THE EXPERIENCE OF CONTRASTING LEARNING STYLES, LEARNING PREFERENCES, AND PERSONALITY TYPES IN THE COMMUNITY COLLEGE ENGLISH CLASSROOM

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Abstract

This study focuses on the classroom experiences of students who identify themselves as learning best as reflective-observers (Assimilators) in contrast to those who learn best as active-experimenters (Accommodators), with additional consideration for their self-identified personality type (introvert vs. extrovert) as well as one of the VARK learning preferences of each student. In the movement for teaching more in line with a constructivist learning paradigm, more dialogue and active engagement has changed the community college English classroom. However, given our emerging understanding of learning styles and personality types, it is questionable whether all students are served by these methods. This study seeks to catalogue the perceived learning experience of students on the two ends of the learning style spectrum (Assimilators and Accommodators) in a community college English classroom that uses diverse pedagogical methods. The research questions explored are: (1) How do Assimilators, defined as introverted reflective learners, and Accommodators, defined as extroverted socially active learners, experience classrooms that use social discourse versus teacher-directed pedagogical methods? and (2) How do they perceive those different situations as a benefit to their learning in a community college English class? A qualitative analysis of interviews with both populations on their experience across multiple sections of a community college English class as well as a review of students’ responses to end of unit lessons in keeping with more teacher-directed or social constructivist pedagogies will be used to discern common and differing perceptions of the teaching strategies employed in the English class.

Key Words: learning styles, reflective observation, psychological types, personality, introversion, extroversion, active learning, direct instruction, learning preferences.
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Chapter I: Introduction

The importance of engaging the student is critical to their success as a learner (Eggen & Kauchak, 2006). At every level from elementary school to university, there is no doubt that we have improved our classrooms with more interactive, collaborative, and learning-centered approaches (Slavin, 2008). In the last twenty-five years there has been a growing awareness of constructivist pedagogy in the discipline of English Language Arts. Constructivism is an umbrella for many terms and takes many forms (Mayer, 2004). The constructivist mission is mostly dedicated to the idea that learning is an active process (Duffy & Cunningham, 1996; Mayer, 2004). Social constructivists focus on dialogue and student interaction within a social context (Duffy, 2009). Peer review workshops, seminars, and student presentations are among the most popular activities in English classrooms at both the secondary and college levels. Many education scholars believe students learn better in collaboration, in cooperation, or by active discussion (Cain, 2012; Cuozzo, 2005). Within this pedagogical framework, teacher-led instruction is considered passive learning, even though the student is still thinking, observing, writing, and questioning (Hirsch, 1996). With a growing recognition of learning styles and personality theory, I have wondered whether every student truly benefits from teaching methods that demand real time responses from students in a social learning environment. For example, there may be more introverted and reflective individuals who do not benefit as much from collaborative, cooperative, and active learning pedagogies. When learning occurs in any one dominant mode (constructivist, social, and active), certain student learning styles and personality types may be ignored (Kolb, 1984). This qualitative study seeks to document the thoughts and feelings of the two contrasting ends of the learning and personality spectrum using contrasting pedagogies, social-constructivist and reflective teacher-directed.
**Problem of Practice**

With the growing constructivist movement that suggests a high level of student interaction, it begs the question whether this approach serves all students. If not, it would be beneficial to know whether there are some students who do not benefit from more socially active, constructivist learning. There is a legitimate concern for interpersonal skills and learning-centered education, but this may have unfortunately led to neglect for intrapersonal, introverted students who learn better independently or via direct instruction. In the context of my own English class, there are various ways we approach the teaching of writing. No one would advocate one method of teaching all of the time, but I wonder how many methods we adopt and become comfortable with without thinking about how the student feels. Students may withdraw or become alienated in a class or discipline that demands the opposite learning style (Kolb, 1984). English teachers use many methods that support the constructivist philosophy, but I am wondering to what degree are these forms of engagement beneficial to all students, and whether there are students who are not as well served under these conditions.

As an English instructor who has taught on different levels from middle school to university, I have observed students who struggle in my courses when I put too much weight on discussion, collaborative projects, and student-led seminars. I have had many students, including some with physical disabilities, who did not want the entire class staring at them and expressed how “turned off” they were by an interactive, cooperative learning environment. Some of these distraught students in my more “student-centered” composition part II courses had previously excelled in my previous part I composition course, which is more “teacher-centered.” I have seen what I considered to be more introverted, reflective learners shut down in these settings and essentially check out. Along the way, several sadly disappeared and withdrew from the course.
One student with a disability even described his anguish to me in private, and I allowed him to write an essay about the bad experience instead of making him do the next oral presentation assigned on the syllabus. I have since modified my courses to have more of a balance of approaches, but I still wonder about these types of learners in other faculty members’ courses who utilize all or mostly social, constructivist methods.

Through the years I have heard colleagues bewildered over quiet students: why are my students so quiet, why are they expecting to be spoon-fed, what is wrong with them? Every teacher wants students to show some sign of life and reaction. But to simply dismiss these quiet students as different, lazy, anti-social or any other negative definition is counter to true student-centered education. Some of those quiet students may be disengaged, some may be unprepared for class, but a good number of them are likely just introverted personalities who prefer to reflect and observe, or think and speak later. Introverts need time to form and articulate opinions, and there are valid biological reasons for this (Laney, 2002).

The importance of self-reflection is well established, but students may not be provided enough time to do so in learning environments that are too fast paced and socially active. Through two studies, Barnard-Brak, Lan, and Paton (2010) determined that students who are self-regulated or have good forethought, performance control, and self-reflection performed significantly better in their course work than those who had little self regulation and only possessed partial forethought and self-reflection. Certainly it is hoped we are not punishing those reflective students who perform better just so we may accommodate others. Perhaps we ought to be improving those who struggle rather than changing the expectations for everyone.

Seventy-nine percent of the student population in one study by Gusentine and Keim (1996) were not the type of learner who necessarily benefits from active learning. Judging by those numbers
it would seem we are catering to just over one fifth the population. It would seem our ambition
to accommodate the extrovert or kinesthetic learner has swung too far in the other direction.

One concern is that teachers may be neglecting a large number of learners in an effort to
meet the education field’s expectations of “active” learning. Cain (2012) argued that American
educators have been on a streak of favoring interpersonal extroverts. Many schools are now
designed for left-brained extroverts (Laney, 2005). Senechal (2012) contended that there is a
bias in favor of social activity. Storr (1988) observed that this societal emphasis on interpersonal
relations is rather recent in history. Part of this reason may be because introversion is so grossly
misunderstood with harmful stereotypes and societal prejudice (Henjum, 1982). Storr (1988)
pointed to a widespread assumption that introverts and thinkers are peculiar and abnormal. Storr
(1988) also argued “learning, thinking, innovation and maintaining contact with one’s own inner
world are all facilitated by solitude” (p. 28). Galagan (2012) argued, “A disproportionately high
number of very creative people are introverts...but schools and workplaces make it difficult for
people to find time and space” (p.28). Despite these misunderstandings, many have pointed out
the value of instructors having knowledge of learning styles and personality types to better adjust
teaching methods and evaluation to match student needs (Chapman & Gregory, 2002; Gogus &
Gunes, 2011; Wolfe et al., 2006). Rochford (2003) suggested all community college instructors
design lessons for different learning styles and even involve students in the design for future use.

The literature on learning styles suggests that forcing all students to participate verbally
in class has the potential to deter a good portion of otherwise capable and intelligent students.
Yet I have heard well-meaning individuals in the field of education speak as if active learning
methods are the only way students learn and that any other approach is outdated. As with my
colleagues’ puzzlement over quiet students, I personally believe these dismissals of other
learning approaches may be due to a misunderstanding of personality type. For example, although introverted learners may appear uninvolved, “they are actively listening and reflecting” (Zeisset, 2006, p. 15). To believe a learner is uninterested because they do not talk may be a gross assumption. While much attention has been devoted to accommodating extroverted students in recent years, little attention has been devoted to students who are more introverted because there is an assumption that all students learn through interpersonal activity. Duman (2010) actually found the most common learning style was comprised of “Assimilators,” those students best known as Reflective-Observation learners who learn best by reflecting and watching. For the purpose of this study, I will call these learners introverted reflective learners.

Group learning can be an excellent form of instruction when paired with whole class teaching methods, but some suggest it can be disastrous when applied alone (Hirsch, 1996). Cain (2012) acknowledged how cooperative learning can be effective when in moderation, but also concluded that “the most effective teams are composed of a healthy mix of introverts and extroverts” (p. 93). The problem seems to be that schools of thought today, especially in the education field, do not acknowledge this healthy mix (Hirsch, 1996). Cain (2012) explained that a “shift from I to we” is being practiced in our schools with cooperative and small group learning where rows of individual seating have been replaced with pods of four or more desks pushed together. As Senechal (2012) demonstrated “Convinced that the outside world calls for collaboration, school leaders and policy makers expect teachers to incorporate group work in their lessons…” (p. 4). While collaboration is certainly important, not enough attention is being put on knowledge, independent thought, and attentive listening (Senechal, 2012). Many districts on the secondary level are actually requiring small group activities “because such activities presumably allow all students to talk” (Senechal, 2012, p. 5) and talking is what is valued.
Pennington (2012) observed an enforcement of group work in schools that can be physically and mentally painful for introverts.

Despite popular opinion, research shows that introverts do their best talking in anticipation and not on the spot (Helgoe, 2008). Pennington (2012) argued that group work is a system that excludes ideas and “is driven by personality and ego” (p. 39). Small group work does provide more opportunity for student discussion, but there is a danger that more extroverted students will dominate these activities (Nussbaum, 2002). Most research on student discussion involves whole class and not small group discussions (Nussbaum, 2002). This gap leaves much to be explored on this subject. Dembling (2012) went as far as to argue that “there’s not an introvert alive who can think clearly in free-for-all brainstorming sessions” (p. 157), yet the majority of schools of education in America promote more extroverted and collective classroom activities as part of the constructivist movement (Al-Shamari, Al-Sharoufi, & Yawkey, 2008; Cain, 2012; Duffy & Cunningham, 1996). An open subject search in Education Research Complete by EbscoHost generated over 4,000 hits for “collaborative learning,” over 4,500 hits for “cooperative learning,” over 7,000 hits for “active learning.” This is contrasted to only 855 hits for “direct instruction” and only around 30 hits for “teaching introverts.” The enormous number of search hits for these topics suggests that there is a great deal of attention being put on these constructivist approaches by the scholarly community in contrast to the alternatives.

Constructivist theory has two separate branches (Moreno & Park, 2010). One is how people construct knowledge through individual construction, everything my writing student must do as they are researching and writing a paper. The other is how they co-construct knowledge with others, which is known as social constructivism. It is this latter one that is examined in the present study and is best seen in the classroom seminars that elicit discourse. Within this
movement of constructivism, an argument seems to have developed into a false dichotomy of active learning or no learning as defined with various buzzwords (Cuozzo, 2005; Hirsch, 1996; Hirsch, 2009). Lattuca (2006) defined constructivist pedagogy as teaching that “emphasizes the active learner—who discusses, questions, debates, hypothesizes, investigates, and argues in order to understand new information” (p. 355). Anything other than constructivist is defined as “passive, rote, and sterile” (Duffy & Cunningham, 1996, p. 170). Marzano (2007) expounded that legitimate practice is too often seen, labeled or misused as drill. Hirsch (2009) explained that educators from a naturalistic philosophy are caught up in a rehash of the “activity movement” that argues “all real learning is constructed” and direct teaching is unnecessary and unproductive (p. 44). Any approach that is concentrated on subject matter is demonized (Hirsch, 2009) and time is wasted in schools on empty activities (Cuozzo, 2005; Hirsch, 2006; Senechal, 2012). Senechal (2012) reported, “as one education professor put it, the content of the lesson was a ‘vehicle for the strategy’” (p. 14).

Ken Robinson’s (2010) animated YouTube video “Changing Education Paradigms” is celebrated in schools of education for his criticism of a “factory model” of education, a disdain for facts, and his exclamation that “great learning happens in groups.” Robinson (2010) insisted that when we separate students and judge them independently we “form a kind of disjunction between them and their natural learning environment.” However, reflective learners see the instructor as the expert and avoid interaction with peers (Peters, Shmerling, & Karren, 2011). Hirsch (1996) also argued that both an activity-based approach and an emphasis on learning styles have actually led to “a disparagement of verbal learning” (p. 256). This very well may be the case in terms of the written word, but group work and an emphasis on the interpersonal has certainly not silenced the spoken word championed within the social constructivist paradigm.
Edgar Dale is an oft-quoted source of justification for socially active learning and has been immortalized by the school of education community. Dale created what he called a cone of experience to show a continuum of experiencing audio-visual media. See Figure 1. Dale was attempting to provide a theoretical model and did not base his theory on any primary research (Thalheimer, 2006). Though Dale never attached any numbers or percentages to his “cone of experience” (Dale, 1954; Lalley & Miller, 2007; Thalheimer, 2006), others have mistakenly done so and renamed it the “cone of learning,” a term that garners up over 14,000 hits on a web search and has been repeated in hundreds of scholarly articles (Dwyer, 2010).

The attached percentages first appeared in a non-scholarly magazine article from 1967 and are not tied to any original data or sources (Lalley & Miller, 2007). It has since been perpetually repeated that we remember 10% of what we read, 20% of what we hear, 30% of what we see, 50% of what we hear and see, 70% of what we say, and 90% for what we do (Lalley & Miller, 2007). This statement may be grossly misleading as well as invalid because it has never been proven with any scientific study but is widely accepted as truth by some in the education community (Dwyer, 2010; Lalley & Miller, 2007). As a result, educators have pushed what they call “active learning” to the forefront with more student-led presentations and seminars. “Active learning” jargon now consumes the education environment (Senechal, 2012). With these beliefs, the 70% of what we say is emphasized far more than the importance of listening and reading. It would be assumed that listening and reading is not active, but in defense of reading, Pattison (1982) observed, “it seems clear that reading has no necessary characteristics of passivity” (p. 54). Gleason (1995) argued that readers are active information processors and not passive decoders and recipients of knowledge. “Listening, reading, and pondering” are actually the learning preferences of introverted learners (Zeisset, 2006, p. 15). If teachers teach according to
the fictitious cone of learning, they may be denying introverted reflective learners their preference for learning.

Dale's Cone of Experience (Dale, 1969, p. 107)

*Figure 1*. Dale’s Cone of Experience

Figure 1: as cited in Thalheimer (2006). Retrieved from: [http://www.willatworklearning.com/2006/05/people_remember.html](http://www.willatworklearning.com/2006/05/people_remember.html)

This misinterpretation, or manipulation, of Dale’s cone of experience has led to teaching approaches that value students who talk. Students who listen and read are surprisingly devalued in these teaching approaches, which may seem antithetical to education. Hirsch (2006) argued
that “in the information age, the key to economic and political achievement is the ability to gain new knowledge rapidly through reading and listening” (p. 2). Both Hirsch (2006) and Kozol (2005) argued that the state of literacy is a tragic threat to democracy. The state of literacy is only made worse in schools by rushing through texts, which Gallagher (2009) has defined as “readicide.” Gallagher (2009) argued that schools essentially kill students’ love for reading. This may be reflective in the number of declining readers every year. Some theorists have argued for more auditory and visual assignments in composition classes like newscasts and videos (Selfe, 2009). While this approach has value and may benefit particular learning preferences, others have argued we are far off the track of effectively teaching writing skills because of our philosophical influences (Prince, 2007). Furthermore, Hirsch (2009) added that the naturalistic, interpersonal, activity based approach to learning, taken up by schools of education and organizations, has removed direct instruction of grammar, which has thus led to frustrated secondary teachers who spend too much time on review and college students who are unprepared for college level writing. Pattison (1982) added, “the norms of correct usage may be false, pretentious, and outdated, but they are the standards of literate behavior demanded in government, business, and the professions” (p. 165). Students simply cannot get ahead without the tools of standard English (Pattison, 1982).

Hirsch (1996) conjectured learning by doing to be “among the least effective pedagogies available to the teacher” (p. 257). Yet we also know that “simply giving people information is not instruction” (Clark, Yates, Early, & Moulton, 2009, p. 274). Whether we remember 90% of what we do is irrelevant to the problems in education, because all learning should lead to an active experience of producing something (Kolb, 1984), whether it be a research paper or a rain barrel. That final product is the ultimate assessment, but everything else on the cone of learning
is how we get to that point. Even Adler (1982), who celebrated active learning and guided discovery learning, acknowledged that “the most important kind of doing, so far as learning is concerned, is intellectual or mental doing” (p. 52). Adler (1982) also addressed the need to accommodate individual student needs, but then contradictorily proposed to eliminate all electives, which would benefit many learners. However, Adler (1982) still recommended using a variety of teaching methods to reach students. As Hirsch (1996) pointed out, “effective teachers have always taught through a diversity of approaches” (p. 256). To assume only one method is superior may be detrimental.

