

DISSERTATION

UNDERSTANDING THE EPISTEMOLOGICAL DEVELOPMENT OF SUBSTANCE
ABUSING COLLEGE STUDENTS: A CONSTRUCT EXPLORATION STUDY

Submitted by

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School of Education

In partial fulfillment of the requirements

For the Degree of Doctor of Philosophy

Colorado State University

Fort Collins, Colorado

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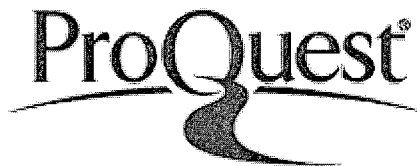
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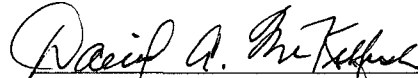
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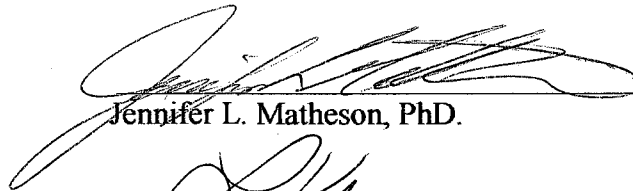
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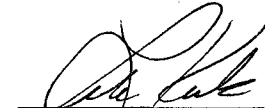
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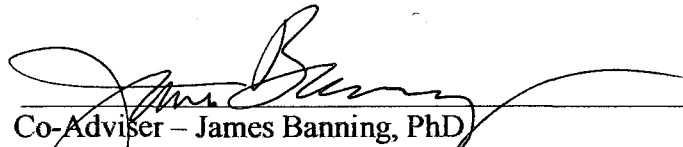
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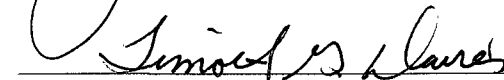
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ABSTRACT OF DISSERTATION

UNDERSTANDING THE EPISTEMOLOGICAL DEVELOPMENT OF SUBSTANCE ABUSING COLLEGE STUDENTS: A CONSTRUCT EXPLORATION STUDY

The purpose of this study was to delve into the epistemological constructs of substance abusing college students and explore whether consistencies with Baxter Magolda's (1992) epistemic constructs were indicated. The study utilized a qualitative, narrative inquiry research design framed by Baxter Magolda's interview outline.

Interviews were conducted with five, college, males each of who were in a leveraged, substance abuse, campus treatment model. All five men had experienced significant consequences related to substance abuse and had been assessed by substance abuse professionals. The same questions regarding the role of the learner, the role of the instructor, the role of peers, the role of evaluation, and the nature of knowledge were employed with each participant. The method of template analysis was utilized to examine and understand the rich narratives of participants by deductively searching for categories outlined by the theoretical underpinnings of cognitive theorists and inductively exploring emerging themes.

The findings of the study revealed a consistency between the epistemic constructs of the participants and Baxter Magolda's (1992) epistemic constructs of absolute and transitional knowing. The findings tentatively suggested that an epistemological delay was present among some participants. The emergence of voice and a utilitarian value of learning emerged as relevant themes regardless of the participant's epistemic construct.

This study provides a foundation in understanding the significance of the epistemological development of substance abusing college students. The findings

suggest that the epistemological development of college students may be an important consideration in designing and implementing substance abuse intervention strategies.

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DEDICATION

FOR ALL COLLEGE STUDENTS WHO HAVE FACED THE DIFFICULTIES OF
SUBSTANCE ABUSE; FOR FAMILIES AND THOSE WHO LOVE THEM; AND
FOR THOSE PROFESSIONALS WHO PROVIDE TREATMENT AND
ACCOUNTABILITY

FOR ALL BACK ON TRAC STUDENTS: PAST, PRESENT, & FUTURE...

FOR ALL THOSE WHOSE VISION AND CREATIVITY SUPPORTED AND
DEVELOPED THE COLORADO STATE UNIVERSITY'S DAY PROGRAMS
OFFICE.....

THIS DISSERTATION IS DEDICATED TO EACH OF YOU.

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There are many people who provided me with support and encouragement throughout my educational journey that made this achievement possible. I am grateful to those who enabled me to move ahead when I wondered if it was even possible.

To my parents: you taught me to dream big and believe in myself. You showed me the journey is to be enjoyed as much as the destination. You taught me to love learning, embrace all others, and be true to myself. You are always near to me providing support when I need, encouragement when I'm down, guidance when I'm confused, and a rare kick when I deserve one. Your unwavering love is a constant in my life and you have shown me that nothing could ever change that. You are present in every page that unfolds.

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CHAPTER I: INTRODUCTION

Colleges and Universities are faced with increasing challenges as society demands high expectations of graduates who are well prepared to engage in a complex, diverse, and multi-faceted world (Keeling, 2004). Skills in problem solving, critical thinking, knowledge acquisition under changing conditions are not only needed in the market place, they are in high demand for effective and engaged citizenship (Baxter Magolda, 1999; Kegan, 1994).

Student development researcher Robert Kegan (1994) reflects that it is not simply these particular skills society is demanding. In a growing and complex world, society demands the organization of our experience. Kegan refers to organizing our experience as self-authorship. "Self-authorship is simultaneously a cognitive (how one makes meaning of knowledge), interpersonal (how one views oneself in relationship to others), and intrapersonal (how one perceives one's sense of identity) matter" (Baxter Magolda, 1999, p. 10). Kegan argues that development in each of these areas is required to utilize the skills that society demands.

However, some students have a very difficult journey in meeting these complex demands. College students who abuse substances may not be as prepared with the skills society demands as are their peers. In fact, college students who have a history of substance abuse experience a myriad of negative consequences during the same developmental years all students are expected to be building the necessary skills to be successful in the world (Aertgeerts & Buntix, 2002; Baer, 2002; Baer, Kivlahan, Blume, McKnight, & Marlatt 2001; Brook, Richter, & Rubenstone 2000; Caron, Moskey, & Hovey, 2004; Dawson, Grant, Stinson, & Chou, 2005; Fenzel, 2005; Ham, & Hope,

2003; Hingson, Heeren, Zakocs, Kopstein, Wechsler, 2002; Johnston, O'Malley, Bachman, & Schulenberg, 2001, 2003, 2006, 2008; National Center on Addiction and Substance Abuse, 2003; Perkins, 2002; Singleton, 2007; Vik, Tate, Carrello, & Field, 2000). Can substance abusing college students develop the skills of self-authorship? Are there delays in the cognitive epistemological development of substance abusing college students that may provide university professionals new insights into transforming skill deficits into learning opportunities?

Researcher and teacher Marcia Baxter Magolda has spent her life's work creating an epistemological frame with which to understand college students' cognitive development. Baxter Magolda's (1992) epistemological reflection model described four ways in which traditional-age college students perceive knowledge: concrete knowing, transitional knowing, independent knowing, and contextual knowing. This groundbreaking research not only provided an understanding of cognitive constructs, but also provided a multi-disciplinary field of professionals tools that may positively impact individual's development enabling the acquisition of more and complex skill sets (Baxter Magolda, 1989, 1999, 1992, 2008; Baxter Magolda & King, 2004; Pizzolato, 2004; Pizzolato, 2003). If applied to substance abusing college students, would these same epistemological constructs emerge? Utilizing these epistemological constructs, could new ways of interventions be designed for students whose substance use has disrupted their ability to gain the necessary tools to be successful in today's world?

Statement of the Problem

When Samantha Spady died in Fort Collins, Colorado over the 2004 Labor Day weekend, the statistics of college drinking suddenly took on the face of a beautiful,

young, seemingly successful woman. In the weeks that followed, three other college students from the state of Colorado tragically lost their lives in alcohol related deaths. Every year, colleges across the country are faced with similar tragedies of lives prematurely and pointlessly cut short (Hingson, Heeren, Winter, & Wechsler, 2005; Hingson, Heeren, Zakocs, Winter, & Wechsler, 2003; Hingson, et al., 2002; National Center on Addiction and Substance Abuse, 2003; O'Malley & Johnston, 2002; Vik et al., 2000; Weitzman, Nelson, Lee, & Wechsler, 2004).

The ramifications of high-risk drinking have risen to the point of the highest priority health risk for college students (Lee, Gledhill-Hoyt, Maenner, Dowdall, & Wechsler, 2002; National Center on Addiction and Substance Abuse, 2003; NIAAA, 2002; O'Malley & Johnston, 2002; Turrisi, Wiersma, & Hughes, 2000). Despite the recent evidence that suggests a growing number of alcohol abstaining students on campus, frequently excessive and severe substance use plagues college campuses in record numbers (Hingson, et al., 2005; Hingson, et al., 2003; O'Malley & Johnston, 2002; Wechsler, Lee, Kuo, Seibring, Nelson, & Lee, 2002). Student deaths, near deaths, transportation to detoxification centers or hospitals, encounters with police officers, altercations with staff members and roommates, are problems every college administrator knows all too well. Administrators and researchers alike have sought new and creative ways for inroads to sustainable change in problematic student behaviors that have been fueled by alcohol and other drug abuse.

Several compilations and key studies have been utilized to understand the magnitude of substance use and trends over the last several decades on college campuses (Wechsler, et al., 2002; Wechsler, Lee, Kuo, & Lee, 2000; National Center on Addiction

and Substance Abuse, 2003). These studies have primarily focused on alcohol use and its consequences. These studies have commonly utilized the definition of binge drinking as consuming 5 or more drinks in one sitting for men, and 4 in a row for women.

Approximately two in five college students drink more than this, which puts them in the category of a heavy episodic drinker, or in a high-risk range. In a 2002 study, Dowdall & Wechsler (2002) found the following:

Frequent heavy episodic drinkers were defined in the same study as those students who had three or more episodes of heavy episodic drinking in the 2 weeks before responding to the survey. Roughly one in five college students can be so classified, and this 23% of students consumes 72% of all alcohol used by college students and experiences more than 60% of the major alcohol-related problems... (p18).

Although research has shown a small increase from 47% to 51% during the years of 1993 to 2001, binge drinking rates have remained fairly steady in the past 15 years (Lee et al., 2002, Wechsler et al, 2002, Wechsler et al, 2000). Binge and extreme drinking coincides with the related consequences that harm individuals and the community (Engs & Hanson, 1990; Lee et al., 2002; National Center on Addiction and Substance Abuse, 2003; NIAAA, 2002; O'Malley & Johnston, 2002; Turrisi et al., 2000).

Binge or high-risk drinking and substance abuse does not come without extensive consequences. These consequences are felt by the individual, the community, and by the institution. Wechsler and colleagues, (2002) reported that between 1993 and 2001, personal consequences have risen significantly in regards to encounters with police, personal injury, and academic difficulties. Additionally, nearly 30% of students admitted

to driving after drinking. Frequent binge drinkers were 21 times more likely to have 5 different alcohol related problems, than non-binge drinkers (Wechsler et al, 2000).

Personal consequences can also include missing classes, unprotected or unwanted sex, and difficulty with campus police. In fact, frequent binge drinkers are seven to ten times more likely to engage in risky behaviors such as unprotected or unplanned sex, property damage, drawing attention to themselves in one form or another to the point where an encounter with the police is needed (Hingson et al, 2003; Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994).

These consequences need to be put into perspective. According to an extensive study done by Hingson, and colleagues (2002), the consequences are staggering and serious. In 1998, college students who died in fatal traffic accidents related to alcohol numbered 1,138. Additionally, it is anticipated that approximately 500,000 students are injured annually due to the volume of their drinking. Another 630,000 students were victims of assault in 1998 due to an escalation of a verbal altercation inspired by anger fueled from alcohol. Finally, "... in that year, nearly 400,000 full-time students nationwide may have had unprotected sex as a result of drinking. Over 70,000 [students] were victims of a sexual assault or date rape, a problem reported by 1.5% of respondents" (p. 141).

Although volumes of data has been compiled, studied, reviewed, and utilized to educate college students, the consequences have not been dramatically altered. There remains a need to creatively explore the substance use of college students with new lenses.

Purpose of the Study

The focus of the study is to delve into the cognitive narratives of college students whose substance abuse has resulted in significant consequences. Through each participant's narrative response to targeted questions, the researcher hopes to explore Baxter-Magolda's (1992) cognitive constructs of Absolute Knower, Transitional Knower, Independent Knower, and Contextual Knower with substance abusing college students. If the constructs are validated, any indication that delays are present within the domain of the interview will be explored. Through each participant's cognitive focused interview, the study hopes to identify and understand the "impacts of discourses as they were taken up or rejected" (Pamphilon, 1999, p. 394).

By understanding the epistemological lens of substance abusing college students, more effective interventions may emerge. The development and implementation of these interventions are critical in engaging high-risk substance users to systemically change behavior. Currently, practitioners do not definitively know the complex ways in which substance use may impact epistemological development. The study explores whether or not Baxter Magolda's (1992) cognitive constructs are present, and if there may be any indication that the constructs appear to be delayed. Although the scope of this study will not identify a causal relationship between substance abuse and delayed epistemological development, it may provide the impetus for further research that explores this relationship. As the literature review will show, there is a glaring absence of epistemological identity development research regarding substance abusing college students.

Significance of the study

Developmentally, alcohol in particular, plays a defining role in the rite of passage to adulthood and has been at the core of the college social scene (Andrews, Hops, & Duncan, 1997; Boyle & Boekeloo, 2006; NIAAA, 2002). Experimentation and use of alcohol is a very tangible form of separation from parents and other authority figures. Over time however, more and more of the experimental use that historically occurred within the college environment is occurring at younger ages. Many students are engaged in experimental use as early as junior high which may become chronic abuse by high school (Hingson et al., 2003). This pattern, along with the way students expect and normalize excessive drinking as the standard of behavior in college, creates a very complex problem for campus professionals (DeJong, Schneider, Towvim, Murphy, Doerr, & Simonsen, 2006; Kilmer, Walker, Lee, Palmer, Mallett, & Fabiano, 2006).

Current prevention strategies include educational based population prevention, policy development, individual educational sanctions, brief motivational interviewing, environmental coalition building, and social marketing. According to DiClemente (2003), bias regarding substance use can impact the consistency of policies and the purpose of interventions. Clearly, there is no single substance use intervention strategy that meets the needs of the entire campus community. College professionals must respond in a much more sophisticated way with a range of intentional strategies that meet the unique needs of each campus. These strategies must span the entire continuum of use from abstinence all the way to dependency (American Medical Association, 2000, 2003; Baer, 2002). Although prevention has been a primary tool, research data highlighting the volume of students with more significant issues beckons campus personnel to explore an

appropriate range of treatment options (Knight, Wechsler, Kuo, Seibring, Weitzman, & Schuckit, 2002; National Center on Addiction and Substance Abuse, 2003; O'Malley & Johnston, 2002).

Treatment has emerged as a key issue for high risk substance abusing students either before they attend institutions of higher education or while on campus. There has been a substantial increase in the number of young people in need of treatment since the 1990's. For example, "In 1995, one in five (21%, or 262,112) of the clients who were admitted to alcohol treatment programs were under the age of 24..." (National Center on Addiction and Substance Abuse, 2003, p. 50). However, only one in six who were in need of treatment received treatment services due to the lack of appropriate resources. Of those who received treatment, most were between the ages of 12 and 17 years old. Some facilities will not treat any participant under 21 years old. For those in college, there may be additional confounding factors. The cost of treatment programs can be a competing financial priority for college students.

This study may contribute to the Student Affairs profession by understanding the way in which substance abusing students cognitively view the world in which they have already been experiencing negative consequences. The cognitive lens of this high risk student group has not been adequately addressed in the literature. By understanding these cognitive lenses in addition to the breadth of research on substance abuse, effective new strategies of intervention may be identified through further epistemological research. The interventions currently utilized have had limited impact on those in the highest risk categories. Current strategies include targeted campus wide policies that frame a judicial

response, environmental strategies, and individual education (Barnett & Read, 2005; Larimer, Kilmer, & Lee, 2005; Perkins, 2002; White, 2006).

New strategies must be developed to make systemic change in high risk substance abuse fueled behavior. Helping students identify personal values, acquire critical decision-making skills, and create goals may spawn positive individual and community outcomes. It is time to explore ideas such as empowering students to self-author or craft their own identity rather than allowing others to negatively create one. New strategies may impact a larger number of students and therefore contribute to more positive outcomes in the debilitating cycle of substance abuse. Whether a student is using substances to combat peer pressure or deal with social anxiety, these critical skills are powerful tools to engage in long term, healthy decision-making (Gilles, Turk, & Fresco, 2006).

Research Focus

Baxter Magolda (1992) focused on the epistemological development of college students and found four distinct and increasingly complex constructs. The first three constructs reflect a gendered archetype of cognitive views and corresponding behavior patterns. Baxter Magolda's qualitative approach created an interview strategy that invited students to engage in epistemological reflection. Key components of the interview included the role of the learner, the role of peers, the role of the teacher, evaluation, and the nature of knowledge (Baxter Magolda). Baxter Magolda's work built upon other cognitive theorists in the field and moved beyond constructs that solely reflected an academic domain. She linked the development of voice with increased learning in both curricular and co-curricular contexts. Baxter Magolda's longitudinal

study over five years focused on college participants with a very similar profile. As chapter two will discuss in more detail, this population was nearly homogenous regarding race, high academic achievement, high collegiate involvement, and middle to upper class socio-economic class.

The focus of this study has a primary and secondary focus. The primary focus addresses the following two questions: (1) is there an indication that the epistemological constructs of substance abusing college students are consistent with Baxter Magolda's (1992) epistemological constructs, and (2) if the constructs are consistent, is there any indication that reflects a delay in the epistemological developmental of these students? The secondary focus addresses the identification of underlying themes. Deductively, the three broader threads identified by Baxter Magolda are considered. Inductively, the study identifies emergent themes.

At the root of this study is the goal of transformative development for a population of college students that has perplexed and confounded countless higher education administrators. Baxter Magolda's (1992) research provides a critical framework for delving in to the cognitive view of this population. It opens the door for further exploration of the role epistemological development may play in transforming treatment and academic outcomes. Participants for the study were chosen from an institution that utilizes a leveraged, collaborative, intensive out-patient treatment program.

Colorado State University's Back on TRAC program has been implemented for seven years. Students are referred to the program due to significant behavioral issues that have violated the student code of conduct. Student's consumption ranges from abusing a

single substance to poly-substance dependency. Although they reflect a range in use, all of them share the commonality of high risk. Five voluntary participants in phase 2 of the program were chosen for the study. Due to the overwhelming majority of men in the program, five undergraduate males ranging in academic class were purposefully chosen for the study.

Research Limitations & Delimitations

The target population may appear to be a sample of convenience at first glance. However, due to the rarity of prolonged treatment with extensive assessments in higher education institutions, the sample choice appeared to be very limited. The delimitation imposed prior to the study was to focus on Colorado State University, the only collaborative and leveraged treatment program that includes a thorough assessment. This may have significant bearing upon the applicability of findings to other institutions. As chapter three will discuss, transparency of the context and purposeful sampling will enable readers to determine the applicability to other institutions.

My professional involvement with this population at CSU is extensive. I currently serve as a member of the CSU Back on TRAC staffing team. My interactions with the students in the program vary to a wide degree. Due to my position, I waited until the fall 2008 semester to interview participants as my administrative duties increased and I was no longer in the role of the primary Back on TRAC judge. As the back-up Back on TRAC judge, I served in this powerful role very infrequently. I invited a colleague to serve as the second evaluator in the template analysis process to increase inter coder reliability and reflexivity in the research. The peer reviewer is Jody Donovan, PhD, the Associate Dean of Students and Executive Director of Parent and Family

Programs at Colorado State University. As a part-time faculty member in the CSU School of Education, Dr. Donovan co-teaches a course in College Student Development Theory. Through this role, she is very familiar with Baxter Magolda's(1992) model but has no direct contact with the Back on TRAC program.

Baxter Magolda's (1992) methodology included annual interviews for five consecutive years. This study includes one interview from five, substance abusing, male students. Students average 6-8 months in the program so the time period of the study was significantly limited.

The scope of substance abuse among college students is clearly well documented. The limitations and the delimitations, the qualitative paradigm, and the constructivist theoretical underpinnings certainly make generalizability nearly impossible. However, limitations, delimitations, methodological choices, and theoretical underpinnings create opportunities for the transferability of epistemological significance. Influencing epistemological development may positively impact student's self-understanding and the acquisition of additional skill sets that enable college success.

Researcher's Perspective

My journey into the world of alcohol and substance abuse began long before I started my career as a Colorado State University hearing officer in 2001. My journey was impacted even before my generation was born. There was a history of substance use that continues to remain partially hidden. This particular room, in my own metaphorical psycho-social home (Chickering & Reiser, 1993), has just begun to be a place of unfolding familiarity and understanding. In the past, this room has been clouded with the shrouds of secrets and hushed tones of generational tragedy.

I am the youngest of six siblings; all female, and all touched by the same quiet, yet powerful influence of the past. Each of us has been touched in a variety of ways. Our journey was buffered by parents who rarely imbibed, let alone abused any type of substance, but the impact continues in both subtle and not so subtle ways. Daily choices, life partners, significant relationships, and past regrets can all be viewed through the lens of substance abuse. I was 25 years old when my mother first shared her story of growing up in a home negatively impacted by substance abuse. She does not share those stories often, but the impact continues through multiple generations.

Professionally, my role as a university hearing officer gave me a new lens with which to view the consequences of abusing substances during the college years. Recidivism enabled me to have multiple contacts with high risk substance abusing students. My own values helped me separate students' behavior and identity. Because of my values, I can easily recall many faces of the students I dismissed for substance fueled behaviors. It was a difficult task. Each of these students made choices and I fully support accountability. However, the sheer scope of the problem has propelled me to ask questions about university policies and interventions. This provided me with a very powerful motivation when I was approached to work with a team of others to create a campus drug court model that would offer high risk users an additional university intervention. In addition to being a university hearing officer, I was also co-teaching a Student Affairs in Higher Education graduate course in student development theory. Combined with my personal exposure, being a hearing officer and student development theory advocate enabled me to bring another perspective to the team.

As a result, cognitive and psycho-social developmental interventions were intentionally woven into the treatment program along with traditional substance abuse treatment, assessment, and accountability. The team purposefully sought out cognitive instruments that would provide clinical guidance and valuable research data. This process proved to be much harder than first imagined as it is difficult to find examples and instruments in the literature for this population that meet both clinical, research, and evaluative needs.

Embarking on the journey to complete a dissertation is a daunting task, but one I felt compelled to travel. I am quite fortunate to have experienced transformational learning along the way. The process has touched the whole of my being. All aspects of my identity have been challenged to look at the world, the roles I play, and the relationships in which I am involved, in new ways. As I took each step on this journey, I could see the faces of the students with whom I am privileged to work. Along the way, I have encountered their struggles, their fears, their privilege and self-centeredness, their hopes, their dreams, their failures, their reflections, their disappointments, their use, their relapses, their healed relationships, and most blatantly, their growth. Each student I have encountered has brought a richly storied and complex life. I have been irrevocably touched by how each has uniquely and diligently searched for meaning.

Wherever I go, there I am; all of me complete. As researcher, daughter, sister, judge, friend, teacher, learner, sojourner, colleague, partner, aunt, woman, and student my whole self has been engaged in this project. I whole-heartedly profess that my own storied life has impacted my choices, methodology, interpretations, and findings of what is enfolded into these chapters.

Overview of the Study

The dissertation is divided into five chapters. Chapter I provides an overview of the topic outlining the purpose and significance of the study, significant issues faced by colleges regarding the substance abuse of students, an overview of college strategies, and the development of collaborative treatment programs. Chapter II assembles a review of literature that is foundational to epistemological identity development. A review of college students' substance abuse trends is provided in addition to defining key concepts, outlining the breadth and depth of consequences, and reviewing the characteristics of students engaged in high risk use. Chapter II also reviews college strategies and responses to problem drinking and other drug use. Chapter III outlines the research methods, paradigms, and theoretical constructs that provide the framework and approach to the study. Chapter IV assembles the findings of the project including rich narrative descriptions from each participant's epistemological dialogue. It also weaves together the stories, themes, and concepts that emerge from the data. Chapter V summarizes the findings and provides recommendations. Chapter V concludes with a summary of broader implications raised by the study for further research and practice.

Summary

College students are faced with many challenges in preparing for the needs of an increasingly complex world. For substance abusing students, acquiring the needed skills is often a daunting task due to the significant impact of consequences they experience. College professionals have diligently sought to decrease the negative impacts of substance abuse for years. This study is designed to increase understanding concerning

the epistemological development of substance abusing students and through this understanding, to develop new strategies in the fight to make systemic change.

