." When asked about high school, Lydia replied "Fun, because I was in all regular classes, I got good grades and I was in sports." When asked about middle school, Frank replied "It was interesting and it was fun and good." The researchers did not ask about fun in education; however, participants mentioned the topic of fun, which may suggest a level of significance for students who are academically underprepared for college.

Another unexpected finding was in relation to self-regulation (i.e., control of thoughts, attention, and actions) and metacognitive skills (i.e., an ability to plan for the future). John was a good example of making good behavioral choices, complying with rules, and planning for the future. Although John lived in a dangerous neighborhood with drug dealers and murders taking place, he never joined a gang or got into trouble. He eventually planned a successful business.

The data extrapolated from John's significant statements suggested that family activities with parents may counteract negative neighborhood influences. John may have obtained self-regulation and metacognitive skills from his family activities with each of his parents. For instance, when questioned about his mother, John responded "She was always cooking and we always joined in – my sister and I... My sister and I would always take turns, you wash dishes, and I'll dry up." When questioned about his father, John responded "he started a business selling vacuum cleaners, so I drove everywhere." Life skills from family activities may provide self-regulation and metacognitive skills to improve students' academic preparedness.

## **Structural Themes**

Giorgi (1985) considered themes as aspects of a complex phenomenon transformed into a structure of events. Giorgi also noted meaning units used for structural themes are not found grammatically within text but in perceptions of what is relevant to the phenomenon. By using imagination, the structure of the phenomenon can illuminate a new understanding but only through participants' significant statements, which becomes the phenomenological reduction of describing experience as presented by those living the phenomenon (Giorgi, 1985). A table within each subsection provided a visual illustration of structural themes discovered using invariant constitutes and research sub-questions.

**Structural themes emerging from research sub-question 1.** The first research sub-question was: how do academically underprepared college students perceive their college lived experience? The analysis of this research sub-question began by first asking the participants to "tell me about the experiences, good or bad in college, you have

had during your education." College experiences were a positive explicit experience for most participants.

Table 8

Structural Themes Emerging from Research Sub-Question 1

Structural Themes	Participants	Coded Refs.	Text %
Positive experiences	14	35	40%
Informing of Available Services	10	37	42%
Guidance for Career Planning	9	16	18%

However, those *positive experiences* did not provide a complete understanding of the structure of events. Using probing questions and imagination, participants' descriptions revealed an implicit structure of their college experience at NNMC. This implicit structure is illustrated in Table 8 as *informing of available services* and *guidance for career planning*.

Most participants reported having good experiences during college with relatively few bad experiences. However, most participants learned about the availability of college support services through other students or instructors, rather than from the admissions counter. Serena noted "I can be honest with you, most of the programs here, I have found out from other students." Serena also noted "I had absolutely no idea what I was doing, but they seem to say things like, we're not here to hold your hand or that should be common sense." In addition, Delores reported "I didn't – don't remember ever getting anything from them."

Some participants had special needs because of a learning disability and they reported obtaining information immediately during admissions. For instance, Phil reported "yes, because the first person I talked to was the lady of special needs. She was

the one that set my courses. She's my advisor for now." Nevertheless under further probing about how he found out about services, Phil explained "My mother found out. One of our neighbors used to work here. So she told her who to go to. Then we set an appointment with her. Then I met her, and I came here."

In reference to *guidance for career planning*, the link courses include orientation and motivation sessions during the summer, which encourages students to plan for the future. For example, John acknowledged

There was a lot of motivation during those courses. During that summer we were always talking about future this, future that. We did speeches. We talked among ourselves. We had little support groups within our own classes, and we thought what are you going to do? Where are you going from this? What do you want to do?

However, most participants, even the students in the link course, did not know about this opportunity. As an example, Phil stated "I haven't seen – I haven't seen yet. But the program I'm in right now, they are very supportive, because it's – I'm in the linked courses." Also in reference to guidance for career planning, Tanya stated "I don't really recall anything right now... information access is definitely an issue on the campus."

To answer the research sub-question of: how do academically underprepared college students perceive their college experience? Most participants had a *positive experience* at NNMC. However under probing, participants revealed that receiving *information about available services* was not obtained through the admissions counter when they initially enrolled at NNMC. Participants also revealed that *guidance for career planning* was a limited activity; most participants did not receive this service.

Although most participants reported a *positive experience* at the college, under probing, participants explained that providing *information about available services* and *guidance for career planning* were not part of admissions staff duties.

**Structural themes emerging from research sub-question 2.** The second research sub-question was: how do academically underprepared college students perceive their lived experience related to early educational factors before and during k-12? During the interview, participants were asked to "describe any experience you have had with someone reading to you as a child, or if no recollection, describe your k-12 experience." Table 9

Structural Themes Emerging from Research Sub-Question 2

Structural Themes	Participants	Coded Refs.	Text %
Parental Involvement	15	71	51%
Teacher Involvement	16	69	49%

The exploration into this research sub-question suggested structural themes such as *parental involvement* and *teacher involvement* as the underlying structure.

In reference to teacher involvement, Rachel reported "Um, without their support and their understanding I probably would have never made it an effort to um, you know, there, to um, learn the way I did." Also, Josephine reported "This is when I was in high school. I had a teacher – my English teacher, and she motivated me to write, write, and write." However, these instances of teacher involvement were sporadic and most participants' experiences were negative concerning k-12. For instance, Delores explained "K-12 you pretty much sat there, be quiet and it was almost like they were drilling something into you rather than letting you show the willingness of wanting to learn."
Laura reported "Junior High as it was – as it was called back then was really hard because there was no one at school who really wanted to take the time to help me, and at home there was nobody."

While many participants experienced some *teacher involvement*, most participants were not receiving much *parental involvement* at their home. Rachel described her experience at home as "I never had parents or adults to follow through on my education... that's where my failure started in my education.." Rachel also noted "teachers had more of an impact on me... I grew up with my Mom who had a lot of medical and mental problems." Laura described,

I don't think I was that happy all through those years. I was, but I think – well home life had a lot to do with it, so I think I was just living, like I was alive, and I was going through school doing the motions of school.

James explained "my father was an alcoholic, so he was never around...and my mom worked two jobs and she was a single parent with a mortgage and a car payment."

Also within the structural theme of *parental involvement* was the important influence of having at least one parent who encouraged participants to achieve academically, which was contingent on a friendly or hostile atmosphere within the home. For instance, Lydia was the one of the two participants from broken families who had an encouraging mother supporting her both financially and emotionally to achieve academically during college. Lydia reported her parents stopped fighting and her mother was available emotionally and financially for her during college. In another example, Delores and Laura were both from two-parent families; however, they both experienced much confusion and fighting between their parents, which suggested a lack of emotional support or encouragement to achieve academically.

**Structural themes emerging from research sub-question 3.** The third research sub-question was: how do academically underprepared students in college describe lived experience related to personal factors that may help or hinder their educational experiences? Participants were asked to "describe a personal issue that may help or hinder your ability to obtain a college degree." Table 10 includes the structural themes emerging from the third research sub-question followed by examples from each participant's significant statements.

Table 10

Structural Themes Emerging from Research Sub-Question 3

Structural Themes	Participants	Coded Refs.	Text %
Behavioral Choices	16	147	49%
Commonalities	14	67	22%
Implicit Complex Structure	16	85	29%

In reference to *commonalities*, Jackie noted her biggest issue toward obtaining a degree was "financial aid probably 'cause my mom doesn't work right now. She's on disability and stuff and my father, um, are currently unemployed." Also, some participants did not have a place to live. Laura explained "I needed somewhere to live, and I was willing to live in the park, and come over here during the day, you know leave my dog outside parked, you know tied up so that I could go." Apollo reported "I was like, homeless for, like, about a month. I had to stay in my girlfriend's car because I didn't have anywhere to stay; I had no money at the time."

The data suggested an *implicit complex structure* within reported *commonalities* through a reflective discovery of participant's circumstance from iterative readings of invariant constitutes. Although she was from a two-parent family, Jane reported family health issues in her home and as the oldest child she often in cared for her mother. Jane noted "I had to play second mother because either my mom was sick or she was giving birth." She dropped out of school in the tenth grade because of family issues, which may have led to her academic underpreparedness.

Delores explicated "Um, my high school years were not pleasant. I dropped out cause I was – I was not happy and I wasn't learning anything in school cause I – I just hated getting up and going to school." Josephine noted "What I love about my dad is, even though he drinks a lot, he's always around...I was kind of like a trouble maker." Rachel reported "I wish they would have stressed to me more of the uh, taking it more of accountability and responsibility...it would have made it easier for me to stay in school." Further, these significant statements may indicate an *implicit complex structure* of influences on participant's *behavioral choices*.