Some educators have suggested that we need to change our methods of teaching because students can no longer sit still and pay attention (Senechal, 2012). Perhaps the inability to sit still, listen, observe, and ponder has been diminished due to cultural or technological influences. Rushkoff (2013) warned of a society that no longer considers the past or the future, one where everyone, kids and adults, are stuck in a distracted state of present tense. Some adults can be shamelessly seen with their heads down in their devices during lectures, speeches, and even artistic performances. What is the point in being there? Surely, some of us can and should multi-task at times. Using our devices might not mean we are absent, though studies show otherwise (Cherwin, 2013). Cherwin (2013) reported a Microsoft study that found employees took an “average of 15 minutes to return their attention back to the previous task when distracted by email, instant message, etc.” Cherwin (2013) explained,

If a person is in a meeting and then decides they must return a text message, they are no longer really focusing on the meeting details. They are physically sitting in the meeting, but they are not present because their attention is diverted to the text and then later more time is spent focusing their attention back to the meeting.
Why would this be any different for the learner in a college course? The point in mentioning this possible cultural shift is because the new approaches offered by theorists often include some form of new technology, from clickers and I-Pads to cell phones. However, many secondary schools ban electronic devices for a reason—simply because they are distracting and at times disrespectful. My college courses actually prohibit such devices for the same reasons, yet those technological approaches are sometimes hailed as the active learning solutions.

Many scholars and writers have pointed out the problems associated with a false dichotomy of active learning or no learning. With so many types of learning, the definitions are not simple generalizations, and the student-centered debate “carries a polemical charge” (Prince, 2007, p. 1). Prince (2007) posed the question, what if this pedagogy labeled progressive actually inhibited progress? Cuozzo (2005) and Hirsch (1996) warned of the problems with using only active student-centered learning. Sweller (2009) explained “Constructivist teaching techniques that guide students to find information for themselves rather than presenting that information explicitly have provided a favored instructional technique among education researchers for several decades” (p. 127). The problem Sweller (2009) explained is that these “minimally guided instructional techniques were developed prior to our current understanding of human cognition” (p. 127). Andrews, Leonard, Colgrove, and Kalinowski (2011) found that active learning methods did not lead to more student learning in college Biology. Kirschner, Sweller, and Clark (2006) identified problems with collaborative, cooperative, and inquiry-based learning models. Murray (2008) argued that we are catering to a small sample of the population who are kinesthetic learners while we neglect the visual and auditory learners. Clark (2011) advocated highly structured teacher direction and argued that the teacher is the “supreme focal point of energy” and that when the teacher sits down, “it sucks the life right out of the room” (p. 179).
Pennington (2012) argued that schools are designed to nurture extroverts, and that excluding Montessori and Waldorf models, classrooms are often too over-stimulating for introverts. Cain (2012) expressed the dangers of neglecting introverts and explained numerous reasons why educators need to accommodate the reflective learner. Ultimately, this study endeavors to reveal the experience of students in a community college English classroom under different pedagogical conditions that may or may not be accommodating of learning style and personality type.

**Intellectual and Practical Goals**

**Intellectual Goals.** This research seeks to determine how personality types and different types of learners respond to community college settings that promote both active collaborative learning as well as whole class direct instruction. The active collaborative learning in this context consisted of classroom discussion through Socratic seminar and group projects. Whole class instruction consisted of instructor led lessons. It is assumed in this study that active collaborative learning appeals more to extroverted personalities. If some learning environments are preferred by different groups, then it would be unfortunate if an instructor only used one methodology and also did not differentiate instruction for those groups. One aspect of the social classroom is the idea of cognitive dissonance. Roberts and Billings (2012) explained that learning takes place through cognitive dissonance resulting from mental disequilibrium, which is one result from social discourse in a classroom. They claim that mental disequilibrium leads to a heightened state of understanding. Burke (2012) also voiced a need to make learning uncomfortable at times. However, other possible results may include students who become alienated and drop out or become lost in the course. Cognitive dissonance does not recognize learning and personality differences, and the notion that we must be forced into a zone of discomfort in order to learn is concerning.
By examining pre-existing data on the participants, this study also aims to distinguish any similarities or differences that might align between the self-identified learning styles and learning preferences of students. This study will add to the body of research concerning the role of learning styles and preferences in the role of teaching and learning, but also to a very small body of literature on reflective learners. This study has the potential to “signal a call for action” (Creswell, 2012, p. 37).

**Practical Goals.** This study aims to learn how students with more introverted and extraverted personalities and reflective or active learning styles are affected by different pedagogical methods, one socially active and the other teacher-led. If the two differing personality types with preferences for one learning style over another experience these pedagogies differently, then learning may not be as effective as it could be. The hope was to gain a sample of students from both sides of the spectrum in order to lend a voice to their experiences. Since this study did not examine a large sample of the population, the goal was to document the experience more in depth and get closer to the student experience than a larger quantitative survey could.

Since “individuals vary in their preferred learning style” (p. 75) pedagogy should value variety and diversity (Osborne, 1996). Teachers should be flexible and take into consideration the different learning styles (Jilardi et al., 2011). However, teacher-led instruction is not the favored approach by scholars and has been “the particular target of disdain among educators” (Goeke, 2009, p 3). Education theorists believe teacher-led instruction is boring and rote (Goeke, 2009). According to Goeke (2009) less documented strategies are actually more popular. But Marzano (2007) noted that many teachers misuse the practice stage of instruction and instruction is mistaken for lecture. This study utilized a practical teacher-led method of
instruction, as well as a student-led discussion based method. The implications of this study have practical effects on the world of education in how teachers prepare and adapt their classrooms for a diversity of learners.

**Theoretical Framework**

Various theories have been developed to shed light on various dimensions to learning, such as Gardner's multiple intelligences (1993), Kolb's learning styles (1985), Gregorc’s cognitive style differences (1984), and various versions of Jung's psychological types (1921). This research study will be examined through the theoretical lenses of Jungian Analytic Psychology and Kolb’s Learning Styles, based on the work of Carl G. Jung and David A. Kolb. This study will rely on existing data established by a Jungian personality assessment (Cain, 2012), Kolb’s Learning Styles Inventory, (Kolb, 1976) and the VARK preference assessment (Fleming, 1987). These assessments will determine students’ profile and inclusion in the study by identifying students on the opposite sides of the learning style spectrum—those that are introverted reflective learners and extroverted socially active learners. Both Jungian (analytical) psychology and Kolb’s Learning Styles are appropriate for this study because they are grounded in the qualitative Interpretivist paradigm.

**Personality theory.** Jung (1921) proposed a philosophy that people are of two different modes: introversion or extraversion. Jung (1921) further divided the two types into eight typological groups: (a) introverted sensors, (b) introverted intuitors, (c) introverted thinkers, (d) introverted feelers, (e) extraverted sensors, (f) extraverted intuitors, (g) extraverted thinkers, and (h) extraverted feelers. This study is concerned with only the general term of introversion and extroversion. Extroverts were defined by Jung (1921) as those who become energized by others. They tend to be assertive, talkative, and feel bored when they are alone. Introverts were defined
by Jung (1921) as those who excel alone with their imagination and prefer reflection to activity. Research identifies 1/3 to 1/2 of the population as introverts (Cain, 2012; Dembling, 2012). Cain (2012) argued we are neglecting this segment of the population with excessive group work.

The popular literature and media exploded with articles about introversion in 2012 after Susan Cain’s best selling book *Quiet* brought attention to the extrovert ideal that she argued is hurting us more than helping us. Cain (2012) argued “we see ourselves as a nation of extroverts— which means we’ve lost sight of who we really are” (p. 3). Helgoe (2008) theorized that America is extroverted, and as result introverts are forced into adapting, going underground, or going crazy. Cain (2012) explained how introverts living under the extrovert ideal are “like women living in a man’s world” (p. 4). Today it seems that the more talkative people are rated as smarter, to the point where even the word “introvert” has been stigmatized, but Cain (2012) pointed to the fact that “some of our greatest ideas, art, and inventions— from the theory of evolution to Van Gogh’s sunflowers to the personal computer— came from quiet and cerebral people” (p. 5). Most scientists, engineers, accountants, doctors, writers and artists have been identified as introverted (Henjum, 1982). Some of the big names Cain (2012) identified as introverts were Eleanor Roosevelt, Warren Buffet, Gandhi, Rosa Parks, Bill Gates, Barbara Streisand, T.S. Eliot, Al Gore, and many other successful writers, leaders, artists, and thinkers. Cain (2012) pondered why we would not want more people like this? Moreover, the question is why would we want to stifle individuals like this?

Today’s contemporary society is designed to accommodate and reward only the extrovert, and this includes in our schools. Cain (2012) reported how introverted children have been identified as problems. Introverts prefer lectures, independent projects, and time to reflect, yet these are all being minimized in today’s schools (Cain, 2012). One study (Goleman, 1995)
described an introverted reflective learner named Judy. The four year old would “hang back from the action at playtime” but Goleman (1995) later found that Judy was “actually a keen observer of the social politics” (p. 36). The child actually excelled in assessments that measured organizational skills, accuracy, and perceptiveness, but these strengths may have never been identified if she had not been a student in Gardner’s Project Spectrum study (Goleman, 1995). Judy might have a difficult time in school since “the vast majority of teachers believe that the ideal student is an extrovert” (Cain, 2012, p. 7). Gatto (2009) argued, “Well schooled people are conditioned to dread being alone; they seek constant companionship through TV, the computer, the cell phone and through shallow friendships quickly acquired, quickly abandoned” (p. xxii).

Introverts are misunderstood and castigated in western society (Cain, 2012; Dembling, 2012; Kagan, 1994; Laney, 2002; Pennington, 2012). Helgoe (2008) argued that people in western society actually have a fear of solitude. Because of urban myths like the introvert being the lone gunman or a psychopath, introverts have been ostracized in western culture (Pennington, 2012). Kagan (1994) argued that “American society is suspicious of the introverted isolate with one or two friends...” (p. 253). Parents even now worry about their children playing alone (Dembling, 2012). Some social scientists (Callero, 2009) have argued that there is a dark side to individualism of which corporate leaders and international banks have used to promote their economic means. Callero (2009) linked individualism to egoism and selfishness and even pointed to extreme individualism with examples like the Unabomber, Ted Kaczynski. Of course, most people, radical thinker or not, do not kill others for satisfaction. If we used this same line of thinking we might point to the mob mentality of mafias, gangs, and hate groups. They act in groups, but our argument would be logically flawed if we assumed all collectiveness is evil.
Some of this fear and confusion has been linked back to Sigmund Freud, who considered introversion a form of pathological neurosis (Dembling, 2012).

Those perceptions of introversion seem odd in a nation that has traditionally celebrated self-reliance and individualism (Martin & Nakayama, 2011). Introversion is far more respected in eastern cultures (Cain, 2012; Pennington, 2012) where people actually live in collectivist societies (Martin & Nakayama, 2011). Sommers (2012) contended that “we’re not as independent as we think we are” (p. 98) and that we conform so often that it is a mindless default, and that this kind of adaptation to the collective can be dangerous. Perhaps we are becoming more collectivist and the east is becoming more individualistic and none of us are even aware. One community within the U.S. that feels the brunt of social constructivism in the classroom is the Asian American population. The issue for Asian Americans is their collective culture is quieter. They are culturally more reserved in their speech and behavior, yet their motivation and concentration skills also often surpass other Americans, which I observed first hand at Northern Virginia Community College where I previously taught. Many regions, like northern Virginia, have significant Asian American populations, so there are greater implications. Japanese Americans are more introverted (Nishida, 1999). The sentiment is the same for Chinese immigrants who “might be confused by the spontaneous and outspoken behavior of their peers in American classrooms…” (Chang, 1999, p. 6). Many Chinese “experience ambivalence and confusion in the [American] classroom” and their lack of participation can easily be misunderstood (Chang, 1999, p 8). Likewise, Filipino Americans may be observed as not being assertive in class, and teachers may associate passivity with a lack of academic ability (Litton, 1999). As Nishida (1999) noted “Although our schools claim to
accept diversity, we lack a concrete approach to understanding our children’s differences” (p. 104). Perhaps we need to understand both collective histories and individual differences.

Part of the rationale for social constructivism is to build community, which is also undoubtedly important. But Cremin (1976) noted that “community is more than a collection of groups” and argued that some level of individualism is actually required to attain community (p. 72). Some of my concerns lead to the debate over individualism and collectivism. Davidson (1970) recounted how savages and barbarians were collective groups. Davidson (1970) also stressed that free individuals had no place among savages. Savages were smaller groups that eventually gave way to the larger groups consisting of barbarians (Davidson, 1970). We have since hopefully evolved from barbarism, and as Davidson (1970) argued, “as men ascend above barbarism, their progress is marked by a gradual emancipation from institutions or a gradual development of individualism” (p. 76). Individual ideals emerged: the hero, the saint, the citizen and the individual citizen ideal in Greece brought forth the foundations of democracy and freedom (Davidson, 1970). The communal world in many respects began later with organized religion, Christianity in particular, as seen in the contrast between mass and the individual (Davidson, 1970). This discussion is for elsewhere, but it is worth mentioning because of the stress introverted reflective learners feel under communal learning conditions. Cain (2013) testified that, “Introverts like to work autonomously, but the trend in education the past twenty years has been focused on group learning” (p. 13). This kind of work can be annoying or even painful to an introvert (Cain, 2013). Introverts like to talk to one person at a time and are uncomfortable in groups (Morris, 1994).

Jung (1921) wrote that “individuation is a natural necessity” (p. 448). Storr (1988) argued that the capacity to be alone is an important skill that enables people to learn, think, be
innovative, change, and imagine. Storr (1988) explained that “human beings are directed by Nature toward the impersonal as well as the personal” (p. xiii). Storr (1988) suggested that solitude is therapeutic and includes practices like prayer and meditation, which have little to do with other people, but contemporary western culture is an obstacle for the peace of solitude. Too many people today fear solitude because they believe it is competitive or too individualistic (Senechal, 2012). But even Callero (2009), a critic of individualism, recognized that “modest expressions of individualism can be beneficial and constructive” and that some “social isolation can facilitate self-reflection and a sense of inner peace” (p. 18). To what degree individualism is defined by may be debated, but certainly the complexities involved with individualism should open up more inquiry into the group vs. individual crux.

Privacy, autonomy, and solitude equal creativity. Artists, as well as some of the greatest thinkers like Descartes, Newton, Locke, and Nietzsche, actually spent a great deal of time alone (Storr, 1988). Yet it is questionable whether we provide this opportunity in our schools. The new groupthink is a “phenomenon that has the potential to stifle productivity at work and to deprive schoolchildren of the skills they’ll need” (Cain, 2012, p. 75). Dembling (2012) and Senechal (2012) warned that we are only getting louder as a society and that the outpouring of emotions on social media is a great example of how extroversion has spread. Extroverts are more responsive to external rewards (Helgoe, 2008), and a materialistic, capitalist society makes that an easier task. As Cain (2012) pointed out, even creative writing is taught as a group project in schools today, even though we might have a difficult time finding a published creative writer who does their writing in groups. Despite a reputation for being troubled, “not all creative people are notably disturbed; not all solitary people are unhappy” (Storr, 1988, p. x).
Introversion does not equate to psychological problems, anti-social personality disorder, or social phobia (Hegloe, 2008; Pennington, 2012), nor does it mean someone is deranged or criminal (Cain, 2012). Introverts have been passed off as an archetype for violent methodical criminals such as school shooters (Cain, 2012) but they are often the prime victims of bullies. It has been documented that many school shooters were both introverted and bullied, and it is true that in “12 of 15 school shooting cases in the 1990s, the shooters had a history of being bullied” (Stopbullying.gov). Of course, logic tells us that not every introvert is bullied and not every introvert goes insane and not every insane person is introverted. We know that victims of bullying are often very low on the extraversion scale and that personality, while not a sole cause, does play a role in who bullies and who gets bullied (Tani, Greenman, Schneider, & Fregoso, 2003). Bullies are certainly able to “sniff out loners and nerds” (Pennington, 2012, p. 69).

Introverts are often more sensitive (Aron, 1999) and may be more distracted by “sirens, glaring lights, strange and strong odors and clutter” (Pennington, 2012, p. 24). 70% of highly sensitive people tend to be introverts (Aron, 1997). They like to take their time, polish and practice their work (Pennington, 2012). They think slower and have sensitive sensory processing (Dembling, 2012). Introverts are the least likely to be narcissistic (Dembling, 2012) and most introverts are highly empathetic, passionate about their values, and even take the lead on social activism (Pennington, 2012). They also seek balance and are more likely to adopt healthy lifestyles (Pennington, 2012). Jung once wrote: “They [introverts] are living evidence that this rich and varied world with its overflowing and intoxicating life is not purely external, but also exists within” (as cited in Aron, 1997, p. 100).