CHAPTER II: REVIEW OF DISCOURSES

“The stories we hear and the stories we tell shape the meaning and texture of our lives at every stage and juncture” (Withrell & Noddings, 1991, p. 1).

The review of discourses provides an overview of cognitive development theories and college substance abuse. Starting with Perry’s (1968) cognitive theory, the literature review traces the research upon which Baxter Magolda (1992; 1998; 2008) framed her work. An overview of cognitive theories and epistemological development provide the framework for utilizing Baxter Magolda’s epistemological constructs as a priori categories with the specific population of substance abusing college students. The review of discourses regarding college substance use provides the current historical context for the study. The literature regarding college substance abuse is extensive. The review includes a historical overview, individual characteristics, the individual and community consequences, treatment issues, and university interventions. As the review of discourses will expose, there is cursory mentioning at best and very limited research that examines the epistemological development of substance abusing college students (Demb & Campbell, 2009; Park & Grant, 2005). Reviewing the intersection of both frames provides justification for the study and enlists greater appreciation for the scope of this research design, methodology, outcomes, and implications.

Literature Discourses on Epistemological Development

Student affairs practitioners have had a long-standing commitment to viewing students holistically (American Council on Education Studies, 1949; Keeling, 2004, 2006). This view seeks to transform the traditional bifurcation of student affairs and academic affairs simplistic separation of students’ component parts such as mind and

identity into a more complex and integrated whole. Contrary to historical views of learning which were steeped in the conviction that “knowledge exists objectively” (Keeling, 2006, p. 3) a renewed commitment to learning has emerged that recognizes the relationship between content and context (Keeling, 2004; 2006). Not only are students complex, so are the environments in which they learn, grow, act, struggle, thrive, and live (Andere-McClelland, 2004; Baxter Magolda, 2004; Bronfenbrenner, 1979; Felner & Felner, 1989; Hamrick, Evans, & Schuh, 2002; Lewin, 1935).

At the core of this complex approach is a concept of learning that integrates specific knowledge acquisition and personal development (Keeling, 2004). “[L]earning, development and identity formation can no longer be considered as separate from each other; they are interactive and shape each other as they evolve” (p.8). As a result, educational and developmental outcomes emerge entwined and interwoven.

Education and development have a synergistic relationship that promotes preparedness to meet the demands of an increasingly complex world (Baxter Magolda, 2004; Hamrick et al., 2002; Keeling, 2004, 2006; Kuk, 1993; Pascarella & Terenzini, 1991). Among the many student learning outcomes, Keeling (2004) includes: (1) cognitive complexity; (2) knowledge acquisition, integration, and application; (3) Humanitarianism; (4) Civic Engagement; (5) Interpersonal and intrapersonal competence; (6) Practical competence; (7) Persistence and academic achievement (p. 18-19). These outcomes place significant value on critical thinking, epistemological development, and reflective meaning making skills.

Parks (2000) alleges that between 17 and 30 years of age, several distinctive cognitive constructs emerge as people make meaning of their experience. Parks states

that this process “includes: (a) becoming critically aware of one’s own composing of reality, (b) self-consciously participating in an ongoing dialogue toward truth, and (c) cultivating a capacity to respond – to act – in ways that are satisfying and just” (p. 6). Others describe the development of growing cognitive and identity constructs as the cross-section of exploration and commitment (Marcia, 1967, 1980; Josselson, 1987).

Heavily influenced by Erikson (1968), Marcia (1967; 1980) argued that to formulate and develop identity, one must confront a time of exploration caused by ideas ascribed from childhood development. Marcia (1980) also referred to this process as a time of crisis. Crisis includes reflecting on both values and expectations. In addition to confronting these ideas, one must make choices that result in life commitments (Josselson, 1987). Parks’ (2000) writings follow similar notions of Marcia and Josselson who also included reflection and action as developmentally significant.

A common thread among developmental theorists is that the structures or lenses through which people view knowledge and make meaning of experience change, adapt, and develop over time. (American Council on Education Studies, 1949; Keeling, 2004, 2006; Baxter Magolda, 1992; Belenky, Clinchy, Goldberger, & Tarule, 1986; Erikson, 1968; Marcia, 1967, 1980; Josselson, 1987; King & Kitchener, 1994; Parks, 2000; Perry, 1968; Piaget, 1950). As thinking changes, so too will personal identity, the ability to make meaning from experience, the complexity of relationships, and certainly behavior (Baxter Magolda; Love & Guthrie, 1999).

Cognitive theorists have been researching epistemological constructs and the ways these constructs develop for decades. According to the literature however, the assumption of this thread applying to all students has not been thoroughly tested.

According to cognitive theorist's discourse, diverse epistemological constructs have not been explored across a variety of domains and among an array of sub-populations. For example, the epistemological development of substance abusing college students is significantly limited. In fact, only two recent articles (Demb & Campbell, 2009; Park & Grant, 2005) were found to support the significance of cognitive development for students who abuse substances.

Epistemological Theories and Cognitive Constructs

Cognitive structural theories provide a guide to understanding "...*how* people think, reason, and make meaning of their experiences" (Evans, Forney, & Guito-DiBrito, 1998, p. 124). These sets of assumptions enable individuals to arrange and manage their own environments and experiences. Cognitive-Structural theorists propose that through life experience, the structures or lenses through which meaning is viewed become more complex (Baxter Magolda, 1992; Belenky et al., 1986; King & Kitchener, 1994; Perry, 1968; Piaget, 1952).

Wadsworth (1979) suggests that there is both a quantitative and qualitative aspect to the development of cognitive structures. Quantitatively, as new information is assimilated and incorporated, the cognitive structures expand. Qualitatively, if information cannot be assimilated and incorporated, new structures must be created to accommodate very new and different experience (Perry, 1968; Piaget, 1950; Evans et al., 1998; Wadsworth, 1979). Accommodation is often the result of a recognized incongruity that does not fit into previous structures (Perry). The pace at which people assimilate and accommodate appears to vary among individuals (Baxter Magolda, 1992; Belenky et al., 1986; King & Kitchener, 1994; Perry, 1968). The process of assimilation and

accommodation may be impacted by bio-psychosocial (DiClemente, 2003) and environmental factors (Andere-McClelland, 2004; Bronfenbrenner, 1979; Felner & Felner, 1989; Lewin, 1935).

The ways of knowing central to students are manifested from their own mental constructions (Baxter Magolda, 1999, 2008). The individualized mental constructions are rooted from unique experiences and contexts. How students make meaning of experience; the assumptions that they hold about the nature, limits, and certainty of knowledge; how they view themselves; and how they construct relationships with others appears to critically impact student's construction of knowledge for themselves and their own concept of voice (Baxter Magolda, 1992; Belenky et al., 1986; King & Kitchener, 1994; Perry, 1968). Thus, ongoing theory building and assessment of students' holistic development is an essential component of the shift toward student learning (Keeling, 2004; Baxter Magolda, 1999, 2008). The following theorists continue to impact and guide current notions of college student's epistemological development.

Intellectual & Ethical Development: Perry

Following the work of Piaget (1950), Perry's (1968) seminal research focused on the adolescent-to-adulthood cognitive transition. Perry was the first cognitive theorist who studied the college population. Perry's original ideas of how cognitive development takes place influenced many cognitive theorists' who followed (Baxter Magolda, 1992; Belenky et al., 1986; Gilligan, 1982; Josselson, 1987; King & Kitchener, 1994; Marcia, 1967).

Perry's (1968) methodology was a longitudinal study of Harvard and Radcliffe students, of which only the men from Harvard were ultimately included. Perry's initial

agenda was simply a descriptive view of 20-30 “student’s response to the impact of intellectual and moral relativism” (p. 7). However, the study grew larger as Perry discovered common challenges among the first 98 interviews.

As the study expanded, Perry (1968) interviewed another 109 students totaling 366 interviews. From these participants focusing on the domains of knowledge and education, Perry identified nine different sequential cognitive forms he called positions. Perry found that growth was seldom linear or progressively steady through the sequential positions. He described growth as “wavelike” (p. 177), occurring predominantly in “surges” (p. 177). Movement from position to position represented significant energy, according to Perry. Although some students articulated this as a spontaneous change, in the interviews, Perry discovered students actively engaged in un-learning and re-learning in addition to creating new cognitive structures. As a result, assimilation and accommodation emerged as critical components of epistemological development (Perry, 1968; Wadsworth, 1979).

Perry (1968) purposefully utilized the term position to convey several key concepts. Position reflects a prevailing stance through which a person views the world. Position also suggests there is a dominant view in a range of cognitive forms, but does not reflect or hint at an expected duration of time. Perry named the positions, (1) Basic Duality, (2) Multiplicity Prelegitimate, (3) Multiplicity Legitimate but Subordinate, (4a) Multiplicity Coordinate, (4b) Relativism Subordinate, (5) Relativism, (6) Commitment Foreseen, and (7-9) Evolving Commitments. Dualism, multiplicity, relativism, and commitment distinguish the modes of meaning making in the positions (Evans et al., 1998).

Dualism is characterized by a dichotomous view of meaning making. From this cognitive structure, polar opposites are differentiated “between the in-group vs. out-group” (Perry, 1968, p. 59). Familiar is correct and it is learned by obedience to authority. In this respect, authority and the absolute cannot be differentiated. From the dualistic epistemological construct, a correct answer is available for every question. The world is viewed solely through the dichotomous lens of black or white, right or wrong, good or bad. When interpretation or uncertainty appears, when authorities disagree, when the in-group interprets diversely, cognitive dissonance emerges and a more complex epistemology is often developed (Evans et al., 1998; Perry 1968, 1981).

Multiplicity can be characterized as the lens where uncertainty and convolution are unavoidable. Complexity is experienced as reality rather than a tactic for learning employed by teachers or other authority figures (Perry, 1968). From this epistemological structure, multiple perspectives exist but appear to hold equivalent and legitimate value. The process of transforming the appearance of equality to an ordered legitimacy becomes epistemologically more complex (Perry; Evans et al., 1998).

Relativism enables the weighing of factors in determining value and significance. Perry (1968) refers to relativism as “revolutionary restructuring” (p. 109). Rather than a special case, epistemologically, relativism accepts that all knowledge is contextual and relative. Legitimacy and significance is acquired through evidence, supporting reason, and contextual application. Commitment to relativism is the habitual integration of relativistic epistemology (Perry; Evans et al., 1998).

Although some of the participants did show significant variation from the positions, categories of the deflection and regressions became apparent in which

individuals suspended, abolished, or reversed development (Perry, 1968). Temporizing during cognitive development is a respite from growth; literally a time-out of sorts even if the next position is known. Escape is a rejection of maturation “for exploiting the detachment offered by some middle Position on the scale, in the deeper avoidance of personal responsibility known as alienation” (p. 177). Retreat, fueled by fury and loathing of otherness, conveys moving backward to dualism in order to justify the stance of me versus other.

Perry’s (1968) seminal work illustrated that late adolescent’s facets of intellectual and ethical development can be articulated in a progressively complex and ordered fashion. Perry did not note if any of the study’s participants had other descriptive commonalities or shared experiences such as abusing substances. This developmental sequence has significantly impacted college faculty and student affairs practitioners (Baxter Magolda, 1992; Perry). Through informal assessment, tentative cognitive notions can be identified. These meaning making clues enable more effective and impactful interactions with students in every facet of higher education. Following the foundational cognitive developmental research that Perry (1968) developed with men, Belenky and colleagues (1986) pursued the inclusion and understanding of women’s cognitive development.

Women’s Ways of Knowing

During the late 1970’s, Belenky, Clinchy, Goldberger, and Tarule, (1986) raised awareness to the absent voices of women in developmental theories. Close on the heels of Gilligan (1982), Belenky and colleagues set out to extend and critique Perry’s (1968) theory by studying gender as a commonality among participants. They interviewed 135

diverse women of various ages, backgrounds, education, environments, and ethnicities. Their goal was to identify a common cognitive ground among the eclectic group of women. They went beyond the positionality of Perry's schema.

[In] our analysis of women's life stories, we allowed the larger cultural, social, and political context of individual lives to recede as we focused instead on, and made central in the text, five knowledge perspectives that we believed captured some of the major ways women (regardless of class, race, or ethnic background) think about themselves, authorities, truth, and life options. (Golberberger, Tarule, Clinchy, & Belenky, 1996, p. 4)

The inclusion of the cultural, social, and political context of participant's lives was a ground breaking step in cognitive research. At that time, Belenky and colleagues were more interested in the commonalities women shared rather than the differences among them. Because the participants did not share substance abuse as a commonality, it was not considered.

Belenky and colleagues (1996) chose perspectives rather than stages or positions and they came to no conclusions regarding the universality of the perspectives (Evans, et al., 1998). In fact, Belenky and colleagues purported several disclaimers that have had lasting impact for theorists in the field of epistemological research. They cautioned that these categories may be found in men, the perspectives may not be exhaustive, and that other women outside the study could sequence or organize them differently (Belenky et al., 1986; Evans et al., 1998; Goldberger et al., 1996).

From their research on women's epistemological perspectives, Belenky and colleagues (1986) utilized voice as a metaphor in articulating women's intellectual and

ethical development. Voice emerged not simple as a primary position from which one views the world. For the women, voice could not be separated from mind and self; all were woven together. The five perspectives the researchers identified were (1) Silence, (2) Received knowing, (3) Subjective knowing, (4) Procedural knowing, and (5) Constructed knowing.

Description of Perspectives. Reflecting the hallmark of the silence perspective, women's voices are not heard. Silence represents the vast powerlessness and limited ability of women to acquire language (Evans et al., 1998; Stanton, 1996). Knowledge is acquired through direct experience. Similar to Perry's (1968) theory, the mode of acquisition is discovered through obedience to authority. Belenky and colleagues (1986) found few women in the perspective of silence, most of who were not from the campus participants. These women were from the youngest of the interviewees, educationally limited, economically challenged, and working in the community.

In the received knowing perspective, women acquire knowledge directly from authorities. This group of women focuses on the voices of others, while ignoring their own. Knowledge is conveyed by those in authority. Women's mode of acquisition is found through listening and remembering (Belenky et al., 1986; Evans et al., 1998).

The subjective knowing perspective reflects a major shift in women's view of knowledge. In these women, knowledge is found within rather than outside. Women's listening is focused on an internal voice rather than the voice of external authorities (Stanton, 1996). Belenky and colleagues (1986) found that women often had a specific experience of moving away from the past, particularly from a significant male authority.

No further descriptions of other potential commonalities were included by the research team.

In the perspective of Procedural knowing, women place value on evaluating and analyzing the different knowledge constructs objectively (Stanton, 1996). Likewise, women value objectively conveying knowledge (Evans et al., 1998). Two styles emerge in learning and conveying knowledge. Women in separate procedural knowing see the world as it is through logic, analysis and impersonal processes. Separate knowers may engage in doubt or debate in the aim for accuracy and precision. Connected procedural knowing describes seeing the world as it is through the personal context. Connected knowers listen carefully, exhibit empathy, and dialogue with others to foster greater understanding (Belenky et al., 1986; Stanton, 1996).

The Constructed knowing perspective embraces both the subjective and objective components of knowing. The head and heart are integrated in mutual dialogue. Belenky and colleagues (1986) portrays constructed knowers as articulate, respectful, authentic, caring, and engaged in mutual dialogue. Hearing the voice of others does not result in losing their own voice. Constructed knowers can hear both voices and are able to balance both contexts.

Significance. Belenky and colleagues (1986) opened several new epistemological doors. First, they cautioned the use of epistemological categories when they are used to equate an entire person with a specific stage. In fact, when participants were asked questions across a variety of domains, they were not necessarily consistent (Stanton, 1996). This may be very significant in a substance abusing population. Second, they cautioned that there could be additional construct categories used by a different

population whether or not the population is exclusively gender specific. Baxter Magolda (1992) opened this door even wider. Baxter Magolda focused on understanding epistemological development through a lens inclusive of both men and women.

Epistemological Reflection Model

The Epistemological Reflection Model (Baxter Magolda, 1992) emerged from research focused on students' perception and understanding of the nature of knowledge throughout the undergraduate experience. "Students interpret, or make meaning of, their educational experience as a result of their assumptions about the nature, limits, and certainty of knowledge" (Baxter Magolda, 1992, p. 3).

Baxter Magolda (1992; 2004; 2008) was, and continues to be, dedicated to transformational learning whereby students are empowered to compose their own perspectives. Constructing one's own perspectives requires the removal of barriers between teacher and student, experience and knowledge, and between the contexts of curricular and co-curricular being. In her study, students described learning as a joint process of constructing meaning with others which resulted in the creation of a distinctive, individual voice.

Baxter Magolda's (1992) interest in transformational learning fostered a study that identified students' perception of the nature of knowledge and how that perception impacts identity and cognitive development. Utilizing a qualitative narrative and longitudinal methodology, Baxter Magolda followed male and female students through their college experience and the first year post graduation. She was particularly struck by the power of personal growth stories involving knowledge and personal experience.

When students were engaged in learning that related to their life experience, growth was powerful regardless of their reasoning pattern.

There were several guiding assumptions that impacted Baxter Magolda's (1992) research and findings. A belief in the social construction of reality created the premise and value of understanding each student's view of the world and the perception of the nature of knowledge. Baxter Magolda identifies herself as a post-modernist believing in "... the fluidity of reasoning patterns [which] indicates multiple realities rather than one single truth about students' perspectives" (p. 21). This guiding principle connects her to naturalistic inquiry as a theoretical approach to her research. Another one of Baxter Magolda's guiding principles is that realities are alterable so she anticipated reasoning patterns to be fluid. Finally, reasoning patterns are related to gender but not dictated by gender. Baxter Magolda held firmly to the belief that gender is socially constructed and therefore alterable.

Methodological Process

Inspired to transform educational practice by understanding how students interpret and make meaning, Baxter Magolda (1992, 1999) utilized a social constructivist perspective to approach the research.

Constructive-developmental pedagogy, as it is described in this book, is more than letting students talk and generate their own ideas. It is a matter of creating the developmental conditions that allow them to generate their own ideas effectively, in essence to develop their minds, their voices, and themselves.

(Baxter Magolda, 1999, p. 7-8)

She employed a narrative strategy that was consistent with her guiding assumptions.

Baxter Magolda (1992) was clear in articulating her beliefs and strategies:

Viewing ways of knowing as complex, socially constructed entities leads to the assumption that these processes can best be understood through the principles of naturalistic inquiry. Because students' ways of knowing and their experiences jointly shape each other, ways of knowing are context-bound. The fluidity of reasoning patterns indicates multiple realities rather than one single truth about students' perspectives. (p. 21)

Although she never discussed whether or not she employed an inductive or deductive strategy, she was very clear about utilizing Perry's (1968) constructs as guiding categories in her research. She was overt about the use of these constructs as well as giving a very transparent description of the context so readers could determine the transferability. Baxter Magolda stated that it was much better to be overt and explicit because it was a constant reminder of the influence upon her research.

Context & Participants. Baxter Magolda's (1992) research took place at Miami University. She described the institution's culture as very involved and fairly homogenous regarding race and socio-economic status. Of the 101 students interviewed as freshman, 70 remained for the entire study. Of these students, 97% were Caucasian with a majority (70%) reporting parental income between \$40,000 and \$149,999. Her randomized selection from the 1986 entering freshman class included 44% male and 56% female, traditional aged undergraduates. She further described them as follows:

The group was highly involved in academic and campus activities. Most studied with other students (93%) and had been bored in class (97%). The majority had attended religious services (86%), had attended a recital or concert (95%), and

drank beer (80%)... Thirty five percent were president of one or more student organizations. (p. 25)

Her rich description of both context and participants reflected her methodological commitment to authenticity (Lincoln & Guba, 1985).

Methodology

Baxter Magolda (1992) chose a longitudinal design to trace the development of each student's ways of knowing throughout the college experience. The interviews were designed to address specific areas of epistemological development. The areas included "... the roles of the learner, instructor, peers, and evaluation in learning; the nature of knowledge; and decision making" (p. 402). In addition to annual interviews, she also utilized a short questionnaire developed by Baxter Magolda and Porterfield (1985).

Findings

From the beginning of her study, Baxter Magolda (1992) raised concerns over the bifurcation of intellectual and affective development. To avoid participating in this dominant educational paradigm, she purposefully defined educator to include both faculty and student affairs personnel. The second through fifth interviews included questions designed to illicit specific examples from student's curricular and co-curricular experiences. Although it was not the primary focus of her study, Baxter Magolda opened up new territory in epistemological research. The interviews were inclusive of student's life in and outside the classroom. Critical thinking, "requires the ability to define one's own beliefs in the context of existing knowledge" (Baxter Magolda, 2003, p. 233). The individualized mental constructions are rooted from unique experiences and contexts that clearly go beyond the classroom door. Therefore, Baxter Magolda did not consider the

constructs and reasoning patterns to be domain specific. This critical concept in her findings opens the door to use these constructs as a priori categories for further research.

Baxter Magolda (1992) was overt in sharing the assumptions that impacted her interpretation of each student's story. To increase trustworthiness, she utilized member checks, prolonged engagement, independent readers, and triangulation. As a result of the study, she identified four distinct categories of knowing coined as absolute knowing, transitional knowing, independent knowing, and contextual knowing. The first three categories were found to include gendered patterns.

Absolute Knowers. Absolute knowers viewed the world through the lens of facts and certainty. Correct answers existed for all questions regarding all areas of knowledge. The gatekeepers of this certainty were authorities. The role of the learner was to obtain this knowledge from the authority. The goal was simply acquisition and remembering. The purpose of evaluation was to reproduce what has been acquired to verify correctness. Peers had little value since they were not equated with authority.

Baxter Magolda (1992) discovered some gender related themes toward acquiring this knowledge. The first theme was receiving and was reflected by a majority of women. Listening and recording were the primary learner roles in the receiving pattern. The process of knowledge acquisition was primarily an internal process. The second theme identified was mastery which was reflected by a majority of men. The mastery pattern reflected an active engagement with the instructor. Mastery pattern learners engaged in arguing, debating, and quizzing to gain knowledge. Peers could serve as partners in these types of interchanges with the authority, but did not hold any direct credibility. Both patterns exhibited similarities toward the elevation of authority and the

disregard for peers emerged. Memorizing knowledge given by the authority reflected a certain and factually attainable world.

Transitional Knowers. Transitional knowers emerged as distinctly different as they began to experience some parts of knowledge as uncertain. "Learning is more complex in the uncertain areas, a situation that prompts students to believe that understanding takes precedence over acquiring and remembering information (Baxter Magolda, 1992, p. 47). Transitional knowers expected to gain some understanding in the different contexts of their lives and were confronted with authorities who were not all knowing. They continued to express that absolute knowledge does exist in particular areas. For transitional knowers, evaluation was expected to measure understanding in addition to comprehension. They also expected peers to assist in the learning.

Two gendered patterns were identified by Baxter Magolda (1992). Interpersonal involved relationships with others. Peers were beneficial in that they gave new ideas exposure. The interpersonal pattern, primarily reflected in women, focused on the collection of others' ideas. The impersonal pattern, reflected in men, expected logic and research from the educator. They wanted to be forced to think and preferred debate with both faculty and peers. Relationships were only utilitarian in scope.

Independent Knowers. Independent knowers shifted their assumptions of the world to being primarily uncertain. They recognized that differences shared by authorities were not solely due to education; rather, there were often a range of views possible. Independent knowers began to see their peers along with themselves as capable of sharing knowledge. Authorities now took on the role of creating opportunities to explore knowledge rather than supplying the truth. Although independent thinking

emerged, there was not a system or structure for prioritizing one perspective over another. All opinions appeared to hold equal value. The role of the instructor was to provide context rather than specific knowledge (Baxter Magolda, 1992).

The pattern of inter-individual emerged primarily associated with women. Thinking for oneself emerged alongside valuing the view of others. A connection between the academic and personal world was another component of the inter-individual pattern. The individual pattern, which appeared primarily in men, reflected an increased focus on one's own thinking. Peers were expected to think independently as well as instructors. The individual pattern learners showed signs of separating from faculty whereas the inter-individuals showed signs of separating from peers.