For instance, Frank was also from a two-parent family and reported no negative family issues. Nonetheless, he had a personal issue in which he developed a drinking problem during his first 2 years at a university. Frank noted "I couldn't study without having a beer or I couldn't do anything or be with friends because the only friends I knew drank, so it was hard for me to associate college and not drinking." Frank dropped out of the university and did not return to college for over 20 years because of his alcoholism.

Table 11 illustrates the *implicit complex structure* within *commonalities* that may have influenced participants' ability to control their *behavioral choices* as an interlocking influence on their academic underpreparedness.

Table 11

Pseudonym	External	Internal	Internal	External	Internal	External
Jane, participant01	Family		Bad			
	Issues		decision			
Frank, participant02		Personal		Teaching		
		issues		Style		
Serena, participant03		Personal				
		issues				
Josephine, participant04	Family	Personal				
	issues	issues				
Rachel, participant05	Family				Learning	
	issues				disability	
John, participant06						
Delores, participant07	Family		Bad			
	issues		decision			
Tanya, participant08		Personal				
5 / 1 1		issues				
James, participant09	Family					
	issues					
Jackie, participant10	Family					
	issues					
Henry, participant11						Foreign
						country
Laura, participant12	Family		Bad			
	issues		decision			
Apollo, participant13	Family					Foreign
	issues					country
Lydia, participant14	Family				Learning	
	issues				disability	
David, participant15	Family					
	issues					
Phil, participant16		Personal		Teaching	Learning	
· • •		Issues		Style	disability	
Total negative	10	5	3	2	3	2
influences						

Implicit Complex Structure within Commonalities and Behavioral Choices

To further illustrate, Serena was from a broken home in which her grandparents took care of her. Serena reported a lack of guidance throughout her k-12 experience and eventually began drinking alcohol at age 13. Serena reported "I started drinking about 13... I didn't

care back then." Rachel added "I wish they would have stressed to me more of the uh, taking it more of accountability and responsibility... I regret the fact that I should have been in school rather than...falling through the cracks."

Conversely, some participants reported they had supportive families in which their parents control their education, or gave them incentives for good grades, and made them do chores around the home. For instance, Henry acknowledged "my father control my education... he tells me like you going to take English... I say okay because anyway I have to go." Phil stated,

I remember one semester my mom told me if I - I should get an - I have to have an A in all my classes to go to a concert this semester...I had an A for that whole section because I wanted to go to that concert.

John added "we were always active at home and there were a lot of chores." In this study, these participants' lived experience were not the norm but do support the notion of an implicit complex structure that influences academic preparedness, as these participants reported only a few negative family issues.

**Structural themes emerging from research sub-question 4.** The fourth research subquestion was: in what ways do academically underprepared college students describe lived experience related to affective factors such as overcoming the challenges they face in obtaining a college degree? Participants were asked "describe how you will overcome the challenges you face in obtaining a college degree." Illustrated in Table 12, the exploration into this research sub-question suggested structural themes such as *confidence/self esteem; perseverance/determination, convergent perspective,* and *selfcontrol* were influential toward academic preparedness.

### Table 12

Structural Themes	Participants	Coded Refs.	Text %
Perseverance/Determination	14	66	47%
Confidence/Self Esteem	8	21	15%
Convergent Perspective	14	43	30%
Self-Control	6	12	8%

Structural Themes Emerging from Research Sub-Question 4

Concerning *perseverance/determination*, Jane proclaimed "I have set my mind to finish up what I started...I'm very determined...I'm up till all hours trying to study." Serena added

Raised two children, lost one, and kept dusting myself and getting right back up... Sometimes I spend six, seven hours at the computer studying... I'm very determined to finish...I think that I'll leave from here with a good, strong foundation, if I fight for it.

Rachel noted "I've had to learn through those struggles and be determined...I am determined to, to finish this education, even if it takes me longer than the 4 years. Tanya reported "I'm very resilient and adapt well... perseverance is key."

Participants' *perseverance/determination* may have had some influence on their *confidence/self esteem*. Frank noted "I'm more outgoing and outspoken and I have self confidence...without self confidence it will be hard to succeed in a college because you are on your own." Rachel acknowledged "one of the things that I look on once I get my degree is my self esteem." When completed, James added "I'll feel good about myself." David described his eventual degree completion as "a sense of personal fulfillment."

College support services appeared as a *convergent perspective* with participants' affective factors, as every positive sounding participant indicated receiving some form of financial aid, linked courses, or tutoring. Participants overwhelmingly indicated that they had the perseverance and motivation to overcome their academic underpreparedness. For example, Jane proclaimed "I have set my mind to finish up what I started...I'm up till all hours trying to study." Frank provided a 5 year plan by stating,

My first step is obtaining my Associate's, which I will get within a year, and then

I'll get my Bachelor's 2 years later and if everything goes great, I would like to go on for my Master's and get my CPA in Accounting.

Josephine noted "I will not let obstacles get to me, no matter what."

These affective factors of determination and perseverance converged with college support services in helping participants to overcome having little family emotional and financial support. Rachel noted "if I wouldn't have the ability of financial aid it would be rough." Delores, another participant with family issues, was adamant about her college support services. Delores reported "I'm getting tutoring for my algebra, and it's awesome."

Additionally, three of the participants read to in their childhood were diagnosed with learning disabilities during K-12. However, Phil, a special needs student, noted "the campus here has the best – one of the best programs for special needs students." In addition, Lydia, a special needs student, noted "I'm trying to – just because I have a disability, to me it doesn't mean that I cannot do it. I know I can do it even with a disability." Lydia added "with the special education person she like – she's there for me to talk to if I need to, or help me understand what classes would be the best."

Participants' learning disabilities did not seem to matter, as the *convergent perspective* of college support services, combined with their affective factors of *perseverance/determination*, was a positive influence affecting their *confidence/self esteem*.

One participant provided evidence of having knowledge of their self regulation abilities but referred to it as self control, and another participant referred to it as having control over his direction in life. For instance, David noted "there's a certain, certain level of *self-control*, I guess, that I have over myself for, uh, pushing past the procrastination and getting that work done." John added "I also was told I can change direction any time, which is true. By being told that, I was actually informed that they don't have a direction for you. You choose that." These statements may have significance because awareness of information about personal abilities such as choosing your own direction in life or knowledge of *self-control* may influence academic preparedness.

**Structural themes emerging from research sub-question 5.** Related to Table 13, the fifth research sub-question was: what influences do creativity and practical skills have on participants' lived experience related to their academic preparedness? To explore this research sub-question, the interview question was: describe an educational situation in which a teacher inspired you to think creatively or use practical skills. The theme *fun academic activities* were found in textual category invariant constitutes but *broken bridge* was found through research sub-questions and insightful participants. The *divergent perspective* was the result of imaginative reflection and integrating an aspect of

interpretive phenomenological analysis, which encourages commonalities, convergent perspective, and divergent perspective.

Table 13

Structural Themes Emerging from Research Sub-Question 5

Structural Themes	Participants	Coded Refs.	Text %
Broken Bridge	14	72	39%
Fun Academic Activities	14	93	51%
Divergent Perspective	13	18	10%

In reference to a *broken bridge*, participants coming into college may need to have an intrinsic reason to pursue the rigors of education and the lack of creativity in the classroom implies something important was missing in education. Delores noted "I think being creative is very important. I think it helps the cognitive skills along, whereas if you just have the cognitive without the creation, then it doesn't come together." Apollo provided insight,

I can count the amount of people I see inspired by learning and developing their mental capacity and it would not be that much...education is not what it should be... I think that's where, um, uh, there's like a bridge – a *broken bridge* in a sense.

Delores added "I didn't feel there was a reason for – for what we were doing." Rachel revealed "I think that it's important for teachers to inspire their students, to figure out a way for our students to stay in school."

In reference to *fun academic activities*, Lydia commented, "with my biology, even though it's difficult with lecture, or it's boring with the lecture, the lab is so much fun because it's hands on." Lydia noted,

My junior teacher, she like – she would give us an essay that we had to make up a story, so it made me think of my gosh, this is like so much fun, I wanna actually keep doing this because it's enjoyable.

In another example Phil added,

the one class that does give me a way to express myself is my photography

class...I have so many different ideas, like movies, music – everything in my mind. The only thing is how to get that from here into the real world.
Serena concluded "I think our English teacher was very strict, but she taught in creative, fun ways." Serena added "probably kids that wouldn't do it in high school were doing it in her class."

Using a *divergent perspective*, it was found that most of the participants had a positive viewpoint of the importance of creative and practical skills, but at least one participant had a negative viewpoint. Frank noted "I believe you need to be well rounded in order to survive in this kind of world we live in today." John added "Creative skills? Well, they help you and they're very important because they actually solve problems for you – your own creativity can solve a problem." However, on a divergent note, James replied,

Not, not necessarily because I feel like learning math, reading and all of those cognitive skills is something people really need to learn in life because they're used almost every day. And those – the practical skills are good, good to learn, but they're not, they're not as important as cognitive skills ...You chose if you want to know the practical skills.