Some draw the analogy of introverts being more like cats and extroverts being more like dogs. The cat greets you quietly and calmly, while the dog greets you loudly and wildly.
Pennington (2012) pointed out a misconception about introverts where “like cats, they can be simplistically dismissed as unsociable and unfriendly” (p.79). Ask the one third of the population who shares their home with a cat though and they might say otherwise. There happens to be more domestic cats in the U.S. than dogs (HSUS, 2011). Cats are more independent and dogs require more direct attention, but it does not mean either one is wrong.

Introversion and extroversion complement each other, but they are quite different (Myers-Briggs & Myers, 1980). The extrovert is more objective, relaxed, and comfortable, and they live to understand (Myers-Briggs & Myers, 1980). The introvert is more subjective, reserved, and questioning, and they live when they understand (Myers-Briggs & Myers, 1980). Henjum (1982) explained two different types of introverts: Type A introverts are self actualizing, able to work well with others, but reserved. Type B introverts are the shy, timid kind with a disadvantage in society. Introverts seek understanding and meaning while extroverts seek sensory stimulation (Pennington, 2012). Introverts seem to be far more reflective (Kolb, 1984), while extroverts are more active (Silver, Strong, & Perini, 2000). Kolb (1984) pointed out the stability of the personality type, “several longitudinal studies have shown introversion/extroversion to be one of the most stable characteristics of personality from childhood to old age” (p. 76), though Jung (1921) acknowledged how we are able to change from situation to situation in order to adapt and often grow more introverted as we age.

There are legitimate biological differences between introverts and extroverts (Laney, 2002). Pennington (2012) reported the research of Debra Johnson and John Wiebe who used PET scans of the brain to show brain differences between the two personalities: Introverts have increased blood flow in the frontal lobes and anterior thalamus, while extroverts have more activity in the posterior thalamus and posterior insula. Dembling (2012) also reported research
that shows how brain scans reveal how extroverts are faster in decision response and faster in translating thought to speech. The faster rate of thinking may be why more athletes are extroverted (Dembling, 2012). Therefore, verbal participation with seminars and debates may not appeal to introverted learners in a classroom setting.

**Learning styles theory.** The theory of learning styles has multiple versions and diverse origins. The study of learning can be traced back to 1904 to Alfred Binet’s intelligence tests that sparked interest in student differences. Around the same time in 1907, Maria Montessori began her Montessori method of education in order to enhance and accommodate student learning. It would not be until 1956 when Benjamin Bloom introduced his taxonomy that we saw an interest in multiple levels of learning. In 1962, Isabel Myers-Briggs and Katherine Briggs developed the Myers Briggs Type Indicator based on Carl Jung’s theory of personality types. Myers and Briggs were the first to show the significant differences among different types of learners based on personality, particularly introverted and extroverted.

David A. Kolb began writing about individual learning styles in 1971, and in 1976 he offered his first version of the Learning Style Inventory. Kolb’s Learning Style Inventory contains four quadrants of learning zones within a cycle that features four distinct learning styles on the inside. Rita and Kenneth Dunn introduced their version of a learning style in 1978, which brought in environmental, emotional, sociological, and physiological, and psychological factors among the differences between student preference.

In 1982 Anthony Gregorc introduced his own model, which applies two perceptual qualities of concrete and abstract and then two ordering abilities of random and sequential. Later in the decade in 1987, Neil Fleming launched his own version called the VARK model, which simplifies learners into just four categories of preference: visual, auditory, reading/writing, and
kinesthetic. Fleming originally had three sectors in what was known as the VAK, but later added the reading/writing quadrant to complete the model. The VARK model remains one of the most popular to determine student preferences. Bernie McCarthy created his own model in 1990 called the 4 MAT model, which also has four categories: Imaginative, Analytic, Common Sense, and Dynamic. Several of these models are centered around quadrants, which is a concept that dates back to ancient times and has been seen in Hippocrates’ four body liquids, Blake’s four Zoas, and the medicine wheel in Native American wisdom (Silver, Strong, & Perini, 2000).

The Kolb Learning Style Inventory (1976) is the primary theory described in the theoretical foundation section of this research project and is the main instrument that provided pre-existing data for this study. This study is primarily concerned with two contrasting stages of the learning cycle: Reflective-Observation and Active-Experimentation learning. See Figure 2 for an illustration of the quadrants.

The Kolb Learning Style Inventory was developed as a learning cycle model based on Kolb’s 1969 research based on experiential learning theory. Kolb began by studying Jung’s research that dealt with how people perceive and process information. Jones, Reichard, and Mokhtari (2003) explained how “Kolb based his theory of experiential learning on peoples’ different approaches to perceiving and processing information, information integration, and nondominant modes of expression” (p. 65). Kolb then took learning style research and formulated a model of styles or types based on the Jungian concept of adult development. The model presents an experiential learning process based on “adult learning and group dynamics” (Gogus & Gunes, 2011, p. 587). For Kolb (1984), experiential leaning includes education, work, and personal development. Kolb further analyzed the different learning styles of the types of learners. Kolb (1984) was sure to explain how “individual learning styles are complex and not
easily reducible into simple typologies” (p. 68). Previous research (Kolb 1984) has shown that “learning styles are influenced by personality type, educational specialization, career choice, and current job role and tasks” (Kolb and Kolb, 2005, p. 9).

Kolb’s (1984) Learning Styles Inventory classifies learning into four categories or stages of learning (see Table 1). Little (2004) explained the categories, “Individuals prefer to input information on a sliding scale between concrete (specific) examples and abstract (holistic) concepts. They prefer to process information on a sliding scale between active (hands-on) experimentation and reflective (passive) observation” (p. 8). My focus will be on those who learn best within the zone of Reflective-Observation (Assimilators) in contrast to those who learn best within the zone of Active-Experimentation (Accommodators). Kolb (1984) wrote how “ineffectiveness results from an imbalance between observation and action” (p. 22). Kolb’s (1984) categories of Diverging and Assimilating learners learn best by reflective observation, reliance on an expert teacher, and often prefer to work alone. Kolb and Kolb (2005) have described Assimilators as students who “prefer readings, lectures, exploring analytical models, and having time to think things through” (p. 5). Yet today’s pedagogy seems more focused on active “student-centered” and cooperative learning (Hirsch, 1996). Kolb and Kolb (2005) defined Diverging learners as those who are imaginative and emotional, and although they may like to work in groups, these learners are considered introverts. Kolb and Kolb (2005) described Converging learners as extraverted thinkers who “prefer to deal with technical tasks and problems rather than with social issues and interpersonal issues” (p. 5). Active-Experimentation learners, Convergers and especially Accommodators, prefer group discussion and interaction (Peters, Shmerling, & Karren, 2011). Assimilators and Convergers make up the largest number
of undergraduate students (Tumkaya, 2012). Diversers and Assimilators are more often introverted than any other learning style (A.Y. Kolb, personal communication, Nov. 10, 2012).

Table 1

Learning Styles Within the Learning Stages

<table>
<thead>
<tr>
<th>Learning Style</th>
<th>Diverger</th>
<th>Assimilator</th>
<th>Converger</th>
<th>Accommodator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Stages</td>
<td>Concrete Experience</td>
<td>Abstract Conceptualization</td>
<td>Abstract Conceptualization</td>
<td>Concrete Experience</td>
</tr>
<tr>
<td>Learning Stages</td>
<td>Reflective Observation</td>
<td>Reflective Observation</td>
<td>Active Experimentation</td>
<td>Active Experimentation</td>
</tr>
</tbody>
</table>

Note. Table 1 shows how Kolb’s Learning Styles (1976) are situated.

The primary concern with active learning is with the middle of the scale from the Reflective-Observation to the Abstract-Conceptualizing learning stages, as highlighted. Note the double highlighted sectors of the Assimilator learning style. The learners who fall under Abstract-Conceptualization and Reflective-Observation, known as Assimilators, are the least accommodated with active and group learning strategies. In contrast, Active-Experimentation and Concrete-Experience are fully accommodated with active and group learning methods.

For the complete Kolb cycle of learning stages, see Figure 2, which illustrates the four learning process zones (or cycles) on the outside of the sphere and the four learning styles on the inside. This study is mostly concerned with the right side within the Reflective-Observation stage, particularly the Assimilators, in contrast to the Active-Experimentation. My concern with oral participation begins with Diversers, is mostly concentrated with Assimilators, but also includes and ends with Convergers. Accommodator learning style is completely untouched by the problem of practice being examined because these learners excel in active group learning.
environments (Nilson, 2003) and discovery learning (Little, 2004). For the purpose of this study, the most emphasis will be given to the most contrasted styles, Assimilators and Accommodators.

![The Complete Kolb Cycle of Outer Learning Stages with Inner Learning Styles](image)

**Figure 2.** The Complete Kolb Cycle of Outer Learning Stages with Inner Learning Styles

Figure 2: Note: This illustrates Kolb’s (1976) four learning process zones on the outside and the four styles on the inside. From the Center for Teaching Excellence, (2012). *Understanding your students*. Duquesne University. Retrieved from [http://www.duq.edu/cte/teaching/understanding-students.cfm](http://www.duq.edu/cte/teaching/understanding-students.cfm)

**Assimilators.** Assimilators fall within Reflective-Observation and Abstract-Conceptualization on the Kolb cycle. Ally’s (2004) research found that Reflective-Observation students learn by observation and reflection, and they prefer that “all the information be available for learning and see the instructor as the expert” also “tend to avoid interaction with others” (p. 27). They prefer abstract concepts, AC (Little, 2004) and thrive off of reflection and observation, RO (Gregory & Chapman, 2002). Assimilators are less focused on people (Kolb, 1984) and prefer logical and factual lessons (Nilson, 2003). Assimilators read and listen actively and do not require active learning methods (Nilson, 2003). Kolb (1984) found that the Assimilation style was parallel to introversion. Assimilators who are naturally more introverted
do not like team building exercises and brainstorming sessions (Dembling, 2012). They rely on an expert and learn from past experience (Gregory & Chapman, 2002). They learn by watching and thinking (Little, 2004). Assimilators prefer lectures and processing time to analyze different aspects of the information they have received (Kolb & Kolb, 2005). Based on the literature, Assimilators should benefit from teacher-directed lessons.

**Divergers.** Divergent learners are considered introverts (Kolb, 1984). Like Assimilators, Divergers need reflection (Gregory & Chapman, 2002), but they also do well in discussions as well as emotional lectures (Nilson, 2003). Divergers have strong communication skills and actually do well in groups (Kolb & Kolb, 2005). They learn by concrete examples, CE and reflective observation, RO (Little, 2004). The lecture or direct instruction is appropriate for this type of learner (Little, 2004). Based on the literature, Divergers are well balanced learners.

**Convergers.** Convergers learn by abstract concepts, AC and active experimentation, AE (Little, 2004). They do well with computer assisted education via software and simulations and also appreciate field trips (Nilson, 2003). Convergent learners are considered extraverts (Kolb, 1984), but they are less concerned with people (Ankerson & Pable, 2008). They prefer to learn by “first hand” techniques such as experimenting, simulation, and with practical applications (Kolb & Kolb, 2005). Active learning that focuses on the practical suits Convergers well (Gregory & Chapman, 2002).

**Accommodators.** Accommodators rely heavily on other people and are defined as extroverts (Kolb, 1984). They strive in group work and hands on learning (Nilson, 2003). They do and feel (Ankerson & Pable, 2008). These individuals enjoy working in teams in order to accomplish tasks (Kolb & Kolb, 2005). They prefer concrete examples, CE and active experimentation, AE (Little, 2004). Discovery learning is a perfect match for these learners.
Duman (2010) found that Accommodators were the least common style at just 14.7% and 8.8% in the control group.

**Learning Styles and Personality Types.** To emphasize the two contrasting stages of the learning cycles Reflective-Observation and Active-Experimentation, this study will examine only Assimilators and Accommodators. These two groups are also contrasted in personality type. Margerison and Lewis’ (1979) research defined a relationship between Kolb’s learning styles and Jung’s psychological types. Margerison and Lewis (1979) placed extroverted personality more likely to occur within the Accommodator and Converger learning styles. Introverted personality was most likely to occur within the Reflective Observation quadrant within the learning style of Assimilator. Kolb (1984) agreed with this assertion. I am wondering how consistent these placements are and whether there are introverted Accommodators who do not prefer active learning methods and extroverted Assimilators who prefer them.

Table 2 shows two theoretical foundations for this study consisting of Jungian Analytic Psychology and Kolb’s Learning Styles. As mentioned, the Assimilators are of most concern within the context of the Constructivist movement for more active learning. The Accommodators are of most concern regarding teacher-led instruction, which may or may not increase at the college level and may increase as a result of more emphasis on standardized testing at the K-12 level. Gardner’s Multiple Intelligence (MI) theory is included in Table 2 to show an additional layer of comparison, as discussed in the following paragraph. At the bottom of the table are the recommended teaching methods for each learning style.
Table 2

**Comparison of Learning Styles**

<table>
<thead>
<tr>
<th>Learning style</th>
<th>Diverger</th>
<th>Assimilator</th>
<th>Converger</th>
<th>Accommodator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personality</strong></td>
<td>Introvert</td>
<td>Introvert</td>
<td>Extrovert</td>
<td>Extrovert</td>
</tr>
<tr>
<td><strong>Type of learner as categorized by Kolb</strong></td>
<td>Visual, &amp; reflective learner watching (Reflective Observation - RO)</td>
<td>Reflective learner watching (Reflective Observation - RO)</td>
<td>Kinesthetic &amp; Action learner doing (Active Experimentation - AE)</td>
<td>Social &amp; hands on Action learner doing (Active Experimentation - AE)</td>
</tr>
<tr>
<td></td>
<td>feeling (Concrete Experience - CE)</td>
<td>thinking (Abstract Conceptualization - AC)</td>
<td>thinking (Abstract Conceptualization - AC)</td>
<td>feeling (Concrete Experience - CE)</td>
</tr>
<tr>
<td><strong>M.I. Intelligence</strong></td>
<td>Intrapersonal/Interpersonal</td>
<td>Intrapersonal</td>
<td>Intrapersonal</td>
<td>Interpersonal</td>
</tr>
<tr>
<td><strong>Teaching methods that appeal to each style</strong></td>
<td>Direct instruction, lecture, small group work</td>
<td>Direct instruction, lecture, readings</td>
<td>Labs, practicum, independent work</td>
<td>Cooperative &amp; collaborative learning</td>
</tr>
</tbody>
</table>

Note: This matrix is based on previous comparisons conducted by Margerison and Lewis (1979), Kolb (1984), Gregory and Chapman (2002), and Nilson (2003).

Although this study will not gauge any level of intelligence, Howard Gardner’s theory of multiple intelligence should be noted as an additional layer of comparison (see Table 2). Several key scholars have noted the similarities between introverted, reflective learners and intrapersonal thinkers (Armstrong, 2000; Fagella & Horowitz, 1990; Gardner & Walters, 1995; Gardner, 1995). Gardner and Walters (1995) noted how intrapersonal thinkers are the most private. Fagella and Horowitz (1990) noted how intrapersonal thinkers work alone and prefer individualized projects and having their own space. Armstrong (2000) acknowledged that more intrapersonal-minded students prefer individual instruction and independent study and more
interpersonal minded learners do better with games and collaboration. Nolan (2003) described knowledge of multiple intelligences as a “better way for teachers to understand and accommodate different learning styles” (p. 119). Gardner’s book *5 Minds for the Future* has been considered an “appeal for a new appreciation of introversion” (Pennington, 2012, p. 72). Just as Cain (2012) warned about neglect for introverts, Gardener (1995) has warned how there is too little attention given to intrapersonal intelligence and how “intrapersonal needs are unfortunately neglected in every area of education” (p. 16). In his definition of intrapersonal intelligence, Smagorinsky (2007) defined it as someone who seeks outs and benefits from therapy and learns from their mistakes. With such a negative connotation it is no wonder why people flock to their admiration of interpersonal intelligence. Of course, “cult leaders and people like Adolf Hitler have been known to have high degrees of interpersonal intelligence” (Nolan, 2003, p. 118), so there are also reasons to be cautious of promoting too much interpersonal intelligence. We should be careful to avoid hasty generalizations in our definitions.