Contextual Knowers. Baxter Magolda (1992) found that it was rare for contextual knowers to develop while in college. She found that many critical experiences occurred in significant new roles and relationships upon completion of the degree (Baxter Magolda, 2003; 2005). The previous reasoning "...perspective is replaced with the belief that some knowledge claims are better than others in a particular context" (1992, p. 69). Contextual knowers reflected not only independent thinking, but the application of knowledge within a particular context. Faculty roles were to foster learning environments that promoted knowledge in a context. The expectation of evaluation was to provide mutual critique between student and instructor. The expectation of dialogue that was inclusive of many different ideas and thought was critical. Baxter Magolda found no gendered patterns within contextual knowers.

Summary

These different epistemological lenses impacted all aspects of students' lives. The narratives of student's not only reflected different lenses with which to view the world, but gendered patterns within them. "What was perceived by some as an ideal environment was perceived by others as the worst possible one" (Baxter Magolda, 1992, p. 14).

Baxter Magolda's work continues today incorporating the foundational work of Kegan (1982; 1994) to explore students' self authored identity, a process that includes cognitive development, interpersonal, and intrapersonal relationships. The epistemological constructs of individuals continues to play a significant role in her work to transform education (Baxter Magolda, 1999; 2003; 2004; 2008).

The epistemological constructs that emerged from her original research have not been utilized in further research with additional populations. Although Baxter Magolda (1992) suggested how this might be approached. "Transferring the insights from the last five chapters to students with different characteristics in different contexts requires taking a step back from ways of knowing and patterns within them to underlying story lines" (p. 191). These story lines included the emergence of voice, the changing relationship with authority, and the changing relationship with peers.

The narratives of other populations would be critical in exploring transferability. Similar to the students in Baxter Magolda's (1992) research, it follows that substance abusing college students also utilize sets of assumptions to make meaning of life. Whether or not there is a pattern associated with this population remains unanswered. In addition to understanding this population, substance abusing college students'

epistemological development may provide further insight to finding appropriate and effective substance use interventions. This particular population of college students has not been the focus of epistemological theorists. However, there is extensive research and discourse concerning this population.

Literature Discourses on College Substance Use

Several compilations of research over the last decades have been focused on understanding the magnitude and providing alternative strategies to combat substance abuse on college campuses (Anderson & Gadaletto, 2001; Johnston et al., 2001, 2003; Johnston, O'Malley, Bachman, & Schulenberg, 2006; National Center on Addiction and Substance Abuse, 2003; Weitzman et al., 2004; Wechsler et al., 2002; Wechsler et al., 2000). The corresponding consequences related to substance use run a vast gamut with the significance ranging from mild headache to the far reaching impact of death (Barnett & Read, 2005; Dowdall & Wechsler, 2002; Hingson, Heeren, Winter, & Wechsler, 2003; Lee et al., 2002). Despite the magnitude of the problem, the vast array of documented consequences, and the breadth of research, college students substance use remains markedly higher than their non-collegiate peers and one of the most significant health priorities for college personnel (Johnston et al., 2003, 2006; Lee et al., 2002).

Alcohol: Historical Trends & Terms

Alcohol is the number one drug of choice by college students (Wechsler et al., 2002). According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA, 2002), 40% of college students can be classed as binge drinkers. These studies have defined binge drinking as consuming 5 or more drinks in a row for men, and 4 in a row for women (Wechsler et al., 2000). Wechsler and colleagues (1994) defines heavy

episodic drinking as three or more occasions of binge drinking in the past two weeks. Approximately two in five college students drink more than defined by binge, which puts them in the category of a heavy episodic drinker, or in a high-risk range (Dowdall & Wechsler, 2002). In a 2002 study, Dowdall and Wechsler (2002) found that approximately “23% of students consume 72% of all alcohol used by college students and experiences more than 60% of the major alcohol-related problems...” (p. 18).

One drink is defined as 12 oz of beer, 5 oz. of wine, or 1.5 oz. of hard liquor (NIAAA). Although research has shown a small increase from 47% to 51% during the years of 1993 to 2001, binge drinking rates have remained fairly steady in the past 15 years (Lee et al., 2002, Wechsler et al., 2002, Wechsler et al., 2000). Binge and heavy episodic drinking coincides with the related consequences that harm individuals and the community (Baer, 2002; Brook et al., 2000; Eng & Hanson, 1990; Grant & Dawson, 1997; Hartzler & Fromme, 2003; National Center on Addiction and Substance Abuse, 2003).

Another significant trend to note is the growing number of students who are abstaining from alcohol use. Wechsler and colleagues (2002) writes:

...evidence of a trend toward polarization drinking behavior has continued since the second CAS survey. About 1 in 7 (16%) students abstained from alcohol during the past year [1993] and 1 in 5 (20%) engaged in frequent binge drinking in 1993, whereas 1 in 5 (19%) students was an abstainer in 2001 and 1 in 4 (23%) was a frequent binge drinker. (p. 207-208)

This trend creates a polarization effect on campus. Substance use polarization impacts college campuses in a variety of ways. From creating effective prevention and education

efforts to the development of appropriate intervention strategies, this polarization reflects a continuum of use among college students (Wechsler et al., 2002). Effective program designs for drug and alcohol centers seeking to create systemic change have needed to balance prevention, education and treatment (DeJong & Langford, 2002). Policies must match a polarized campus with very diverse student needs (Newman, Shell, Major, & Workman, 2006).

For most students involved in substance abuse, use does not begin upon entering a college campus. These patterns have started to develop during high-school, and for some, even earlier (Fenzel, 2005; Fenzel, Douchis, & Campbell, 1998; Gfroerer, Wright, & Kopstein, 1997; Gil, Wagner, & Tubman, 2004; Hartzler & Fromme, 2003; Lee et al., 2002; McCarty, Ebel, Garrison, DiGiuseppe, Christakis, & Rivara, 2004). According to the National Center on Addiction and Substance Abuse (CASA) (2003), 3.3 million young teenagers between 12 and 17 years of age begin drinking each year. Of those students who have experimented with getting drunk, by the time they are in the 12th grade, most have continued getting drunk. Of these same young users, they are five times more likely to drop out of school (Lee et al.). Alcohol is among a wide range of substances that that negatively impact college students.

College Drug Use

It is clear that alcohol does not appear to be the sole drug choice for college students (Arria & Wish, 2005; Blows, Ivers, Connor, Ameratunga, Woodward, & Norton, 2005; Hall, Irwin, Bowman, Frankenberger, & Jewett, 2005; Johnston et al., 2003, 2006; Kilmer et al., 2006; Lanier, Nicholson, & Duncan, 2001; McCabe, Teter, & Boyd, 2005, 2006; McCabe, Teter, Boyd, Knight, & Wechsler, 2005; Mohler-Kuo, Lee, & Wechsler,

2003; Simons, Gaher, Correia, & Bush, 2005; White, Becker-Blease, & Grace-Bishop, 2006). College students are also in jeopardy of negative consequences and high risk drug use that may result in the development of additional substance disorders (Larimer et al., 2005). Young, Corley, Stallings, Rhee, Crowley, & Hewitt (2002) found that nearly 8% of 18 year olds met diagnostic standards for marijuana dependence. In addition, Young and colleagues found an additional 3% met diagnostic standards for illegal drugs not including marijuana.

Marijuana is the most common drug use reported by college students (Johnston, et al., 2003, 2006; McCabe et al., 2006). According to Mohler-Kuo and colleagues (2002), the prevalence of marijuana use among college students was 1 in 6 or 17% in 2001. Nearly 30% reported marijuana use in the past month and almost 50% had used sometime during their life. This reflects a significant increase (12.5% to 16.9%) in use between the years of 1993 to 2001. Students who smoked marijuana were also more likely to binge drink and smoke cigarettes (Mohler-Kuo et al.).

Non-medical use and abuse of prescription drugs is an increasing problem for college students (Johnston et al., 2003, 2006; McCabe et al., 2006). Opioid use is at its highest level in the past 20 years. McCabe and colleagues (2005) researched the non medical use of prescription opioid analgesics among college students. They found that use is more likely “...among college students who were white, residents of fraternity and sorority houses, attended more competitive colleges, earned lower grade point averages, and reported higher rates of substance use and other risky behaviors” (p. 789). Several studies (Fendrich & Johnson, 2001; Gfroerer et al., 1997; McCabe et al., 2002) conclude

that nonmedical use of opioid analgesics is the most common drug use among college students second only to marijuana.

Stimulant medication use and misuse by college students is on the rise (Brown, Freeman, & Perrin, 2001; McCabe, Knight, Teter, & Wechsler, 2005; Peterson, & Stewart, 2005; White et al., 2006). White and colleagues, found that some students' use of stimulant medication, whether appropriately prescribed or illegally procured, appears to be motivated by a desire to improve attention. In the same study, nearly 7% of approximately 1,000 students had been diagnosed with attention deficit hyperactivity disorder or attention deficit disorder and had been prescribed stimulant medication. However, over 16% of the sample self-reported misusing or abusing stimulant medication. White and colleagues concluded with a call for further research.

Student Characteristics

The college years involve a substantial transition from high school that requires many personal adjustments and skill development in order to be successful. It is a time when many students reflect on identity (Baxter Magolda 1992; 2003; 2004; 2008), explore social relationships (Neighbors, Fossos, Woods, Fabiano, Sledge, & Frost, 2007; Read, Wood, Kahler, Maddock, & Palfai, 2003; Schulenberg & Maggs, 2002; Schulenberg, Maggs, Long, Sher, Gotham, Baer, et al., 2001), manage a change in living situations, and individuate from parents (Chickering & Reisser, 1993; Schulenberg et al., 2001). The transition from high school to college represents a time of increased freedom and exploration of all aspects of life. It is also a time prior to the responsibilities that many acquire after college such as a career, a mortgage, a long term intimate relationship, and for many, a family (Schulenberg & Maggs).

Developmentally, college students often arrive on campus with certain expectations around substance use (Gilles et al., 2006; McCarthy, Miller, Smith, & Smith, 2001). For many, alcohol in particular plays a significant role in the transition from high school to college in addition to a marker of individuation (Andrews et al., 1997; Boyle & Boekeloo, 2006; NIAAA, 2002; Schulenberg et al., 2001). Many late adolescents attribute drinking as a right that comes with an increase in freedom and adulthood (Schulenberg & Maggs, 2002). Even when presented with educational information that points out the potential risks and consequences, many college students perceive a benefit to drinking as a way to increase social networking and to fit in with peers. For many, the benefits outweigh the potential costs (Gilles et al.; Schulenberg & Maggs).

Researchers have focused a great deal on understanding the many different student characteristics that appear to show a relationship with higher substance use (Neal, Sugarman, Hustad, Caska, & Carey, 2005; NIAAA, 2002; Presley, Meilman, & Leichter, 2002; O'Neill, Parra, & Sher, 2001; Park & Levenson, 2002; Schulenberg & Maggs, 2002). For example, during high school, college bound students are more likely to use substances less than their non-collegiate peers (Johnston et al., 2001). However, once they have arrived on college campuses, college students substance use outpaces their non-collegiate peers (Johnston et al.). In terms of alcohol use, first year students, males, Caucasians, members of Greek organizations, and athletes have been found to be drinking more frequently and at higher rates than their college peers (Caron et al., 2004; Cashin, Presley, & Meilman, 1998; Johnston et al., 2006; McCabe, Schulenberg, Johnston, O'Malley, Backman, & Kloska, 2005; Presley et al., 2002). Researchers have

been challenged to address the integration of multiple variables that provide insights between substance use and combinations of these risk and protective factors (Anderson, Martens, & Cimini, 2005; Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002; Baer, 2002).

Risk & Protective Factors

Risk factors are those characteristics, behaviors, or environments that are associated with higher substance use or substance related consequences (Baer, 2002; Fenzel, 2005; Gil et al., 2004; Green, Uryasz, Petr, & Bray, 2001; Ham & Hope, 2005; Hartzler & Fromme, 2003; Hussong, 2003; Jessor, 1991; Jessor, Costa, Krueger, & Turbin, 2006; Lange, Clapp, Turrisi, Reavy, Jaccard, & Johnson, 2002; Marsh & Miller, 1997). McGue (1999) shows that there may be a genetic propensity as well as environmental factors that contributes to an individual's risk for substance abuse. Besides genetic history and growing up in a home where substances are consumed (Austin & Chen, 2003; Bierut, Dinwiddie, Begleiter, Crowe, Hesselbrock, Nurnberger et al., 1998; Jacob & Leonard, 1994; Peterson, Hawkins, Abbott, & Catalano, 2006; Sher, Trull, Bartholow, & Veith, 1999), there is convincing research on other personal salient risk factors including impulsivity (Baer), sensation-seeking (Baer; Camatta & Nagoshi, 1995), marijuana and tobacco use (Baer), and an association of anger with heightened substance use (Sher et al.). A proclivity toward risk taking behavior has been shown among substance abusing college students whether or not the behavior involves substances (Hartzler & Fromme, 2003; Jessor, 1991).

Certain relationships may also be a factor related to college student substance use. Jacob and Leonard (1994) concluded that peer substance use may be one of the most

significant correlates or risk factors for increased substance use. In similar study, Marsh and Miller (1997) found that the personality dimension of extraversion or sociability is correlated with higher substance use. Environmentally, the lack of connection between enforcement of drinking laws and policies has been related to an increase in substance use (Arthur et al., 2002). There are a myriad of personality, environmental, and behavioral constellations that are associated with substance use.

Students who perceive that their parents approve of drinking, are much more likely not only to drink, but to also experience problems (Andrews et al., 1997; Austin & Chen, 2003; Peterson et al., 2006). In a self-report survey of 265 college freshman, Boyle and Boekeloo (2006) found that approximately one third perceived parental approval of drinking. Among this group, there was a stronger association with negative consequences ranging from a headache to arrest for drunken driving than their peers. Boyle and Boekeloo also found that the perception of mother's approval was more significant than father's with negative consequences.

However, regardless of specific risk type, there also appears to be a cumulative nature to these risks. According to Fenzel (2005), "adolescents and emerging adults are more likely to engage in heavy drinking when psychosocial risk factors are more salient and protective factors less so" (p. 127). In addition to risk factors, most students also exhibit a variety of protective factors that tend to decrease the quantity and frequency of substance use thereby increasing the complexity of the phenomenon (Arthur et al., 2002; Bergen-Cico & Viscomi, 2008; Engs, 1990; Martens, Ferrier, & Cimini, 2007; Read, Wood, Davidoff, McLacken, & Campbell, 2002; Stewart, 2001; Wechsler, Dowdall, Davenport, & Castillo, 1995).

Research regarding protective factors and the ways in which they impact substance use has not been as widely researched as risk factors (Bergen, Cico & Viscomi, 2008). However, researchers have found the following protective factors related to less substance use and related consequences: pro-social activities (Baer, 2002; Wechsler et al., 1995; Fenzel, 2005), volunteerism (Fenzel), high parental monitoring (Schulenberg & Maggs, 2002), parental relationship quality (Baer); low sensation seeking (Jackson, Shur, & Park, 2005), involvement with nonsubstance-using peers (Baer; Bates & Labouvie, 1997; Jackson et al., 2005), high achievement in school (Newcomb, Abbott, Catalano, Hawkins, Battinpearson, & Hill, 2002), and social competency (Arthur et al., 2002). In addition, Engs, Diebold, and Hanson (1996) found a relationship between students who identify as more religious consume less alcohol than peers who identify as less religious. High religiosity as a protective factor is also consistent with the research of Jackson and colleagues (2005) and Stewart (2001).

Abuse & Dependence.

The Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV-TR) provides specific criteria for substance abuse or dependence (American Psychiatric Association, 2000). The American Psychiatric Association defines substance dependence as:

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following criteria occurring at any time in the same 12-month period:

- (1) tolerance, as defined by either of the following: (a) a need for markedly increased amounts of the substance to achieve intoxication or desired effect (b)

markedly diminished effect with continued use of the same amount of the substance.

(2) withdrawal, as manifested by either of the following: (a) the characteristic withdrawal syndrome for the substance (b) the same (or closely related) substance is taken to relieve or avoid withdrawal symptoms.

(3) the substance is often taken in larger amounts or over a longer period than was intended

(4) there is a persistent desire or unsuccessful efforts to cut down or control substance use

(5) a great deal of time is spent in activities necessary to obtain the substance

(6) important social, occupational, or recreational activities are given up or reduced because of substance use

(7) the substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance . (APA, 2000, p. 197)

Substance abuse is similar in that one or more of the following could be attributed leading to some form of distress. The American Psychiatric Association (2000) has defined substance abuse as:

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by one (or more) of the following criteria within a 12-month period:

(1) recurrent substance use resulting in a failure major role obligations at work, school, or home

- (2) recurrent substance use in situations in which it is physically hazardous
 - (3) recurrent substance-related legal problems
 - (4) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substances.
- (APA, 2000, p. 199)

There are several factors that may affect a student's substance abuse or dependence as previously articulated; personality, attitudes, ability to transition to a new environment, social relationships, family history, and peer influence are all possibilities (Armstrong & Costello, 2002; Del Boca, Darkes, Greenbaum, & Goldmann, 2004; Hingson, Heeren, & Winter, 2006; Jennison, 2004; Knight et al., 2002; Korcuska & Thombs, 2003; Leibsohn, 1994; Leshner, 1997; NIAAA, 2002; Sher, Trull, Bartholow, & Vieth, 1999; Shim & Maggs, 2005). Clearly college students who are participating in the high-risk binge categories are at risk for becoming diagnosed with substance abuse or substance dependency (NIAAA). Wechsler and colleagues (2002) found that nearly one third of college students qualified for a diagnosis of alcohol abuse according to the DSM-IV-TR criteria. Additionally, 6.3% or 1 in 17 met the DSM-IV-TR criteria for alcohol dependency.

Knight and colleagues (2002) found frequent heavy episodic college drinkers were 19 times greater odds of being diagnosed with alcohol dependence and 13 times greater odds of being diagnosed with alcohol abuse. It is critical to note that of those with the diagnosis of alcohol dependency, only 6% were found to have sought treatment.

Treatment is not necessarily utilized by many college students with significant substance abuse problems. The number of college age students admitted to alcohol

treatments programs has increased in the past decade, and yet there remains a significant gap between the need and those who actually receive treatment (National Center on Addiction and Substance Abuse, 2003). McCabe, Boyd, Cranford, Morales, & Slayden (2006) found that less than 6% of individuals who self-reported significant drug use had ever used any type of substance abuse treatment. Similarly, Wu, Pilowsky, Schlenger, & Hasin (2007) found that despite a high prevalence of substance use disorders among college students, the rates do not match a self-perception of need for such services. In addition, Wu and colleagues found that college students are very unlikely to receive treatment of any type, including early intervention services. For those college students who do receive services, entry into treatment is often a result of external pressures such as a court mandate, university judicial requirement, or parental demands (Waldron, Kern-Jones, Turner, Peterson, & Osechowski, 2007).

Co-Occurring Psychological Disorders.

If treatment is sought, it is not uncommon to find co-occurring pathology discovered through the assessment process that requires additional therapy (Dawson et al., 2005; Petrakis, Gonzalez, Rosenheck, & Krystal, 2002). National estimates for the entire population suggest that approximately 37% of persons fitting the criteria of alcohol abuse or alcohol dependent would also have a co-occurring psychiatric disorder that is diagnosable (Community Mental Health and Substance Abuse Partnership, 2003). Typically, these diagnoses may include mood disorders such as depression or anxiety, other disorders such as bi-polar, attention deficit, bulimia and anorexia (National Center on Addiction and Substance Abuse, 2003). The association of psychopathology and increased substance use among college students is well documented regarding stress

(Spear, 2002), symptoms of depression and anxiety (Baer, 2002; Burke & Stephens, 1999; Dawson et al., 2005; Fenzel et al., 1998; Stewart, Karp, Pihl, & Peterson, 1997), perceptions of low self-worth (Baer), mood and personality disorders (Fenzel et al.), ADHD (Biederman, Monuteaux, Mick, Spencer, Wilens, Silva, Snyder, & Faraone, 2006), and eating disorders (Anderson et al., 2005). Regardless of the diagnosis, high risk college substance users experience a myriad of negative consequences associated their use.

Consequences

Binge or high-risk drinking and substance abuse does not come without consequences. These consequences are felt by the individual, the community, and by the institution. Wechsler and colleagues (2002) reported that between 1993 and 2001, personal consequences have risen significantly in regards to encounters with police, personal injury, and academic difficulties. Additionally, nearly 30% of students admitted to driving after drinking. Frequent binge drinkers were 21 times more likely to have 5 different alcohol related problems, than non-binge drinkers (Wechsler et al, 2000).

Individual Consequences

High risk substance use may be either the cause or a significant contributing factor in a wide range of consequences such as legal, academic, physical, psycho-social, and emotional (Perkins, 2002). According to an extensive study done by Hingson and colleagues (2002), the wide-ranging consequences of high risk use include waking up with a headache all the way to alcohol poisoning resulting in death. For individual college students, substance use may directly impact grades, relationships, financial stability, and freedom.

Early Use. There is also a correlation between early use and significant or problem drinking patterns in later years (Gil et al., 2004; Hingson et al., 2003; McCarty, et al., 2007; Rivinus, 1988; Tucker, Orlando, & Ellickson, 2003). Regardless of whether it is alcohol or other drugs, the consequences for early use are significant. Not only are those who begin substance use at an early age at greater risk of becoming dependent, they are less likely to seek treatment (Hingson et al., 2006; Gil et al.). Those who begin drinking before the age of 21 years old are two times more likely to experience alcohol related problems (Grant & Dawson, 1997). Even more staggering, the researchers found the individuals that begin drinking before the age of 15 are at great risk of becoming alcohol dependent. This group is four times likelier to become alcohol dependent than those who do not start drinking until the age of 21. Those that begin before the age of 14 years old experience the greatest risk for lifetime consequences and pathology.

Academics. The link between alcohol and other drug use and negative academic consequences is well noted (Loury, 1997, Paschall & Freisthler, 2003; Presley, Leichliter, & Meilman, 1999; Singleton, 2006; Wechsler et al., 2002; Wolaver, 2002). According to Wolaver, drinking corresponds to reduced study hours and overall decreased academic goal attainment. Wechsler and colleagues found that when students who identify themselves as binge drinkers are compared to non-binge peers, the report of missing a class is 46.3% to 10% respectively.

Several studies clearly associate low grade achievement and significant alcohol use. Presley and colleagues (1999) report an inverse relationship between grade point average and estimated drinks per week. In this study, "A" students self report three drinks per week. Inversely, "D" students self report an average of 10 drinks per week. In

a similar study, Paschall and Freisthler (2003) studied 754 students and found “the amount consumed was more strongly associated with academic performance ($r = -.26$ with cumulative GPA) than frequency of consumption ($r = -.16$)” (p. 552). Both, however, show a negative impact on academic achievement.

Sexual. Individual consequences of high risk substance use also include college student’s decision-making regarding sexual activity (O’Hare, 2005). Frequent binge drinkers are seven to ten times more likely to engage in risky behaviors such as unprotected or unplanned sex (Hingson et. al, 2003; Wechsler et al., 1994). Santelli, Brener, Lowry, Bhatt, and Zabin (1998) studied 4,000 sexually experienced youth, and found that 23% of the men had multiple partners in the past month. This percentage increased to 61% as the number of alcohol related behaviors increased.

Hingson and colleagues (2003) also found a relationship between the age of first use and the likelihood of unplanned and unprotected sex. Specifically, with those college students who experienced being drunk before the age of 13, they were two times more likely to engage in unplanned sex and 2.2 more likely to engage in unprotected sex.

Personal Injury. Personal injury resulting from high risk substance use can be found on almost every campus. In a nationwide study by Wechsler and colleagues (1998), 12% of drinkers experienced personal injury within the past year. Hangovers, nausea and vomiting are additional consequences experienced by a high number of college students that impacts academics, work, and general health (Perkins, 2002).

In addition to social consequences, brain function is also affected by alcohol consumption during adolescence (Nordby, Watten, Raanaas, & Magnussen, 1999). Alcohol disrupts and inhibits brain function in the acquisition of new memories (White,

Jamieson-Drake, & Swartzwelder, 2002). In smaller doses, minor brain impairments may not be detected by the individual. However, at larger doses the impairment may be severe and include the inability to recall significant events. "Blackouts represent episodes of anterograde amnesia during which individuals are capable of participating in salient, emotionally charged events of which they will later have no recollection" (p. 117). White and colleagues found that approximately half of the 772 college students who had ever drunk, had experienced one or more blackouts. Nearly 10% had experienced a blackout within two prior weeks of the survey. Of this group, many self-reported having found out later that they had engaged in vandalizing property, driving, or had sexual intercourse. The study also revealed those who have experienced three or more blackouts were associated with poor grades, higher quantity of consumption, and an earlier age of drinking onset.