The *divergent perspective* suggested the importance of creative and practical skills; however because they were not part of entrance assessment or part of teaching methods, these skills were not viewed as required or important to at least one participant.

# **Creative Synthesis of Academic Underpreparedness**

The creative synthesis was an attempt to create what Moustakas (1994) called a "culmination of the research in a creative synthesis" (p. 18) by using cognitive and noncognitive distinctions to reveal types of academic preparedness and underpreparedness. Making the design of phenomenology usable in this way provided what Pringle et al. (2011a) noted as evidence-based data firmly rooted within participants' direct quotes about the phenomenon. Table 14 includes a summary of ways noncognitive factors may influence students' academic preparedness and underpreparedness.

Table 14

Cognitive/Noncognitive Distinctions

Four ways noncognitive factors may influence students' academic preparedness

Cognitively Prepared/Noncognitively Prepared Cognitively Prepared/Noncognitively Underprepared Cognitively Underprepared/Noncognitively Prepared Cognitively Underprepared/Noncognitively Underprepared

Source: Dr. Irene Stein (e-mail communication, August 09, 2011).

Table 15 includes the cognitive/noncognitive distinctions used to associate participants within each distinction followed with a creative synthesis concerning each distinction. The term *cognitively prepared* was operationalized as participants' metacognitive ability to plan (e.g., home-schooling their children, planning a business, or planning entrance into a university). The term *noncognitively prepared* was operationalized as participants' self-regulation ability to control their behavioral choices (i.e., control of thoughts, attention, and actions), which may result from family support. Self-regulation and metacognitive skills may provide a deeper understanding, which may help educational leadership understand how to address academic underpreparedness. This portion of the study accounted for the complexity between academic preparedness and underpreparedness.

Table 15

Participants' Potential Loss of Academic Preparedness Seen Respectively Through Cognitive/Noncognitive Distinctions

Pseudonym	Types of academic preparedness and underpreparedness
John, participant-06	Cognitively Prepared/Noncognitively Prepared
Frank, participant-02 Tanya, participant-08	Cognitively Prepared/Noncognitively Underprepared
Jane, participant-01 Henry, participant-11 Lydia, participant-14 Phil, participant-16	Cognitively Underprepared/Noncognitively Prepared
Serena, participant-03 Josephine, participant-04 Rachel, participant-05 Delores, participant-07 James, participant-09 Jackie, participant-10 Laura, participant-12 Apollo, participant-13 David, participant-15	Cognitively Underprepared/Noncognitively Underprepared

# Cognitively prepared/noncognitively prepared. The cognitively

prepared/noncognitively prepared distinction implied academic preparedness in both

constructs. The data results revealed that John had home-schooled his daughter and he was merely going to college and taking noncredit courses to give his daughter a sense of security. For instance, John noted "I home schooled my daughter." In addition, John noted,

I came with her because her not being ever in a classroom was a little scary for her, and I said, "Don't worry, I'll go with you…even though I've already got my diploma and stuff, but they didn't care so it was all right.

John was the only participant considered both cognitively and noncognitively prepared for college, which suggested he had control of his behavioral choices and his metacognitive ability to plan. As well, the next distinct revealed two other students were also cognitively prepared.

**Cognitively prepared/noncognitively underprepared.** In this distinction, cognitively prepared/noncognitively underprepared respectively equated to metacognitive preparedness and underprepared in self-regulation skills. In one example, Tanya (participant-08) tested out of high school at the age of 16 and obtained an AA degree soon afterward. However, 14 years later she decided to return to college for a BA degree. Tanya noted "So having to be divorced and trying to negotiate things with my youngest child is probably one of my biggest issues that's kept me from graduating." Tanya's personal issue made her an at-risk student in college and qualified her as noncognitively underprepared.

In addition, Frank (participant-02) was cognitively prepared because he entered a selective university directly after graduating from high school. However, Frank had an alcohol problem and he dropped out of college. His alcohol issue suggests he was an at-

risk student and therefore noncognitively underprepared. If Frank were to stay away from drinking alcohol, he could easily succeed in college because of his strong family and school affiliations. Tanya and Frank were both cognitively prepared but noncognitively underprepared, which may have lowered their ability to control their behavioral choices (i.e., control of thoughts, attention, and actions).

The three cognitively prepared students (i.e., John, Frank, and Tanya) provided leadership skills at the college. John indicated that he was providing informal tutoring for many of the participants within the link courses. Frank indicated he was the president of a student organization at the college. Tanya she belonged to an Honor Society at the college and she attended project planning meetings to help the community. These participants were metacognitively prepared.

Nonetheless, two participants were underprepared to self-regulate. Frank had to stay away from drinking alcohol and Tanya had a troublesome alcoholic ex-spouse and children, which presented scheduling issues. These examples contradicted the notion that self-regulation provided students with better metacognitive skills. However, the imbalances between these skills were found the most influential factor towards academic preparedness and underpreparedness.

**Cognitively underprepared/noncognitively prepared.** The cognitively underprepared/noncognitively prepared distinction was defined as metacognitively underprepared with self-regulation preparedness, which appears to contradict the subjective analysis for the other participants. However, while assessing participants for this distinction, it was discovered that some participants who may have been noncognitively underprepared during K-12 were noncognitively prepared during their entry into college. For instance, some participants did not have family support during k-12 but had it during college.

In Jane's (participant-01) circumstance, the reason was because the family health issues that held her back during her k-12 experience were absent during college because her family supported her college aspirations. Jane noted "I had a real hard life. Pretty much my grade – my education really consisted from first through eighth grade...I was out of school because of family problems, health issues." Jane initially met the criteria of cognitively underprepared for college; however because of her family support during college, she met the criteria of noncognitively prepared to deal with her academic challenges. Jane explicated "My kids would say, well, what's holding you? Why aren't you finishing up? I said I don't know."

Henry (participant-11) had strong family support from the beginning, and he was only cognitively underprepared because of not speaking English fluently. Henry noted "Like math, physics and chemistry, I'm really good at that, but the good thing here is like they prepare you for talking." In addition, Henry noted,

The relationship, I've got a good relationship with my father because I realize that nobody give you better advice of your father because he have lived the life, and my mother I consider her like my best friend because we – I always talk to her about my problems.

Because of his strong family support, Henry met the criteria of noncognitively prepared to overcome his cognitive language difficulties.

Lydia (participant-14) and Phil (participant-16) both have learning disabilities; however, Lydia currently has strong family support, and Phil always had strong family support, which makes them both noncognitively prepared for college. Phil entered the university directly from high school and found the teaching style was different at the university in comparison to what he encountered in high school, and the university did not give him the disability support services he needed to perform academically. Phil reported,

In LA, it was – the lady that supposed to help you, she was so busy – so many students. She just – it was like she didn't know who you are. I walk in. I talked to her like the day before, and she's like, "Who are you again?"

However, because of Phil's strong family support and the college's support services, he met the criteria of noncognitively prepared to handle his learning disability.

Lydia was cognitively underprepared because of her not receiving the extra support needed for her learning disability during most of her K-12 experience, but that changed during high school. When asked about high school, Lydia replied "Fun, because I was in all regular classes, I got good grades and I was in sports." Although she was from a broken home during K-12, she presently has strong family support from her mother, aunt, and uncle, which makes her noncognitively prepared to overcome her learning disability challenges. Lydia noted,

I can go talk to them because my aunt and my uncle have a college degree and have taken college classes and all of my family tells me just remember that this will be the best for you for your future.

These participants were potentially metacognitively underprepared but noncognitively prepared to self regulate their behavioral choice process. Interestingly, of the four participants in this distinction, three participants were from stable two-parent families with reported family issues in one family but the issues were health issues not family strife. The only possible common reason found for these four participants academic underpreparedness was a subpar k-12 educational system but this was questionable.

**Cognitively underprepared/noncognitively underprepared.** This distinction was defined as academically underprepared in both metacognitive and self-regulation skills. The only discernible difference between this group of participants and the other groups (i.e., the other three distinctions) was that 78% (7 of 9) of participants in this distinction were from broken families. When combining the three other groups into one group for data analysis purposes, only 15% (1 of 7) of participants were from a broken home. Although a two-parent family does not guarantee the cognitive or noncognitive preparedness of the participant, it does suggest an improved chance that participants may have preparedness in one of these two cognitive/noncognitive distinctions.

Most participants were underprepared in both cognitive and noncognitive distinctions, which may suggest a loss of self-regulation and metacognitive skills. Fifty six percent (9 of 16) of study participants were within the cognitively/noncognitively underprepared distinction. The researcher admitted fitting into this distinction, which may result in researchers' personal bias. However, by using participants' significant statements, an attempted was made to describe participants' experiences without personal bias.