Other learning styles have interesting parallels. Gregorc’s (1982) Abstract Sequential thinkers need time to consider lessons and can be compared to Kolb’s Assimilators. Gregorc’s (1982) Concrete Sequential thinkers prefer lecture and teacher directed lessons and can be compared to Kolb’s Convergers. McCarthy’s (1990) Type III and IV learners are more student centered where the teacher is more of a facilitator, especially Type IV learners who prefer to share, present, and teach others. Type III and IV have much in common with Kolb’s Accommodators. Type I and II are more teacher directed; the teacher is a motivator and provider of information (McCarthy, 1990). Type I learners, which emphasize reason, are most like Kolb’s Divergers. Type II learners, which thrive off of facts, are most like Kolb’s Assimilators.
The VARK theory was used as an additional layer of analysis in this study. It is important to note that VARK is more about learning preference whereas Kolb’s cycle is more about cognitive processing (VARK, 2011). The VARK website (2011) pointed out that Kolb’s theory explains “how we process learning in the brain whereas VARK is about our preferences for taking information into the brain and communicating them ‘outwards.’... Sometimes the link between VARK and these theories appears to be quite strong but VARK has its own focus, rationale and strategies” (n.p.). Therefore, the VARK has its own secondary purpose here and is not to be compared to the Kolb learning styles or personality types.

It should be noted that no student is ever boxed into any of these neat categories (Silver, Strong, & Perini, 2000). Jung (1921) warned that no person is 100% introvert or extrovert if they are to remain sane. Storr (1988) explained that neurosis follows if extraversion or introversion becomes extreme where in extroversion we lose ourselves in the crowd of conformity and in introversion we lose our touch with the real external world. No one is limited to just one world (Briggs-Myers & Myers, 1980). Cain (2012) and Laney (2002) pointed out that we sometimes change personality types during different periods of our life or in different environments. Kolb (1984) also argued that we have a general natural tendency toward introversion as we age. Kolb (1976, 1984) has also warned against boxing a student into one sole learning style. Kolb’s learning style theory is a full cycle of styles, and students sometimes use all styles and approaches, but favor some. Even though all students may have the potential to do well in group work, collaborative learning tends to favor the Accommodators on the other side of the sphere.

**Summary.** Learning style and personality type theories argue that there are different types of people who react differently in one setting. This embrace of diversity is essentially a
constructivist value and is modeled in the concept of differentiated instruction. However, my inquiry seeks to determine whether stark opposites (Assimilators and Accommodators) can really benefit from the same instructional method. Assimilators are more introverted and intrapersonal whereas Accommodators are more extroverted and interpersonal. Assimilators prefer to learn via observation and reflection whereas Accommodators prefer to learn actively and hands on using experimentation. The theories seem to expose the lingering question of how one learner feels and thinks in a class designed for another. In chapter 3, I will further define the two groups of learners that will be the focus of this study using the various learning styles, learning preferences, and personality types.

Chapter II: Literature Review

This study explores how learners may react in settings that do not match their self-identified learning styles. There is little direct research that shows how reflective, introverted learners react to and overcome social, active learning methods that go against their self-identified ideal natural state of learning and vice versa. In the field of composition, the literature is just about obsolete. Given this fact, this literature review will accomplish several objectives. First, the scarce existing research on learning style and personality type in the writing classroom will be explored, first with the university and then at the community college level. Existing research on learning styles will then be explored. An exploration of existing research on personality types will follow. Finally, teaching and learning will be examined under the context of active social learning versus direct instructional methods.

Introduction

One research study (Duman, 2010) found that individuals learn differently and concluded that multi-dimensional teaching models should be used. It is important to note that Kolb and Kolb (2005) have reiterated that there is no such thing as a fixed learning style and that learning
happens in a cycle. Wirz’s research (2004) found that compatibility of student learning styles with the teaching style of their instructors resulted in retention of more information when the styles match. For example, Wirz (2004) reported that poor first-year science instruction can be tied to failure to recognize learning styles. This failure results in the loss of over 200,000 science students each year who switch to other fields after their first college science courses (Felder, 1993). One study implied that “active learning is not a quick or easy fix for the current deficiencies in undergraduate science education. Simply adding clicker questions or a class discussion to a lecture is unlikely to lead to large learning gains” (Andrews, Leonard, Colgrove, & Kalinowski, 2011, p. 403). In other studies, direct instruction has been found to be highly successful for increasing student success in multiple subjects (Al-Shammari, Al-Sharoufi, & Yawkey, 2008). Reflective learners, visual learners, and intuitive learners all benefit from direct lecture or presentation (Wirz, 2004), so the implications of this study are significant.

Learning in the Writing Class

Writing is a means to understanding a student’s experience through intrapersonal intelligence (Gleason, 2011). Much of what writing instructors do touches on the intrapersonal. The type of reflective thought elicited in an English class is naturally more introverted. Examples in a writing course include reflective journals, meta-cognitive analysis, portfolios, free writing and other pre-writing strategies. Gleason (2011) documented how developmental writing students improved their fluency, voice, and confidence through the use of reflective learning. Reflection is also beneficial because it helps students identify their areas of confusion (Marzano, 2007). Jensen and DiTiberio (1984) found that “introverts generally have less difficulty with writing than extraverts perhaps because they tend to follow the composing process as it is traditionally taught. Their basic writing process often follows the pre-writing rewriting pattern”
Although people of any personality type can write effectively, knowing your personality type can improve your writing skills (Aron, 1999).

**Writing at the university level.** One study (Davidson-Shivers, Nowlin, & Lanouette, 2002) sought to find out whether learning style and multimedia lessons had any influence on undergraduate writing. The study used pre-writing tasks or lessons, the Kolb Learning Style Inventory, and a questionnaire on demographics. Davidson-Shivers et al. (2002) found no statistically significant difference among the four learning styles on written performance, but they suspect their results were due to methodological rather than conceptual reasons and still believe learning styles should be considered. One problem with their results is the students had prior knowledge and experience with pre-writing strategies, so the researchers recommended further research on less experienced populations (Davidson-Shivers et al., 2002).

One study gets close to the heart of what I am exploring in this study. Gottschalk, Pollastro, and Prorak (1994) designed a study that used twelve sections of a freshman composition course at the university level. Using basic library skills as the objective, six sections used a small group active learning method and six used lecture. Students were given a pre-test, a personality evaluation, and post-test. The quantitative side to this study examined learning outcomes and found that both test scores and confidence increased, but found no significant relationship between the increased scores and teaching method or personality type. Gottschalk et al. (1994) admitted, “We had hoped to see strong evidence that student learning and confidence would be greater under the group method than the lecture method, but we did not” (p. 484). Furthermore, one interesting point that evolved from this study was that even though the majority of participants were extroverts at 65 percent of the sampled population,
nearly 50 percent indicated that they preferred the lecture. Only 36.7 percent preferred the small group class, and another 14.2 preferred independent learning.

The qualitative side of the study requested written comments from the participants and this time the group methods received more positive comments. However, "Some students liked the lecture method because ‘it went pretty much step-by-step.’ Many said that they liked the projection of the computer screen using an LCD panel and an overhead projector" (Gottschalk, et al., p. 484, 1994). Some students said they “learn better through the lecture method” (Gottschalk et al., p. 484, 1994). One common request from the students was for more hands-on work, which in this case was time for computer use. Many students had criticism for the group class: “the groups were not helpful because only one or two people did all the work” and “going and reviewing what every group had done was very boring” or they “felt more work needed to be done individually” (Gottschalk et al., p. 484, 1994). The researchers (Gottschalk et al., 1994) declared that the “results indicate that small group activities in a classroom setting may not necessarily improve student knowledge scores or confidence in using the library” (p. 484).

Gottschalk, Pollastro, and Prorak (1994) admitted,

> We had hoped to see a relationship among knowledge or confidence scores, teaching method, and personality type. For instance, we thought our extraverted students (65 percent of the total sample) and our feeling students (57 percent of the total sample) would learn better under the group method, since the literature indicates these types are predisposed to group work. However, no such relationship was shown. (p. 484)

The question that goes unanswered in this study was who were these students and which particular learning styles reflected the above opinions. Though the researchers identify personality type, learning styles were not identified. Learning preferences are also unknown.
Many English instructors reference Lev Vygotsky to justify small group discussions (Smagorinsky, 2007). Smagorinsky (2007) advocates small groups, but admitted “I don’t think that Vygotsky was saying that because thinking is social in origin, teachers should necessarily use small groups in classrooms...[rather he] implies that even when people are alone, their thinking involves a sort of dialogue with others, including those long gone” (p. 62). But Smagorinsky (2007) also argued that Vygotsky’s emphasis on speech is to show how it is a “primary tool in the construction of culture” and that “through speech, people express what is on their minds” (p. 64). Smagorinsky (2007) questioned the primacy of speech, but saw it as a tool. Smagorinsky (2007) argued “both writing and talking to learn are more inviting to students because they needn’t fear being wrong” (p. 65). My concern is if students are from an introverted culture they may not benefit the same way others might. The emphasis on speech over writing is also of great concern. Speech and group work appeals to interpersonal intelligence (Nolan, 2003) and may prove to be difficult for intrapersonal and linguistic thinkers.

Previously, research by Smagorinsky and Fly (1994) investigated small groups in the English classroom and found that scaffolding is one solution to the problems with small groups. Smagorinsky and Fly (1994) generated theoretical hypotheses, but admitted their research was limited. Still, as Di Pardo and Freedman (1987) pointed out “we know little about precisely why groups work when they do, or perhaps more importantly what accounts for their failures” (as cited in Smagorinsky & Fly, 1994, p. 160). Research into personality and learning styles of these failures may enhance our understanding.

One observational study (Jensen & DiTiberio, 1984) established four settings for research on personality and writing: a thesis support group, workshops, a writing clinic, and a developmental writing program. In all of the settings, students expressed how knowledge of
personality type and its relationship to writing helped alleviate anxiety (Jensen & DiTiberio, 1984). Jensen and DiTiberio (1984) found that “Classroom teachers who allow for discussion and activity with other students meet the extroverts’ need for doing” (p. 288). Jensen and DiTiberio (1984) found that extroverts worked right through drafts often without outlining, and described the process as “quick and dirty” (p. 289). Outlining sometimes came later as a form of revision. One extrovert student expressed her dislike for writing because of the isolation. In contrast, the introverts in this study seemed to follow the traditional pre-write, write, revise process and showed less difficulty with writing overall as a result. One issue Jensen and DiTiberio (1984) found with introverts is some planned too much and could not get started on the actual writing. Overall, Jensen and DiTiberio (1984) found great value in acknowledgement of personality type for understanding differences in how students write, and also made several recommendations for further research that have since appeared to go unanswered.

Carrell and Monroe (1993) found that composition pedagogy may not always be appropriate for all students. Because writing processes differ, some may need a long time to “incubate ideas” whereas others may benefit from the popular freewrite strategy (Carrell & Monroe, p. 148, 1993). One study (Carrell & Monroe, 1993) collected writing samples and administered a personality instrument to university students from nine sections of first year writing. This study had students working through the same writing processes and examined the writing results in three different groups: basic writers, traditional freshman, and ESL. Carrell and Monroe (1993) concluded that there are “negative correlations that may be the effect of incompatibilities between the processing styles of students high on these scales with the method of writing instruction under which they have been required to work” (p. 161).
In a study using the VARK, Rakap (2010) explored the influence of learning preferences on student success. The study used the VARK, a self-evaluation of technology use, and the results of six quizzes for 46 adult participants in a web based course. Rakap (2010) found that kinesthetic learners performed the worst on evaluations and read/write learners performed the best. The statistical results showed that learning preference has a significant effect on success. While this study did not examine writing skills, it did identify students with reading/writing learning preferences as being at an advantage in a course with traditional assessment.

**Community college writing.** The previous results and K-12 research may have different implications for the community college, which is a unique environment with diverse student populations. One study (Miglietti & Strange, 1998) at a two-year college examined age, classroom expectations and preferred learning styles. The study collected data that consisted of survey, grades, and course evaluation material for remedial English and math students. The study used a modified version of LSI, known as the Kolb Adaptive Style Inventory. Assimilators made up 37.3 percent of the adult aged population of 25-53 years of age and 30.8 percent of the traditional aged population for 18-24 years old. Accommodators were only 8.5 percent of the adult aged population and 7.7 percent of the traditional aged population. Diversers represented the largest percentage of the two age groups, 50.9 and 60.4 percent. The study found that age accounted for little of the variance in classroom expectation and learning style. Learner centered classes resulted in better grades and a better sense of accomplishment, but adult student preferred the teacher directed mode of instruction (Miglietti & Strange, 1998). The researchers (Miglietti & Strange, 1998) acknowledged previous findings that showed how the teacher-centered style led to more learning in other remedial settings.
In a study using the VARK, Lincoln and Rademacher (2006) explored ESL students at the community college. This is significant to my study because 20 percent of the site population consisted of minorities (BCC, 2012), many whom are ESL students, who eventually land in English 101 after developmental coursework. Lincoln and Rademacher (2006) found that one third of the students surveyed had a preference for reading/writing. The study concluded that note taking was the preferred learning mode of 1/3 of the participants. 20% favored aural modes, 15% favored kinesthetic, 4% favored visual, and 15% chose multiple modes. Females favored auditory and multimodal learning styles, while males preferred note taking. Asian males favored note taking and aural learning. Hispanic students preferred note taking and kinesthetic learning significantly more than the other modes. It does not seem clear from these results how active learning or direct instruction would affect these diverse learners. Lincoln and Rademacher (2006) concluded, “Understanding student learning styles—and teaching to those learning styles—may result in attracting more English language learners to ESL classes, engaging them in the educational process, and retaining them until they graduate as informed, productive members of society” (p. 498).

Knowledge of and class discussion of learning styles or personality types can be helpful for students. One community college professor (Houston, 1997) actually used personality types as a discussion in developmental writing courses to develop more self confidence in writing ability. Houston (1997) acknowledged that as an extrovert she is cautious to appeal to introverts, but her approach begins with having “them form small groups and discuss the different writing techniques they use” (p. 212). It is, however, unclear how the introverts in that population feel about discussing their personalities. This begs the question once more, what if that very oral participatory approach is the problem?
One community college study (Kelly, 1987) found that there was no significant difference in the distribution of personality types between basic and standard writers, but that one type of introvert [ISTJs], struggled more with writing. Kelly (1987) also found that basic writers, students with numerous serious errors, are not just one personality type. It would be interesting to apply this same approach of writing assessment with the Kolb learning style inventory. Kelly (1987) recommended all writing instructors to teach and provide assignments that “appeal to all the processes and attitudes— all the gifts and strengths” (p. 168). Differentiated instruction, scaffolding, and portfolio assignments are effective ways to reach all learning styles (Chapman & Gregory, 2002).

**Learning Styles**

This section will review the general research on learning styles beginning with the issues of gender and college major. Review will include broad research on learning styles in the community college through the university setting. Reviewing the various studies involving learning styles provides a fuller context for this study. Knowledge of this research informs the community college English instructor and sets the foundation.

**Gender.** Past researchers of learning styles have considered gender. In one study, Ally and Fahy (2002) found differences between gender for learning style preference. An earlier study by Williams (2001) found that more males were found to be Assimilators than any other learning style [18 to Converger-13, Diverger-11, Accomodator-11, out of 49]. Philbin, Meier, Huffman, and Boverie (1995) also found that males were more likely to be Assimilators and females were more likely to be Accommodators with preference for non-traditional environments in the concrete experience mode. Other research (Gusentine & Keim, 1996) found that “women preferred to transform information into knowledge through active experimentation and that the men preferred to transform it using reflective observation” (p. 19). More recently
though, Jones, Reichard, and Mokhtari (2003) found no significant differences in preferred learning by gender. Learning styles may also have more significance for male introverts and extroverts than it does for women who are less limited by their styles (Peters, Shmerling, & Karren, 2011).

**Majors.** Kolb’s research (1984) found that Divergers are often found in majors such as English, political science, history, and psychology. Convergers were often found in careers such as engineering and medical doctors (Kolb, 1984). Physics majors have been found to fall between Converging and Assimilating (Kolb, 1984). Foreign language majors have been found to be on the Diverging and Assimilating line (Kolb, 1984). Many business majors fall into the Accommodator category (Kolb, 1984). The largest number of art students in one scholarly study by Gusentine and Keim (1996) preferred the Assimilator learning style (44%), followed by Accommodator (22%), Converger (19%), and Diverger (16%). Other research (Tumkaya, 2012) found Assimilators to be the most populated group of learners.