Moderate and heavy drinking negatively impacts adolescents during and after moderate and heavy use (Nordby et al., 1999; Wolaver, 2002). The hippocampus as well as portions of the prefrontal cortex are continuing to develop during this period and can be damaged because of alcohol use. High-risk drinking may cause long-term damage to the development of these areas causing loss of mental capacity in learning, memory, and decision-making (National Center on Addiction and Substance Abuse, 2003; Little, 1997; Wolaver, 2002).

Community Impact

Students with high-risk drinking patterns often leave a wake behind them. Residence hall communities can be disrupted impacting non using students' ability to study and sleep. Fights, taking care of high-risk students, and verbal insults that are not

always remembered are common outcomes of students participating in high risk drinking and substance abuse (Hingson et al., 2002; Wechsler, 2002). However, staff and university police are also involved in many cases due to property damage, defacement of public/private property, verbal aggression, excessive noise, and discriminatory language and acts (Perkins, 2002).

DUI. Driving under the influence of alcohol and other drugs is a salient problem for today's college students, not to mention their community neighbors (Clapp, Johnson, Voas, Lange, Shillington, & Russell, 2005; Hingson et al., 2003; Steptoe, Wardle, Bages, Sallis, Sanabria-Ferrand, & Sanchez, 2004)). Presley and colleagues (1995) found that 31.9% of college students 20 years old and younger self-reported that they had driven while intoxicated in the past year. Slightly over 33% of students 21 years and older admitted the same. Timmerman, Geller, Glindemann, and Fournier (2003) cautioned that not all designated drivers among college students remained sober.

In a study of over 17,000 students, Wechsler and colleagues (1994) found that 60% of men and 49% of females who had driven while intoxicated had also engaged in frequent heavy episodic drinking in the past month. There is a similar relationship with marijuana. Although the study was not centered exclusively on college students, Blows and colleagues (2005) found that habitual marijuana use "... is associated with a 10-fold increase in the risk of car crash injury" (p. 610). It is clear that regardless of the type of use, for some students, the consequence of driving while in an altered state can be worse than arrest or injury.

According to the National Highway Traffic Safety Administration, in 2000, 33% of all traffic fatalities occurred in crashes where at least one of the driver's or victim's

blood alcohol concentration was over the legal limit. For college students, this is especially significant as 40% of fatalities result from motor-vehicle crashes.

Approximately half of these deaths were associated with drinking and driving (Clapp et al., 2005; Timmerman et al., 2003).

Sex Assault. There is strong evidence linking sexual assaults with alcohol use (Abbey, 2002; Benson, Gohm, & Gross, 2007). College sexual assaults often occur in settings where alcohol is being consumed and decision making may be altered. Abbey, Ross, McDuffie, and McAuslan (1996) found an average of 50% or more of sexual assaults experienced by college students can be associated with the use of alcohol. In a study that included 350 undergraduate women, the results revealed that 21% were victims of attempted rape and 13% were victims of rape (Benson et al., 2007). Of these groups, 78.7% reported alcohol use at the time of the incident. These results are consistent with theories that suggest alcohol impairs the ability to process multiple cues, especially cues that may signal danger (Benson et al.).

College Prevention & Intervention Strategies

Intervention strategies utilized by institutions to combat substance abuse vary from campus to campus. Although there is extensive discourse regarding the types of strategies (Baer, Marlatt, Kivlahan, Fromme, Larimer, & Williams, 1992; Banning, Kuk, 2005; Karlin-Resnick, 2004), none of the strategies found suggest an intentional or specific focus on the cognitive development of students. Felner and Felner's (1989) ecological perspective on health interventions provides a framework for understanding campus alcohol intervention programs. This framework provides three intervention classifications: person-focused interventions, environmentally focused interventions, and

transactional focused interventions. The discussion of prevention and intervention strategies concludes with a description of a recent model for leveraged treatment adapted from community drug courts that has begun to be replicated on multiple campuses.

Person Focused Intervention

Early identification and prevention efforts for individuals on campus may be offered through the counseling center, health center, or even through the judicial process of the institution. The need for such programs is significant. For example, Wechsler, Molnar, Davenport, and Baer (1994) pointed out that a minority of students consume the majority of alcohol on campus. In a self-report study, Wechsler and colleagues found that 23.4% of the students consumed 68% of the alcohol on campus. This group is associated with a much higher percentage of consequences and is more likely to develop life-long chronic substance use issues. Ironically, person focused intervention programs are only present on some college campuses. Individual intervention including identification, assessment, referral and treatment are not nearly as prolific as the population prevention efforts (Cooper & Archer, 1999; DiClemente & Velasquez, 2002; Foote, Wilkens, & Vavagiakis, 2004; Marlatt, Baer, Kivlahan, Dimeff, Larime, Quigley et al., 1998).

Foote, Wilkens, and Vavagiakis (2004) reviewed the alcohol screening and referral process in college health centers. Of the 234 schools that completed the survey, only one third “engaged in ongoing, routine screening of students for alcohol use, whereas the remaining two thirds of schools performed screening on only 10% of their students” (p. 154). Gintner and Choate (2006) argue that identification of problem drinkers is much more likely if screening opportunities are not solely found in health

centers. In fact, many researchers suggest that student affairs professionals are poised to screen for problem drinkers due to the significant amount of direct contact with students (Foote et al.; Gintner & Choate; Larimer & Cronce, 2002).

Although not every campus has a counseling center, on campuses that do the staff has likely seen an increase in the severity of psychological concerns. However, although more complex mental health issues are on the rise, Benton, Robertson, Tseng, Newton, and Benton (2003) did not find substance abuse to be among the increase in severe concerns. Unfortunately, substance abuse was found to have remained steady over the 13 years of the study. Despite the increase in awareness and research, substance abuse referrals has not declined on college campuses (Benton et al.). Although several research studies have focused on substance abuse referrals to campus health and counseling centers (Benton et al.; Foote et al., 2004; Gintner & Choate, 2006; Larimer & Cronce, 2002), no research was found that focuses on off campus referrals. While studies have shown positive outcomes for students who utilize services at university counseling centers (Turner & Berry, 2000; Wilson, Mason, & Ewing, 1997) no literature specifically researched outcomes regarding substance abuse.

Judicial. Hoover (2004) studied 6,327 college records of alcohol arrests and found that, by 2002, the number had increased for 11 years in a row. This increase over time showed that college alcohol arrests had increased by 11% during these years. This increase may be due to changes in campus policies or stricter enforcement, however, combined with other research the increase in consequences appears to reflect the climate and culture of many campuses (Anderson & Gadaletto, 2001; Bergen-Cico, Barretto, & Vermetter, 2003; Nicklin, 2000). Alcohol remains the most renowned factor in campus

conduct infractions. In addition to the consequences of the violation, these same students are at higher risk for poor academic achievement (Caldwell, 2002; O'Hare, 1997).

Most schools have a code of conduct that would include a violation of underage drinking in addition to many other alcohol related activities. Potential consequences for violating school policies related to alcohol have been increasing on many campuses around the country. "These potential consequences included being fined, attending a required educational program, performing community service, being referred to a treatment program, and receiving other disciplinary action" (Wechsler et al, 2002, p. 212).

Another interesting finding is that regardless of the policy on campus, students polled by Wechsler and colleagues (2002), wanted more clarity concerning the current rules. In addition, a majority of the students were seeking more alcohol free living. There are growing numbers of students that appear to be seeking more accountability on campus rather than less. The polarization that is beginning in the campus community between those who abstain from drinking and those who are high-risk drinkers results in a confounding and complex campus issue (Wechsler et al.).

Education. Providing educational sanctions for violators of campus conduct codes remain a favorite strategy for many institutions (Kivlahan, Marlatt, Fromme, Coppel, & Williams, 1990). Anderson and Gadaletto (2001) report that 84% of colleges they surveyed offer some type of educational sanction when alcohol was involved in the school conduct violation.

Strategies of how to work with high risk drinking, alcohol abuse and dependence vary from campus to campus. Educational interventions including workshops, classes,

posters, and guidelines on how to calculate blood alcohol levels have become more popular in the past several years (Wechsler et al, 2002). One reason may coincide with the rise in frequent binge drinking. Many professionals have argued that students lack the ability to calculate blood alcohol levels in order to drive safely and therefore, this may be a deterrent (NIAAA, 2002). Educational strategies have also been marketed through on-line sources to meet the needs of current students.

Strike & Zero Tolerance Policies. Strike policies have been enacted due to the frustrations and concern over high-risk substance use and the ramifications on individuals, the campus community, the institution, and the broader community. Historically, zero tolerance policies emerged from similar concerns on a national level. In the 1980's, the federal drug policies received a lot of attention for the tough response to all levels of drug related crime (Skiba, 2000). In 1986, Peter Nunez, U.S. Attorney in San Diego, conceptualized and implemented one of the first zero tolerance policies that became a working model. The concept was simple; any vessel holding any quantity of illegal drug was impounded. Zero tolerance policies began to emerge from that point. The language and no-nonsense response to crime was developing at the same time that educators were hungry for change (Skiba, 2000; McCune, 2000).

Educators and Administrators were seeking change from what many considered the "superpredator" image of many teens related to substance abuse and violence (Browne, 2003). The first zero tolerance policies focused on expulsion for drug possession and activities related to gangs. In 1994, President Clinton signed the Gun Free Schools Act (Public Law 103-382). Although the bill was targeted for public K-12 schools, it has been the most significant piece of legislation that influenced the expansion

of zero tolerance policies (Skiba, 2000). When the bill was originally signed, it was specifically designed to cover weapons. Since 1994, many districts broadened the scope to include alcohol and other drugs, as well as fighting (Skiba; Browne).

Many school districts attribute lower disciplinary cases and safer classroom environments to the use of zero-tolerance policies (Jones, 1997). Proponents claim the clarity of the expectations is effective. For example, in Tacoma, Washington, the school district implemented a zero tolerance policy in 1991 against fighting. "After one year, the policy resulted in a 95 percent drop in violent behavior on campus" (McAndrews, 2001, p. 2). Proponents claim that it is the consistency with which discipline is given, regardless of trivial circumstance, that makes the policy effective (Skiba, 2000; Hamilton Fish National Institute on School and Community Violence, 1999). This is the argument upon which many college campus conduct policies have been built.

Opponents argue that the policy is applied inconsistently and often denies students fundamental rights such as due process and free speech (Skiba, 2000; Ableser, 2002; Keleher, 2000). Another issue that opponents have raised concerning zero tolerance policies concerns the equity of implementation among the entire student body. While proponents of the policy speak to its effectiveness, opponents question the racial disparity found in the data (Harvard Civil Rights Project, 2000; Gordon, Piana, & Keleher, 2000; Browne, 2003). The data from multiple researchers clearly shows that African Americans are more likely to be suspended than any other racial group (Keleher; Browne; Harvard Civil Rights Project, 2000).

Zero tolerance policies have been implemented for nearly two decades. According to Fowler (2004), zero tolerance is in the evaluation stage. A critical

component of this stage is to accurately gather information from scientific research methods in order to guide policy decisions. Opponents have raised many concerns about zero tolerance policies due to the lack of unbiased, scientific evaluations of a policy that has been implemented for more than ten years. Opponents have raised concerns that this data has been prevented from collection to avoid the racial implications (Gordon et al., 2000). Without accurate policy evaluations, there may not be an effective means to answer the questions whether or not the policy is effective (Skiba, 2000).

Environmental Interventions

Environmentally focused alcohol intervention programs often include workshops, classes, freshman orientation, curriculum infusion, peer education, and alcohol awareness weeks (DeJong & Langford, 2002). These strategies are often media focused programs seeking for removal or reduction of alcohol from the environment. Campus and community coalitions function to reduce underage access, limit irresponsible sales and create standards for marketing alcohol sales (DeJong & Langford).

Social Marketing campaigns have become very popular in the last several years. The popularity of these campaigns arose when it was discovered that students often overestimate the amount that their peers consume (DeJong et al., 2006; Granfield, 2005; Martens, Page, Mowry, Damann, Taylor, & Cimini, 2006; Perkins, 2002; Perkins, Haines, & Rice, 2005). When this happens, it tends to justify the amount of use along with inappropriate behavior and the cycle is perpetuated. When the information is accurate, the myth is broken, resulting in dissonance that changes behavior. The student is faced with a new reality and often will participate in healthier behavior (NIAAA, 2002; National Center on Addiction and Substance Abuse, 2003).

There has been both positive and cautious criticism of these types of campaigns on college campuses. For the campus community as a whole and specifically with non-binge drinkers and low risk drinkers, these interventions appear to have much greater success. However individuals who are at risk, in an alcohol abuse or alcohol dependent category, this intervention has not proven to be substantially successful (Wechsler et al, 2002; NIAAA, 2003). The intervention can be as simple as walking in a student center as asking people what amount of alcohol they believe other students on campus are drinking (Kellogg, 1999).

Transactional Interventions

Transactional focused programs utilize the strategy that addresses the individual student concern along with the unique campus environment. A transactional focus recognizes the college effect often associated with alcohol. Students arrive on a college campus with certain expectations around the culture of drinking. There is a need to provide programs that address the individual concerns and the college environment simultaneously.

An ecological approach to alcohol issues, on the other hand, focuses on the relationship between the individual student and the campus environment. An ecological perspective requires an examination of the major components of behavior, person characteristics, environmental conditions, and the transactional relationship among them. There is a multi-directional exchange that occurs among the various contexts that impact behavior (Blocher, 1978; Bronfenbrenner, 1977; Andere-McClelland, 2004).

Back on TRAC (Treatment, Responsibility, & Accountability On Campus)

For some college students, treatment may not be an option due to criminal charges and court outcomes (Hoover, 2004). Similar to the campus conduct system, the criminal justice system is deeply impacted by widespread alcohol and other drug use. The cycle of incarceration and arrest is often predictable when addiction and substance abuse are involved. The predictable pattern is arrest, prosecution, conviction, incarceration, and then release. Oftentimes, the cycle is repeated in a very short amount of time (National Association of Drug Court Professionals, 1997). It was this pattern that called for a new community court strategy to emerge.

In the early 1980's, criminal justice practitioners and treatment providers began working together to break the predictable and widespread cycle of addiction and criminal behavior (Huddleston, Freeman-Wilson, & Boone, 2004; National Association of Drug Court Professionals, 1997). A multi-disciplinary dialogue concerning this cycle spawned the development of a new approach eventually called drug court.

The goal of a drug court is to stop the abuse of alcohol or other drug use through a leveraged, collaborative approach. The incentive for successful participation in treatment is dismissal or reduction of charges and significantly less time in jail. It is a team effort of sharing information, widespread accountability, culminating with the Judge playing a much more significant role than solely disciplinarian (National Association of Drug Court Professionals, 1997). The Judge, through rewards and sanctions, keeps the participant engaged in treatment. The treatment providers keep the entire team informed as to the participant's progress and setbacks. Drug courts create an environment with clear and certain rules that provide boundaries and create opportunities for skill and

knowledge development. "The rules are definite, easy to understand, and most important, compliance is within the individual's control. The rules are based on the participant's performance and are measurable" (p. 7).

The evaluation of drug courts has been of great interest to both the criminal justice system and the general public. Between 1999 and April 2001, Belenko (2001) designed a critical review of 37 published and unpublished drug court evaluations. The study found that on average 47% of participants graduated from community drug courts. Successful graduation was an indication that the cycle had been broken; the participant had not had additional charges and was exhibiting successful behaviors such as maintaining a job and meeting family responsibilities. The drug court phenomenon has exploded across the country with dramatically better results using a collaborative treatment approach (Huddleston et al., 2004; Marlowe, DeMatteo, & Festinger, 2003; Meyer & Ritter, 2002). Collaborative treatment models may be an additional strategy for college professionals seeking to break similar cycles.

In conversations among judicial affairs professionals, many are quick to agree that current practices are not working for students experiencing severe impacts of substance abuse (personal communication, D. Gehring, 2005; personal communication, W. DeJong, 2005). College campuses have begun to mirror a similar cycle faced by communities where substance abusing students' violate student conduct codes, face a university hearing, and repeat the behavior until the last recourse of suspension or expulsion ensues. College student arrests have steadily climbed for more than a decade (Hoover, 2004). Up almost 11%, these arrests are a direct result of alcohol and other drug use. University infractions show similar patterns with a disproportionate number of high risk or heavy

users in violation of university rules (Barnett & Read, 2005). Although many creative educational interventions have been utilized by campus administrators, the volume of substance fueled behaviors continues to rise (Barnett, & Read; Larimer et al., 2003; Perkins, 2002; White, 2006).

In addition to students putting their own lives at risk as previously noted, the destructive behaviors are also severe when measured by the impact on the broader community. In fact, while suspension of these students may alleviate the immediate concerns in the campus environment, the problems often surface elsewhere in the broader community or at another university. It is no longer appropriate or realistic to believe that suspension can be the primary tool with which to respond to as much as 37% of the student population who are engaged in high risk substance abuse (Wechsler et al, 2002). The precedent for campus treatment has already been set in terms of other medical and psychological health concerns among students. Appropriate treatment of medical and psychological health concerns of students is related to the mission of higher education. Students point to these ancillary services that aided the pursuit of academic goals (Turner & Berry, 2000; Wilson et al., 1997).

It has, in fact, been difficult for some to embrace the idea that colleges need to provide intervention and limited treatment programs. As a pioneer in providing a leveraged, collaborative treatment model, Colorado State University (CSU) has been instrumental in offering an alternative to traditional methods of intervention by way of a model that offers both accountability and treatment. CSU adapted the model and principles of a community drug court (NADCP, 1997) to a campus environment. This model serves students who have violated the student conduct code fueled by varying

degrees of substance use. This collaborative system of accountability incorporates weekly staffing meetings, case management, treatment plans, case reviews, drug testing, rewards, and sanctions through a multi-disciplinary team. Addressing participants' alcohol and other drug issues along with empowering the acquisition of a wide range of skill sets, allows students to remain in school and focus on academic goals (Matheson, Gloeckner, Rein, & Miller, in press). Cognitive development, intrapersonal development, and interpersonal development skills are primary objectives of the program.

The program, entitled Back on TRAC (Treatment, Responsibility, and Accountability on Campus) is leveraged development and treatment for students facing potential separation from the university due to alcohol and other drug fueled behaviors. The program emphasizes accountability and personal responsibility while providing on-campus treatment resources, case management, peer support, and individually tailored contracts (Matheson et al., in press). A staffing team meets weekly to review each student's progress in both treatment and developmental arenas (Monchik & Gehring, 2005).

This unique opportunity is a voluntary program in which students who may otherwise be separated from the university because of substance fueled conduct issues have an opportunity to remain in the campus community as long as they participate in the Back on TRAC program. Back on TRAC provides opportunities for both skill and knowledge acquisition. The program provides a structure within which students are able to gain personal insight by increasing holistic competencies for a lifetime of healthy living (Miller, 2008; Monchik & Gehring, 2005).

The program is designed to maximize the number of tools each student can attain to be successful in the university environment and beyond. Some students quickly realize to be successful they must live a substance free life beyond the Back on TRAC program. Others seek a social life in which they consume responsibly, safely, and in a lifestyle that remains consistent with personal values and commitment to health.

This program has been replicated on other college campuses. Oklahoma State University, Texas A&M, the University of Nevada at Reno, Northwestern University, and South Dakota State University have all adopted the model and are currently in various stages of development.

Discourse Gaps

Only two studies were found that involve the cognitive epistemological development of substance abusing college students in the literature (Demb & Campbell, 2009; Park & Grant, 2005). Although both studies begin to open a door for further epistemological research, neither sheds light on whether or not there may be a relationship between substance abuse and cognitive delays or substance abuse and particular epistemological constructs.

Park and Grant (2005) propose that higher levels of constructive thinking are related to fewer negative consequences associated with substance use. In a study of 181 undergraduates from the psychology department of the University of Connecticut, they defined constructive thinking as “a style of appraising and approaching life that involves adaptive reasoning and control of negative emotions to allow appropriate problem-solving actions (Epstein & Meir, 1989)” (Park & Grant, 2005, p. 757). Participants self-report on the Constructive Thinking Inventory (Epstein & Meir, 1989) and the Alcohol

Expectancy Questionnaire (Kushner, Sher, Wood, & Wood, 1994) revealed that women with more advanced constructive thinking experience fewer consequences related to alcohol consumption. Park and Grant suggest that there may be a positive relationship between coping skills and higher constructive thinking.

Demb and Campbell (2009) suggest that there is a difference in the psychosocial and cognitive development of substance abusing college students. In a study of 4,428 participants who graduated from a Midwestern, research institution between the years of 1983-1993, current use and college use were self-reported. Demb and Campbell conclude that for those who were high-risk drinkers in college (46%), not all persisted in high risk drinking. Time-limited was used to signify those who were high-risk drinkers in college but dramatically decreased the frequency and quantity of alcohol upon graduation. For those whose drinking was time-limited to the college years, “developing mastery over alcohol and making progress along typical young adult psychosocial and cognitive developmental tasks” distinguished them from the persistent drinkers (p. 15). Demb and Campbell conclude that further cognitive and psycho-social development research on substance abusing college students is needed.

Summary

Literature on college substance abuse regarding the history, trends, characteristics, and impact, is voluminous. It is clear from the review of discourses that research regarding the prevention, intervention, and treatment strategies of college professionals reflect the magnitude of substance abuse on college campuses today. The literature regarding the epistemological development of college students suggests that epistemic constructs impact student’s view of knowledge, their role as learner, the role of peers, and

the role of authority. The intersection of both literature discourses suggests that a gap exists regarding the epistemic constructs of substance abusing college students. Utilizing the seminal research of cognitive theorists, the framework for exploring the epistemic constructs of substance abusing college students offers a new lens with which to address the vexing problem. A complex and widespread problem must have a comprehensive and complex set of solutions. As student trends change, so must the programs and interventions that professionals have the responsibility to provide.

CHAPTER III: PARADIGMS AND METHODS

It is clear from the review of literature that a population of substance abusing students who experience a myriad of negative consequences exists on most college campuses today. Extensive research has been utilized to describe these individuals, their behaviors, their environments, and the consequences they experience. However, there appears to be a research gap in understanding the epistemological development of substance abusing college students. This gap has been the impetus for the study. The primary purpose of this study is to identify the epistemological lens of substance abusing college students utilizing the constructs identified by Baxter Magolda (1992) as a priori categories along with noting any patterns that may indicate some level of cognitive delay. The findings will be outlined in chapter four followed by the implications, meaning, and how these findings may impact future research in chapter five.

This chapter provides a roadmap of paradigms and frameworks upon which the research is designed. The chapter begins with the researcher's stance and how this stance impacts the major paradigm choice. The researcher's axiological, ontological, epistemological foundations are brought not only to the research; they cannot be separated from the research choices and findings. These foundational paradigms are discussed to provide transparency which will also be discussed as a tool for added credibility (Patton, 2002). The constructivist theoretical tradition is outlined and connected to the researcher's axiological, ontological, and epistemological foundations. The research paradigm and theoretical framework provide the methodological roadmap. The methodology choices are then discussed concluding with the process for analysis.

Researcher's Stance

From research design to research questions, my choices are linked to and supported by my own epistemological, ontological, and axiological lenses. Research is never value free. My perspectives, experiences, and values shape my understanding of the world. My worldview is what guides and influences my research. In chapter one I shared some of my personal and professional experiences related to substance abuse that shape my worldview. However, it is critical to further disclose how my professional roles and experiences shape my understanding of college students who have abused substances.

I have been working with the population of substance abusing college students for over eight years, first as a university hearing officer and then as the director of a university office that provides treatment services and programs. Throughout these years, I have observed behaviors, patterns of consequences, and surprising outcomes I could not always predict. I have encountered many students who have impacted my life positively and who continue to inspire my dedication to the profession of student affairs. I have developed strategies and programs based upon the literature, collaboration with colleagues, and feedback from these same students. During this time, I have also been an instructor in the Student Affairs in Higher Education masters program where I co-teach a course in student development theory. Psycho-social and cognitive developmental theories are foundational to this course. Many of the programmatic developments were a direct result of teaching student development theory.

My worldview has been impacted by all of these experiences and relationships which, in turn, influence this inquiry. However, it is the intersection of these professional

roles that provides me with a unique set of lenses; lenses that I continue to search for in the literature. At the crux of this intersection is my belief that realities are alterable. Josselson & Lieblich (2003) highlighted the tension between such personal and theoretical knowledge. I bring my professional and theoretical knowledge to this research knowing that they must be balanced with the unknown areas of knowledge, experience, and meaning brought by each participant. Josselson & Lieblich describe this straddling process as a way to “illuminate the interviewees’ words” (p. 263). My description of this process is both a guiding assumption and expectation; my description is that meaning is co-created.