Serena (participant-03) was a high school dropout from a broken home but returned to obtain a college degree within 7 years of dropping out. Serena was cognitively underprepared because of being out of school for 7 years. She noted "I got straight into algebra and I hadn't taken a math class in quite some time so, it was a little difficult." She was noncognitively underprepared because of a personal issue (i.e., drinking alcohol from the age of 13 years) and she admitted to "creating my own obstacles for many years." While Serena may have stopped drinking alcohol during college, she has very little family support, which potentially qualifies her as an at-risk student and noncognitively underprepared.

Josephine (participant-04) was a high school graduate going directly into college but she takes noncredit courses to prepare for college level coursework. She was very close to her grandfather who passed away causing a lack of motivation in her, which may have contributed to her cognitive underpreparedness. Josephine noted "I wasn't motivated to succeed in school as much when he passed away." In addition, she was from a broken home and the father of her daughter was alcoholic. Because of a lack of family support, she was seen as an at-risk student and noncognitively underprepared for college.

Rachel (participant-05) was a high school dropout during the 10<sup>th</sup> grade but returned to school 20 years later. She was cognitively underprepared because of the long period away from school. Incidentally, Rachel may lack self-esteem; she noted "one of the things that I look on once I get my degree is my self esteem." In addition, Rachel insisted,

Again, um, I think it's very important for, for teachers to, to teach education wise but also to keep in mind that uh it's important to give life skills, so that students will be able to compete in the real world. Um, and I think that that should be important to, for the teachers to remember that a lot of the students that, that are high risk, will have the challenge of having to learn skills and life skills.

As a student with a learning disability and from a broken family, Rachel was seen as an at-risk student and therefore noncognitively underprepared for college.

Delores (participant-07) was categorized as cognitively underprepared because she was a high school dropout who returned after 19 years from school. Delores noted "It's – um, I'm learning a lot more, I mean, whereas before I didn't have – I didn't feel there was a reason for – for what we were doing." She was noncognitively underprepared because she has no family support and she has a tendency to make bad decisions. Delores noted, "I dropped out cause I was – I was not happy and I wasn't learning anything in school cause I – I just hated getting up and going to school."

James (participant-09) graduated from high school and he went directly into college. However, this may have been possible because of his girlfriend, as John noted,

I didn't think I'd actually get out of high school until I met my girlfriend, and she's an honors student, she's, I don't – she's told me she's never had a, anything but an A from seventh grade all the way to high school and she's a senior now. James added,

And if I ever need help with my homework or anything like that, she, she'll help me. She's actually in English – she's actually in a higher – all higher classes than me and she's still in high school. So, she's actually a really smart girl, and she's helped a lot. James was from a broken family with an alcoholic father and a mother who worked two jobs. For the reasons previously stipulated, he was classified as both cognitively and noncognitively underprepared for college.

Jackie (participant-10) was from a broken family but managed to graduate from high school and go directly to college. Jackie was from a broken home with at least one abusive parent, which was the reason for her classification as noncognitively underprepared. In addition, she used many tutoring services, which was the reason for her classification as cognitively underprepared for college level coursework. However, Jackie may have experienced an inferior k-12 school system, as she noted "High school, just about the teachers, the Filipino teachers that we really couldn't understand them, or they really wouldn't help out." Jackie further added "I didn't really learn much."

Laura (participant-12) acknowledged she needs to do better in both English and math, and she was taking noncredit courses to improve in these areas. She was classified as cognitively underprepared and noncognitively underprepared for other reasons as well. The main reason was that she has no family support and she lived in the park when starting college, she noted,

Well, I had a lot of barriers because to go to summer school I needed somewhere

to live, and I was willing to live in the park, and come over here during the day,

you know leave my dog outside parked, you know tied up so that I could go. When asked about her parents, she added "They are both passed away."

Apollo (participant-13) was a high school adult who graduated from high school and went directly into college. However, Apollo was from another country and he does not speak English fluently and therefore he was cognitively underprepared. Apollo was also from a broken family, and he was living out of his girlfriend's car at the beginning of college. Apollo noted "I had to stay in my girlfriend's car because I didn't have anywhere to stay; I had no money at the time." He was noncognitively underprepared because of this reason.

David (participant-15) was a high school dropout but obtained a general education diploma (GED) within a year and went straight into college. When asked why he was taking noncredit courses, David responded "Uh, we have a compass test here inside the school." In addition, David responded, "I've taken the math course, it's, uh, it's a 102 Basic Algebra. My math skills have never been too strong. But having those courses helps me, uh, catch up." Interestingly, David also noted, "Uh, I think a lot of people my age, uh, have problems with procrastination... And so I guess that would probably be one of my hindrances."

### Summary

The NVivo 8 software program was essential to query participants' interview transcripts and storage of their significant statements. The steps for analyzing data were (a) acknowledging bias at appropriate moments, (b) developing preconfigured categories, (c) developing textual categories, (d) developing structural themes, and (e) developing a creative synthesis. In chapter 4, the textual categories for *lived experiences before k-12* reflected most participants were read to before entering elementary school by a sibling or grandparent. Negative family issues were the dominant within textual category *lived experiences during k-12* and positive college experiences in textual category *lived experiences during college* mainly because of college support services. Another textual category, *noncognitive factors*, suggested most participants had some inspiring teachers

during their educational experience but generally education was considered boring because of the teaching method of lecturing.

In chapter 4, the first set of structural themes suggested most participants were not *informed of available services* or provided information about *guidance for career planning* during their initial admission into NNMC but found out about these services through friends and teachers. Structural themes such as *parental involvement* and *teacher involvement* occurred on a limited basis for most participants. Additionally, the third set of structural themes such as *commonalities, behavioral choices*, and *implicit complex structure* were a major negative influence on participants' academic preparedness. However, structural themes such as *perseverance/determination, confidence/self esteem, convergent perspective*, and *self-control* were positive influences on participants' academic preparedness primarily because of a convergence between affective factors and student support services. The fifth set of structural themes such as *broken bridge, fun academic activities*, and *divergent perspective* were found as a broken potential but may become a positive influence through integrating creative and practical skills with cognitive skills.

The creative synthesis provided cognitive and noncognitive distinctions to understand types of academic preparedness and underpreparedness. In brief, chapter 4 included a comprehensive description of the results and data analysis using textual categories, structural themes, and a creative synthesis. Chapter 5 consists of findings from textual categories, structural theme findings as related to the research question, and findings related to the creative synthesis. Chapter 5 concludes with a discussion of the significance to leadership, the research limitations, research implications,

recommendations for future research, and a summary.

#### **Chapter 5: Conclusions and Recommendations**

The purpose of the study was to discover through the exploration of lived experiences, the influence of noncognitive factors on college students' academic preparedness. Chapter 4 data results focused on textual categories, structural themes, and creative synthesis. Chapter 5 entails a subjective discussion of the phenomenological research findings from the data analysis and results. Chapter 5 begins with a discussion on findings surrounding textual categories such as *lived experiences before k-12, lived experiences during k-12, lived experiences during college,* and *noncognitive factors.* 

# **Textual Category Findings**

Creswell (2007) reported textual descriptions are an explanation of what participants experienced in reference to the study's phenomenon. As a precursor to the structural theme findings, the textual category findings suggested what participants experienced were negative social-cultural influences related to their home environment, which may have affected their behavioral choices. This was consistent with Sanagavarapu (2008), who implied an individuals' self-regulation was a social cultural phenomenon primarily emanating from an individuals' home environment. The finding was also consistent with Jolivet (2012), who reported the primary issue with developmental vulnerability was how the child perceived his or her relationship with each parent.

**Textual category 1.** The first category, *lived experiences before k-12*, was mainly a focus on reading experiences before the participant entered elementary school. Early educational factors such as participants' many reading experiences before they entered elementary school were an unexpected finding. A total of 69% (11 of 16) of

participants were read to, primarily by their siblings or grandparents, which may suggest a lack of parental involvement. This significant finding was supported by Fewell and Deutscher (2004) who stated, "Positive changes in developmental functioning occurred only when the mothers increased their level of response during interactions with their children" (p. 133). However, the textual category finding in reference to academic preparedness was questionable because the level of response between participants and parents were not accessible.

**Textual category 2.** The second category, *lived experiences during k-12*, entailed participants experiencing negative family issues such as a broken home, personal issues such as drinking alcohol, or making bad decisions. The significant statements made by participants supported negative aspects of their broken home, lack of family support, alcohol abuse, and possibly a deficient k-12 system. Of the at-risk factors noted in the Griffin (2008) report, the majority of participants identified having at least three negative aspects such as broken home, lack of transportation, and lack of employment for parents. Personal factors associated with this textual category such as lack of family support were suggestive of both cognitive and noncognitive underpreparedness. Participants' lack of guidance suggested one possible reason for their unfortunate choices, which also contributed to their academic underpreparedness.

The only participant who was both cognitively and noncognitively prepared for college experienced relatively few family issues or personal issues. In addition, both of his parents lived within the household during k-12. However, the most influential finding was this participants' involvement in family activities with both parents, activities with his siblings, and having to do chores. As well, this participant did not develop any

personal issues such as alcoholism during adolescence or adulthood. The finding is supported by Boylan (2009) and Mathews (2010), who both acknowledged that personal factors may influence students' academic preparedness.