**Community college research.** In the Gusentine and Keim (1996) study of community college art students, two hundred students from five community colleges were administered the Kolb learning Style Inventory and a questionnaire. 100 students were from for credit transfer courses and 100 were from non-credit courses. The non-credit courses had a deviser age population but the transfer courses had a predominant age of 22 years. Nearly 73 percent of all the students were women, but 55 percent of the transfer course students were female. 34 percent of the men and just 9% of the women were identified as art majors. Gusentine and Keim (1996) found that “Both art majors and nonmajors preferred the Assimilator learning style.” Because the Kolb's Learning Style theory indicates that students in the arts use the learning modes of reflective observation and concrete experience it was hypothesized that most of the students
would be Divergers. However, since Divergers represented the smallest number of students at 16 percent, the hypothesis was rejected. “A chi-square analysis revealed no statistically significant differences between art majors and nonmajors in their learning style preferences” (Gusentine & Keim, 1996), but they did find that age made a difference. Traditional aged students 23 and younger were more likely to process through reflective observation, while non-traditional were more likely to process through active experimentation. The breakdown for community college students of traditional age in this study (Gusentine & Keim, 1996), are as follows: Assimilator (47.2%), followed by Diverger (22.6%), Accommodator (18.9%), and Converger (11.3%).

In one study, Jones, Reichard, and Mokhtari (2003) found that most community college students’ learning style preferences varied significantly across the four different subject-area disciplines of English, math, science, and social studies. The majority of the participants, 59%, were classified as being within the Assimilator learning style. 83% of the participants switched learning style modes for two or more disciplines. Only 19% of the students stayed within the same learning style quadrant throughout each of the five assessments. Of the twenty students who demonstrated a fixed learning style, there were 13 Assimilators (65%), 3 Divergers (15%), 2 Convergers (10%), and 2 Accommodators (10%). Jones, Reichard, and Mokhtari (2003) concluded that community college students’ learning style preferences vary across different subject areas and that students are able to adapt to different learning situations.

Another community college researcher (Carthey, 1993) found that Convergers actually have the best grades for business, accounting, and law courses. A different study found that Convergers had the highest GPA scores overall (Carthey, 1993). Carthey (1993) also found that
Accommodators had the second highest number of A’s. Assimilators had the highest number of B’s and C’s in one study (Carthey, 1993).

**University research.** By surveying 800 graduate students Kolb (1984) found that business majors fell into Accommodators (67). Nursing (13) and engineering (234) fell into the Converger category. Diversers had a mix of English (30), history (34), political science (24) and psychology (24). Assimilators had the most with economics (911), math (34), foreign language (16), sociology (15), chemistry (27), and physics (27). 65% of students in Hai’s (2005) study were Diverging or Assimilating students, which also show a majority. Tumkaya (2012) found that more university students were Assimilators and less were Accommodators.

By these numbers, it appears if teachers only teach to the Accommodators it seems they would only be accommodating the business majors and the least number of students while actually neglecting the majority. If we are favoring interpersonal extroverts as Cain (2012) suggested and favoring kinesthetic hands on learners (Murray, 2008), who both most likely happen to be Accommodators, where does this leave the other learners, especially the Assimilators who are of stark contrast? Gusentine and Keim’s (1996) findings suggested different learning styles are possibly being neglected as a result of teaching methods.

**Personality Types**

This section will review the general research on personality types and the connection to learning styles. Kolb (1984) wrote, “there is a correspondence between Jungian concepts of introversion and the experiential learning mode of reflective observation via intentional transformation...” (p. 79). There is a strong parallel between Assimilators and introverts and Accommodators and extroverts. Dembling (2012) noted that for introverts, “sitting and watching is a complete feast for [their] sensitive sensory perception (p. 45). Ally (2004) also found that
learners within the Abstract-Conceptualization stage [the other dominant stage of Assimilators] preferred to work more with things and symbols and less with people and like to work with theory and to conduct systematic analyses.

**Recent research.** Cain (2012) traced the origins of hyper extroversion back to a culture of personality where we value those who entertain us more than the ones who inform us with facts and knowledge. Some of the origins come right from our Ivy League colleges: “Harvard’s provost Paul Buch declared in the late 1940s that Harvard should reject the ‘sensitive, neurotic’ type and the ‘intellectually overstimulated’ in favor of boys of the ‘healthy extrovert kind’” (p. 28). Cain (2012) examined historical examples of how this extroversion ideal originates with the Greeks, Romans, and then later with our outspoken founding fathers. Cain (2012) explained how early Americans felt threatened by intellect and pointed to the 1928 presidential campaign of former professor John Quincy Adams (one of the few presidents identified as an introvert) versus the extroverted military leader Andrew Jackson. A Jackson slogan read: ‘John Quincy Adams who can write/ And Andrew Jackson who can fight’ (p. 30). Jackson devastated him in the election and would go on to become one of the most ruthless presidents minority populations have ever had to face. However, Abraham Lincoln has long been classified as an introvert (Helgoe, 2008) and some have suggested President Barack Obama may be more introverted (Pennington, 2012).

Helgoe (2008) claimed that the external is valued over the internal in our society. Much of the abandonment of the internal has to do with radical behaviorism and then cognitive behaviorism (Helgoe, 2008). One can simply look to American healthcare approaches to see more evidence of the value of the external over internal. Physicians and therapists are not paid to
investigate inside (Helgoe, 2008). Your only option as a patient is wait until your physical external symptoms warrant an investigation or seek out an alternative holistic doctor.

**Personality in college.** Through a series of interviews, Cain (2012) examined the extrovert ideal on our college campuses today. One Harvard business student told Cain she would be hard pressed to find an introvert on campus: “your grades and social status depend on it [extroversion]” (p. 44). Cain (2012) found that students have to act forcefully to survive in this environment and talk with confidence even if they are unsure. Williams (2004) echoed this assertion of confidence and argued “the only difference between Harvard students and community college students is that Harvard students think they are right even when they are wrong, and community college students think they are wrong even when they are right” (p. 42). If we are value talk and confidence over intrapersonal skills in the classroom, then what are the societal results when these students graduate to the workforce?

**Personality in business.** One would assume we would have better communication in society, but the problem is these extroverted skills do not always translate to success in the real world, even in the business sector (Cain, 2012). A Brigham Young University study found that the CEOs of 128 major companies who were considered charismatic had bigger salaries but not better performance (as cited in Cain, 2012). In fact, Cain (2012) reported how “introvert leaders in one business study outperformed those led by extroverts by more than 14%” (p. 56). Steve Wozniak, co-founder of Apple, is another successful person Cain (2012) pointed to who is a solitary introvert. “Most inventors and engineers I’ve met are like me-- they’re shy and they live inside their heads,” said Wozniak in his memoir, “They’re almost like artists. In fact, the very best of them are artists” (as cited in Cain, 2012, p. 73). Wozniak actually advises kids to work alone: “You’re going to be best able to design revolutionary products and features if
you’re working on your own. Not on a committee. Not on a team” (as cited in Cain, 2012 p. 74). Cain (2012) explained the flaws of teamwork: “what looks like multitasking is really switching back and forth between multiple tasks, which reduces productivity and increases mistakes by up to 50 percent” (p. 85). More than 70 percent of U.S. offices use open space plans that consist of cubicles and pods, but studies show that these open space plans lead to hostile, insecure, and distracted employees (Galagan, 2012). Cain (2012) reported that many businesses (e.g. Reebok, Backbone Entertainment) are finally just reshaping their organizations to allow more privacy, autonomy, and solitude. Pixar and Microsoft are another two companies that accommodate the individual employee while also encouraging interaction (Cain, 2012).

Teaching and Learning

This section will review the foundational research on social constructivist learning and teacher-led instruction. These are the two contrasting approaches of teaching that were used in this study. The first approach is social learning, which features many options, including the Socratic seminar used in this study. The second approach is the teacher-led instruction, which features several variations, including the direct instruction used in this study. The next part of this section identifies a clashing of western teaching methods with eastern philosophy. The final part of this section reviews learning style awareness and studies that gauge achievement.

Social learning. How we teach has long been considered an important element in student learning. Collaborative learning was coined by British educator Edwin Mason in 1968, but these principles were articulated half a century earlier with the early progressive educators (Kail & Trimbur, 1997) and some of the techniques date back to the one room school house (Sego, 2003). Both constructivism and collaborative learning are more philosophy than actual
teaching methods (Woolfolk, 2007). However, some scholars (Ruey, 2010) have defined constructivist strategies as anything interactive and collaborative. This approach is beneficial to extroverts and Active Experimentation learners because they learn best by teaching others and prefer interaction (Ankerson & Pable, 2008). Peters, Shmerling, and Karren (2011) reported several studies that show how “learning style preference of the student influences the effectiveness of collaborative learning” (p. 314).

Cooperative learning originates from the work of Kurt Lewin in the United States and can be defined as an arrangement in which students work in mixed ability groups in cooperation to reach a shared goal (Woolfolk, 2007). Group work is the simple mixing of students in groups and may not result in cooperation or a shared goal (Woolfolk, 2007). If done carefully, both cooperative learning and simple group work can benefit students in the learning process (Woolfolk, 2007). Students with interpersonal intelligence “love cooperative learning groups” (Shirley, 1998, p. 7). However, Nilson (2003) pointed out that cooperative learning is a supplementary technique and should not replace lecture, whole class discussion, experiential learning and other means. Nilson (2003) also addressed how discussion can get monotonous after a while, especially since it only appeals to auditory learners. Marzano (2007) found that groups of four or more students actually lead to a loss in learning. Cain (2012) reported some studies that show how performance gets worse as group size increases and how individuals actually produce more ideas alone than when they worked in groups. The one exception is online brainstorming, but the online learner still has time to reflect in an online setting (Cain, 2012). Ruey (2010) found that constructivist instructional strategies such as collaboration and discussion helped adult learners in an online environment. The difference between seated and online instruction and the connection to learning styles will be discussed briefly in Chapter 5.
The Socratic Seminar is one method to promote social learning. The use of questioning as a curricula framework is an ancient method that Socrates used. Copeland (2005) explained: “Socratic questioning is a systematic process for examining the ideas, questions, and answers that form the basis of human belief” (as cited in Burke, 2010, p. 1). Students must speak in this setting in order to gain participation points. Roberts and Billings (2012) cited one study where a seminar on Emma Lazarus’ poem “The New Colossus” led to a hostile contemporary debate about immigration. The teacher reflected on some of the problems with this conflict: “it seems my students only become more narrow-minded when presented with an opposing point of view” (as cited in Roberts & Billings, 2012, p. 26). But Burke (2010) found that discussion-based instruction enhances achievement and comprehension. Hale and City (2006) argued “student-centered discussions help students develop intellectually and socially” (p. 3).

The seminar brings students into a dialogue about a text or issue. Often instructors remove themselves from the environment and become an observer. The students are either leaders, who facilitate the discussion, or they are participants. The objective is for students to engage in dialogue to explore an issue deeper than usual (Hale & City, 2006). To structure the course as a conversation helps engagement, comprehension, and reflection, but the entire educational experience cannot be one conversation (Burke, 2010). Burke (2010) argued that the challenge is integrating conversation with teaching of skills and knowledge. The positive arguments for seminars do not consider, nor mention, personality types or learning styles or preferences. The seminar is the social form of learning that will be used in this study and discussed further in Chapter 3.

Other types of active methods include inquiry-based instruction or discovery learning. This type of learning occurs when students are largely on their own working toward discovery of
principles and ideas (Slavin, 2008). Beach and Myers (2001) have argued that inquiry based English instruction engages students. Though sometimes beneficial and often not necessarily group work, these types of methods have been found to distract learners and do not result in long-term memory processing (Kirchner, Sweller, & Clark, 2006). Hirsch (1996) deemed discovery-based learning as the “least effective pedagogical method in the teacher’s repertory” (p. 246). Hirsch (1996) retorted that the picture of a “lecture format, passive listening, mindless drill, and rote learning” is a “mere caricature” (p. 245). The rhetoric of “hands on” project based discovery learning is usually used to “imply disdainfully that visual and verbal learning is artificial and unengaging” (Hirsch, 1996, p. 253). These prejudices, Hirsch (1996) asserted, affect disadvantaged students the most. Becker and Gersten (2001) also found that low-income graduates performed better from direct instruction than the students who did not have these same teaching practices.

Kirchner, Sweller, and Clark (2006) reported multiple studies that found problems with pure discovery learning: Carlson, Lundy, and Schneider (1992) and Schauble (1990) revealed false starts and inefficient results with discovery learning; Moreno (2004) found that guided learning is more effective than discovery; Chall (2000) and McKeough, Lupart, and Marini (1995) as well as Schauble (1990) and Singley and Anderson (1989) all found that strongly guided learning had better results than discovery; Tuovinen & Sweller (1999), Hardiman, Pollatsek, and Weil (1986), in addition to Brown and Campione (1994) all found that well-designed, controlled experimental studies support direct instruction across the board. Kirscher, Sweller, and Clark (2006) found that the more guided the teaching the better success the students had. Slavin (2008) asserted that guided discovery learning is far more promising than pure student-led discovery learning. Hirsch (1996) also called for more guided and model-based
learning and argued that students are more interested by good subject matter than by a student-centered classroom.

**Direct teacher-led instruction.** The characteristics of effective teaching have been thought to be teacher knowledge, clarity and organization, warmth and enthusiasm (Woolfolk, 2007). Direct instruction or explicit teaching has been observed as the best means of teaching basic skills (Al-Shamari, Al-Sharoufi, & Yawkey, 2008; Hollingsworth & Ybarra, 2009; Marchand-Martella, Slocum, & Martella, 2003; Woolfolk, 2007). Direct instruction has been defined as being:

skills-oriented, and the teaching practices it implies are teacher-directed. It emphasizes the use of small-group, face-to-face instruction by teachers and aides using carefully articulated lessons in which cognitive skills are broken down into small units, sequenced deliberately, and taught explicitly. (Carnine et al., 2004, p. 5)

Direct instruction was found to be superior to discovery learning (Klahr & Nigam, 2004). Woolfolk (2007) suggested that, “Every subject, even college English or chemistry, can require some direct instruction” (p. 489). Behavioral learning theories and a well versed, repeated criticism of knowledge-based education that asserts “students are not empty vessels” have dominated the education field (Hirsch, 1996). Despite the “empty vessel” arguments, there is evidence that direct instruction can help students learn actively and that “student controlled learning can lead to systematic deficits in the student’s knowledge” (Woolfolk, 2007, p. 490).

Reflective Observation learners and introverts also prefer a teacher-led classroom and prefer to think rather than talk (Ankerson & Pable, 2008).

Direct instruction is not a lecture as many assume, though a lecture does have its place in college instruction (Nilson, 2003). Jonassen (2009) made an interesting counter to the
constructivist argument for problem solving and argued that if learning is problem solving then why not let the student figure out what to do with a teacher’s lecture? Lectures are a problem to solve for some students. They have to connect the lecture to their course reading and research and often those connections are not spelled out for them explicitly. Jonassen (2009) suggested that the preparation, the lecture itself, and post lecture connections could essentially be considered a process of discovery.

Direct instruction goes past just lecturing information to an audience. In a broad sense, direct instruction is any direct teacher-led lesson. Though there are multiple models, the basis of most direct instruction models is the introduction/review stage, the development stage, the guided practice, closure, independent practice, and then evaluation (Rosenshine, 2009).

Direct instruction derives mainly from two lines of scholarship and curriculum development. The first line of development refers to Direct Instruction or (DI) which was created by Zig Engelmann in the 1960’s and later refined with others in the 1980s. This model consists of an “explicit, carefully sequenced and scripted model of instruction” and is supported by a “landmark empirical research study” with follow up studies that have spanned more than thirty years now (National Institute for Direct Instruction, 2013, n.p.). The initial study in 1967 was called Project Follow Through and was the largest educational experiment ever conducted, and evaluated nine major approaches to educating at-risk students (National Institute for Direct Instruction, 2013). Only students taught with the Direct Instruction approach consistently outperformed control students on basic, cognitive, and affective measures (National Institute for Direct Instruction, 2013).

The second line is usually referred to as lowercase direct instruction or (di), which was coined in 1976 by Barak Rosenshine after he found a causal relationship between a set of
variables and student achievement (National Institute for Direct Instruction, 2013). There have been various other variations of the direct instruction model developed by other scholars. There is also a more recent explicit instruction model, e.i., that puts more emphasis on how students process and structure in-coming information (Goeke, 2009). For the purpose of this study, generic lowercase direct instruction will be used.

Woolfolk (2007) recognized the learning benefits of knowledge and skills based direct instruction and recommended direct instruction to model and explain in order to build metacognitive knowledge and skills. Woolfolk (2007) suggested, “every discipline has its own terms, names, facts, and rules” (p. 273). Procedural knowledge must be practiced to develop it, and though many misuse practice as drill, practice is not drill (Marzano, 2007). Effective practice is a procedure facilitated by a guiding teacher (Marzano, 2007). Burke (2010) recommended a three step process for most writing instruction that begins with teacher modeling, moves to a communal practice, and ends with independent creation.