My axiological lens reflects the ethics and values that influence my perceptions, decisions, and actions. These values are reflected in the research process as I chose the subject, paradigm, theoretical framework and methods (Guba & Lincoln, 2005; Lincoln & Guba, 1985). My axiological view frames the nature of human beings as holistic. Human beings are innately whole and must be viewed holistically (Taylor & Bogdan, 1998). My values include a firm belief that behavior reflects identity but is not equivalent to identity. Substance abuse is a distinct behavior of many college students. Many professionals and practitioners have engaged in researching the behavior or phenomena (Johnston et al., 2003; Johnston et al., 2006; National Center on Addiction and Substance Abuse, 2003; Weitzman et al., 2004; Wechsler et al., 2002; Wechsler et al., 2000). I came to the study seeking a dialogue with each participant regarding individual epistemological frames.

Ontology encompasses the relationship between the knower and the known (Patton, 2002). My own ontological perspective is that realities are alterable and bound

to context. Realities are mental constructions that are based upon the experiences of the knower (Denzin & Lincoln, 1994). The mental construction's form and content cannot be separated from the knower's life experience. In this sense, they are not more or less true as in absolute. However the mental constructions may range from primitive to sophisticated (Denzin & Lincoln).

My own autobiography frames my epistemological stance as past personal stories framed my current viewpoints and paradigms (Clandinin & Connelly, 2000; Patton, 2002). My epistemological belief is that how I know what I know is subject and a result of my life experiences. These epistemologies impacted and defined the relationship between myself and each participant (Bogdan & Bilken, 2003). Intertwined with theoretical perspectives, myself understanding informed and guided my methodological choices.

As a post-modernist, my epistemological beliefs are grounded in the complexity of life. I believe that not only do we live complex and storied lives as Lincoln (1997) points out, but that we also bring multiple selves or identities to our construction of the world. The image of a "... polyphonic chorus of author/selves, subjects and participants, audiences and texts" (p. 38) reflects the complexity of narrative inquiry and constructivist approach that defines my relationship to the research in which I am involved. As such, I bring my own values, experiences, relationships, and perspectives that produce an additional sound that blends toward a polyphonic chorus of meaning.

Theoretical Framework

My theoretical framework is based upon a constructivist perspective. I approached the research with a desire to understand how each participant constructs

reality and meaning (Patton, 2002; Lincoln & Guba, 1989, 1985). According to Perry (1970), assigning meaning making to reality is captured as participants describe the unfolding of their lives within the framework of the interview; together we co-construct meaning.

I believe that realities are socially constructed providing defining matrices out of which both community and individual identities emerge (Smith, 2003). A constructivist framework is consistent with Taylor and Bogdan (1998) who illuminated the process of interacting with daily life experiences as critical to the meanings assigned reality.

From a symbolic interactionist perspective, all organizations, cultures, and groups consist of actors who are involved in a constant process of interpreting the world around them. Although people may act within the framework of an organization, culture, or group, it is their interpretations and definitions of the situation that determine action, not their norms, values, roles, or goals. (p. 12)

The meanings placed on relationships or experiences drives the way in which people act. It is from these interactions that meanings emerge and are interpreted. Human behavior, therefore, emerges from the ways in which people characterize and understand their world (Riessman, 1993). A constructivist framework is particularly appropriate in a study aimed at understanding behavior through identification of epistemological constructs. The politics of the author cannot be separated from the research in a constructivist framework because change is at the heart of the research. By identifying the inequalities and giving voice to those with little power, systemic change is possible (Tierney, 1994). Despite widespread efforts to prevent and curb college

substance abuse, this trend continues often resulting in escalating consequences (Johnston et al., 2006). Change is critical to systemically alter these consequences.

Tierney (1994) argues that a constructivist, postmodern perspective is one that utilizes caring to bring voices to light. The purpose is not simply to acknowledge the differences but to bring those differences to light in a transformative way (Patton, 2002). “Caring, then, is a way to work on an individual level and at the same time relate that care to the broader questions about the structure of society” (Tierney, p. 107). Whether the factors have been prior substance abuse, peer involvement, family background, stress, or personal beliefs, the consequences of substance abuse are widespread and staggering (Johnston et al., 2003; Johnston et al., 2006; Weitzman et al., 2004; Wechsler et al., 2002). What ethical responsibility do institutions have regarding treatment for these students? Would additional inquiry give rise to more effective intervention and treatment strategies that enable substance abusing college students to be successful? A constructivist framework cannot be separated from the theoretical underpinnings of the researcher.

Theoretical Underpinnings of Epistemological Development

In addition to the epistemological perspectives, the theoretical concepts brought by the researcher impact the meanings elicited from a constructivist framework (Patton, 2002; Tierney, 1994). Cognitive epistemologies have been utilized to understand both identity formation and the process by which behaviors are linked to the person and environment. Perry’s (1968) seminal work gave researchers and practitioners meaning making clues to better understand college students. Perry’s research provided the

groundwork upon which others followed (Baxter Magolda, 1992; Belenky et al., 1986; King & Kitchener, 1994).

Baxter Magolda's (1992) research has particularly impacted my epistemological understanding. Inspired by Perry (1968), King and Kitchener (1994), Belenky et al., (1986) and Gilligan (1977), Baxter Magolda identified epistemological constructs that provide insights beyond the academic domain. Her constructivist framework and narrative approach also resulted in the identification of gendered epistemological patterns. I believe this theoretical knowledge to be significant in understanding the construction of reality by college students who are impacted by substance abuse. I view the Baxter Magolda's theoretical significance "provisionally, tentatively, critically, inquiringly ..." and with openness (Josselson & Lieblich, 2003, p.265).

Methodology

Methodology refers to the way in which we approach problems and seek answers (Taylor & Bogdan, 1998). Human beings live storied lives through life-long interactions and relationships (Connelly & Clandinin, 1990). Meaning-making varies from person to person based upon individual realities, paradigms, and knowledge. I am drawn to narrative inquiry precisely because of these complexities and the search for how people construct reality and make meaning in their lives. Through a constructivist paradigm informed by epistemological development theories, I have chosen narrative inquiry as a process to search for substance abusing college students' meaning-making.

Narrative Inquiry

The purpose of narrative is not to understand the past exactly as it unfolded. Narrative “describes the road to the present and points the way to the future” (Josselson, 1995, p.35). Rather than searching for a resurrection of the past, narrative inquiry empowers the researcher to understand the process of reconstructing it (Pamphilon, 1999). Through the interpretation of contexts, selection of symbols, and deciphering the web of interactions, narratives provide the tools for constructing revealing truths (Riessman, 1993). As such, narratives do not stand alone but require on-going elucidation. “Narrative is a way of understanding one’s own and others’ actions, of organizing events and objects into a meaningful whole, and of connecting and seeing the consequences of actions and events over time” (Chase, 2005a, p. 656). Stories linked to the “formations and reformations” (Riessman, 2003, p. 341) of meaning, told and re-told in light of current self-understanding.

Narrative is not only a technique, but a comprehensive strategy in uncovering both the dialogue within the self and the dialogue with the world (Josselson, 1995; Yow, 1994). “Life histories are helpful not merely because they add to the mix of what already exists, but because of their ability to refashion identities” (Tierney, 2000, p. 546). Exploring the epistemological reflections of students whose substance abuse has resulted in significant consequences provides an opportunity to travel beyond the demonization of those who participate in binge drinking and other drug use, and search for relevant interactions between life discourses and epistemological lenses.

The world, as I know it, is complex, dynamic, filled with multiple realities and reflects not a single Truth, but multiple truths. Meaning-making varies from person to

person based upon individual realities and knowledge. I am drawn to narrative inquiry precisely because of these complexities and the search for how people make meaning in their lives. I resonate with Daiute and Fine (2003) as they expressed the purpose of narrative:

...narratives do not merely report on the life that is lived nor the community that has developed. The narrative process is a search for meaning, so the telling and the told, the hearing and the written, are inextricably linked as is the individual narrator in the social milieu of discourse. (p. 63)

Utilizing the discipline of narrative is most often associated with an inductive process whereby the categories of meaning unfold and are co-created by researcher and participant (Connelly & Clandinin, 1990; Creswell, 1998; Taylor & Bogdan, 1998). Although a priori categories are often identified by the research from the theoretical knowledge, the categories remain tentative and flexible (Patton, 2002; Piantanida & Garman, 1999).

As previously discussed, my theoretical knowledge has been very influenced by Baxter Magolda (1992). She too utilized narrative inquiry as the method to pursue the meaning-making of college students. She described her research process as inexorably related to the cognitive constructs identified by Perry (1968) but did not identify the process as inductive or deductive. However, Baxter Magolda provided transparency for the reader by describing the context in extensive detail along with Perry's constructs and a detailed process description of her interpretations.

Methods

In reviewing Baxter Magolda's methods, I made the decision to utilize her epistemological constructs as a priori categories for analysis. Although it was not possible to replicate a longitudinal study due to time and cost limitations, I chose an alternative of utilizing her first interview template with a purposeful sample of substance abusing college students. The interview questions are very consistent with my own axiological, ontological, epistemological, and methodological assumptions.

Setting: Colorado State University

Approximately 25,000 students attend Colorado State University, a land grant, Carnegie I research university located an hour's drive north of Denver, Colorado. Colorado residents make up about 80 percent of the total enrollment and 13.3 percent of students with U.S. residency are ethnic minorities. There are 20,829 undergraduate, 3,655 graduate, and 527 professional veterinary medicine students. Undergraduates comprise 81% of the student population, evenly split between males and females, and have a mean age at registration of 21. The freshmen class from fall 2008 numbered approximately 4,250. Freshmen are required to live in the residence halls. The average entering freshman ranks in the 72nd percentile, brings a 3.5 grade-point average, and has an average ACT composite score of 24.0 or a SAT combined score of 1,112.

CSU uses the American College Health Association-National College Health Assessment (NCHA) as one measure of the extent of alcohol and other drug usage, attitudes, and perceptions among its students. In the 2006-2007 administration of the NCHA, CSU freshman students reported 30% do not drink or consume alcohol. In addition, 52% of freshmen drink 4 drinks or less or none at all (ACHA, 2007).

According to the 2006 consortium benchmarking survey completed by Hodgkins Beckley Consulting, there is a slight improvement in the level of students who are not engaged in binge drinking from 2001 to 2006 (60.2% to 63.7%).

Back on TRAC. The Back on TRAC (Treatment, Responsibility, & Accountability on Campus) Program at Colorado State University represents an adaptation of the community drug court model on a college campus. Back on TRAC (BOT) provides the methodology to systematically, holistically and effectively intervene when a student's repeated pattern of substance abuse has undermined his/her emotional, physical and academic well-being. It accomplishes this task by applying the principles and components of the successful drug court model to the college environment. It holds substance abusing students to a high level of accountability while providing individualized treatment, development, and compliance monitoring (Monchik & Gehring, 2005).

Students qualify for candidacy in the BOT program if the CSU conduct policy is violated due to substance fueled behaviors and if at the outcome level is that of suspension. In order to be accepted into the program, an extensive assessment is required that includes a detailed history of all substance use (legal and illegal), the Substance Abuse Subtle Screening Inventory (SASSI) (Miller, 1985, 1999), the Minnesota Multiphasic Personality Inventory (MMPI) (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989), and a baseline urine analysis that tests for seven different types of drugs, including alcohol.

Purposeful Sampling

Participants of the study were chosen from a voluntary pool of students in the second phase of the BOT program. Due to the thoroughness and consistency of the BOT assessment, there was assurance that each possible research participant had experienced significant consequences including a deferred suspension, and an assessment that met a minimum diagnosis of substance abuse (APA, 2000). A flyer (Appendix A) explaining the research project was given to the case managers for distribution to students in phase 2 of the program. Students in the second phase of the program have maintained approximately four weeks of abstinence from alcohol and other drugs which has been verified through random urine tests and breathalyzers.

By choosing students in phase 2, students had established rapport with the staff and they had time to detoxify from the most significant effects of prior substance use. I did not want the interviews to be impacted by current substance use. The case managers assured students that participation was voluntary. During the late summer and early fall of 2008, there were no female participants in the second phase of the program.

During August of 2008, flyers were distributed to BOT phase two participants. Each participant was given a copy and invited to participate. Five men volunteered and followed up with individual appointments. We met in my office because of its familiarity to the participants. After an individual explanation of the interview, each participant signed the consent form, chose a pseudonym and then proceeded into the interviews. Rick, John, Johnny, Max, and Rob shared personal experiences in the classroom, gave examples from co-curricular life, and co-created meaning with me. There were no incentives given to participate in the study yet each participant wanted to be involved.

I made the decision to include all five voluntary men that allowed for a range of academic standing and, what appeared to be saturation of epistemic constructs. One hundred percent of the men were Caucasian undergraduates. The academic standing of the five included two seniors, one junior, and two sophomores. After each student gave his consent the interviews took place between mid and late September 2008.

Data Collection

Utilizing Baxter Magolda's (1992) constructs as a priori categories, I utilized the template from her first interview with five students who were in phase 2 of the BOT program.

The template includes the following questions:

1. Tell me about the most significant aspect of your learning experience in the past year.
2. As you think about yourself as a learner in the classroom, what role do you prefer to play to make learning more effective for you?
3. Let's talk about instructors. What do you expect from them to help you learn effectively? (Follow up if necessary: What relationship do you think instructors and students should have to make learning effective?).
4. What about other students in your classes? What kinds of experiences have you had with them that help you learn? (Follow up if necessary: What kinds of interactions would you like to have that would help you learn?)

5. As you think back over the work you've done in your classes the past year, talk about how you think learning should be evaluated in order for you to learn effectively.
 6. Discuss your perspective on the value of the things you have learned in the past year. (Follow up if necessary: What things have you learned that you think are important? What concerns have you had about some of the things you have learned?)
 7. I am interested in your perspective on how best to make decisions. Can you describe an important [educational] decision you made in the last year and talk about how you went about it?
 8. Would you change anything about the learning environment you have experienced over the past year? If so, what?
 9. Is there anything else you would like to share to help me understand your perspective on the learning you have experienced over the past year?
- (Baxter Magolda, 1992, p. 412)

Each interview was between 60 and 90 minutes and was tape recorded to achieve the maximum accuracy of all responses. Following the five interviews, four of the tapes were transcribed. I took notes prior to the interview, during the interview, and after the interview. The fifth tape was destroyed during the transcription process. It was damaged beyond repair. This will be addressed in more detail in the next chapter.

Data Synthesis & Analysis

I transcribed each student's epistemological responses following the interview. Each transcript was reviewed by the researcher and the peer reviewer applying the a

priori categories of Baxter Magolda (1992) (Bogden & Bilken, 2003). The a priori categories were compiled on a template analysis grid (Appendix A) to provide consistency between the researcher and the peer reviewer.

Template Analysis

Template analysis is a particular approach to analyzing qualitative data (King, 1998). The hallmarks of template analysis is that a thematic coding template is created that reflects hierarchical levels of codes. The researcher designs and organizes the template according to relevant themes. The themes can come from the literature review, theoretical underpinnings, or broader themes associated with the data set. If the researcher utilizes themes from the literature or other prior theoretical knowledge, the thematic template utilizes a priori codes. These are directly related to the research question and are marked accordingly when the data is reviewed. This process can also be done with an initial subset of the data. When the process is concluded, the same template is applied to the entire data set. The process concludes by organizing the interpretation within the same template format (King, 1998).

Template analysis was a particularly appropriate method of interpretation due to the emphasis on hierarchical coding (King, 1998) and inclusion of theoretical underpinnings. Prior to the analysis, the coding template (Appendix B) was created that combined the research questions and the theoretical concepts from my literature review.

When the template was complete, the transcripts were analyzed using the a priori categories of concrete, transitional, independent, and contextual epistemological constructs defined by Baxter Magolda (1992). After merging the identified codes with those of the peer reviewer's, findings were then organized that fit each code followed by

a secondary sort into the structure of the interview template (i.e., the role of the learner, the role of the instructor, the role of peers, the role of evaluation, and the nature of knowledge) (Baxter Magolda). Next, the secondary themes were explored, which Baxter Magolda also identified. “By underlying story lines, I mean the threads that run through the collective student stories that are more general than the specific ways of knowing or patterns within them” (p. 191). These broader threads include the development and emergence of voice, the changing relationship with authority, and the evolving relationships with peers. The process was concluded by searching for emergent themes, discussing tentative themes with the peer reviewer and seeking input from participants.

Coding

Coding is a process by which the data can be broken down into manageable chunks in order for it to be analyzed and interpreted. “Coding gives a researcher analytic scaffolding on which to build” (Charmaz, 2005, p. 517). The technique of coding through assigning a code or shorthand description to extract both data identification and data constructs was utilized (Merriam, 2001).

Chase (2005b) described the coding process as “immersion” (p. 95) into both the data and the preliminary interpretation. In addition to sorting themes, similarities, and dissimilarities, coding also reflects the biases and assumptions of the researcher (Charmaz, 2005). The process included sharing these tentative categories with the peer reviewer in order to gain insight, check assumptions, and participate in the co-creation of meaning. This discussion included a deductive and inductive component.

Bracketing

Denzin (1989) describes the process of bracketing the data. Bracketing includes analyzing smaller sections of the data for similarities and differences. By re-arranging and putting the sections back together in the context of the setting, important themes may be identified. Emerging themes elucidate threads that are significant to substance abusing college students. In addition, any relevant themes may provide insight into the epistemic constructs and how development may be fostered.

Trustworthiness Criteria

The measures for ascertaining validity are “derived from community consensus regarding what is ‘real’, what is useful, and what has meaning” (Guba & Lincoln, 2005, p. 197). From a constructivist paradigm, process and outcome are critical considerations. Trustworthiness is dependent upon the confluence of reality, usefulness and meaning in addition to establishing the research quality. The quality of the study is reflected by the integrity of the researcher in the processes of establishing authenticity and reflexivity. The researcher alone does not assign saliency in interpreting meaning which may promulgate social change (Guba & Lincoln). Rather, the interpretation and action is in conjunction with each participant. The consent process was very informal and relaxed. Each of the five participants appeared eager to participate in the research. Four of the five particularly articulated hopes for improving intervention programs for other college students who experience negative consequences related to substance abuse. Riessman (1993) proposed additional criteria to augment validity and trustworthiness including persuasiveness, coherence, and pragmatic use.

Persuasiveness

When analysis flows from and is sustained by research data, the inquiry is both credible and convincing (Riessman, 1993; Lincoln & Guba, 1985). The reader must find the conclusions a plausible interpretation. “Persuasiveness ultimately rests on the rhetoric of writing – on literary practices – and reader response” (Riessman, p. 66). Prolonged interaction with participants is one way in which credibility is enhanced (Merriam, 2001). The relationship between the researcher and participant builds as trust is established (Lincoln & Guba, 1985). The relationship with each of the five students was established prior to the research through the Back on TRAC program. Although there was only one interview, because of previous involvement in the program, the interactions were informal, comfortable, and relaxed.

Coherence

Consistency of the interpretations must be dense or “thick” (Riessman, 1993, p. 67). It is the responsibility of the investigator to provide the thick description of context at all levels. As a constructivist inquiry, transferability is directly linked to the depth of context description (Baxter Magolda, 2001). As a result, a detailed description of the research setting, the institutional context, and the research participants is provided for the reader.

Pragmatic Use

Sometimes entitled transferability (Miller & Crabtree, 2005; Patton, 1998), pragmatic use refers to the future researchers verifying through further inquiry, or application to other contexts. Pragmatic use requires an audit trail of research decisions in addition to rich description (Riessman, 1993). Riessman cautioned that validation is

not linked to prescribed procedures. “There is no canonical approach in interpretive work, no recipes and formulas, and different validation procedures...” (p. 69). The integrity of the process and outcome must be constantly reviewed. Based upon the literature discourse, intentional decisions were made to continue the epistemological research of Baxter Magolda (1992) with the specific population of substance abusing students. These choices were informed by Baxter Magolda’s transparency. In many ways, this research is evidence of her study’s transferability. This research was motivated by the hope of contributing to college substance abuse intervention strategies. By being committed to transparency, the hope is that readers will judge the methods, the context, and the interpretations as transferable to another setting.

Authenticity

Authenticity is critical to my methodology. As each participant brought his own narratives to the co-construction, so too were those of the researcher. Like each participant, the researcher’s storied life provides the back-drop of meaning-making. Guba and Lincoln (2005) provided authenticity standards by which constructivist inquiry may be evaluated including fairness and ontological authenticity which are described as “hallmarks” (p. 207) of authentic appraisal.

Fairness

Fairness is the fulcrum that balances all voices regardless of power, perspectives, or voice. Guba and Lincoln (2005) wrote that “... fairness was defined by deliberate attempts to prevent marginalization, to act affirmatively with respect to inclusion, and to act with energy to ensure that all voices in the inquiry effort had a chance to be represented” (p. 207). Being intentional and mindful about fairness as participants were

chosen and the interviews were conducted served as high priorities. The research was concerned that there were no women in the second phase of the program. Utilizing women who were in the first phase of the program was considered, but not pursued. Although that decision would have increased fairness in terms of gender inclusion, it did not include fairness regarding the interruption of treatment. The first phase of the program is very tenuous. Participants have not fully established relationships with the staff. It was strongly felt that this heightened the imbalance of power for students. Regarding the participants in phase two, commitment was made to a purposeful sample that was inclusive of class, race, and grade point average.

Ontological Authenticity

Although fairness ensures the balance of all voices, ontological authenticity is a “criteria for determining a raised level of awareness” by each participant (Guba & Lincoln, 2005, p. 207). Narrative inquiry is steeped in reflection as each person intentionally chooses how to tell, what to tell, and what to omit. Each participant was given an opportunity to openly share their own experience. The interview was structured but open. All five participants asked questions, paused for reflection, and shared their experiences.

Reflexivity

The concept and practice of self-awareness is at the heart of reflexivity for a researcher. The hard work of self-reflection includes understanding the perspectives, relationships, biases, and roles brought by the researcher into the inquiry process (Taylor & Bogdan, 1998).

Attempts to be explicit concerning prior roles was exhibited. In addition, transparency concerning passion for this study which transcends the significant but not sole goal of understanding the epistemological development of substance abusing college students. The researcher has been deeply and ardently concerned with producing “social critique and advocacy” (Bloom, 2002, p. 310). Research that gives voice to students who have been identified with alcohol and other drug abuse and whose substance fueled behaviors have had significant impact upon their ability to be successful in a university community has been the driving and motivating source. The process of reflexivity has been to intentionally participate in on-going dialogue with colleagues, faculty, and students. These conversations have impacted the process of choosing methods as well as the process of interpretation.

Ethical Considerations

Long before the dissertation process began, ethical considerations were reviewed with intentionality and forethought. The researcher served as both the coordinator and the judge of the Back on TRAC program. Although the staffing team is structured such that no one person makes an ultimate outcome or program decision, that position is undeniably powerful. It is the role of the judge to confer both rewards and sanctions. For some students, the judge represented the face authority, accountability, and rules. It is counter-intuitive for students to develop an interpersonal relationship based on mutual trust when the balance of power is so institutionally tipped.

For some students, the imbalance of power creates an impenetrable zone of distance and distrust. For others, the fulcrum of power creates a welcomed safety net. For these students, seeking to please the face of authority becomes the marker for

success. It is not uncommon for students to begin the program angry and resentful but through time transform dramatically. Long after completion of the program, many students remain connected with the staffing team. As a result of these relationships, methodology choices due to researcher's role and power were made.

Conclusion

Chapter III reviewed the procedures used in this study and the rationale for a narrative approach to understanding the epistemic constructs of substance abusing college students. The chapter reviewed the researcher's ontological, axiological, and epistemological foundations that were brought to the research. The constructivist perspective of the researcher was discussed to provide transparency for the reader and to strengthen credibility. The methods were reviewed which outlined the setting, the purposeful sampling technique, the data collections process, and analysis technique.

CHAPTER IV: FINDINGS

Reflections on the Making of Meaning

For years, when a new candidate was presented to the Back on TRAC (BOT) program, my first thought was never an inner comment about the breadth or depth of consequences which brought them to this option. It was usually a moment of awe or respect for the amount of courage it must have taken to stay in school and agree to abide by the rules of a pretty demanding abstinence program. But after my initial interaction, I am embarrassed to admit, I have frequently drawn premature conclusions from body language, tone of a spoken word, or other first impressions. I would be the first to admit that these speculations were frequently short-lived. What I have learned from so many individuals is that each person's story is unique and complex.