The study's finding was also consistent with Boylan's (2009) finding that combining cognitive (i.e., analytical skills) with noncognitive factors (i.e., affective and personal factors) may provide a means for targeted interventions for academically underprepared college students. As well, the study's findings supported by participants' significant statements implied that learning communities may help to provide a supportive collaborative environment for developmental learning. Engstrom and Tinto (2008) supported the notion that learning communities may help provide students with a feeling of belonging, which may offset their negative home experiences.

**Textual category 3.** The third category, *lived experiences during college*, was that participants benefited academically from affective factors such as motivation and perseverance. A significant finding was participants' motivation and perseverance was beneficial to academic preparedness. Participants indicated that their determination to complete their college degree and college support services were vital. Boylan (2009) supported the notion that affective factors are just as important as cognitive skills for academic preparedness during college because noncognitive factors are an indication of how these students feel about themselves. The finding was supported by Duckworth et al.'s (2007) research findings that implied affective factors such as perseverance and temperament may be as important as cognitive skills for academic preparedness.

**Textual category 4.** The fourth textual category, *noncognitive factors*, referred to participants' desire to learn life skills. The significant finding was that most participants

implied that inspiring teachers made education fun and that creative and practical skills were just as important as cognitive skills. However, the analysis of participants' significant statements suggested that creative and practical skills (i.e., life skills) were not an integral part of their educational experience. Another finding was that participants wanted more hands on fun classroom experiences integrated as life skills training. Mathews' (2010) finding that students desire fun assignments with recognition of their hard work is consistent with this finding.

### **Structural Theme Findings**

Using the previously mentioned textual categories was partially helpful in discovering structural themes. Giorgi (1985) described structural themes as building the structure of participants' experience within the phenomenon. In this study, the structure of the phenomenon was built by using the research sub-questions as a guide and iterative readings of every invariant constitute within textual categories.

**Structural theme 1.** The findings for structural themes *positive experiences*, *informing of available services*, and *guidance for career planning* were confounding themes but suggestive of a lack of institutional cohesiveness at Northern New Mexico College (NNMC). Findings from these structural themes were suggestive that although participants indicated mainly *positive experiences* at NNMC, they were not *informed of available services* or *guidance for career planning* at the admissions counter. The recommendation is to connect every curriculum with student support services, which may result in better communication at the admissions counter. Levin et al. (2010) recommended that colleges connect every curriculum offered to students with student support services. This aspect of institutional cohesiveness is consistent with this study's finding.

**Structural theme 2.** The findings for the structural themes *parental involvement* and *teacher involvement* were suggestive of negative influence on college students' academic preparedness. One way to counteract this at the college level may involve providing part-time faculty with full benefits, which would acknowledge that they contribute toward participants' academic preparedness. This recommendation is consistent with Levin et al.'s (2010) suggestion that providing full benefits to part-time faculty may increase cooperation between program personnel. Providing internships for k-12 students and invitations to parents of k-12 students to attend program events would help develop linkages and relationships with external parties for improving students' academic preparedness.

**Structural theme 3.** The findings for the structural themes *behavioral choices*, *commonalities*, and *implicit complex structures* illustrated how personal factors may hinder participants' academic preparedness. By including personal factors with cognitive factors during the academic assessment of new students, academic advisors can appropriately target student interventions, which is consistent with Boylan (2009). As suggested by Griffin (2008), underprepared students may need an encouraging academic environment to prepare them academically and to promote their self worth. The federally funded link courses at NNMC addressed concerns in the Griffin study but expanding this as a campus wide model using an instructional specialist with a committee of students as constituents may also provide consistency. Providing curriculum consistency is

consistent with Levin et al.'s (2010) finding that instructional specialist improved communication between programs with a committee of constituents (i.e., students).

**Structural theme 4.** The findings for structural themes *confidence/self esteem*, *perseverance/determination*, and *convergent perspective* showed how noncognitive factors may become a positive influence on students' ability to continue their degree aspirations. This is consistent with Cunha and Heckman (2008) suggestion that noncognitive factors are more malleable at later ages than cognitive factors, which according to Bailey (2009) may account for minimal degree attainment results using only cognitive training within developmental education. For these participants, noncognitive skills were as important as cognitive skills for obtaining a better return on investment (ROI) within developmental education. This is also consistent with the Cunha and Heckman (2008) model in which adolescence and adulthood become critical developmental periods for obtaining better ROI using noncognitive factors for developmental education.

**Structural theme 5.** The findings for the structural themes *academic activities*, *broken bridge, divergent perspective*, and *self-control* were suggestive of ways noncognitive skill factors such as creative and practical skills have a positive influence on the academic preparedness of underprepared college students. Participants may need to learn life skills such as creative skills and practical skills integrated with cognitive skills to successfully accomplish their dreams and develop self-control. This finding is consistent with Sternberg's (2008) contention that a set of integrated skills are necessary for individuals to become successful in obtaining their goals. Thematic findings suggested there is a disconnection between cognitive skills and noncognitive skills and

the need for public educational leadership to acknowledge the equal importance of noncognitive skills, which is consistent with both Heckman (2008) and Weel (2008). These findings and previously mentioned findings provided insight into participants' cognitive and noncognitive academic preparedness.

### **Creative Synthesis Findings**

The data results indicated that most participants in this study were both noncognitively underprepared as well as cognitively underprepared. Within the creative synthesis findings, four cognitive/noncognitive distinctions were useful toward understanding participants' academic preparedness and underpreparedness by using cognitive and noncognitive distinctions to better understand the *implicit complex structure* inherent within the phenomenon. These cognitive and noncognitive distinctions may enhance the positive aspects of academic underprepared students within learning communities as well as providing them with a sense of belonging. Engstrom and Tinto (2008) suggested a sense of belonging can result from educational institutions integrating developmental education into the mainstream to avoid marginalizing these students by separating them from the mainstream. Further, Hand and Payne (2008) suggested providing emotional support through a network of relationships may play an important role in academic persistence; the latter can be enhanced through outreach programs that address the four cognitive/noncognitive distinctions.

**Cognitively prepared/noncognitively prepared.** John revealed by his behavior during the interview and his interview responses that he may possess good cognitive and noncognitive skills. John noted that he often helped other students as an informal unpaid mentor. Innovations linking below college level courses and college level courses should

address the presence of this type of student, not to separate the student, but to allow this student to work as a paid informal student mentor. This finding was supported by Ramirez (2009), who considered mentoring as synonymous with nurturing and tutoring and vital for programs and institutional practices. As part of institutional practice, outreach activities may offer faculty training to understand the dynamics of different types of academic underpreparedness as well as provide stipends for students acting as informal mentors.

**Cognitively prepared/noncognitively underprepared.** Participants Frank and Tanya were in the cognitively prepared and noncognitively underprepared category, and they may become good basic skill mentors. However, they may need additional training with self-regulation to assist them toward their goals. This finding was consistent with Vukman and Licardo (2010), who advocated using self-regulation to find alternatives when encountering obstacles to one's goals. Berger (2011) implied interventions focused on self-regulation such as setting goals, monitoring self progress, and note taking were a form of self-regulated learning in which learners become aware of their limitations and strengths and become proactive in their learning. Innovative institutional outreach may provide Frank and Tanya with an improved ability to make behavioral choices, set goals, and monitor self progress.

**Cognitively underprepared/noncognitively prepared.** The four participants (i.e., Jane, Henry, Lydia, and Phil) in this cognitively underprepared and noncognitively prepared category may need cognitive improvement. However, focusing merely on cognitive improvement was found to be ineffective within the literature review. Heckman (2008) revealed cognitive improvement alone was largely ineffective for adults because of low cognitive brain malleability during late adolescence and adulthood, which may indicate a need for outreach training in metacognitive skills. Metacognitive skills are a way for students with low cognitive intelligence quotient (IQ) to compensate and become academically prepared (Dunlosky & Metcalfe, 2009). Innovative institutional outreach may provide these four students with stipends as an informal noncognitive skills mentor.

**Cognitively underprepared/noncognitively underprepared.** Most of the participants were in the cognitive underprepared and noncognitive underprepared category. Seven or 78% of the nine participants in this category reported family issues such as a broken home and alcoholism. The participants' statements and the literature review suggested personal issues contributed to inconsistent actions and lack of goal setting during the k-12 experience. Morisano and Shore (2010) implied self-regulation may provide the basis for persistent action and further implicated personal goal setting as a direct engagement to address academic underpreparedness. Developmental outreach programs may need to focus on students' self-regulation skills, metacognitive skills, and cognitive skills, as these skills provide a foundation for academic preparedness.