Woolfolk (2007) also acknowledged how direct instruction helps students perceive links among main ideas will help them construct accurate understandings and noted ample evidence that shows that direct instruction helps students learn actively. Hollingsworth and Ybarra (2009) pointed to various research studies that showed how direct instruction leads to more student achievement and that students learn more and learn faster. Reagan (2008) reported how direct instruction lessons are successful specifically in the teaching of a fact-based course like American history. One researched case study (Al Shamhari, et al., 2007) found that direct instruction is effective in improving reading comprehension skills and reviewed the literature on several other key studies that backed success with direct instruction.
Several reading studies have also shown positive effects. An article from the Oregon Research Institute discusses a study that evaluated the effect of Direct Instruction and found that Direct Instruction had a positive effect on reading skills for Hispanic students (As cited in Baltimore Curriculum Project, 2013). A 2002 study found that a model based on Direct Instruction had a positive impact on English language learners (Addison & Yakimowski, 2003). A 2003 review of experimental studies of reading programs for English language learners found Direct Instruction to be among the programs with the strongest evidence of effectiveness (Slavin & Cheung, 2003).

The National Institute of Direct Instruction (2013) has argued that solid research has shown positive results for over 25 years in reading achievement. Schug, Tarver, and Western (2001) compiled information in a policy report that identified 34 studies where direct instruction methods were compared with other methods. The results showed 87 percent of the post treatment means favored the direct methods (p. 7). One key factor to note is many of these Direct Instruction studies are strictly at the elementary level. Another element to consider is the difference between DI and di, direct instruction. Yet another aspect to consider is direct instruction may actually include some small group activities during the practice phase. Schug et al. (2001), however, reported multiple studies conducted in several states that showed superior results favoring direct instruction in various subjects in both elementary and secondary education. Rosenshine (2009) argued that there is empirical support for direct instruction.

Though critics might label direct instruction as teacher centered, Hollingsworth and Ybarra (2009) pointed to Jeanne Chall’s broad research in 2000 that revealed how “teacher centered” teaching produced higher achievement than other approaches and was more effective for students who are at-risk, minority, or have learning disabilities. Some researchers (Hatcher & Bringle,
have identified direct instruction or lecture as methods that allow ample time for reflection. Active learning is also improved when instructors added in appropriate time for reflection (Hatcher & Bringle, 1997). More research on direct instruction pedagogy in higher education may benefit the field.

**Intercultural differences.** There is a culture clash between learning styles and teaching styles for students who travel or immigrate to new countries (Martin & Nakayama, 2011). In some countries like Belgium students do not answer the professor’s questions even if they know the answer, whereas students in the United States answer the questions even if they do not know the answer (Martin & Nakayama, 2011). A more sociable classroom in U.S. classrooms could pose a problem for those students from other cultures.

Of particular concern, many Asian American students in American schools (and Asian students with American teachers) from K-12 to college level can relate to a feeling of discomfort and frustration and often complain about having to sit through gibberish (Cain, 2012; Ouyang, 2003). This is because in these more introverted cultures, and likewise in the minds of Assimilators, the teacher is expected to be an expert (Peters, Shmerling, & Karren, 2011). Several studies found that Asian American students are more introverted and must contend with an extroverted and confusing American approach to education when being educated in the United States (Chang, 1999; Chi, 1999; Chuong, 1999; Litton, 1999; Nishida, 1999; Park, 1999). For these students, group work is unnatural and leadership from a teacher is expected (Chang, 1999; Chi, 1999; Chuong, 1999; Litton, 1999; Nishida, 1999; Park, 1999). Credibility decreases as material is discussed without expert guidance, themes are taken out of context and meaning is lost as it moves further away from the primary source. Cain (2012) cites one student named Hung Wei Chien from Taiwan at UCLA:
The professor would start class, saying ‘let’s discuss!’ I would look at my peers while they were talking nonsense, and the professors were so patient, just listening to everyone...I remember being amazed. It was a linguistics class, and that’s not even linguistics the students are talking about! I thought, ‘oh in the U.S., as soon as you start talking, you’re fine. (p. 185)

There are some differences between western and eastern learning, and this may have implications for American students from different backgrounds (Cain, 2012; Ouyang, 2003). Japanese, Korean, as well as Filipino and Vietnamese educations hold great emphasis on relation of facts and memorization (Chang, 1999; Chuong, 1999; Litton, 1999; Park, 1999). The Japanese education is routinized, teacher-centered, and textbook orientated (Nishida, 1999), which our constructivist scholars have been critical of. Chinese students learn by listening, observing, reading, and imitating (Chang, 1999), which would be considered “passive” by western education theorists.

The Asian American or Asian student is more acquainted with working on their own in the school setting, even though Asian society is a more collective society. Litton (1999) found that Filipino Americans are not used to working in cooperative groups; they are taught to be polite and encouraged to remain quiet. Vietnamese are accustomed to lecture style and do not participate (Chuong, 1999). Park (1999) found that Korean students do not prefer to speak in class and hesitate when expressing their opinion. Park’s study found that Korean Americans have a negative preference for group learning and tend to be the most visual of any race. Park (1999) advised “teachers should try to minimize the use of small group activities for Korean-American students” (59). Nishida (1999) found a lot of learning diversity among Japanese American students, but found that these students “may consider loud, excited classroom dialogue
improper or even boisterous” (Nishida, 1999, p. 101). One study by Venugopalan (2000) found that “introverts of Chinese, Japanese, and Korean (Confucian-based) linguistic background scored slightly higher in reading than extroverted students with similar language origin” (p. 74-75), so these students are traditionally considered to be successful.

Another study (Ouyang, 2003) reported the challenging results of American and other western teachers in China who used a western style pedagogy of “student-centered, communicative learning...” (p. 121). Many foreign teachers ended up disappointed and even bitter over their unsuccessful endeavors in China (Ouyang, 2003). 70% of students in one study complained that the teachers were improvising and had a lack of organization and linearity, “which resulted in a lack of a sense of achievement for the students” (Ouyang, 2003, p. 127). Foreign teachers with the western style also received numerous criticisms for treating their students like kindergarten kids with their active learning methods, not correcting errors, and talking “wild” (Ouyang, 2003). An interesting finding in his study about writing assignments showed how Chinese students believed the foreign teachers had bias in grading where mid level students with likable opinions received higher grades on their writing than the top students with good language and structure (Ouyang, 2003). The foreign teachers had their own complaints about the passivity of the students (Ouyang, 2003). The parallels of this scenario in China to teachers in the United States who emphasize active social learning that may go against the nature of introverted reflective learners is concerning.

**Awareness of learning styles.** Individuals enter the Kolb cycle at different points depending on the process of learning and the teaching method (Nilson, 2003). Yeganeh and Kolb (2009) referenced research that demonstrated “that the less academically successful students are, the more important it is to accommodate their learning style preferences, because
these are the learners who often are placed into remediation and are unable to successfully negotiate college-credit courses “ (p.62). Yeganeh and Kolb (2009) also pointed to research that showed how knowledge of learning-style preferences increased student achievement and reduced dropout rates. Yeganeh and Kolb (2009) explained “overall learning effectiveness is improved when individuals are highly skilled in engaging all four modes of the learning cycle at contextually appropriate times “ (p. 16). Perhaps it is the ultimate objective to open all four stages. Yeganeh and Kolb (2009) reflected, “Mindfulness helps us understand processes by which the mind is aware, intentional, and accepting. Using the two together unlocks a powerful tool for empowered adult learning in organizations” (p. 18). Although Yeganeh and Kolb (2009) were referring to adult learning, there may be implications for younger students and their awareness and engagement in the learning stages as well. Tapping into your students' learning styles may increase their learning experiences (Gogus & Gunes, 2011).

**Academic success.** Learning styles can be a critical part of a student’s success since they represent “each person’s biologically and experientially induced characteristics that either foster or inhibit achievement” (Dunn, 1984, p. 17). People simply prefer to learn in different ways (Nilson, 2003). In one study, Gogus and Gunes (2011) found that a dominant learning style may be a sign of limited learning range. Kolb (1984) described learning styles as the unique manner in which each individual collects, organizes, and transforms information into useful knowledge. JilardiDamavandi et. al. (2011) found a statistically significant difference in the academic achievement of students that correspond to the four learning styles. Of particular note, the mean scores for Converging and Assimilating students were significantly higher than for the Diverging and Accommodating groups. JilardiDamavandi et. al. (2011) concluded, “This result was in accordance with those of some other scholars (Malcom, 2009; Lynch, Woelfl, Steele, and
Hanssen, 1998; Newland and Woelfl, 1992; Kolb, 1984), as they found that Accommodators and Divergers were slightly less successful students than convergers and assimilators.” (p.189). This once again points to a scenario where we may be adjusting our teaching to meet only one or two of the quadrants. JilardiDamavandi et. al. (2011) concluded: “for students to benefit maximally from instruction and assessment, at least some of each should match their learning styles. Therefore, flexibility is crucial for students as well as for teachers” (p.189). Baribeau (2006) agreed when it comes to student athletes: “Because our student-athletes learn by seeing and hearing, reflecting and acting, reasoning logically and intuitively, and by analyzing and visualizing, our teaching and coaching methods must also vary” (p. 51). A different study (Nuthall, 1999) that examined differing types of instruction found that 77% of information was recalled after visual instruction, 57% after dramatic instruction, and 53% after verbal instruction. Baribeau (2006) recommended using different strategies for visual and auditory learners.

Summary

The literature shows benefits to both active learning and direct instruction methods, as well as the pitfalls for each. As mentioned in the introduction, it is not my intention to argue for one over the other. The nature of the English classroom is actually quite constructivist in many regards that the student constructs their own contribution to knowledge through a process of multiple drafts while engaging in participatory discussion of texts and peer review workshops along the way. However, it could be reasonably argued that writing itself is still a solitary task. The question here remains, as how do students on opposite sides of the learning style and personality type spectrums react in a classroom using two philosophically contrasting pedagogical methods? This paper will explore the classroom experience of introverted reflective learners as contrasted with extroverted socially active learners.
Chapter III: Methodology

This chapter presents the research questions that guided this study in addition to the methodology used to investigate the experience of different learners. This study examined whether two different instructional modalities are conceived to be more supportive by the student, dependent on its orientation towards supporting active, social interactions in the service of learning vs. more observant, and reflective behaviors on the part of students through teacher-directed lecture and presentations. The study sought to compare the experience of introverted reflective learners with extroverted socially active learners.

In the context of this paper, active learning is cognitive through social discourse. The alternative to socially active learning is cognition through intellectual reflection of what is presented to the student by an instructor. When I reference introvert, it should be clear that these students may still be cognitively engaged. When I reference extrovert, it should be clear that these students are socially active, not physically. To appeal to both types of students involves a juxtaposition of teaching approaches. The two groups, introverted reflective learners and extroverted socially active learners, are in the context of two pedagogical modalities, one where the teacher is providing examples and modeling to students, which was assumed to be the preferred learning of the introverted Reflective Observation learner, and then seminars which expect the learner to be learning through social and cognitive discourse, which was assumed to be the preferred learning of the extroverted Active Experimentation learners. See table 3. Based on the literature review it is assumed introverted reflective learners would prefer instructor-led lessons and extroverted active learners would prefer social learning.
Table 3

Assumed Setting of Learners

<table>
<thead>
<tr>
<th>Socio-psychological Profile</th>
<th>Kolb’s Learning Styles</th>
<th>Assumed Preferred Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introverted Reflective Observer Learners</td>
<td>Assimilators</td>
<td>Instructor-led Lessons</td>
</tr>
<tr>
<td>Extroverted Active Experimenter Learners</td>
<td>Accommodators</td>
<td>Social Participation</td>
</tr>
</tbody>
</table>

Through the review of literature, there appears to be a gap in the research concerning learning styles and personality types and pedagogy in English instruction. This qualitative study aimed to investigate whether introverted reflective learners may feel and believe they are better able to learn through a more direct form of writing instruction than recommended through a more socially active form of interaction. In short, this study may explain how different students react and feel in in response to differing pedagogical stances in keeping with differing personality types and preferred learning styles.

This section of the chapter outlines the research questions and overall mission of the research. The chapter maps out the strategy and process of inquiry. The overview in this chapter will include information about the site and participants, specific process details of data collection, and the procedures used for data analysis. The proceeding sections of this chapter discuss the validity and credibility of this study and all of the related ethical considerations for protecting the human subjects. The concluding paragraph will summarize the importance of instructor awareness of personality, learning styles, and learning preferences.
Research Questions

Two central questions will guide the collected data and how it will be analyzed in this qualitative investigation:

1. How do Assimilators defined as introverted reflective learners, and Accommodators defined as extroverted socially active learners, experience classrooms that use social discourse versus teacher-directed pedagogical methods?

2. How do they perceive these different modalities of teaching and learning as beneficial to their learning in a community college English class?

The research questions sought to determine how introverted, reflective learners who are more intrapersonal react and feel in settings that are more accommodating of extroverted, active, interpersonal learning, which are the suggested teaching methods in line with constructivist philosophy. Likewise, how do extroverted learners who are more interpersonal react and feel in opposite environments that do not allow social discourse?

The active socially-constructed learning setting requires students to answer questions on the spot, lead discussions, or work with other students in groups. How do reflective learners, as defined by the Assimilator learning style within the Reflective-Observation quadrant of Kolb’s Learning Style Inventory, react to and/or overcome active learning methods that may go against their ideal natural state of learning, particularly if students are not provided an opportunity to enter a lesson at the points in the learning cycle where they learn best? The question persists how do students experience their learning environment across differing methodologies. Do they have different perceptions? Do they always feel uncomfortable? Do they sometimes benefit?

In comparison, how do students on the opposite side of the learning stage spectrum, the Accommodators within the Active-Experimentation stage, respond to different pedagogical
methods that demand more observation and reflection? Do they become impatient or frustrated? Do they sometimes benefit? Is it possible some students will defy what their learning style defines them as? In other words, can and will these students adapt to different teaching styles?

An additional objective sought was to learn the similarities or differences among personality, Kolb’s learning styles, and the VARK learning style preference by comparing the pre-existing data. Do any patterns emerge across learning styles, learning preferences, and personalities? What are the connections, if any? The significance of these comparisons will also be discussed in this chapter.

**Research Design**

This section will outline the specific steps taken for this project. The basic strategy of inquiry is explained and followed with an outline of the research stages. The two contrasting modalities of teacher-led instruction and social constructivist instruction will be carefully described. The critical use of pre-existing data will also be explained in this section.

**Strategy of inquiry.** In order to explore personality, learning style and preference, and to see how students feel in different learning environments, a qualitative study is needed. Creswell (2012) explained that qualitative research includes, “...the study of research problems inquiring into the meaning individuals or groups ascribe to social or human problem” (p. 37). This qualitative research requires interview data and direct narratives as relayed by the participants. The benefit of using process questions is to better understand the internal student factors and show the humanistic side through narrative, observation, and interviews.

This study relies on the narratives of the participants via interview data in order to reveal the “multiple perspectives of truth and constantly changing reality” (Rubin & Rubin, 2012, p. 14). Narrative research is considered “any study that uses or analyzes narrative materials”
The essential goal of this study was to hear the perspective of students with introverted personalities and Reflective Observation learning style [Assimilators] and those with extroverted personalities and Active Experimentation learning style [Accommodators].

**Stages of the research.** Table 4 presents the stages of this research project and is described in the remainder of this chapter. The first stage is prior to commencement of the research and involves teaching and administering the end-of-unit student surveys. The next phase involves identifying the participants who will be invited. The culminating stage is the research with collection and analysis of data.

Table 4

**Phases of Research**

<table>
<thead>
<tr>
<th>Stages</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pre-research stage</td>
<td>administer learning style inventory, personality survey, and VARK survey teach using two methods and collect immediate feedback on methods using short take home surveys</td>
</tr>
<tr>
<td>2 Sorting</td>
<td>sort pre-existing data and clump students into categories based on patterns established in the survey results, identify students and invite</td>
</tr>
<tr>
<td>3 Research</td>
<td>collect narrative data: interview students code data for themes across the different groups</td>
</tr>
</tbody>
</table>

_The two different learning modalities: Socially active vs. teacher-led instruction._ The students in my English classes experienced a variety of teaching methods and experiences. Some of the activities in my class are teacher-directed and focused on information, and others are more social constructed. I have been developing multiple techniques for everything I teach because I have an assumption that students learn differently based on the experiences I described.
in the introduction of this paper. I was wondering here more specifically if students as identified by a particular personality type, learning style, and learning preference find some methods more supportive than others. The juxtaposition of Reflective Observation and Active Experimentation has led to my curiosity of how personality and learning style impacts their classroom experience.