I do not recall the first time I met each of the five men who volunteered to participate in this research. As a BOT staffing team member, I had encountered most of these men in educational groups I facilitated and more informally around the office. I knew their names and had many friendly interactions. I did not have a clinical relationship with any of them, yet, at one time, had heard why they were being presented as candidates to the program. Those details are important and contain rich material that pertains to each of their storied lives; but that material was left out of this study for a reason. I approached our time together seeking deeper understanding of the epistemological constructs through which each of them viewed the world; at least at that point in time. What unfolds in this chapter is my interpretation and analysis of the process and findings.

The Interviews

Other than gender, being Caucasian, and sharing a history of substance abuse, Rick, John, Johnny, Max, and Rob, had different stories, different majors, different views, and different dreams. Max and John were both seniors. Max was preparing for a degree in finance and John was pursuing a political science degree. Max had achieved academic success and was preparing to graduate within the year. John's academic experience was wrought with frustration. He did not display confidence in a professional vision nor was he clear about his ability to graduate. Rick was the only junior and the one who articulated his future goals with the most specificity including a definite graduate institution, a timeline for future courses, and explicit research experiences. Rick expressed his dream with definite clarity. He shared specific benchmarks that would lead him to complete a graduate program in clinical psychology and result in his professional goal of a career in clinical counseling. Rob and Johnny, both sophomores, were chronologically and academically the youngest. Johnny's focus was business administration with an interest in management. Rob was undeclared at the time of the interview but had hopes of a business degree with a minor in psychology. Rob's goals were vague but his reflections expressed a great deal of clarity regarding his collegiate experiences. He shared many stories from co-curricular events and encounters where he believed a significant amount of his college learning took place.

Max was the first interview and the student I have known the longest. He appeared very comfortable and intrigued by the questions. I interpreted his expressions, the long pauses, and the way he searched for particular phrases as a desire to truly communicate his experiences. He frequently checked on my understanding of what he

had communicated. If he was not sure I had completely understood, he gave examples to help me thoroughly understand.

Both Johnny and Rob expressed a desire to contribute to research that might help other students who have had similar experiences. There was a lot of laughter in both of these interviews. Johnny and Rob both described the significance of their freshman year as a time of particular growth. Rob articulated several regrets concerning choices he made during his first year on campus. He related those regrets to his motivation for participating in the study.

John appeared uncomfortable from the outset of the interview. My attempt at building rapport was more difficult with him. In checking back with him, he expressed that the subject caused more discomfort than our dialogue. John's stories and experiences were filled with frustration. He frequently asked me to repeat and explain questions because they did not seem to relate to his experience; especially in the academic environment. John did not appear confident and frequently checked his responses as if there was a correct answer. John's affect reflected both his frustration and disappointment with his college experience. He discussed his confusion regarding a disconnection between his effort and the outcome. John expressed that the more hours he studied and the harder he tried to succeed, the worse his grades reflected his effort. I noticed that John rarely looked directly at me unless I was speaking; even then, his eye contact was not consistent. John's electronic tape was unintentionally destroyed during the transcription. However, I did take notes that enable me to tentatively include him in the study due to my notes, my follow-up interaction, and my memory.

Rick was the only one of the five who had attended another institution and transferred to the university. He shared many stories that compared and contrasted both institutions. Rick was very quick to respond with specific examples and stories that reflected not only his experience, but also how he felt about them. Rick shared very clear expectations for faculty, peers, knowledge, and how evaluation should take place. Rick's responses were substantially longer than the others. Rick rarely hesitated and appeared, as I described in my observations, very confident. Rick kept consistent eye contact and did not appear to be concerned with the accuracy of my understanding. When I asked him if he would be willing to meet again so I could check for precision regarding the transcription and meaning, he politely voiced that there was no need. He expressed confidence in my ability to transcribe as well as in his own articulation of insights.

Interpretations

When the interviews were complete, the notes were reviewed, the interviews transcribed, and the peer reviewer provided insights for analysis. The time spent with each student was rich with personal experiences, thoughts, feelings, and insights. Reflecting on the stories they told, the insights they shared, and the expectations that each held, provided a much deeper appreciation for the epistemological constructs with which they viewed the world. Every time additional reading or reflection takes place regarding their meaning making, something new is gleaned. It was much more exciting than previously imagined.

As noted in chapter III, not only was template analysis a particularly appropriate method of interpretation, the organization outlined from the template enabled me to literally see different connections of dialogue by cutting and pasting (King, 1998). The

template also served as a constant reminder of the influence the a priori categories were for this research. The template served to highlight and improve awareness so the influence could be kept in check and reviewed. Had they not been so explicitly stated, they may have had limitless influence.

The interpretations are organized according to the template level. The discussion that follows begins with the a priori categories of concrete and transitional constructs (Baxter Magolda, 1992). Baxter Magolda's independent and contextual constructs were not included because the findings were not inclusive of student's reflecting those particular constructs. The discussion next addresses the secondary sort reflective of the interview template (i.e., the role of the learner, the role of the instructor, the role of peers, the role of evaluation, and the nature of knowledge) (Baxter Magolda). The discussion proceeds with the secondary research focus of the underlying storyline of voice and the emergent theme of learning as a utilitarian process. Regardless of the epistemological construct, all five students shared both themes. The discussion concludes by addressing the other primary research question regarding the presence or indication of epistemological delays if Baxter Magolda's constructs were identified.

Overview of Findings

The study found strong indications to support the transferability and appropriateness of at least two of Baxter Magolda's (1992) epistemological constructs within a the participants. With very few exceptions, themes reflective of absolute and transitional knowing were consistently identified and confirmed by the peer reviewer. Although the methods did not utilize any type of quantitative analysis, when the codes

were aggregated, there appeared to be a higher total number of codes reflecting absolute knowing constructs than transitional constructs. This varied for each individual.

None of the five participants reflected a singular epistemological construct as identified by Baxter Magolda, although there did appear to be a predominant epistemological construct for each. The epistemological construct that appeared to be predominant for John, Johnny, and Rob was absolute knowing. Max and Rick both reflected absolute and transitional epistemological constructs. It was clear that Rick's epistemological construct was predominantly consistent with transitional knowing. Max's predominant construct was much more difficult to identify. The experiences he shared and the expectations he highlighted were consistent with both absolute and transitional knowing. The difficulty may be related to the number of years in college from which he reflected. Although the overall coding was equally split between both constructs, his more recent reflections are more consistent with transitional knowing.

Absolute Knowing

I really didn't realize or think that school was like really important 'cause I just figured you'd get a little bit better. But then... once I started going to school more for myself than my parents and my family and my image, ... I didn't want people to look at Max and say "oh yah, he stopped going to school". Now it's more for me. I want to go to school and I really, really want to finish. And hopefully I'll do well enough where I can continue.

-Max

The foundational epistemic assumptions of absolute knowing articulated by Baxter Magolda (1992) was that knowledge is absolute and comes from authority such as faculty. These epistemic assumptions were frequently reflected throughout most of the interviews. All five participants described how they individually obtained the

information and how they could identify if it was correct. As previously discussed, Baxter Magolda found two gendered patterns she called receiving and mastery. The study utilized any reflection of gendered patterning to help identify and code the a priori categories, but purposefully did not code the patterns due to the small size of participants, that all five were male, and because this was not included in the research questions. It is important to note that Baxter Magolda found that epistemologically, 68% of freshman, 46% of sophomores, 11% of juniors, and 2% of seniors reflected an absolute knowing construct. None of the year five participants indicated consistency with the epistemological construct of absolute knowing.

Max was the first participant interviewed in the study. At one point in the discussion, it appeared as if he had previously been exposed to Baxter Magolda's work. He articulated such a hallmark example of the mastery pattern within the construct of absolute knowing, it was staggering. Max shared his enthusiasm for learning with the following description:

So I think my favorite [part of learning] is... the sense of accomplishment. I guess... totally mastering something, like even if it's just a simple graph. Just totally mastering it when... even though just memorizing it, you'd get by.

Not all of the examples were this obvious, but what follows is a discussion of absolute knowing.

The Role of the Learner

Rick, Rob, Max, Johnny, and John reacted with such surprise, it was as if it was the first time anyone had asked them how they view the role of the learner. Several of them needed this repeated while tentative dialogue began. John appeared the most perplexed. He seemed to think it was some trick kind of experiment. Most described

being present, taking notes, and acquiring content information. It was the “acquisition” that varied slightly. Max brought a subtle sense of humor to the interview. When asked what role he preferred to play in class, he responded, “I prefer to play the person who never raises their hand.” For Max, memorizing information was not only reflected in the expectation of learner, he felt it was the best way to maximize success. Max expressed this in his statement:

...I've realized that memorizing is the best way to get through school. So I memorize more than go back... even though I love going back and figuring it all out, I know that... all that were in my classes this year was scantron essays... or scantrons and one class essay. So I know that this year, except for the one class, really just... memorize everything, write it down, and memorize my notebook and that's how I'm going to do the best.

For Max, the primary measuring stick for doing the best was grades. Although cognizant of more internal measuring sticks such as confidence in the ability to apply information, Max was predominantly motivated by grades. For him, the role of the learner was to be successful in the acquisition of grades rather than simply the acquisition of knowledge.

Rob, John, and Johnny identified that the role of the learner was to acquire information from the instructor. This did not seem to connect with a purpose for learning. Rather the role of the learner centered on reflecting back to the instructor, or the authority, that the information was acquired properly. The focus was on the specific content. Johnny reflected a similar style of note taking to acquire information:

I'll sit there and I'll take notes in lecture which I can do relatively easily even if I don't comprehend it, I can still get it all down and then review the notes by myself or with someone else is definitely... is the best way and that's when I feel like I really learn it better.

Comprehension for some additional purpose was not present in the dialogue. Johnny also described a level of mastery where he could deduce the answer on a test if need be, but

like Max, the measuring stick was grades. For Johnny, mastery was the hallmark of his role which he articulated in the following summary:

But when I really get it down, when I really have it in my head ... is when I review it and that probably takes me close to like, 80-90% of the information I'll retain, and then, ah ... even the information I don't retain ... say it's on a test ... I can usually work it out with logic ... kind of just answer.

Rob described receiving knowledge from the professor in a process where peers did not play a very significant role. Rob's role as the learner focused primarily upon the instructor. That focus is consistent with the epistemological construct of absolute knowing where the authority has all the knowledge. Rob expressed some challenges when peers took on a distracting role:

I mean everyone's sitting there, taking notes, doing whatever. I mean I'll talk to them [peers] occasionally but when the professor is giving notes, most people are quiet. I don't really engage in conversations while the professor is giving notes or lecturing or what not ...

Max gave very similar responses but added that for him, debate was a preferred way to acquire knowledge or practice mastering it. Max delighted in giving examples of classroom debate such as:

- Max: As far as debate, then I'm all over it if I can prove other people wrong.
Lisa: Does it make a difference about debating with a faculty member verses debating peers?
Max: No ... I'd rather debate peers 'cause usually ... debating faculty is just hard, especially older ones 'cause they've had everything thrown at 'em. They know how to handle it, you know what I mean? But if you debate with peers you can kind of throw them off their balance and get 'em. It's just easier to debate with peers ...

Although he did not like losing such an intellectual battle, Max was motivated by demonstrating his skill in front of the instructor.

The Role of Peers

Rob, Johnny, John, and Max expressed varied expectations for peers. Peers either were supportive helpers in activities as study groups, or useful partners in gaining knowledge in the classroom. Whether the examples involved debate or asking questions the learner hadn't thought of first, peers helped Rob, Johnny, John, and Max imitate the voice of the instructor. Whether the role is supportive or active, both peer roles are consistent with Baxter Magolda's (1992) epistemological construct of absolute knowing. Rick also expressed expectations regarding the role of peers in illuminating the knowledge given by the instructor. However, it was clear that from Rick's experience, this could also be frustrating. This was particularly apparent when he shared:

But I really don't like it when people don't seem to get the underlying point of what they're talking about; or what their own statement is. They still don't know what they're talking about or they don't get the big picture. I got a kid in my Current World Problems class and he'll bring up hypothetical's all the time. I can't stand hypothetical's in Current World Problems because they have no merit. Could be like ... we're talking about the U.N. kind of stuff and he'll start saying, "Oh what if this, this, this, and this?" That has no basis. That is not furthering the class discussion. He is only trying to make himself seem smarter when in reality he is becoming that class kid who doesn't know what he's talking about. And I can't stand that. Anyone can say what if this...it just doesn't make any sense. He's not asking questions that pertain to the lecture or the pertinent material at all.

It was clear that none of the five participants considered peers to be credible purveyors of knowledge. Both Max and Rick questioned the usefulness of peers from time to time in our discussion.

For Rick, in particular, if peers could not assist the process of gaining knowledge by asking pertinent questions or bringing up something other students did not think to ask, peers were likely described as a hindrance. Although Rick did not reflect

predominantly absolute knowing (Baxter Magolda, 1992), when he did utilize this construct it was most often in reference to or regarding the role of peers:

I expect them to actually read the material before asking questions. But, you know if we are going to review chapter 4 that day and they haven't read chapter four and then they are asking questions that were blatantly obvious in the book, they should be reading that kind of stuff before they come in. Otherwise it's just wasting class time. Class is only 50 minutes ... your talking a question that can take up two minutes. You're knocking out a significant portion of the time already.

In groups ... like I got a biology lab today ... [peers] helps a little bit, but in reality if you can't ... or if I can't grasp my own information, my peers probably won't be able to help me nearly as much as the professor ... I honestly never count on my peers for anything ... I'm in there for me. If they need help or if someone sitting next to me has a question and you know they want to lean in and ask me something, that's fine. But I don't count on them for anything because I don't like counting on other people in that kind of context.

Rob, John, and Johnny didn't find this nearly as annoying as Rick described.

Rather, Rob and Johnny saw a possible benefit. Peer questions may prompt the instructor to describe the knowledge more effectively or it may help individuals to grasp something deeper. John went even further reflecting what appeared like gratitude because others were willing to raise their hands and ask questions. John described that kind of active participation as a difficult process for him, especially if the class was larger. Rob and Johnny appeared much more comfortable:

Rob: the student should be willing to ask a question whether they think it's stupid or not. And the teacher should answer it or explain ...

Johnny: So if someone brings the question up, you know it makes everyone think about it. Even if they've already thought about it, it makes them think about it a second time so they may realize something they didn't realize before or they may understand better than they did before.

However, similar to Max and Rick, Rob, Johnny and John never described peers as having much authority or authentic knowledge.

The Role of the Instructor

... he's your teacher ... he's the person that's handing you grades ...

-Rob

Johnny's vivid description was very consistent with the hallmark of Baxter Magolda's (1992) absolute knowing construct in the centrality of the instructor.

According to Baxter Magolda's description of absolute knowing, if the instructor was not only the authority, but also held the answers and performed the evaluation, he or she was definitely the primary focus in the classroom. And yet, when asked the question, "What do you expect from them [instructors] to help you learn effectively", it was surprising at how difficult it was for most participants to respond. Prior to the interviews, this was not considered to be a particularly difficult discussion. The researcher's notes revealed that four of the five participants not only took much longer to respond, three also needed the question repeated. One possibility is that it may have seemed so obvious to the participants that they were taken aback by the interview's inclusion of such an obvious question.

Rob helped clarify his response during a follow up session. Rob described that instructor expectations seemed so obvious to him that he considered it a trick question. Although he could describe what he considered to be good and bad instructors, faculty played such a central role in learning that he hadn't considered what it was that made them more or less effective. Although he could not give specific examples, effectiveness appeared to be linked with higher grades.

Similarly, in a follow-up conversation with Johnny, he realized by reviewing the transcripts that he expected faculty to be entertaining in order for him to learn more

effectively. Nearly every example Johnny gave to describe a good instructor had something to do with fun, creating a safe classroom, or bringing personal passion into the lecture. John also shared that if the instructor could make the class fun or interesting, he was more invested and would likely receive a better grade.

The hallmarks of instructor expectations identified by Baxter Magolda (1992) readily appeared in the discussion. It was apparent that Max, Rob, Johnny, and John each shared two common expectations for an instructor. First, instructors would exhibit expert authority meaning that the instructor could answer everything. Second, they expected instructors to be entertaining or at the very least, excited or passionate about the subject.

Max: Mostly, I expect instructors to know what they're teaching backwards and forwards... and have it planned out, you know, have their agenda planned out for the day.

Johnny: That's a tough question 'cause I've had a few professors that... none that I've absolutely loved, but I've had a few that I've liked. I had a Logic and Critical Thinking teacher that - you know a lot of people thought he was boring but I found logic somewhat interesting and the way he presented it wasn't like really lively or anything but he just presented it in a way that he cared about it and .and so ... it made me pay attention to it. It almost made me care about it... I've got a Bug Science class that the teacher just... loves bugs. He actually loves bugs and so it's just I got to respect how much he loves bugs. And it makes it really easy to learn 'cause he knows exactly what he's talking about and you can ask him anything and he knows exactly what he's talking about.

Johnny's words were particularly striking, "It[He] almost made me care about it"; almost, but not quite. Entertainment was directly related to increased engagement or participation which resulted in better grades. For Rob, Johnny, and Max, connecting the purpose of learning to the expectations of instructors was clearly absent.

Johnny, Max, Rob, and John consistently expressed a clear hierarchy regarding instructor authority. A hierarchical view of authority was very consistent with Baxter

Magolda's epistemic construct of absolute knowing. Johnny, Max, Rob, and John each shared stories regarding experiences with teaching assistants (TA's) versus faculty.

Johnny: I found my composition class... my TA was okay... she wasn't great... she wasn't bad. She was just, like, okay... which is what I was expecting because you know Composition 150 is such a basic course that everyone has to take and their just pushing people through it. And since it's one of the biggest that you have to have but it's taught in a smaller setting that they have to have so many teachers for it... you know, it's just really random luck on how good or bad of a teacher you get. And so...

Lisa: What made her so-so?

Johnny: Her expectations... her grading system I thought was too hard. Ummm..I thought that her teaching style wasn't as effective say as an actual professor...

Johnny expressed openness to a TA as an instructor but continued utilization of his entertainment and classroom environments as criteria for comparison to faculty.

Max also applied faculty expectations and evaluative criteria to a TA's performance in the classroom. Clearly, this was a source of significant frustration for Max. During our discussion, his face flushed, his voice rose, and he struggled to articulate himself with complete sentences in depicting the difference in authority and effectiveness between faculty and TA's. With an agitated tone, Max described the impact on his learning when TA's did not meet his expected criteria:

I've had a lot of grad students which is..., ah, 'cause when grad students get to the board with math and they start going backwards and they don't... and they're like "wait" and they have to do it again and then they're just always confused..I can't learn at all... They don't know what's going on. That's the worst. But when..ah, all I expect, really, from instructors is know what they're doing.

Although a few TA exceptions were described, most participant stories illustrated justification for dismissing information provided by TA's. Because they were not truly an authority, TA's did not possess valid knowledge worth acquiring or remembering.

Rob provided an additional insight related to the role of instructors. He referred to a utilitarian agenda in building a relationship with faculty that could result in increased success. Although others may have thought about faculty relationships in this way, Rob was the only one who expressed it. Rob conveyed this agenda in the following way:

I was thinking more in regards of getting to know professors individually so they know who you are ... they might tend to give you a break or ... go out of their way a little more to help you personally with specific questions on upcoming tests.

Again, Rob's agenda is consistent with Baxter Magolda's (1992) construct of absolute knowing.

Interpreting the role of the instructor findings related to Max was very difficult to fully comprehend. There were ample a priori codes identified in the transcripts. However, when the process was completed, a primary epistemic construct did not emerge as it did with Rob, John, Johnnie, and Rick. His stories and experiences were from his entire undergraduate experience. Rob and Johnnie provided insights from a much shorter time period. Although coding from the transcripts was not available, from notes and memory John did not provide illustrations, experiences, or expectations that differed epistemologically. With Max, it is important to note that he reflected more than one epistemological construct through his illustration of experiences. The preparation of the interview template did not include this distinction. As a result, the discussion did not support a narrative a timeline or chronological limit regarding his reflections. For example, Max gave several rich descriptions of relationships that had grown with certain faculty that led me and the peer reviewer to wonder if he was exhibiting an epistemological transition consistent with Baxter Magolda's (1992) construct of absolute

to transitional knowing. When added to preceding dialogue, he depicted a utilitarian focus to instructor relationships that were tentatively consistent with absolute knowing.

I've had instructors that ...I wouldn't say close to but I would go to their office hours ... usually they are harder subjects stuff that I can't quite wrap my brain around without their help. And ideally, I mean I've always pretty much had this, is where you go in ... first of all they're glad you came in because no one goes in to office hours ... EVER.

Multiple times, Max referred to a particular faculty member. Over the course of the discussion, Max shared how the relationship with her shifted over the previous year. In his earlier interactions with this particular instructor, Max described a relationship built upon debate and finding ways to create separation. He used the example of debating with peers that exhibited his mastery over the subject. In the following paragraph Max shared that he noticed significant differences between them from the beginning.

I had her in Women and the Economy and she's a huge feminist ... [Max rolled his eyes when referring to her being a feminist ...] ..and I'm completely anti-feminist and we ... I mean we did not see eye to eye on anything. But just the way she goes about it ... she ... I mean I kind of have an edge to me a lot of the times. She has no edge and she listens and if you're right she'll tell you you're right; and she'll tell you why you're wrong most of the time. I just loved her ... she was just so good and she was really smart. Even though we, I mean we're completely different ...

His self-portrayal of having an edge is very consistent with Baxter Magolda's (1992) gendered mastery pattern reflected in the epistemic construct of absolute knowing. In more recent experiences with this same instructor, Max depicted building a relationship where he experienced a connection. Max' illustrations of a shift from separation to building a connection is consistent with what Baxter Magolda (1992) described as the process of agency and communion. The shift between agency and communion were particularly poignant during the transition from absolute knowing to transitional knowing and eventually salient in independent knowing. Communion is the process of building

connections and relationships with others whereas agency is the process of building separateness (Bakan, 1966). Based upon one interview, my interpretation reflects a very tentative analysis.

The Role of Evaluation

In the discussion concerning evaluation, Johnny and Rob's experiences had not varied much regarding evaluation experiences. Whereas both were sophomores in mostly larger classes, they had experienced a few different types of quizzes and what they referred to as "scantron" exams. Scantron exams are pages of numbers with corresponding bubbles. The answer choice is filled in with a pencil mark and then scored by a computer. Although each had some creative alternatives they might have preferred, both described the role of evaluation as producing the correct answer. If knowledge is absolute, it follows that the authority would provide the correct information which could be effectively evaluated. The answer would either be correct or incorrect. John and Max shared similar insights that Johnny articulated in the following paragraph.

... a good amount of my classes the teachers had TA's that sit in the back of the classroom while the class is going on and write test questions from the lecture which makes it much better than using ... just re-writing old tests. Because it's on information that is actually seen in class and so I think it gives you a really fair chance to know what's going to be on the test. You've been presented all the information that's on the test so now it's up to you to study for it....

The last few lines were consistent with two hallmarks of absolute knowing: acquisition and remembering (Baxter Magolda, 1992).

Both John and Johnny hinted that negative evaluative results were less connected to their ability to memorize or learn than they were reflective of the instructor's skill. Both suggested that if the instructor presented the information with passion or had the talent to keep them engaged, than they would experience better grades. It was clear that

classes in which Johnny achieved good grades, he also noted that the instructors were of high quality. John was quite similar in his explanations of his low grade point average. It appeared that grades were related to many other factors and not whether or not they learned the material. It is not clear regarding whether or not John and Johnny recognized this correlation.

Rob was asked to reflect specifically on the role that exams played in the process of learning. Not only was he clear about exams not reflecting actual learning, he creatively outlined an alternative option he felt was much better in terms of integrating learning and evaluation.

Rob: No. I don't think exams have any part in the learning process. It's just... I think an exam is simply just part of... tell them what you already learned. You asked the best way and maybe it's not but that's the only way I've done it.

Lisa: ... what do you think would be more effective to help you learn?

Rob: Well for one example, I think that my psychology class... especially this semester... is we're learning all about experiments psychologists have done in the past. I think it'd be really interesting if we could do one ourselves. And um... and then maybe turn in the surveys and maybe audio and video of what we did and be graded and assessed on that. How we actually... [answered the question]. I'd say that'd be more applicable to a career or job because they are not going to be handing out scantrons when you go to work, right? It's going to be actual results of what you do.