However, the cognitive underprepared/noncognitive underprepared category may represent the most challenging level of academic underpreparedness and developmental outreach programs may need to find other solutions as well. Students who are classified within this category may require Blair and Diamond's (2008) alternative perspective, which views self-regulation as a balance between cognitive control and emotional arousal, suggesting students' awareness of optimal balance may improve their academic preparedness. Developmental outreach programs should consider the self-regulated learning strategies recommended by Vukman and Licardo which include planning, monitoring, regulation, reflection, and linking to academic achievement outcomes.

Vulman and Licardo (2010) argued self-regulation of metacognitive skills was an important indicator of academic preparedness. The formation of these noncognitive auxiliary skills may become the solution for improving developmental education, as these skills are malleable during adulthood and late adolescents. This is consistent with Heckman (2008), Cunha and Heckman (2008; 2009) and Vygotsky (1978), who advocated auxiliary skills were the formation of abilities such as controlling behavioral impulses and the ability to plan. Figure 2 provides a subjective illustration of noncognitive influences on participants' self-regulation (i.e., control of thoughts, attention, and actions) and their metacognitive skill (i.e., an ability to plan for the future).



*Figure 2*. The potential influences on students' self-regulation and metacognition may

also influence their academic preparedness.

### **Central Research Question Findings**

For this portion of the study, answering the central research question provided an understanding of the ways noncognitive factors in four noncognitive areas affected participants' academic preparedness. The central research question was: *in what ways do noncognitive factors influence the preparedness of academically underprepared students at Northern New Mexico College*? Each noncognitive area from the Figure 1 model in chapter 1 was essential for understanding the relationship between the central research question and the four noncognitive factors: personal factors, early educational factors, affective factors, and noncognitive skill factors. Five research sub-questions were useful toward discovering the influence of these four noncognitive areas.

**R1: Research sub-question 1.** The question of *how do academically underprepared college students perceive their college lived experience* was essential to start the process of understanding the phenomenon of academic underpreparedness. This initial question allowed the participants to become comfortable talking freely about their thoughts concerning their experiences at NNMC. However, under probing, many participants perceived negative experiences with the admissions staff when they enrolled. These negative experiences revealed that admissions personnel at NNMC were in many instances rude to enrolling students and made them feel awkward for merely asking questions, which may be a symptom resulting from a lack of institutional cohesiveness. However, most participants perceived their college experience as positive primarily as a result of student support services that included link courses, also known as the bridge program. **R2:** Research sub-question 2. The second research sub-question: *how do academically underprepared college students perceive their lived experience related to early educational factors before and during k-12*, had a primary focus on *early educational factors* before college. Most participants perceived their early educational experiences as a mixed perception of receiving attention from some family members but not necessarily from their parents. Participant's perception of school during this early education period before college was of having some helpful and inspiring teachers but these experiences were sporadic. Most academically underprepared college students perceive *early educational factors* before and during k-12 as a negative experience in which broken homes, family issues, and poor decision-making were common. The majority of negative experiences were the result of *personal factors* explored in the third research sub-question.

**R3:** Research sub-question 3. For the third research sub-question concerning *how do academically underprepared students in college describe lived experience related to personal factors that may help or hinder their educational experiences*, participants described many commonalities of negative family issues and personal issues. Nine (i.e., 56%) participants did not enjoy their school experience or their home life experience and many of these participants developed negative behaviors such as alcohol usage and skipping school. The remaining seven (i.e., 44%) participants perceived some aspects of school or home life as an enjoyable experience but many of these participants still developed negative personal issues such as drinking alcohol or marrying an alcoholic spouse. In this study, most participants described *personal factors* as hindering rather

than helping their educational aspirations. Conversely, the same participants provided a different perspective with regard to the fourth research sub-question.

**R4:** Research sub-question 4. The fourth research sub-question was *in what ways do academically underprepared college students describe lived experience related to affective factors such as overcoming the challenges they face in obtaining a college degree*? With the help of financial aid and link courses, participants described their motivation and determination to obtain a college degree as an attitude of *not to be denied*, no matter what occurred in their life. Participants described that they wanted to feel a sense of self esteem through personal accomplishment and to feel good about themselves. To answer the question academically underprepared college students described the confidence that a new found maturity of self-control and financial aid provides when obtaining a college degree.

R5: Research sub-question 5. The fifth research sub-question concerning *what influences do creativity and practical skills have on participants' lived experience related to their academic preparedness*, was suggestive of more positive influences than lecture alone. Most of the participants recognized the important influence of creativity and practical skills combined with cognitive skills. Creative and practical skills influence life skills and make education fun; the academic preparedness of underprepared college students may become enhanced by these skills. However, one participant described skills such as creativity and practical skills as not important because they were not part of the educational system and therefore not needed to complete a college degree. Answering the five research sub-questions was a method for addressing the central research question and satisfying the purpose of the study.
## Purpose and Significance to Leadership

The purpose of the study was to discover, through the exploration of lived experiences, the influence of noncognitive factors on college students' academic preparedness. The results of this study may provide educational leaders with a better understanding of academic preparedness for underprepared college students. In the past, cognitive skill testing was at the heart of an attempt to provide educational opportunities in the United States for every individual (Jackson, 2007). However, Lindqvist and Vestman (2011) noted that diverse gender and ethnic populations of students may benefit more by focusing on their noncognitive skills rather than on their cognitive skills. Exploring the ways noncognitive factors may shape cognitive skills is significant to community college leadership for developing support systems to better assist students' academic preparedness.

Jurgens (2010) reported nearly 50% of the graduates from 4-year institutions are students beginning their educational aspirations through community colleges. To improve the promise of community colleges and of developmental programs associated with these colleges, educational leadership must consider the importance of noncognitive factors in relation to self-regulation, metacognition, and cognitive skills. Educational leadership may need to refocus efforts so that community colleges use current knowledge of noncognitive factors for interventions, curriculum consistency, and academic preparedness standards.

#### **Research Limitations**

The research findings were only generalizable to other colleges that have similar diverse ethnic populations of academically underprepared college students. Subjective

bias may affect the research findings. To mitigate possible bias, the researcher disclosed potential bias with the phenomenon of academic underpreparedness and used participants' significant statements to verify subjective results and findings. In addition, the small sample size of 16 underprepared college participants was a limitation.

While metacognition studies concerning executive functions such as selfregulation and metacognitive functioning corroborates the importance of recognizing a disregulated emotional system (Crooks & Kirkland, 2010), these research studies do not elaborate on external forces influencing the disregulated emotional system. Sitzmann and Ely (2011) noted self-regulation as the most essential adult asset for enabling effective functioning in personal lives, workforce, and higher education. However, researchers primarily focused on individuals with disabilities in the investigation of this aspect of executive control and neglected the general adult population (Garner, 2009). Although the current study was not generalizable to the larger population, the study was an important step toward establishing ways that noncognitive factors may influence students' disregulated emotional system, thereby influencing their academic preparedness.

#### **Research Implications**

In this study, one major research implication was the influence of noncognitive factors seen from Vygotsky's developmental law in which social-cultural experiences through intertwining constructs of self-regulation and metacognition have an implicit influence on college students' academic preparedness. The current research focusing on four noncognitive areas suggested these factors may influence students' self-regulation and metacognition, thereby influencing their academic preparedness. Educators may use

noncognitive skills training to produce a better ROI than solely investing in building cognitive skills for adolescent and adult college students (Cunha & Heckman, 2009).

Another major research implication was that studies of noncognitive factor may become a focus for improving education. The current political trend toward measuring only students' cognitive skills suggests an incomplete understanding of the importance of noncognitive factors, especially concerning academic underprepared college students. Sternberg (2008), a noted educational psychologist, argued the change of focusing on noncognitive factors can occur without lowering academic preparedness standards.

#### **Recommendations to Educational Leaders**

Based on textual categories, structural themes, and creative synthesis, the first recommendation is to make learning enjoyable with less focus on lecturing while demonstrating practical, creative, and cognitive skills to develop life skills. Mathews (2010) reported students exhibited apathetic behaviors when a lack of hands-on activities and a lack of personal support were evident in the classroom. The current exploratory study revealed these noncognitive factors may have an integral and implicit complex structure of influence on academic preparedness.

The second recommendation entails providing self-regulation knowledge support for every student, as this may improve students' metacognitive planning skills and thereby improve their academic preparedness. According to Vukman and Licardo (2009), self-regulation of metacognitive skills is an important indicator of academic preparedness. Dunlosky and Metcalfe (2009) suggested students with a low IQ may compensate and become academically prepared through their metacognitive skills. Leadership in education may increase retention rates as well as improve the learning potential of every student by making him or her aware of his or her self-regulation and metacognitive abilities and training them to improve on these abilities.