Before the data collection commenced, the students experienced two different pedagogical methods on four different occasions: 1. a student led seminar discussion, 2. teacher-led direct instruction and discussion. The lessons were devised around short non-fiction readings. The objective of the lessons in both classes is to learn and practice the rhetorical mode of an assigned nonfiction essay from an anthology titled *50 Essays*. Rhetorical modes consist of narrative, description, causal analysis, process analysis, definition, classification, comparison, and argument. These are the main purposes of the writing, which the students practice later in their own compositions in English 101. Many instructors base their composition courses around this foundation. The general elements of composition are also studied during the lessons. The general elements of composition consist of style, structure, technique, thesis, theme, topic sentences, use of dialogue, use of evidence, characterization, setting, and point of view, among other attributes. All of these terms were front-loaded to the students in my classes early on. The students were reminded of the focus as they progressed through the semester.

*Modality 1: Teacher-led instruction.* During the first instructional method students first learn of the modes and elements of composition. In these class sessions I used a form of direct instruction. See Figure 3. This method provides the information to the student usually in a short ten-minute PowerPoint presentation followed with a whole class discussion led by the instructor. After the mode is introduced directly, the instructor turns to the essay as a model. The instructor
points out examples in the text and defines the elements in a modeling phase. Then the instructor
turns to the student and asks them to point something out, either verbally in speech or writing.

![Direct Instruction Diagram](http://www.worksheetlibrary.com/teachingtips/directinstruction.html)

*Figure 3.* Direct instruction model
as cited in Worksheet Library (2013). Retrieved from:
http://www.worksheetlibrary.com/teachingtips/directinstruction.html

In this mode, the instructor directs the questions and participation is voluntary and
limited. Traditionally, only the assertive, perhaps extroverted, students participate, though this
does not mean that introverts never participate in class. It also does not mean the participants,
regardless of confidence or personality, have meaningful contributions. There are times when
very confident students chime in to share unrelated digressions. Overall though, for the sake of
time and information, this method is mostly run by the instructor. The instructor may use
occasional visuals, video, or guest speakers as supplements to instruction. Questions may be
dispersed throughout or at the end of the class. Reading quizzes at the beginning of class or review forms at the end of class may also be used as evaluation.

**Modality 2: Social engagement.** The second method is where the students practice and hopefully immerse themselves in the rhetorical modes and elements of the writing. This method is a student-led whole class discussion, otherwise known as a variation of the Socratic Seminar. It is up to the students to identify and discuss the composition terms as modeled for them previously. These student-led seminars involve three student leaders who prepare questions for the class and moderate the discussion. Instead of sitting in rows, this class is organized in a whole class circle. The instructor observes on the outside of the circle, taking notes for assessment and a recap at the end of class. Students cannot turn to the instructor during the seminar for help; they must work out whatever questions they have. All students who are not designated leaders are required to participate in order to gain classwork points. Different variations of this method exist and some (Le & DeFilippo, 2008) argue it is useful for students as early as elementary school. Le and DeFilippo (2008) claimed this method helps enhance reading skills, creativity, and critical thinking. See Appendix D for the full assignment rubric.

This ancient method of learning is based on Socrates’ philosophy that learning happens through inquiry and dialogue. Surely, some great learning does. The fact that this method is promoted by the constructivist philosophy of learning also shows how our philosophies of education have come full circle. Only fifty years ago one would have been able to label a student-led seminar like this as traditional learning. Today any form of direct teaching is considered traditional and the old Socratic way is considered progressive.

**Pre-existing data.** After four sessions of each teacher-led and student-led class, the students were asked to complete a survey that posed questions about their learning experience:
How did you feel during today’s class? What did you come away with? The students were also asked to rank their learning methods preference from among Teacher-led, Seminars, Solo Presentations, or Group Presentations. Solo presentations were the only classroom activity out of the four they did not experience in this course, but I included it to contrast it with their group presentation experience. I usually wait to elicit feedback until students have experienced and practiced the activities at least a few times. These feedback surveys are commonly distributed to students at the end of class. I returned to the surveys during the interviews with participants to elicit any reflective thoughts or changes they may have had about the learning experience.

Three more expansive surveys were administered early on in the Spring 2013 semester prior to the class feedback: Kolb Learning Style Inventory, VARK learning preferences survey, and a personality survey. These are common surveys I administer to my English 101 students. The surveys were administered in the first two weeks of the semester, which is a standard practice in first year college general education classes. Discussions about these surveys are also a great icebreaker in general education courses like ENG 101. As an instructor I am always curious about who my students are and how I can better accommodate their needs.

Administering these types of surveys is not only a lot of fun for most students, but they are also quite useful, providing invaluable insight into how the students think and react. I administer these surveys every semester to learn more about my students and to help them learn more themselves as well as their peers. We have a discussion about the theories behind each survey and then they have the opportunity to reflect in their written journal. I also take this opportunity to adjust the course as much as possible based on what types of learners populate the class. The survey results also help me identify and help students who might struggle through a course that requires reading and writing, independent reflection, and collaboration.
Pre-existing data on personality. This first set of pre-existing data determined personality type. This information was extrapolated from the informal personality type questionnaire (Cain, 2012) given to all students the week of 25 January 2013 during the first week of classes. This quiz consists of twenty questions. The more questions answered true, the more introverted the person. This easy-to-use personality type survey is a variation of one I have used for several years to help students learn more about themselves at the beginning of their college career. Since the pool of students are taken from English 101, and based on how advising works at the institution, it can be assumed most of these students are first year community college students.

To minimize the complexity involved for the sake of time and cost, I opted not to use the MBTI, The Myers Briggs Type Indicator, which is one questionnaire used today to gauge personality and can be especially helpful to students in learning more about themselves (Myers-Briggs & Myers, 1980). Many schools, guidance counselors, and career centers use the MBTI. Some companies even use this evaluation in the hiring process. Enron used the MBTI to weed out introverts in their employee screening in order to find the “most ruthless, ambitious, and ego driven” candidates (Pennington, 2012, p. 126). The MBTI would be a better instrument for quantitative primary research. I used a simplified quiz adapted by Cain (2012) to sample a more general overview of introversion and extroversion.

Pre-existing data on learning style. The Kolb Learning Style Inventory is the primary instrument used to determine eligibility. The Kolb Learning Style Inventory, or LSI, was the second survey administered in the beginning of the semester the week of 1 February 2013. The Kolb Learning Style Inventory was selected because of its ease and appealing popularity. D. Griggs, S.A. Griggs, Dunn, and Ingham (1994) found that LSI was the most frequently used
learning style instrument. Special permission was granted to use this instrument. The survey sheet has twelve questions numbered in four columns A through D: 1A, 1B, 1C, 1D, 2A, 2B, etc. The survey poses questions about how the person learns and places them in a ranking from 1-4, from least to most. The profile sheet contains an answer key for the test as well as profiling graphs for plotting scores. The ACCE score on the Learning Style Type Grid is obtained by subtracting the CE score from the AC score. Similarly, the AERO score is AE minus RO. Once the dominant areas of the cycle (AC, AE, CE, or RO) are established, the dominating learning style is revealed: (from clockwise) Diverger, Assimilator, Converger, and Accommodator. Since the Kolb Learning Style Inventory, LSI, has more scientific credibility, this data was what determined eligibility to become a candidate for interviews.

*Pre-existing data on learning preference.* The third survey, and one most students seem to enjoy, is the VARK. The data from this survey will not establish eligibility for interviews, but will be used to determine whether there are differences among the Assimilator, Accommodator, and other types of learners. This approved survey consists of sixteen questions that ask subjects to choose one out of four scenarios that best fit their preferences in a given learning environment. A scoring sheet matches the answers to one of four learning preferences and whichever one collects the most is the dominant learning preference. The VARK preferences are visual, auditory, reading/writing, and kinesthetic. It is often interesting to see how these preferences do or do not match up with their chosen majors. In a general education course like English 101 there is an expected diversity because everyone has to take the course regardless of major and learning preference. The challenge for the English instructor is to appeal to all four preferences while emphasizing the course objective of reading and writing.
**A review of pre-existing data.** An important step in this research was to examine the pre-existing data and sort the students according to patterns that emerged after coding for theme. This research sought to identify clear patterns across the three surveys to organize coherent groups according to learning style, personality type, and learning preference. After participants were deemed eligible based on their Assimilator or Accommodator learning styles, they were organized into clusters consisting of student personalities, learning styles and preferences. Analysis was conducted of the participants in these groups.

These clusters consisted of the two personality types, the two contrasted learning styles in this study [Assimilator and Accommodator] and the four VARK learning preferences. For example, cluster 1 represents introverted Assimilators who prefer learning visually. See Table 5. The other two learning styles from the Learning Style Inventory, Converger and Diverger, will not be included in this study. Since there were two learning styles examined in this study, connected with four learning preferences and two general personality types, there was the potential for as many as sixteen clusters. Because personality is so closely linked to the learning style, personality was included in the clustering process. Thus the introverted Assimilator has four possible clusters, one for each learning preference. The extroverted Accommodator has four possible clusters, one for each learning preference. The assumption is that Assimilators are introverted and Accommodators are extroverted, so clusters 9-16 in the second two lines of Table 5 are not expected to fill. However, learners who do not match the assumptions will make great candidates for interviews.
Table 5

Possible Clusters to Classify Participants: VARK Learning Preferences

<table>
<thead>
<tr>
<th>Personalities and Kolb Learning Styles</th>
<th>Visual</th>
<th>Auditory</th>
<th>Reading/Writing</th>
<th>Kinesthetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introverted Assimilator</td>
<td>cluster 1</td>
<td>cluster 2</td>
<td>cluster 3</td>
<td>cluster 4</td>
</tr>
<tr>
<td>Extroverted Accommodator</td>
<td>cluster 5</td>
<td>cluster 6</td>
<td>cluster 7</td>
<td>cluster 8</td>
</tr>
<tr>
<td>Extroverted Assimilator</td>
<td>cluster 9</td>
<td>cluster 10</td>
<td>cluster 11</td>
<td>cluster 12</td>
</tr>
<tr>
<td>Introverted Accommodator</td>
<td>cluster 13</td>
<td>cluster 14</td>
<td>cluster 15</td>
<td>cluster 16</td>
</tr>
</tbody>
</table>

**Interviews.** This study was comprised of voluntary participants who were interviewed individually about their academic performance and experience in English 101 using different pedagogical methods in the Spring 2013 semester. The interviews began within a month of the course coming to a close and were completed by the close of June 2013. These interviews were recorded and relayed through narrative, and then analyzed for patterns.

Interviews are appropriate techniques used to gather empirical data (Bayne, 2005). Interviews also allow more flexibility to dig deeper into the student’s academic experience (Rubin & Rubin, 2012; Butin, 2010). Feelings and thoughts of students in their natural learning environment will be invaluable, but the researcher must always remain cautious of their own interpretation, which Creswell (2003) warned we cannot escape. While data is always subjective to an extent, the holistic nature of qualitative studies leaves this topic in a very broad open state. Reinforcing the study with an element of quantitative research in a mixed method is enticing because of a desire to include a survey. A survey would explain the differences in behavior
across individuals (Bertrand & Mullainathan, 2001). However, this study was more interested in listening to the students, recording their subjective experiences, and perhaps becoming a voice for them. The narrative approach provides an outlet for students to share their educational experience. Narrative analysis methods enables the researcher to record a holistic compilation of the experiences of individuals in order to connect the experience with the social context (McAdams, Josselson, & Lieblich, 2006). One way to capture the experience of community college English students as this study seeks to do is to simply listen to their reflections.

As an additional layer of analysis, this study also included normal noted observations of the students in the learning environment and a source of comparison during the interviews to refer to. These observations were basic notes based on how the students previously performed during the course in the seminar and teacher-led settings. Most of these observations were recollections of their behavior, whether the student was participating or not, assertive or quiet during class discussions, as remembered by myself, as noted in course materials, and as discussed later with the participant during the interviews. These observation notes were minimal and were only used to enhance what the students said about their experience and perception.

The role of the researcher in this study was to listen to and convey the feelings of the different types of learners as they responded to different classroom situations. Butin (2010) explained that “all one can do is accurately and thoroughly document the perspective being investigated” (p. 60). Interviews are, according to Butin (2010), a “seemingly concrete and simple means for collecting key data from relevant individuals” (p. 96). The purpose of this study was exploratory research to explain how the subjects feel. Interviews utilized process analysis questions. The benefit of using process questions is to better understand the internal student factors and show the humanistic side through narrative, observation, and interviews.
Population

The study population consisted of first year community college students from three sections of English Composition 101. Students were already diversified since ENG 101 is a general education requirement and students are of various backgrounds and majors. A stratification of this population was considered by gender, but ultimately not acted upon due to the high concentration of females in the courses. The participants were adult community college English students, approximately 18-65 years of age, female and male, and of random ethnicity and socioeconomic levels. Academic levels were equivalent based on college placement in ENG 101 with the understanding that community colleges have students with very diverse backgrounds and varying ability. Twenty-four of the forty-four students qualified as Assimilators and Accommodators in the three sections of ENG 101 and were invited.

These English 101 courses were portfolio courses that are capped at 19 students each, though final student count is often 12 to 15 due to poor attendance or performance withdrawals. Portfolios foster active leaning and motivate students (Zubizarreta, 2004). The portfolio is a collection of works each student must compose and revise. At the end of the semester students were to compile their best works and submit the portfolio to the English department for pass or fail evaluation. If the student failed the portfolio but passed the class they had one semester to revise their work. Zubizarreta (2004) recommended portfolios for inspiring reflective learning and argued that deep reflection allows students to focus on leaning in new ways.

The population of students was sampled from Bristol Community College in Fall River, Massachusetts. According to the Bristol Community College Fact Sheet (2012), the following data reflects the most recent semester available, Fall 2012. The college population includes 11,949 for credit students and 13,478 noncredit students. 47.7% were full-time and 52.3% were
part-time. There are multiple campuses that include New Bedford, Attleboro, and the most populous main campus in Fall River in which this study samples from.

The college has a 62.7% rate of fall-to-fall semester retention on average. Fifty-one percent of the student population is over 21 years old and 61% of the students are women. Twenty percent of the student population are considered minorities in an area that is only 11% minority. Fifty-two percent of all students receive Pell grants and the BCC Foundation awarded $154,403 in scholarships to 234 students. The top enrolled programs are General Studies: 2,936, Criminal Justice: 581, and Business administration: 571. Graduation rates are at 19%, but Sbrega (2012) explained that these rates only apply to a small portion of the overall population and to use them as a principal assessment tool would be inadequate. Most community college students transfer out before the Associate’s degree. When using the new national criteria of assessment for community college success as established by a national commission, the BCC success rate goes up to 80% (Sbrega, 2012).

Selection of Participants

The qualifying determinations were made from the pre-existing data taken from the clusters based on the Learning Style Inventory results. The purposeful selection process helped identify the students who would best help the researcher understand the problem (Creswell, 2009). Only students who were determined to be Reflective-Observation learners known as Assimilators and Active-Experimentation learners known as Accommodators were invited to participate. These selections ensured that students were from the two opposite sides of the spectrum. In order to narrow down the participants to the most contrasted ends of the spectrum, the other two learning styles were not subjects in this study. Therefore, no students who were Divergers or Convergers were invited to participate, regardless of their personality results.
Several students who qualified as an Active-Experimentation learner and Accommodator but did not qualify as an extrovert on the personality quizzes were still invited. There were no Assimilators who were not introverted. It is important to note that these surveys are not one hundred percent accurate and it is possible participants did not answer the questions correctly.

Classroom observation during the seminars also proved to be important in order to compare class participation to their respective personality types. Observation notes were kept on each student as they worked in the collaborative environment, as part of a standard course record. Some characteristics of evaluation were noted: a.) quieter more reserved students. b.) active but hesitant or nervous. c.) assertive, aggressive, or dominant students. These observation notes were later referred to during the interviews.

Given the need to examine only Assimilators and Accommodators, twenty-four out of forty-four students were eligible to participate in this study based on the findings of the pre-research data. The twenty-four participants were taken from the Accommodator and Assimilator categories, since these were determined to be the styles of learning on the furthest ends of the spectrum. For the purpose of this study, I am most interested in the contrast between the two learning styles of Assimilator and Accommodator. Secondarily, I am interested in their personality types. Lastly, the third layer of learning preference is also of interest.

Due to subsequent withdrawals and failure in the course, only 14 of the identified 24 students were invited to participate in the interviews for this study. Seven Accommodators and seven Assimilators. All fourteen students successfully passed the course with a C or better. Out of those invited, five Accommodators accepted and were interviewed. Six Assimilators accepted, but in the interest of balancing out the number of Accommodators and Assimilators, only the first five Assimilators to reply were invited to be interviewed.
Only 1 of the 5 Accommodators was Male and the other 4 were female. 2 of the 5 Assimilators were male and the other 3 were female. The higher number of female students may be representative of the growing number of female college students and an observed minority of male students. Two out of the five Assimilators were male and only one of the Accommodators was a male. Perhaps a future study can separate by gender and examine a better representation of male college students.