Rob's emphasis on application emerged multiple times throughout the interviews. This was consistent with absolute knowers expectation of evaluation's role in improving mastery outlined by Baxter Magolda (1992).

The Nature of Knowledge

Simply put, Rob, John, Johnny, and Max all described knowledge as certain in one fashion or another. In most cases, the authority would have correct answers unless they were not truly authority, such as the TA's to which several participants referred.

During the discussion on the nature of knowledge, both Rob and Johnny shared co-curricular examples. Johnny shared several specific thoughts he felt would improve his success:

I'd have had all the classes a lot smaller; I'd have the professors more handpicked so I have professors I like teaching the classes. Professors that are interesting and interested in me.

Rob appeared to suggest that the exposure to so many things enabled him to learn a lot.

Rob put it like this:

I'd just say being able to ... be in the classroom, studying and reading more, writing more..makes me be able to speak more knowledgeably and come off as not just the average Joe.

Toward the end of Rob's interview, he was asked if he thought it was possible to always find the answer, regardless of the question. At first he gave an emphatic negative.

What followed was another example of dialogue that may reflect transitioning from one epistemic construct to another.

Lisa: Is it always possible to find an answer to something?

Rob: No.

Lisa: okay

Rob: I'd say no but other times yes but it takes time. Other times if you ask it the right way

Lisa: What are the kinds of questions you think can't necessarily be answered?

Rob: I don't know. I guess I just left that open to possibilities... [laughing]...

When Rob replied that it wasn't always possible to find an answer, but then seemed confused by his own response, his confusion appeared consistent with a transition between absolute and transitional knowing (Baxter Magolda, 1992).

Absolute Knowing Summary

After reading the transcripts, not following up with some discussions in the moment was frustrating. Rob, John, Johnny, and Max all shared expectations and

experiences framed from an absolute knowing epistemological construct where knowledge appeared certain and the authority had all the answers (Baxter Magolda, 1992). Although none of their experiences equated peers with authority, some individual discussions incorporated specific roles peers played in the acquisition of knowledge. For some it was support and others it was to practice through debate. Even Rick reflected experiences concerning the role of peers that appeared consistent with the construct of absolute knowing. Although each participant had personal preferences for types of evaluation, all except Rick described evaluation's purpose as to reproduce that which was acquired to check for correctness. Johnny summed up his college experience with the following words:

It may not have been the best learning environment for me ... it was the college learning environment and it was ... it's an experience and there's the good and bad that come with it. As much as I don't like the bad, I really enjoy the good. Overall, it's been a great experience ... the good combined with the bad, just makes me work through adversity and makes me learn a lot more than if it was just tailored to me.

Transitional Knowing

According to Baxter Magolda (1992), the epistemological construct of transitional knowledge reflected a substantially different shift from the construct of absolute knowing. The hallmarks of transitional knowledge were more complex because learners accepted that some knowledge was inevitably uncertain. However, learners also held the belief that some knowledge remained quite absolute. Rather than a focus on acquisition and memory, for transitional knowers, the focus was on the "process of learning" (p. 108).

Rick was the only participant whose findings were consistent with the epistemological construct of transitional knowing as outlined by Baxter Magolda (1992).

Although others shared examples and engaged in discussion that were coded as transitional knowing, they did not appear to reflect this as a predominant epistemological construct as did Rick. Rob appeared to search for understanding and meaning especially when he reflected on his co-curricular experiences. For example, he gave a macro view summation of his first year experience highlighting its significance.

Okay, I'd say the most significant experience of learning would not necessarily be factual, but actually experience ... experience in college and how to go about learning such as studying, organizing, ... organizing time ... managing time ... and also who you know ... who your resources are.

Searching for understanding by focusing on the process is consistent with Baxter Magolda's epistemological transitional knowing construct.

What follows is a discussion of the many appearances where participant's reflections were consistent with transitional knowing. It was clear that Rick's epistemic construct mirrored a transitional knowing lens; especially when discussing expectations for him, the instructor, and for role of evaluation.

The Role of the Learner

Similar to Baxter Magolda (1992), the study noted that the role of the learner shifted when the view of knowledge was uncertain rather than absolute. Rick exhibited a consistent focus on prioritizing the process of understanding over knowledge acquisition. He was overtly irritated in recalling past courses that only required memorization. This is very consistent with Baxter Magolda's transitional knowing construct. "Students altered their focus from acquiring knowledge to understanding it" (p. 105). Rick frequently compared his previous undergraduate institution with his current university experience. When he described the content of courses during his freshman and sophomore years, he

was clearly irritated by a focus on simple vocabulary. One of his motivations for transferring was the desire for a more conceptual academic focus.

Now that I've come here, I'm definitely gonna learn more from conceptual and concept analysis instead of vocab.

Rick also expressed a desire to play an active role in learning. He consistently described a desire to apply the concepts learned inside the classroom to the world beyond. When reviewing the coding along with interview notes, there was a connection between understanding, application, and level of enthusiasm expressed by Rick and often by Max. Both Rick and Max clearly were more animated when they discussed what they could do with knowledge. They each uniquely described a sense of accomplishment or pride that related to the application of what they learned. Max shared the following:

... it's a really simple graph and simple equation... it's easy to memorize. But then once you go back and look at like why everything is and put it all together, then you can... then you learn like where it's supposed to be taking you. You know, not just the simple graph but... as far as trading, and you can go outside the meaning and do all sorts of stuff. So I think the... my favorite is... the sense of accomplishment.

There was a distinct difference between the enthusiasm for knowledge application in participants with findings consistent to absolute knowers than with those whose findings were consistent with transitional knowers. Rick, and often times Max recognized a purpose for learning that was not present with Johnny and John. Baxter Magolda (1992) identified recognition for the purpose of learning as a central hallmark of the epistemic transitional knowing construct. An example was Rick's expectation of connecting the lecture to life outside the classroom:

Because sometimes they'll just read off the power points that are already posted on-line. And that, to me, makes no sense at all. I can go home and read something on line if I wanted to. I'm coming to the lecture to actually learn something different. Some professors that actually broaden the books

vocab[ulary] and what the definitions are and they actually talk about applications... that makes a big difference. Because then they're actually relating it to a real world circumstance and for me, it's just a lot easier for me to retain that information if I can relate it to one other thing because otherwise I'm just learning a vocab[ulary] word.

Rick was also different from some of the other participants regarding decision making. Rick's decision to transfer did not appear to involve anyone who could be considered an authority figure. Rick took charge of the decision and the process by researching the institution, visiting the institution, and outlining his goals. He described the significance of this move in many different ways throughout the interview:

I just went to MPI so that I could get easily into; they had a good psychology department and I just kinda stuck with it for two years until I graduated drug court. Once I graduated drug court, is when I applied to Colorado State knowing, after doing much research about the departments and everything, I came out and visited. I really liked the school and realized that this one would further my education and not just kind of be ... vocab[ulary].

According to Baxter Magolda (1992) a focus on process rather than reliance on authority, distinguished absolute from transitional knowing. "Processes believed to lead to future success replaced direct reliance on authorities for educational decision making" (p. 105).

The Role of the Instructor & the Role of Peers

The study's findings highlighted some similarity between instructor and peers in discussions with Rick and Max, but only when the content of knowledge was uncertain. This is very consistent with transitional knowing as described by Baxter Magolda (1992). Understanding appeared to replace the simpler goal of knowledge acquisition. As previously noted, the purpose for understanding was consistently related to application. In that way, understanding knowledge seemed to take on a utilitarian role.

However, when the content of learning was perceived to be absolute or concrete, understanding appeared secondary to acquisition. This went unnoticed in the first two

rounds of coding the interviews. It also caused confusion regarding Rick's description of peers and their role in learning. If he was describing his expectation of peers and the example involved knowledge he viewed as absolute, peers were not equated with authority and their opinions held little value. He gave an example of a debate where one side used facts and the other emotion.

You might have one guy say ...give [a] good example for legalization based upon jail rates, recidivism rates from drug court compared to prison and then the guy for criminalize might say oh well, smoking pot makes you stupid... smoking pot causes you to do heroin...Do I really need to bring out a book and show you how that's not true?...that just brings down the intelligent conversation to a low. Compared to when you are actually debating facts and um ...misguided research and all that kind of stuff. And then some people bring in emotions and my brother use to smoke pot and then he did turn to heroin. Okay ... you had a brother who smoked pot and turned to heroin ... that has nothing to do with the debate at all. That might be a reason for your opinion but as far as the opinion of the topic goes, that's invalid.

Rick's depiction of peers made more sense when it became clear that his description of peers' role in learning shifted when knowledge was uncertain. Instructors and peers alike played a role in the process of learning when knowledge was perceived as uncertain.

Rick discussed one of his favorite classes in that light:

One of my best classes was Philosophy and Criminal Justice. And it was an absolutely wonderful class, because the philosophy in that category ... you're not talking about Asian Philosophy ... you're talking about pure concepts about how one person can relate to another. And there was like 20 people in the class. It was the most ... um ... everyone talked ... it was the most active class I've ever been in because it just had to do with ... you know, the professor could say one thing – what do you think about voodoo? And one person could say, "I think those people should be locked up in an insane asylum", which person actually did. And I was like look, they are just practicing their religion, you have to back off. And the professor would give his own feedback. And everyone learned in the class at the same time because the questions were essays.

The Role of Evaluation & the Nature of Knowledge

Rick's and Johnny's reflection on the role of evaluation was distinctly different. Whereas Johnny was more interested in measuring the correctness of what he had acquired, Rick's perspective focused on understanding and application.

Because my first test that I took in Research Methods was a lot more conceptual. And it really had nothing... there were some vocab[ultery] questions, but... the professor would put in a paragraph say identify the independent variable, the dependent variable... like it wasn't just what is it? You had to actually identify it. And so far that's actually made quite a big difference.

For Rick, the ability to apply concepts and understand the process was central to evaluation. Rick also discussed the value of research and logic which he illustrated through his experiences.

Whereas... um... Marxism isn't too valuable because you can maybe understand certain people with it better but past that and have a little bit of knowledge for yourself but you're not going to use it.

From Rick's perspective and occasionally Max', the nature of knowledge appeared to reflect both certain and uncertain arenas. This was inferred from Max' and Rick's illustrations but the interpretation was not confirmed. Max gave several examples of comparing math to a course like philosophy. However, it appeared that value was linked to applicability rather than knowledge being certain or uncertain.

Lisa: So to you, it sounds [as if] valuable means something you can use.

Max: Yes. Something... something like... elementary math is extremely valuable because you use that for the rest of your life... Whereas... um... Marxism isn't too valuable because you can maybe understand certain people with it better but past that and have a little bit of knowledge for yourself but you're not going to use it.

Max also expressed some frustration when the evaluation's focus was limited to memorization. He expected evaluation to contain some kind of application which he portrayed as much more important:

I'll be sitting next to someone ... um ... the best thing I can think of is my financing class. There's this kid that is just like a whiz at math and can do all those. But then we take our quizzes and I'm just so much better at memorizing I get better grades. But I mean that kid is so much better with the field of financing ... it's just ridiculous that I am better in the class than he is.

These examples are consistent with Baxter Magolda's (1992) epistemological construct of transitional knowing.

Transitional Knowing Summary

As previously noted, Rick's depiction of experiences and expectations were very consistent with Baxter Magolda's (1992) transitional knowing. With a few additional illustrations from Max, the shift from acquisition to understanding was evident with Max and Rick. Peers appeared to play a more significant role, particularly when the knowledge content reflected uncertainty. Rick and Max stressed the significance of application through understanding regarding evaluation. It is clear that the findings showed consistency with the epistemological construct of transitional knowing, despite the small number of participants.

Broader Themes

Baxter Magolda (1992) encountered three broader themes that were not related to epistemology. These broader themes were explored for relevance in the analysis. Baxter Magolda's identified these themes as salient to all young adults. "The development and emergence of voice, the changing relationship with authority, and the evolving relationships with peers are three underlying story lines that form the foundation of parallels between the participants and other young adults" (p. 191).

The study found examples of each theme throughout the discussions. However, because the study did not utilize a longitudinal approach, there was no clear way to track

the evolving relationships with peers accurately. Max shared several stories concerning one particular faculty member. His portrayal of this relationship reflected a shift from separation and competition, to valuing a more connected relationship. The study also found threads of voice particularly from Rick's discussion. Like Max, Rick's illustrations reflected a longer period of time.

After reviewing Baxter Magolda's underlying themes, an emergent theme of utilitarian value of learning, which Baxter Magolda (1992) had not mentioned was discovered through the analysis. What follows is a discussion of voice and the utilitarian value of learning.

Voice

Rick described how his substance abuse negatively impacted his life and self-understanding. While he was abusing drugs, it appeared as if there was neither a connection to the process of learning, nor a relationship with instructors or peers. When he stopped using drugs, he expressed not only a connection to the learning, but with the instructor and peers as well. The description of his role as a learner before and after he quit smoking marijuana was dramatic. Even Rick's illustrations were more animated and passionate. What emerged from that transition was a very different Rick. His voice and focus moved from who he had been, to who he wanted to become. This decision impacted his involvement as a learner, his relationships, and his ability to integrate those experiences.

I mean I actually stayed all through the classes and didn't skip classes once I quit getting high. I actually stayed. I mean I use to just kind of go to class...even if I went to class...I might stay for half the time, leave, go back home...Home was like 27 miles away. But I would just go home, smoke some pot and watch TV and then when I switched off, I actually stayed at class and started liking class;

liking professors, talking to professors and actually getting involved in school instead of just going there and getting the grades and leaving....

During the discussion, Rick appeared to associate his previous institution with who he had been. After transferring to CSU, he articulated a much more integrated identity connecting with others, building a professional identify and, perhaps the most obvious, he identified himself as a knower.

I never saw myself graduating from MPI [MPI – My Previous Institution]. That is a four year commuter college. I'm a lot smarter than that...and that's just kinda what I got stuck with. Like my brother; I love him to death but he's not as smart as I am and he went to school. It really is more of an ego thing in the beginning because I didn't want to be the smarter one graduating from MPI and then him graduating from SLU. And I had already known that I was going to transfer schools but, I had to make sure I actually took care of it.

He often connected his professional goals with his personal growth and development.

Baxter Magolda (1992) identified three principles in promoting the development of voice: "validating the student as a knower, situating learning in their own experience, and viewing learning as constructing meaning with others" (p. 340). Rick discussed all three of these principles as he shared his story.

If it was during school hours and there was like a club like psychology ... I would like to talk to psychologists ... I really would ... 'cause I actually know what they are talking about as far as review materials and other things as well ... I'd even be for some study groups. You know a lot of people in classes that are actually in my major ... discussion ... like an intelligent discussion where people actually know what they're talking about, and not ones where people are making comments just trying to sound smart ... there's a big difference between the two if you actually listen closely. You can tell the ones that are trying to sound smart and the ones trying to make a good influence. And I would like to have good discussions like I did in my philosophy class. Like stuff like that I mean, you had both extremes..you had people talking non-stop about good arguments and then some of the classes that I go to, it's just a big down fall and I would like an intellectual conversation.

The study encountered similar intrapersonal development with Rob and Max.

Rob described a significant transition between his first and second year. He expressed

this shift through highlighting regrets, showing a connection between his behavior and identity, and acquiring a clearer picture for his future.

Well the only thing I wish I could have known was experience. I don't know if you can know experience but I wish I would have somehow come into my first year already knowing that you can't go out every night and um... you do have to choose who your friends are because they have a major impact on what you do.

Max discussed several similar experiences:

When I came here... both my parents came here and it wasn't like I really wanted to come here. It was pretty much, I mean, I really didn't want to leave Colorado and I didn't get into Colorado College which is where I really wanted to go so I came here. I really didn't realize or think that school was like really important 'cause I just figured you'd get a little bit better. But then... once I started going to school more for myself than my parents and my family and my image... most of my image. I didn't want people to look at Max and say "oh yah, he stopped going to school". Now it's more for me. I want to go to school and I really, really want to finish. And hopefully I'll do well enough where I can continue.

Secondary Utilitarian Focus

In reviewing the transcripts after the third time, it became apparent that all four transcripts contained discussions around learning that contained a utilitarian focus. This theme appeared to cut across different epistemological constructs. For examples:

Lisa: okay... good... talk to me a little bit about your perspective on the value of things that you have learned in the past year. For example, what things have you learned that you think are really important?

Johnny: ...probably say some business things I've learned are most important because it's my major and it's what I want to do with my life. I can say the science classes, the history classes... now they're all well and good... you know, sometimes the information is boring and sometimes it's interesting... not something I'm really going to need for the rest of my life.

Max: I would honestly say that I haven't really learned anything valuable in my classes over the past year. I mean... even though... all of them are upper divisions but I'm through like my intermediate classes which are kind of like you learn economics and through all those and now I'm in Marxism which... I mean that's a cool class. And you get to see the other side of my mind. But I'm never gonna... I mean... I can't even understand them but at least I know where they are coming from... you know... I've read their books but I'm never gonna use that. And then, Marketing... I mean I just have to take that for my business minor. And

then International economics..it's just that...I've taken classes that I'm probably not going to use as much as I did say junior year. Junior year is when I took the classes that I will probably use the most.

It was clear that for each participant, value was directly related to applicability. Learning and outcome were connected or, as Max expressed it is not valuable at all. Regardless of the experiences or expectations, each of the five students described learning or knowledge acquisition as a product. They varied in their expression, but each overtly attached the purpose of learning to finding a job or career. There did not appear to be any intrapersonal impact of learning.

Research Agenda

The purposes of the study focused on the cognitive narratives of students whose substance abuse has resulted in deferred suspension from college. The study's primary focus was twofold. First, to explore each participant's narrative responses to targeted questions in order to explore Baxter Magolda's (1992) cognitive constructs of Absolute Knower, Transitional Knower, Independent Knower, and Contextual Knower with substance abusing college students. Secondly, explore for delays if the narratives were consistent with Baxter Magolda's constructs. The secondary research focus was also twofold. First, the narratives of each participant were reviewed deductively for underlying themes that matched those from Baxter Magolda's study. Second, inductively, the narratives were reviewed for emerging themes.

The Epistemological Reflection Model

In the research with five men who have experienced deferred suspension from college due to substance abuse, the study found that all five narratives were consistent with Baxter Magolda's (1992) epistemological constructs. Given the limitation in scope

and size of the sample, only consistencies with the first two model constructs of absolute and transitional knowing were identified. Max, John, Johnny, and Rob's narratives were consistent with absolute knowing. As previously noted, Max also portrayed elements of transitional knowing, particularly with more recent experiences. Rick appeared to primarily reflect a narrative consistent with transitional knowing.

Throughout the study, the narratives of each student varied, even though they may have appeared to have shared a particular epistemological construct. For example, all five participants commented that classroom size impacted their learning experience. However, the meaning placed upon that commonality varied. For Johnny, this was an expectation because he described faculty as more entertaining. For Rick, smaller class size was related an increase in time for which students could express opinions, or acquire more information. For Rob, he could create a relationship with the faculty member more readily in case he needed help or a break down the road.

Although it would be premature, not to mention inappropriate, to make any general conclusions regarding an entire population of substance abusing college students, it was clear that further exploration of epistemological development would be beneficial.

Delays

In the study of two sophomores, one junior, and two seniors, both sophomores and seniors primarily reflected a consistency with the Baxter Magolda's (1992) epistemic construct of absolute knowing. Due to the utilization of other constructs in varying degrees, it appeared that even within the absolute knowing epistemic construct, there was a range. The remaining junior, Rick was the only one of the five who was predominantly

consistent with an epistemological construct of transitional knowing. Baxter Magolda's study of over 100 students resulted in a correlation between class and epistemic construct. In her longitudinal study, as students progressed from year to year, Baxter Magolda noted epistemological development that was inclusive of both curricular and co-curricular experiences.

Regarding students identified as absolute knowers, Baxter Magolda (1992) found the following class percentages: freshman (68%), sophomores (46%), juniors (11%), seniors (2%) and first year graduates (0%). As students progressed through college, they displayed increasingly more complex epistemological development. This study of five men, found two sophomores and one senior reflective of the epistemic construct of absolute knowing. Although the other senior reflected some elements of transitional knowing, there were many experiences and expectations that mirrored absolute knowing.

Baxter Magolda (1992) outlined the following results regarding transitional knowing: freshman (32%), sophomores (53%), juniors (83%), seniors (80%), and first year graduates (31%). Findings from this study identified one junior who manifested the epistemic construct of transitional knowing. As previously noted, Max, the other senior, exhibited cognitive traits which were consistent with both absolute and transitional knowing. This suggests that epistemological delays may impact or may be related to a population of substance abusing college students. The implications of such a delay will be discussed in chapter V.

Summary

This chapter reviewed the findings of the research. The findings suggested that the epistemic constructs of the participants were consistent with Baxter Magolda's (1992)

absolute and transitional knowing. The narratives of each participant were shared by discussing the role of the learner, the role of the instructor, the role of peers, the role of evaluation, and the nature of knowledge through the lens of each epistemic construct. The emergence of voice was reviewed in the findings along with the emergent theme of learning as a utilitarian process. The chapter concluded by addressing the tentative significance of epistemological delays.

CHAPTER V: IMPLICATIONS

Implications for Knowledge & Practice

Substance abuse among college students continues to be of great concern for many higher education leaders (Johnston et al., 2006; Weitzman et al., 2004). According to research, the substance abuse trend is not likely to drastically change without a comprehensive and complex set of strategies and tools (Felner & Felner, 1989; Anderson & Gadaletto, 2001; Nicklin, 2000; DeJong & Langford, 2002). To that end, leaders can gain new insights by understanding the epistemological development of substance abusing college students which may result in additional strategies and tools.

The epistemological development of five, male substance abusing college students, unveiled many rich and varied experiences. This research revealed a consistency of epistemological constructs between the five men from this study and those in Baxter Magolda's (1992) research. Although most of the findings were reflective of the curricular environment, when co-curricular discussion occurred the epistemic construct was also consistent.

This chapter begins with a brief summary of the study and findings. Next, the chapter will provide a broader discussion regarding philosophical implications. The discussion then moves from philosophical implications and continues with the implications for practice based upon the findings of this study. The institution's mission is also discussed as it relates to new strategies designed to promote the epistemological development of substance abusing college students. The findings are then discussed as they relate to the literature. It is critical that these strategies are evidence based and built upon sound research. Therefore, the discussion includes the implications for future

research regarding the epistemological development of substance abusing college students. The chapter concludes with a final summary of the research and its meaning.

Summary of the Research Study and Findings

Utilizing the narratives of five undergraduate men who were identified with a diagnosis of substance abuse, I employed the interview template from Baxter Magolda's (1992) study. The interview template elicited narratives, meaning making, and expectations regarding the role of the learner, the role of peers, the role of instructor, the role of evaluation, and the nature of knowledge. The data collection and analysis were informed by previous conceptualizations of epistemological development as well as my own epistemological framework. However, the study included a flexible approach that also considered emergent themes. The participants were identified through purposeful sampling. Enlisting the practice of template analysis, I developed primary and secondary hierarchical a priori codes. The peer reviewer and I coded the transcripts, identified consistencies with Baxter Magolda's constructs, underlying story lines, and emergent themes. Themes were reviewed with participants who were willing and available.

What emerged from the research regarding the primary and secondary focus were rich narratives. The primary focus resulted in reflections consistent with Baxter Magolda's (1992) constructs of absolute knowing and transitional knowing. Three of the five participants clearly were consistent with absolute knowing. One of the five clearly was consistent with transitional knowing, and the final person shared consistencies with both constructs. In comparing the study's group of five men to Baxter Magolda's participants, there appeared to be some delay in epistemological development. Although the sample size was small, any sign of delay has significant implications for practice.

The secondary focus of underlying story lines was difficult to interpret due to the study's design of a sole interview. Although the interview was designed to focus on the most recent year, some students shared stories from two or three years prior. This made it difficult to identify the broader threads of a changing relationship with authority and the evolving relationships with peers. However, there was some indication that these themes were also included in the narratives. This was inconsistent and was disproportionately present in Rick, the junior, and Max, the senior. Because of the inconsistencies, I did not include these in the findings.