The third recommendation entails providing college support services for every student, whether they seem to need it or not as a way to greet every student with a supportive and cohesive education atmosphere. Some students who did not know anyone at NNMC or did not identify as having a learning disability had a difficult time finding support at the beginning of his or her college education. In brief, NNMC offers many helpful college support services but apparently this information is not shared with the whole student population at the admissions counter during enrollment. Rather than community colleges applying for grants to provide college support services, community colleges may need to receive this funding without applying, as a regular part of providing educational college support services for the entire student population. Bailey (2009) noted both academically prepared and academically unprepared students have difficulty with their classes and recommended eliminating the misguided developmental distinction by providing assistance for every student.

Additionally, Morisano and Shore (2010) argued basing education on cognitive IQ scores may exclude gifted underachieving students. According to Morisano and Shore, gifted underachievers rely on nonacademic abilities such as creativity and intrinsic motivation. Noncognitive factors, when included with cognitive factors, may not only help gifted underachievers and academically underprepared college students but may also inform an out-of-date U.S. public educational policy.

## **Future Research Directions**

Future research directions may include researchers developing studies on noncognitive theory to update an out-of-date cognitive *g*-factor theory that continues as the current foundation for U.S. public education policy. Weel (2008) noted that cognitive skills based on IQ have one underlying aspect known as *g*-factor. Additional qualitative studies may provide another viewpoint to connect the many processes of noncognitive factors in one theoretical model. A quantitative study of the ways noncognitive areas jointly influence academic preparedness may also be needed.

Just as the Binet questionnaire became the foundation for IQ testing, noncognitive questionnaires can become the foundation for new cognitive/noncognitive life skills tests that consider both noncognitive and cognitive factors. The possibility of using noncognitive factors combined with cognitive factors as the foundation for U.S. public education policy may require future research to deal with the ever-growing population of underprepared adolescents and adults entering college. Huffman (2009) noted a potential loss in the trillions of dollars when comparing the U.S. educational system to educational systems in top-performing countries such as Finland and Singapore. Bailey (2009) noted "developmental education as it is now practiced is not very effective in overcoming academic weaknesses" (p. 12).

The premise that many noncognitive areas may influence students' self-regulation and therefore their metacognitive skills may require further study. Cunha and Heckman (2009) noted noncognitive factors are more malleable in late adolescence and adulthood than cognitive factors, which are more malleable in childhood. Research into how noncognitive factors effect self-regulation and metacognitive skills among the developmental periods of late adolescence and adults could benefit from future research, as self-regulation and metacognition may help academic underprepared college students compensate for low IQ.

## **Summary**

In summary, textual category 1, lived experiences before k-12, finding suggested a lack of parental involvement, but in reference to academic preparedness was questionable because the level of response between participants and parents were not accessible. Textual category 2, lived experiences during k-12, finding was a focus on personal factors such as lack of family support to suggest one possible reason for participants' unfortunate choices, which also contributed to their academic underpreparedness. Textual category 3, lived experiences during college, finding was that participants' motivation and perseverance was beneficial to their academic preparedness. Textual category 4, noncognitive factors, finding was that most participants suggested inspiring teachers made education fun and that creative and practical skills were just as important as cognitive skills but were not an integral part of their educational experience.

Structural themes 1, *positive experiences, informing of available services,* and *guidance for career planning,* finding was suggestive of a lack of institutional cohesiveness between instructional programs, student support services, and admissions counter personnel. Structural themes 2, *parental involvement* and *teacher involvement,* finding was suggestive of a lack of linkages and relationships between teachers and parents for improving students' academic preparedness. Structural themes 3, *behavioral choices, commonalities,* and *implicit complex structures,* finding was suggestive of the

ways that personal factors may hinder participants' academic preparedness with recommendations to ensure promoting their self-confidence as well as providing curriculum consistency. Structural themes 4, *confidence/self esteem*, *perseverance/determination*, and *convergent perspective*, finding was suggestive that noncognitive skill formation was just as important as cognitive skill formation in obtaining a better ROI within developmental education. Structural themes 5, *academic activities*, *broken bridge*, *divergent perspective*, and *self-control*, finding was suggestive of the ways noncognitive skill factors such as creative and practical skills have a positive influence on the academic preparedness of underprepared college students.

The textual categories and structural themes were vital toward discovering cognitive/noncognitive distinctions. The cognitively underprepared/noncognitively underprepared distinction included the majority of participants. This distinction finding suggested developmental programs may need to include more of students' noncognitive skills such as creative skills, practical skills, and knowledge of their self-regulation skills as well as their metacognitive skills than focusing on cognitive skills alone.

Textual categories and structural themes were also vital toward answering the five research sub-questions. The first research sub-question was how do academically underprepared college students perceive their college lived experience? Positive experiences were the initial perception of most participants' college experience. However, under probing, participants remembered that the admission personnel did not inform them of available services or about guidance for career planning. Instead, the participants lived experience about this information came later through their conversations with friends and teachers. The second research sub-question was: how do academically underprepared college students perceive their lived experience related to early educational factors before and during k-12? In essence, many of the participants' perceived early educational factors before k-12 as chaotic with much strife between their parents. However, the majority of them were read to but not by their parents but by their siblings or grandparents. Academically underprepared college students perceived early educational factors during k-12 as equally chaotic with sporadic positive lived experiences.

The third research sub-question was: how do academically underprepared students in college describe lived experience related to personal factors that may help or hinder their educational experiences? For this question, personal factors were integrated with interpretive phenomenological analysis, which provided a vast source of participants' commonalities through their direct quotes focusing on family issues and personal issues. For the most, participants described the noncognitive area of *personal factors* in their lived experience as hindering their educational experiences.

The fourth research sub-question was: in what ways do academically underprepared college students describe lived experience related to affective factors such as overcoming the challenges they face in obtaining a college degree? Participants described their challenges within a combination of affective factors such as perseverance and motivation combined with student support services to enhance participants' academic preparedness. They also described their current lived experience in college with an increased confidence in their chances of obtaining a college degree.

The fifth research sub-question was: what influences do creativity and practical skills have on participants' lived experience related to their academic preparedness? Fun

was a terminology found throughout participants' description in association with creativity and practical skills. In this study, underprepared college students suggested creativity and practical skills have a positive effect on their lived experiences and academic preparedness.

In mention to the four noncognitive areas found in the Figure 1 model, the study findings show that *early educational factors* were not consequential because the amount of interactions between parents and participants were not accessible. In reference to *personal factors*, this area was a commonality in participants' cognitive and noncognitive lived experiences and had a negative effect on most participants' academic preparedness. *Affective factors* were helpful toward participants' academic preparedness when converging with college support services. *Noncognitive skill factors* were vital for academic preparedness; however because they are not part of educational measures, this noncognitive area was a divergent factor.

The four areas of noncognitive factors found in Figure 1 were vital toward discovering cognitive/noncognitive distinctions, which provides researchers and educational leadership with information on ways to reform educational practice. Levin et al. (2010) argued reforming educational practice in community colleges may require a new way of organizing the educational experiences of students, faculty, administrators, and staff. The findings from the current study support Boylan (2009), who argued developmental education may need to expand cognitive assessments to include affective and personal factors. The current study also supports Sternberg (2008), who argued for a broader spectrum of abilities such as creative and practical skills, as part of students' educational life skills training.

The research results indicate noncognitive factors influence college students' academic preparedness in a variety of complex ways. Research limitations as well as research implications, research recommendations, and suggestions for future research were also discussed. This study added to the body of knowledge and understanding of the influence of noncognitive factors on academic preparedness.

The only other study found using different areas of noncognitive factors is Boylan's (2009) study, which advocated affective factors and personal factors become part of cognitive assessment during admissions. This study expanded on that study and four other studies by exploring four areas of noncognitive factors and discovered some of the ways that participants' self-regulation and metacognition were potentially influenced. Heath (2008) implied using the imagination can be an indispensable method for understanding the experiences of other individuals. This exploratory study focused on the influences of noncognitive factors on college students' academic preparedness from the academically underprepared college student's perspective.

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# Appendix A: Permission to Use Premises



## UNIVERSITY OF PHOENIX

## PERMISSION TO USE PREMISES, NAME, AND/OR SUBJECTS

(Educational Opportunity Center)

#### Located at Northern New Mexico College

Check any that apply:

I hereby authorize Danny Thom, student of University of Phoenix, to use the premises (facility identified below) to conduct a study entitled A Phenomenological Study: The influence of Noncognitive Factors on Academically Unprepared College Students.

I hereby authorize Danny Thom, student of University of Phoenix, to recruit subjects for participation in a study entitled A Phenomenological Study: The influence of Noncognitive Factors on Academically Unprepared College Students.

I hereby authorize Danny Thom, student of University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled A Phenomenological Study: The influence of Noncognitive Factors on Academically Unprepared College Students.

Signature Allario Pomero Date June 2, 2011 Print Name Hilario E. Remero

Title, Director of EOC

Address of Facility, 921 Paseo de Oñate, Espanola NM 87532

# Appendix B: Informed Consent Form

## UNIVERSITY OF PHOENIX INFORMED CONSENT: PARTICIPANTS 18 YEARS OF AGE AND OLDER

#### Dear

My name is Danny Thom and I am a student at the University of Phoenix working on a Doctor of Educational Leadership degree. I am conducting a research study entitled "A Phenomenological Study: The Influence of Noncognitive Factors on Academically Unprepared College Students." The purpose of the research study is to discover through the exploration of lived experiences, the influence of noncognitive factors on college students' academic preparedness.

Your participation will involve a face-to-face interview lasting less than one hour. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, you can do so without penalty or loss of benefit to yourself. The results of the research study may be published but your identity will remain confidential and your name will not be disclosed to any outside party.

In this research, there are no foreseeable risks to you except if you volunteer information about criminal activity such as drug use, but no interview questions will specifically seek to discover this information. Although there may be no direct benefit to you, a possible benefit of your participation is school leadership may use the general information to improve your support services, and the research findings may serve as a foundation for future studies.

If you have any questions concerning the research study, please call me at \_\_\_\_\_\_ or email me at \_\_\_\_\_\_.

As a participant in this study, you should understand the following:

- You may decline to participate or withdraw from participation at any time without consequences.
- 2. Your identity will be kept confidential.
- Danny Thom, the researcher, has thoroughly explained the parameters of the research study and all of your questions and concerns have been addressed.
- 4. If the interviews are recorded, you must grant permission for the researcher, Danny Thom, to digitally record the interview. You understand that the information from the recorded interviews may be transcribed. The researcher will structure a coding process to assure that anonymity of your name is protected.
- Data will be stored in a secure and locked area. The data will be held for a period of three years, and then destroyed.
- 6. The research results will be used for publication.

"By signing this form you acknowledge that you understand the nature of the study, the potential risks to you as a participant, and the means by which your identity will be kept confidential. Your signature on this form also indicates that you are 18 years old or older and that you give your permission to voluntarily serve as a participant in the study described."

Signature of the intervieweeSignature of the researcher	Date Date	_
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# Appendix C: Interview Protocol and Questions

## INTERVIEW PROTOCOL AND QUESTIONS

Study Title: A Phenomenological Study: The Influence of Noncognitive Factors on Academically Unprepared College Students

Location: \_\_\_\_\_

First, thank the participant for participating and review the study purpose, review confidentiality, and review informed consent.

Before the interview begins, ask the participant if there are any questions, then have the participant sign the consent form. Remind the participant that the interview will be audio-recorded, and then ask for permission to start the recording.

- The interview begins with a general question such as (1) *in general; tell me about the experiences, good or bad in college, you have had during your education.* This is then followed with probing questions like *can you tell me a little more about* \_\_\_\_\_\_ or *tell me what you mean when you stated* \_\_\_\_\_\_. In general, repeat this for each question by starting with a general question, then followed by probing questions depending on what the participant is focusing on.
- In an attempt to stay consistent with the proposed study purpose, and to understand the ways noncognitive factors influence academic preparedness, participants will be asked to explore their lived experiences in each noncognitive area mentioned in this study. To explore early educational factors, the general question will entail (2) *describe any experience you have with someone reading to you as a child, or if no recollection, ask to describe their K-12 experience.* This is then followed with probing questions.
- To explore personal factors, the question will entail (3) *describe a personal issue that may help or hinder your ability to obtain a college degree.* This is then followed with probing questions.
- To explore affective factors, the question will entail (4) **this question does not** relate to previous questions, *describe how you will overcome the challenges you face in obtaining a college degree*. This is then followed with probing questions.
- To explore noncognitive skill factors, the question will entail (5) *describe an educational situation in which a teacher inspired you to think creatively or use practical skills.* This is then followed with probing questions.

Thank the participant for donating their time and give the participant \$20.00, and ask if the participant is willing to verify the verbatim transcript from the audio recording as well as textual categories. If so, then arrange a day and time for the meeting.

# Appendix D: Nondisclosure Agreement


## Non-Disclosure Agreement

GMR Transcription Services, Inc., acknowledges that in order to provide the services to Danny Thom (hereinafter "Researcher") who is a researcher in a confidential study with the University of Phoenix, Inc., GMR Transcription Services, Inc., must agree to keep the information obtained as part of its services (as more fully described below) confidential. Therefore the parties agree as follows:

- The information to be disclosed under this Non-disclosure Agreement ("Agreement") is described as follows and shall be considered "Confidential Information": <expressly describe information> <u>Digital Audio Recordings and verbatim transcripts of these recordings</u>, All information shall remain the property of Researcher.
- 2. GMR Transcription Services, Inc. agrees to keep in confidence and to use the Confidential Information for *transcription* only and for no other purposes.
- 3. GMR Transcription Services, Inc. further agrees to keep in confidence and not disclose any Confidential Information to a third party or parties for a period of five (5) years from the date of such disclosure. All oral disclosures of Confidential Information as well as written disclosures of the Confidential Information are covered by this Agreement.
- 4. GMR Transcription Services, Inc. shall upon Researcher's request either destroy or return the Confidential Information upon termination of this Agreement.
- 5. Any obligation of GMR Transcription Services, Inc. under this Agreement shall not apply to Confidential Information that:
  - a) Is or becomes a part of the public knowledge through no fault of GMR Transcription Services, Inc.;
  - b) GMR Transcription Services, Inc. can demonstrate was rightfully in its possession before disclosure by Researcher/ research subjects; or
  - c) GMR Transcription Services, Inc. can demonstrate was rightfully received from a third party who was not Researcher/research subjects and was not under confidentiality restriction on disclosure and without breach of any nondisclosure obligation.
- 6. GMR Transcription Services, Inc. agrees to obligate its employees or agents, if any, who have access to any portion of Confidential Information to protect the confidential nature of the Confidential Information as set forth herein.
- 7. GMR Transcription Services, Inc. shall defend, indemnify and hold the Researcher and the University of Phoenix harmless against any third party claims of damage or injury of any kind resulting from GMR Transcription Services, Inc. use of the Confidential Information, or any violation of by GMR Transcription Services, Inc. of the terms of this Agreement.

- 8. In the event GMR Transcription Services, Inc. receives a subpoena and believes it has a legal obligation to disclose Confidential Information, then GMR Transcription Services, Inc. will notify Researcher as soon as possible, and in any event at least five (5) business days prior to the proposed release. If Researcher objects to the release of such Confidential Information, GMR Transcription Services, Inc. will allow Researcher to exercise any legal rights or remedies regarding the release and protection of the Confidential Information.
- 9. GMR Transcription Services, Inc. expressly acknowledges and agrees that the breach, or threatened breach, by it through a disclosure of Confidential Information may cause irreparable harm and that Researcher may not have an adequate remedy at law. Therefore, GMR Transcription Services, Inc. agrees that upon such breach, or threatened breach, Researcher will be entitled to seek injunctive relief to prevent GMR Transcription Services, Inc. from commencing or continuing any action constituting such breach without showing or providing evidence of actual damage.
- 10. The interpretation and validity of this Agreement and the rights of the parties shall be governed by the laws of the State of California.
- 11. The parties to this Agreement agree that a copy of the original signature (including an electronic copy) may be used for any and all purposes for which the original signature may have been used. The parties further waive any right to challenge the admissibility or authenticity of this document in a court of law based solely on the absence of an original signature.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf:

rinted Name of Third Party/Vendor:
ignature:
Address:
Date:
rinted Name of Researcher:
ignature:
Address:
Date:

## Appendix E: Confidentiality Statement



## **CONFIDENTIALITY STATEMENT**

As a researcher working on the above research study at the University of Phoenix, I understand that I must maintain the confidentiality of all information concerning all research participants as required by law. Only the University of Phoenix Institutional Review Board may have access to this information. "Confidential Information" of participants includes but is not limited to: names, characteristics, or other identifying information, questionnaire scores, ratings, incidental comments, other information accrued either directly or indirectly through contact with any participant, and/or any other information that by its nature would be considered confidential. In order to maintain the confidentiality of the information, I hereby agree to refrain from discussing or disclosing any Confidential Information regarding research participants, to any individual who is not part of the above research study or in need of the information for the expressed purposes on the research program. This includes having a conversation regarding the research project or its participants in a place where such a discussion might be overheard; or discussing any Confidential Information in a way that would allow an unauthorized person to associate (either correctly or incorrectly) an identity with such information. I further agree to store research records whether paper, electronic or otherwise in a secure locked location under my direct control or with appropriate safe guards. I hereby further agree that if I have to use the services of a third party to assist in the research study, who will potentially have access to any Confidential Information of participants, that I will enter into an agreement with said third party prior to using any of the services, which shall provide at a minimum the confidential obligations set forth herein. I agree that I will immediately report any known or suspected breach of this confidentiality statement regarding the above research project to the University of Phoenix, Institutional Review Board.

Signature of Researcher

Printed Name

Date

Signature of Witness

Printed Name

Date