The emergence of voice was reflected by each participant regardless of year or epistemological development. In addition to the emergence of voice, another theme was indicated by the data. Regardless of age or epistemic construct, each participant voiced a utilitarian expectation for learning. Value of learning was directly proportional to the utility of the knowledge. If knowledge could be used immediately, the value of that information was more than knowledge that wouldn't be utilized until some future time. Students expressed that knowledge related to vocational skill, even though use might be delayed, was evaluated as great worth. Without specific utility, knowledge held little if any worth.

Each student was encouraged to share his own unique experiences and meaning making. According to Baxter Magolda, (1992) "situating learning in the student's own experience, legitimizes their knowledge as a foundation for constructing new knowledge" (p. 378). This epistemological understanding may be a useful foundation for creating new strategies on college campuses to systemically change behaviors related to substance abuse. Readers are encouraged to not only find their own meaning within these pages,

but to engage in dialogue with students on their own campuses. Transferability can only take place when transparency exists. To assist the reader, this study attempted to aid transparency by giving detailed descriptions regarding the context of the setting, the research methods employed, and detailed description of the research participants.

Intervention Strategy Reflections

What follows is a discussion of the findings related to three of Baxter Magolda's story lines. Baxter Magolda (1992) found the three themes salient in all of her participants, regardless of epistemic construct or academic class. The three themes were: (1) the development and emergence of voice, (2) the changing relationship with authority, and (3) the evolving relationships with peers. Baxter Magolda argued that these three themes were salient not only for her participants, but for all college students. The discussion of findings is organized according to these three themes because of the connection to the literature review and to help readers grasp the significance of the implications for practice. The findings are also discussed regarding delays and the utility of learning.

As previously noted, the development and emergence of voice across all participants in the study regardless of epistemic constructs was identified as well. Although there was hesitancy in including the other themes as findings from the study, there were indications that these themes were also present. Without a longitudinal design, gauging a *changing* relationship with authority and *evolving* relationships with peers was difficult to decipher from one set of narratives. However, it is tentatively appropriate to describe them as relevant based upon the experiences each student shared. The emergence of voice was different in that each participant's narrative reflected not

only repeating other's voice, but development toward identifying a voice of his own. What varied was the degree of development which appeared to correspond to the epistemic construct.

Baxter Magolda (1989, 1992, 2001, 2008; Baxter Magolda & King, 2004) described a transition within each theme that correlated with epistemological development. The emergence of voice began with repeating the voice of others and developed to identifying one's own voice (Baxter Magolda, 1992). The relationship with authority transitioned from reliance on external authority to becoming an authority in a particular context. Likewise, peer relationships transitioned from no value in the classroom, or from a co-curricular perspective being the authority, to peers becoming authority in certain contexts (Baxter Magolda, 1992).

Emergence of Voice

In the study, those consistent with absolute knowing often hesitated and expressed difficulty in responding to the questions. One student in particular wanted affirmation regarding the narratives he expressed as if there was one correct answer. This appeared to shift with those reflective of transitional knowing. There appeared to be more confidence and less repeating of others. Academically, all three reflecting absolute knowing had ideas about an academic course or major, but none were confident in identifying future goals. They ranged in tentativeness regarding vocational careers and appeared to be searching for a good match with personal strengths. One student expressed a great deal of difficulty and frustration in identifying such a match. This was different for the one who was consistent with transitional knowing. Not only was he clear concerning educational and vocational goals, he had identified the steps to achieve

them. Connecting these findings with the literature review provides some implications for practice.

Perry (1968), Belenky et al., (1986) and Baxter Magolda (1992) all described a transition in self-understanding with more complex epistemic constructs. When the epistemological lens overlaps with the literature regarding college substance use, a strong correlation appears between a less developed epistemic construct and higher risk of substance abuse. According to Demb and Campbell (2009) recent study, epistemological development does impact substance use. The implication for practice is to intentionally increase opportunities for substance abusing college students to develop a voice of their own. Baxter Magolda (1992) cautioned that “...delayed claiming of student voice protracted dependence on authority, and uneven reliance on peers” (Baxter Magolda, 1992, p. 210).

According to Baxter Magolda (1992) and Baxter Magolda and King (2004), the emergence of voice can be fostered when learning is positioned in each student’s own experience, when the student is authenticated as knower, and when constructing meaning with others is at the heart of learning. Without an independent voice that reflects one’s own values, goals, and knowledge, student’s decision making regarding substance use may be overly reliant on peers. Intentionally creating opportunities for substance abusing students to develop their voice may have long-term impacts toward independent decision making.

Relationship with Authority

In the study, students with the epistemic construct of absolute knowing shared that peers created a climate of pressure regarding substance decision-making. This was

particularly salient for those who were consistent with absolute knowing. The narratives focused on the temptations and pressures of co-curricular environments. In the classroom, the authority was clearly the instructor with a Ph.D. In the co-curricular environment, the participants expressed varying degrees of deferring to peers who were described as holding significant influence. This was particularly evident with those consistent with absolute knowing.

The findings seem consistent with the literature regarding the epistemological shift described by Perry (1968), Belenky et al., (1986) and Baxter Magolda (1992). Similar to the emergence of voice, as the epistemic construct becomes more complex, the reliance on authority lessons and the shift toward personal authority becomes more salient. Although the college substance use literature reflects student perception that alcohol use is a marker for individuation from parents, substance abusing students do not appear to be individuating from peers (Andrews et al., 1997; Boyle & Boekeloo, 2006; NIAAA, 2002; Schulenberg et al., 2001). For example, Jacob and Leonard's (1994) research found that peers substance use significantly impacts those around them.

Connecting the findings to the epistemological literature and the college substance use literature indicates that providing support for students to foster internal authority may result in a decrease of substance abuse. Baxter Magolda (1992) specifically highlighted the skills required to take responsibility of acting within the parameters of policies.

Banning particular behaviors attempts to force students to abide by their obligations; it does not help them accept those responsibilities. Assisting students to arrive at their own decisions about their obligations promotes their

development and increases the likelihood that they will act on those obligations.

(Baxter Magolda, 1992, p. 355).

Regardless of a curricular or co-curricular environment, acting on the obligations outlined by policies may not produce the expected results if students do not perceive a relationship between the policy and authority. As a result, the necessary support required to develop these skills is inversely proportional to the progression in complexity of epistemic constructs.

The less developed epistemologically, the more support required to act on obligations. The practical implications for these findings suggest that intervention strategies include intentional support for developing personal authority. Creating policies and programs without this component, may not achieve the desired results, especially for those less epistemologically developed. Infusing reflection components to mandated programs, harm reduction approaches, peer educator models, and providing professionals with epistemological training are examples of working together across campus to support epistemological development.

Relationship with Peers

According to the study's findings, the curricular relationship with peers showed a slight shift from those consistent with absolute knowing and transitional knowing. In a curricular environment, peers played a relatively insignificant role with absolute knowers. This shifted for the one student who was consistent with transitional knowing, however, only if the material appeared to be certain. From a co-curricular perspective, peers showed a significant impact regarding personal choices related to substances, particularly for those consistent with absolute knowing.

According to the literature review, peers play an important role in epistemological development, in constructing an identity, and in choices regarding substance use (Baxter Magolda, 1992, 1999; Johnston et al., 2006; Kegan, 1994; Perry, 1968). The process of interacting, learning, and living with people who are different promotes the skills required for success in a complex world (Baxter Magolda, 1992, 2004; Kegan, 1982). Baxter Magolda (1992) found that as epistemic constructs develop from absolute to contextual, peers take on an increasing role of authority in particular contexts.

For substance abusing students, the implications of this study and the literature review regarding peer relationships may offer insights to intervention strategies. Designing interventions that support an epistemological range of participants enables peers an opportunity to co-create meaning. When students are found responsible for a substance related conduct code violation, an educational mandated sanction is often required (Gadaletto, 2001). Incorporating epistemological development themes into the sanction could be accomplished by enlisting student partners in the sanction design. Peer educators could be recruited from those who have experienced the conduct process; mixing mandated and voluntary individuals together to co-create risk management strategies and provide support.

Delays & Utilitarian Value of Education

The study found some indication that substance abusing students experience epistemological delays. The study's findings when compared to Baxter Magolda's (1992) longitudinal research indicates that this group of substance abusing college students were less epistemologically developed than her outcomes would have predicted. This suggests tentatively that this group exhibited a delay.

An epistemological delay regarding substance abusing college students may have significant implications for practitioners. Reasons for the delay and relationships to other factors were not considered in the design and scope of this project. However, an epistemological delay suggests that intentionally focusing on epistemic constructs may impact the behaviors related to substance abuse. For substance abusers, information alone concerning substance use may not result in changed behavior. A more comprehensive set of strategies that include intentional epistemological development would need to be integrated into all strategies. Helping students build skill sets, identify their own voice, and discover personal values may provide support for epistemic constructs to develop. Rules and policies alone without the focus on the skills required to meet those obligations may be ineffectual.

Another theme emerged from the study regarding a utilitarian value of learning. Regardless of chronological age, educational class, or epistemic construct, all five participants expressed varying degrees of expecting knowledge to serve a particular external function. None of the students regarded knowledge that impacts identity development to hold any value whatsoever. In reviewing the epistemological and substance literature, a utilitarian expectation for learning was not found.

Although this was not found in the literature, the implications for practice with substance abusing students may also be significant. This theme suggests that practitioners may need to link learning particular skills through the intervention with direct benefits that support substance abusing student's lives. Currently, for example, highlighting the utility of refusal skills to long term benefits of avoiding the path to dependency may seem salient to practitioners, but students may have a different lens.

Given this theme, practitioners may need to work with substance abusing students in order to identify what is salient for them. One common intervention is to help students understand blood alcohol content by learning the standard measurement of one drink (Wechsler et al., 2000). However, gaining knowledge of a standard drink is not useful to a student who cannot pour it accurately. Linking learning with the need for specific skill sets may increase the value of the intervention for substance abusing students.

Considerations

As noted in Chapter II, the synergistic relationship between development and education promotes the skills necessary to meet the complex demands for the world today (Keeling, 2004, 2006). Although this study's scope was not intended to draw any conclusions about causation of delays or a correlation between any epistemological constructs and substance abuse, the findings provide a very important step in addressing substance abuse by college students from a new frame. The study's findings open the door to recognize the value of intentionally understanding the epistemological development of substance abusing college students. This cannot be accomplished without the student voice. Listening to the experiences of the current college student population is critical as a foundation for constructing new and more complex ways of knowing. What follows is a discussion of both the philosophical implications and the intervention strategy implications.

Philosophical Implications

Substance abusing college students must be included in discussions regarding transformational education (Baxter Magolda, 2006; Keeling, 2004, 2006). If learning, development, and identity formation are intricately linked, then it is incumbent upon

professionals to include all three in curricular and co-curricular policies, programs, curriculum, and activities that impact substance abusing and non-substance abusing students alike. In order to foster systemic change for substance abusing college students, the context and environments of these students must be incorporated into a university wide philosophy focused on transformational education.

Bias: Personal & Departmental

The widespread consequences and impact of substance abuse should not be underestimated (Johnston et al., 2006). Institutional policy makers as well as other leaders in areas such as Residence life, student conduct, Greek life, health centers, police departments, and counseling centers have all been impacted professionally and, likely, personally by substance abuse (Johnston et al.). Personal bias must give way to a university wide philosophy that integrates learning, development, and identity formation for all students.

Although there was no evidence that personal bias of university professionals against substance abusing students exists in the literature, both anecdotal and professional experiences suggest this happens all too frequently. DiClemente (2003) argues that the personal views individuals carry may negatively impact the ways in which they serve substance abusing individuals. Access to services, support in recovery, resource allocation for services, and manipulating policy development are ways that can significantly impact those who have or who are currently abusing substances. According to DiClemente:

If addiction is seen as a moral failing, it will be condemned. If seen as a deficit in knowledge, it will be educated. If the addiction is viewed as an acceptable

aberration, it will be tolerated. If the addiction is considered illegal, it will be prosecuted. If viewed as an illness, it will be treated. (p. vii)

If personal bias is not set aside, the intentional integration of learning, development, and identity formation of substance abusing college students may vary greatly from their non-substance abusing peers.

Institutional department inconsistencies or bias negatively impact substance abusing student's in similar ways. If one department endorses a zero tolerance policy and a related department does not, the messages students receive are inconsistent and confusing. Whether the disparity is on a personal or departmental level, it may potentially result in limited systemic behavior change as substance abusing students encounter inconsistencies regarding support, messages, and expectations (Wechsler et al., 2002). This does not mean that institutions cannot hold students accountable for behavior that is in violation of conduct standards. It does mean, however, that sanctions reflect an institutional mission of integrating learning, development, and identity formation.

Institutional Mission

Baxter Magolda (1989, 1992, 2001, 2008; Baxter Magolda & King, 2004) consistently has been a strong leader in transforming the antiquated collegiate model where education is bifurcated between curricular and co-curricular learning. This study affirmed what Baxter Magolda concluded more than fifteen years ago, that epistemological constructs may not be domain specific. A consistency of epistemic construct regarding intellectual and affective development implies the need for academic affairs and student affairs to work seamlessly towards an institutional mission of learning

(Keeling, 2004; 2006). Understanding what students know is only part of the task of each institution's mission (Kegan, 1994).

A holistic view of students necessitates professionals not only understanding what students know, but also how they know it (Baxter Magolda, 1992, 2006; Kegan, 1994). For substance abusing college students, understanding the epistemic construct is a new lens with which an institution may strategically intervene. This may appear to be a simple or obvious notion however in the literature regarding college substance abuse intervention strategies, understanding student's epistemic constructs is glaringly absent. Even in Felner and Felner's (1989) ecological perspective on health interventions, the strategies based upon person-focused interventions, environmentally focused interventions, and transactional focused interventions do not appear inclusive of intentional development of substance abusing student's epistemic constructs. Policies, programs, interventions, and services related to substance abusing students must be consistent with each institution's mission for learning and preparing students to engage in a complex, diverse, and multi-faceted world (Baxter Magolda, 2008; Keeling, 2004, 2006; Kegan, 1994).

Two recent studies (Demb & Campbell, 2009; Park & Grant, 2005) in addition to this research suggest that understanding the epistemic construct of substance abusing students may provide a new intervention strategy. The goal is to make systemic change in alcohol and other drug consumption as well as in substance fueled harmful behavior. By intentionally working toward epistemological development, substance abusing students will have a more complex set of tools with which to live a much healthier life.

The following is a discussion of the study's findings in relationship to the literature review.

Suggestions for Future Research

This study provides a strong foundation for a new approach to college substance abuse intervention. Although the findings show promise, recommendations for study improvements would enable researchers and practitioners a better understanding of how to incorporate epistemological development into campus strategies.

Study Improvements

Although Baxter Magolda's (1992) interview template created very helpful dialogue and rich narrative, specific questions need to be added regarding co-curricular experiences. It would be helpful to increase both the number of participants and follow them through college experience. It would also be useful to utilize a mixed methods design that can incorporate quantitative components such as the Substance Abuse Subtle Screening Inventory (SASSI) (Miller, 1985, 1999), and the Minnesota Multiphasic Personality Inventory (MMPI) (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). Another aspect of future research should be designed to further explore the presence and impact of an epistemological delay. A comparison population of non-substance abusing college peers would also add clarity to understanding the utilitarian focus in learning and the presence and impact of a delay.

Future Research

Two additional areas for research related to the epistemological development of substance abusing college students reflect the way epistemic growth takes place and the impact of epistemic growth on self authorship.

Assimilation & Accommodation. According to Perry (1968, 1981), Baxter Magolda (1989, 1992, 2001, 2008; Baxter Magolda & King, 2004), in order for individuals to develop epistemologically the skills of both assimilation and accommodation must be utilized. Although very similar conceptually, Kegan (1982), utilized the terminology of confirmation, contradiction, and continuity for the same process of epistemic growth. Assimilation serves to incorporate new experience into current cognitive structures resulting in epistemic expansion. Accommodation is the process of creating new cognitive structures when new experience cannot be assimilated into current cognitive structures (Perry, 1968; Piaget, 1952; Evans et al., 1998; Wadsworth, 1979). According to researchers, the pace at which people assimilate and accommodate appears to vary among individuals (Baxter Magolda, 1992; Belenky et al., 1986; King & Kitchener, 1994; Perry, 1968). The pace at which non-substance abusing students assimilate and accommodate compared to the pace at which substance abusing students assimilate and accommodate would enhance the understanding of epistemological development. Similarly, the same comparison related to accommodation would enable practitioners to target very specific skills required for more complex ways of knowing.

Self-Authorship. Baxter Magolda's more recent work has had a significant impact on transformational learning (Keeling, 2004, 2006). Baxter Magolda (2003, 2004, 2007, 2008) expanded the work of Kegan (1994) in linking epistemological development with interpersonal development and intrapersonal development coined as self-authorship. Baxter Magolda (2008) defined self-authorship as "... the internal capacity to define one's beliefs, identity, and social relations, [which] has emerged in the past 15 years as a developmental capacity that helps meet the challenges of adult life" (p. 269). Research regarding the self-authorship of substance abusing college students may significantly expand the impact of intervention strategies long into the future.

Summary

This study's findings suggest that the epistemological development of substance abusing students may be a significant factor in the development and delivery of intervention strategies. By intentionally focusing on developing more complex epistemic constructs, substance abusing students may be able to gain useful skills and self understanding that impact curricular and co-curricular environments. The intervention strategies may appear more salient to this population if the intervention is tailored to specific epistemic constructs. Campus intervention strategies must include student involvement, partnerships with campus and community stakeholders, knowledge of college substance trends, treatment techniques, and an understanding of epistemological development. Rather than gauging successful outcomes by solely measuring the quantity and frequency of use, additional measures of epistemological development may not only be utilized, but also correlated with additional outcomes such as retention, grade point average, and graduation.

A complex and systemic problem must have a comprehensive and complex set of solutions. As student trends change, so must the programs and interventions that student affairs professionals and university administrators provide. The epistemological development of substance abusing college students must not be underestimated. It is time to seek additional ways of successful prevention, education, and intervention treatment for a population of students seeking an education to engage in a complex, diverse, and ever changing world.

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APPENDIX A: VOLUNTEERS FOR RESEARCH PROJECT

If you are in Phase 2 of Back on TRAC and are interested in participating in a voluntary research project, please contact Lisa Miller at 491-4693. This opportunity is voluntary! The project includes one or two interviews that will take no more than three hours total. Participation will NOT impact your status in the Back on TRAC program or your ability to receive services through the DAY Program's office.

WHAT: The interview questions will be about your classroom experiences in the past year. The types of questions will include what helps you learn most effectively in classes. You will be asked questions about what you expect of faculty, what you expect of your peers, and how you like to be evaluated.

WHO: Any Back on TRAC student in Phase 2 is eligible to participate.

WHEN: The interviews will take place around your schedule. You will choose the time and location that is convenient for you. The interviews will take place during the late summer or early fall 2008 semester..

WHY: The research is to help better understand the way students in Back on TRAC think about learning. The research will attempt to understand this group of students better so that more helpful programs can be created in university settings for students who have experienced negative consequences related to substance use.

INVESTIGATOR: The investigator who will be interviewing you is Lisa Miller. To find out more about this project, please contact her at 491-4693.

APPENDIX B: CODES

Codes - % of each construct was found in 1989 and may not reflect additional years!				
Categories of interview questions.	Absolute Knowing (1)	Transitional Knowing (2)	Independent Knowing (3)	Contextual Knowing (4)
	<p>Knowledge is certain. Authority has ALL the answers. Authority has all the answers. Role of learner = obtaining knowledge from the instructors. Evaluation = reproduce what has been acquired to see if it is correct. Peers are of little use as they do not possess knowledge. (88%) of Freshman are reflected as absolute knowers.</p>	<p>Not ALL knowledge is certain. Some absolute knowledge exists. Discrepancies b/n authorities in uncertain areas are viewed as a result of answers being unknown. Learning is more complex; understanding takes precedence over acquiring and remembering information. Authority=focus on understanding and application of knowledge. Evaluation=measures understanding and comprehension of material. Peers=their involvement assists learning in uncertain knowledge. The emphasis is on the process of learning rather than the acquisition. (58%) of Sophomores are found to be Transitional Knowers.</p>	<p>Knowledge is MOSTLY uncertain. Differences in the opinions of authorities represent the range of views possible in an uncertain world. Authority – students begin to see themselves as equals and hold their own opinions as valid. Instructors – promote independent thinking and the exchange of opinions; shifts from providing knowledge to providing the context in which to explore knowledge. Peers – legitimate source of knowledge. JUDGING SOME PERSPECTIVES AS BETTER OR WORSE IS OVERLOOKED. EVERYONE BELIEVES WHAT THEY WILL. SINCE KNOWLEDGE CAN BE VIEWED SO DIFFERENTLY, THERE IS NO OBLIGATION TO MAKE JUDGEMENTS ABOUT CERTAIN VIEWS. Evaluation should reward independent thinking and should not penalize a student for different views. Because there is no risk of being wrong, views are freely expressed. Both categories are looking much closer. (83%) of Juniors and (80%) of Seniors are found to be Independent knowers.</p>	<p>No Gender Patterns</p> <p>Thinking for oneself is the hallmark! Knowledge is contextual and remains uncertain; some knowledge claims are better than others in a particular context. Judgements of what to believe are possible, although not absolute based on reviewing evidence. Points of view must be supported by evidence. Instructor's role is to foster learning environments that promote application of knowledge in a context. Evaluation takes on a reciprocal role to critique each other. Any type of evaluation is appropriate as long as it accurately measures competence in a particular context. Contextual Knower's assumptions are evident in 6 areas:</p> <ol style="list-style-type: none"> 1. Varying value of ideas – some are better than others. 2. Contextual Expertise – expert=valid knowledge. 3. Learning Contextually – knowledge out of context holds little value. 4. Teaching contextually – dialogue is inclusive of multiple ideas prior to being challenged. 5.
	<p>(A) Receiving ♀ Minimal interaction with instructor; comfort with learning environment; internal approach to learning; always defer to authority; listening and recording as primary role in class.</p> <p>(B) Mastery ♂ Public role in class to demonstrate their interest; expect interchanges with instructors; verbal approach; view peers as partners in arguing and</p>	<p>(A) Interpersonal ♀ Involved in learning through collecting others' ideas; peers may provide exposure to new ideas; seeks rapport w/ the instructor to enhance self-understanding; values evaluation that takes</p> <p>(B) Impersonal ♂ Wants to be forces to think; prefers debate w/ instructors and peers in order to master the process; not the info; values evaluation that is fair and practical; resolves uncertainty by logic and research.</p>	<p>(A) Interindividual ♀ Dual focus of individual thinking and engaging the views of others; instructors role is to promote the exchange of opinions; evaluation is a joint process b/n student and instructor. Connection between the</p> <p>(B) Individual ♂ Values the exchange of opinions but primary focus is on one's own thinking! Expect peers to think independently – if not, this can be source of irritation; moves toward a REAFAL consideration of peer</p>	

	Peers are a support network to help listen; rarely ask questions; use internal resources to resolve differences in knowledge. Little identification with authority!	debating/quizzing to master the material; evaluation helps improve mastery; seeks out authority to resolve differences in knowledge. Imitates authority!	individual styles/differences into account; resolves uncertainty by personal judgment. With uncertain knowledge, faculty should foster the sharing of ideas. Certain knowledge, THE truth. If teachers are uncaring, teaching is completely ineffective!	Don't value peers knowledge, only their contribution to an environment steeped in debate. "CHALLENGE ME" Not much interest in developing rapport with faculty. There is a shift from giving answers to giving opinions especially when the opinions are steeped in challenge!	knower and others that maintains the integrity of both. Dual focus on the knower's ideas and the ideas of others. Thinking for self increases due to the decrease in worry about what others think of me. A connection between academic and personal spheres emerges. Agency, which involves separateness, is new!	opinions. Prefer instructors to allow student driven learning goals; evaluation is based upon independent thinking.	Evaluating Contextual learning – judging performance must be related to context. 6. Decision-making in context. Seen only rarely among undergraduates.
(L) Role of Learner	L1A	L1B	L2A	L2B	L3A	L3B	L4
(P) Role of Peers	P1A	P1B	P2A	P2B	P3A	P3B	P4
(T) Role of Teacher / Instructor	T1A	T1B	T2A	T2B	T3A	T3B	T4
(E) Evaluation	E1A	E1B	E2A	E2B	E3A	E3B	E4
(K) Nature of Knowledge	K1A	K1B	K2A	K2B	K3A	K3B	K4

Directions: Review the transcript of each interview. Highlight any passage that reflects the code and mark it according to the above chart. If there are significant quotes you feel would be of great benefit to Ch. 4, please mark those and provide a brief notation.