**Data Collection.** Upon administering the initial learning style, preference, and personality surveys that determined eligibility, students were not told about the possible research participation. This deference in disclosure was used so that the researcher would not sway student answers. At the initial introduction of the research proposal after eligibility was established, I explained my broader interests to the class as “an interest in how we learn.” Full disclosure of research goals were distributed to the final participants only after they shared their experience, so that the subjects did not change their narratives to adapt to the researcher’s goals. See the debriefing statement in Appendix C.

It was explained to the students who qualified as Assimilators and Accommodators that:
1.) this study is completely voluntary 2.) students may withdraw at any time if they feel uncomfortable or uninterested 3.) the study is disconnected from their course grade since the grades were already submitted 4.) the study is completely confidential, meaning their names will be removed from interviews and replaced with numbers and then aliases 5.) audio recordings of interviews will be destroyed upon completion. These points were also reiterated on the Signed Informed Consent Document provided to each participant. See Appendix A.

With the semester concluded, students were asked to sit down for one on one interviews to reflect on their learning experiences. See Appendix B for the recruitment letter of invitation.
Informed consent was obtained after all possible participants were identified. The students received an oral explanation of the research interests only after the interviews were conducted and were provided an opportunity to ask questions. They were encouraged to investigate the subjects more for themselves and email me with follow up questions or concerns.

Students sat down for a brief in-person interview made up of five primary questions that asked them to share their feelings about classroom environment, teaching methods, and student/teacher interaction. Prior to the main interview, students were greeted and surveyed for general information that includes: major of study, number of college credits completed and enrolled in, state of high school and whether there were any certain factors they would like to share, e.g. alternative school, school for the gifted, etc. Prior to beginning the questions, students were asked about and reminded of the teaching methods they had been exposed to (seminars and teacher-led lessons). The structured central interview consisted of five central questions with subquestions:

1. Throughout the semester, our class conducted several Socratic seminars (group discussions). Can you tell me what this experience was like for you as a participant? Just to remind you, the readings were Eighner, Sanders, Baldwin, and Anazuldua.
   a. How did you feel when others were speaking?
   b. Did anything help your learning?
   c. Did anything hinder your learning?

2. What was your experience like during the Socratic seminar as a leader? Just to remind you, you were the leader of the seminar for [name of essay].
   a. How did you feel when others were listening to your questions?
   b. Did anything help your learning?
   c. Did anything hinder your learning?

3. Throughout the semester, our class received several teacher-led direct lessons on the readings and writing. Can you tell me what these experiences were like for you as a learner?
   a. How did you feel as you were listening or observing?
   b. Did anything help your learning?
   c. Did anything hinder your learning?
4. Is there anything else you would like to share about your learning experience in any of these varied settings? [follow up] Could you describe an uncomfortable learning environment?

5. In regard to the personality and learning preference surveys you took at the beginning of this course, do you feel you have an understanding of personality types? Do you agree with the quiz results? [Remind them what those results were.]

A five minute follow up interview took place a week later to serve as a member check. This meeting asked the following questions:

- Is there anything you would like to elaborate on since we last spoke?
- Is there anything you have reconsidered?
- Is there anything else you would like to share about your learning experience in any of the varied settings this semester?

The interviews were approximately thirty minutes long and were recorded on a Sony digital recorder for later transcription and analysis. Audio and transcript data was stored on a password-protected home computer with a separate portable back up external hard-drive. This protection adds to the credibility, transferability, dependability and confirmability of the study, (Lincoln & Guba, 1985).

**Data analysis.** The data was collected and analyzed inductively to “establish patterns or themes” (Creswell, 2012, p. 37). By identifying patterns in participants’ responses, it was hoped that a narrative of personality, learning styles, and learning preferences for community college students would hopefully emerge.

Transcription was not conducted until all the interviews were complete, in an effort to avoid possible researcher bias (Seidman, 2006). Coding and sorting by basic inductive theme were tied back to research questions. This was a tedious process. Saldana (2009) pointed out twenty-nine different approaches and justified scholarly coding as a craft. Contextualizing strategies and analysis were applied to connect categories and themes (Maxwell, 1996). Narratives would be shared through profiles and vignettes, as they should be (Seidman, 2006).
Qualitative research data analysis software called Dedoose was utilized for analytic memos, to ensure better organization (Saldana, 2009). These memos were classified and divided by the recurring themes. This application saved time and helped to manage data effectively during the coding process.

The data was originally coded using initial coding, a first cycle method also known as open coding. This method was chosen because of the ability to organize into three parts with comparison and contrast (Saldana, 2009). Key phrases and qualifiers were selected from all the interviews for each question that directly aligned with the question asked. Dramaturgical coding was also used since this approach works well with this study because of the naturalistic approach, the need for deep understanding, and because it “attunes the researcher to the qualities, perspectives, and drives of the participant” (Saldana, 2009, p. 103). To expand characterization and point of view, some of the analysis relied on narrative coding (Saldana, 2009). Key codes were developed to assist in the process. Saldana (2009) suggested that the researchers should be conscious of the differences between codes and themes, which were helpful during the deliberation of how to best frame the responses. Once this distinction was made between theme and code, the emerging themes were identified and shared in the results.

Validity and Credibility

Risks. There were no serious risks associated with this research and the likelihood of any risks was minimal. There was a possibility of misinterpretation of learning styles and personality type on the part of the participant, e.g. introversion is shy or inferior. To ensure appropriate interpretation and understanding after the interviews, it was explained to the participants that: 1. no one psychological personality type or learning style is right or wrong, no evaluative test is 100% accurate, and no one is 100% one way or the other. 2. All learners use all of their learning
styles at some point, but many have preferences. 3. All people go back and forth between introversion and extroversion depending on the environment and situation, but some have a stronger preference, and some are considered ambiverts (in the middle) (Cain, 2012; Jung, 1921). It was also explained that introversion does not mean shy or inferior and that many of our greatest business leaders, inventors, and creative artists have been introverts (Cain, 2012; Dembling, 2012; Helgoe, 2008). Hopefully, these explanations reinforced understanding of the research goals and terms.

**Validation.** Validation is an important step in the process of achieving credibility and trustworthiness (Creswell, 2009). Psychological type should not be used to label, diagnose, or prescribe behavior, so each student informant should be expected to verify their preferences (Zeisset, 2006). Participants were asked to verify the survey findings and most agreed with the results. Member checking should be used to confirm accuracy (Creswell, 2012). Member checks were applied with brief follow up interviews that provided the participant with an opportunity to expand or correct the record. Detailed description of informant narratives (Lincoln & Guba, 1985) and awareness of alternative theories (Maxwell, 1996) were also important in my mission to achieve better accuracy.

**Reliability Trustworthiness.** Since this research aimed to give voice to students, much of the trust was placed on the student’s testimony. The member-checking follow ups attempted to verify the experiences and provide one last opportunity for students to share their thoughts. While these experiences were subjective, there is no reason to believe students would falsify their experiences on purpose. There was no judgment on their experiences, and there was no right or wrong answer. It was carefully explained to the participants that preferences for learning do not in any way judge the instructor or student. The researcher tried to make the interview a
comfortable setting, asking them whether they were comfortable and offering them a bottle of water. As with any qualitative narrative, the evidence was subject to moods based on time of the day, what the subject ate that morning, and how well they slept the night before. Noise level, temperature, light, and time of the day all matter in the educational setting (Chapman & Gregory, 2002; Dunn, Beaudry, & Klavas, 1989). The student’s initial classroom experience was also subject to those same environmental factors in addition to the influence of other students in the room that day. The evidence was also subject to flaws based on participant memory.

There are competing views on the reliability of the learning styles instrument. Rochford (2003) asserted that learning styles are a successful research based approach that has yielded statistically significant results. Nilson (2010) reported mixed results on test-retest reliability for the LSI as well as low correlations among factors that should correlate with LSI classifications and low to moderate predictive validity (effect sizes). Elsewhere, LSI has been found to be weak concerning psychometric considerations (Pickworth & Schoeman, 2000). Manolis, Burns, Assudani and Chinta (2013) found reliability issues with the LSI instrument and made their own recommendations for revision. Nilson (2010) also claimed to find no clear evidence that modified instruction leads to better learning through the LSI results. However, since this study brings in other factors such as introversion and does not aim to look at quantitative factors or effects, those previous mixed results do not have much impact here.

In a very similar manner to the LSI criticism, Dr. Marilla Svinicki articulated the challenges regarding the reliability of the VARK:

We found that [VARK] was hard to validate statistically....We just couldn’t get a good fit with the data....this does not mean that the instrument itself is not valid or desirable, but it shouldn't be used in research; that is not its strength. Its strength lies in its educational
value for helping people think about their learning in multiple ways... We just have to recognize that the constructs of learning style are too varied to pin down accurately...

(quoted in Fleming & Baume, 2006, p. 3)

Even Fleming, the creator of the VARK, has questioned the validity of VARK: “I sometimes believe that students and teachers invest more belief in VARK than it warrants” (as cited in Fleming & Baume, 2006, p. 3). However, since the results of VARK are an additional experimental layer to my research, there is not much reliance on these results. Hawk and Shah (2007) compared the similarities of VARK and Kolb learning processes and illustrated several key learning activities that may overlap. Any comparisons that showed a pattern in his study were an additional bonus as discussed in the results section in chapter 4.

**Limitations.** Assumptions about personality type and learning style theories may have affected the study. Students’ experiences may change from class to class, teacher to teacher, or by hour of the day. Skills or confidence may also develop or in some cases diminish over time. Experiences may differ by geographic location (northeast versus southeast), level of education (K-12, community college, university), socioeconomic status, and setting (private vs. public, urban vs. rural) with different teachers and classmates. Online learners are also excluded from this study, which is another area worthy of exploration at another time.

More specific differences to consider include whether students from high and low income families have a more or less favorable reaction to teaching methods that promote active learning. Other studies (Ally & Fahy, 2002) have shown differences between gender for learning style preference. Other questions remain for grade point average and at risk students with the greatest risk of withdrawal. None of these above factors were identified in this study.
**Delimitations.** This study was narrowed down to an undetermined number of students from three sections of ENG 101. This study could have been expanded to more sections or more general education courses on a larger scale for a quantitative or mixed methods study. This study was also narrowed down to only those who qualify based on the evaluations and observation; other excluded students of different learning styles may have strong feelings about the learning environment either in favor or opposed to certain practices. The non-qualifying students’ experiences would be interesting to learn about in a separate study.

**Protection of Human Subjects and Ethical Considerations**

Ethical concerns and the protection of human informants was primary in this study. All participation was voluntary and abided by all expectations and guidelines of the Northeastern University Internal Review Board and the Bristol Community College Internal Review Board.

Privacy was protected to ensure no risks. Participant names were immediately converted to coded numbers: Research Informant 001, 002, 003 etc. The numbers were then converted to alias names used in the results. Audio files of interviews were labeled by numbers. No real names were used anywhere. The original master list of participants will be kept on file in a password-protected file and original recordings will be destroyed upon final research publication. The data (audio interviews) was transcribed to Word document format. This format was then coded for similarities, differences, and highlighted key themes. The informants’ narratives were finally used in my written doctoral project using the assigned aliases.

**Conclusions**

Qualitative interviews helped expand on the understanding of the pedagogical impact on students. Questions were used to probe the students on their emotional responses to a teaching style. The significance of this study is of importance for introverted reflective and extroverted
active students in community college general education courses and beyond. The study results may help teachers better accommodate all students. My objective is to balance out my English classroom with a variety of methods that helps different types of learners. Along with the practical goals of the study, and to avoid unexamined assumptions, I acknowledge that not all learners are confined by their dominant personality type or learning style, nor are they prevented from overcoming deficiencies in other areas.

**Chapter IV: Research Findings**

For the purpose of this study I first identified the differences that exist amongst my students’ personalities, learning styles and preferences. Students were organized based on patterns that emerged in the data. For example, it is generally expected that most Assimilators would be introverted, but one might have a reading/writing preference and another might have a visual preference. Perhaps some Assimilators are less introverted and some Accommodators are more introverted. In short, many possibilities exist across students’ personality types, learning styles, and learning preferences, and the results of this study related to these possible relationships may lead to a better understanding of how students’ learning styles and preferences interact. For example, it was interesting to see how an individual with one learning style differed in preference or personality from another person with the same learning style.

One would assume that Assimilators, who are normally more introverted, would be the quieter students and Accommodators, who are normally more extroverted, would be more vocal in class. This study confirmed that Assimilators are those students who observe, think, and reflect, while Accommodators are those who are social and active most of the time, but not all of the time. There are deviations from the stereotype, which may be caused by a combination of factors that include personality type and learning preferences.
In reporting the findings, this chapter will be broken into the following twelve sections: Identifying the participants, Selection of participants, Breakdown of final participants, Accommodators’ preference of classroom activity, Assimilators’ preference of classroom activity, Ranking of classroom activity, Experience of Assimilators, Experience of Accommodators, Perception of Assimilators, Perception of Accommodators, Narratives, and Summary. Identifying the participants and Selection of participants will explain how the participants were identified and selected. Breakdown of final participants will describe who these final ten participants were in regard to learning style, personality type, and learning preference. The participants are divided into two groups: the Assimilators and the Accommodators. The next two sections move into the two contrasting groups’ preferences of classroom activity. The following two experience sections will share the experiences of the participants. These experiences are followed by a report of the perception of both contrasting groups. The Narratives section will report four unique profiles, two from each learning style examined. The chapter closes with a summary that previews some of the major points that will be discussed in chapter five.

**Participants Identified by Personality, Learning Styles, and Learning Preferences**

As part of the class, the instructor provided his classes with three separate surveys to determine personality type, learning style, and learning preference. Table 6 presents a breakdown of how students were identified by personality, learning style, and learning preference in this pre-research data. There were a total of forty-four students across three sections of English 101 with thirteen to seventeen students in each section. The pre-research data from the surveys found that 52% of the students were introverted and 48% were extroverted. This overall percentage of introverts is consistent with research that places introverts at
anywhere from one third to half the population (Cain, 2012). However, a previous study of much greater size of randomly selected students at Bristol Community College found that 60% were extroverted and 40% were introverted (Kelly, 1987). Whether or not the student population has changed since the Kelly study is undetermined.

Table 6

*Personality Types, Kolb Learning Styles, and VARK Learning Preferences for Three Sections of English 101*

<table>
<thead>
<tr>
<th>Personality Type</th>
<th>Kolb Learning Styles</th>
<th>Learning Preferences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Visual</td>
</tr>
<tr>
<td>Extroverted</td>
<td>Assimilator</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Accommodator</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Converger</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Diverger</td>
<td>2</td>
</tr>
<tr>
<td>Introverted</td>
<td>Assimilator</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Accommodator</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Converger</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Diverger</td>
<td>1</td>
</tr>
<tr>
<td>Totals:</td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>
Table 6 is a compilation of all pre-existing data results from the three surveys. For the purpose of the study, only Assimilators and Accommodators were invited to interview for data collection because they are the two extreme ends of the learning style spectrum. Table 6 reveals that there were no extroverted Assimilators with visual or kinesthetic learning preference. Neither introverted nor extroverted Accommodators showed a learning preference for reading and writing. Auditory learning preference was the most populated category and kinesthetic was the lowest populated. Table 7 shows the total number of students by learning style. There are more Assimilators than any other learning style and fewer Accommodators than any other learning style. Note again that this study focuses on only Assimilators, the largest group, and Accommodators, the smallest population in this sample.

Table 7

*Total Number and Percentage of Students by Learning Style in all Three Sections*

<table>
<thead>
<tr>
<th>Accommodators</th>
<th>Divergers</th>
<th>Assimilators</th>
<th>Convergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>11</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>18%</td>
<td>25%</td>
<td>36%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Participants’ Stated Preference for Classroom Activity in Relationship to their Identified Learning Styles

This analysis of the final participants is once again based on the pre-existing data taken from surveys utilized during the course. During the interview the participants were asked to confirm their learning style, learning preference, and personality type. Some participants understood these definitions, while some needed a refresher. All were asked whether they understood and agreed with the results, and in some cases they refuted the results.
Before the close of the semester, the course members were asked to rank their preferred classroom activity based on instructional method: teacher-led, seminar, group presentation, or solo presentation. Teacher-led instruction as described in chapter three was direct instruction of a lesson on the elements of the writing samples studied in class. The seminar as described in chapter three was student-led discussions of the writing samples. The group presentations were a collaborative presentation of shared research topics consisting of 3-4 students per group. The solo presentation was a hypothetical option in contrast to group projects since most of these students did not participate in one during this English course, unless their partners dropped or failed to show up. I have used the solo presentation in past semesters to mixed results, and certainly many other courses include this as a requirement. Note that this study focused mostly on the teacher-led instruction versus the student-led seminars. Participants in the research study were asked to confirm and clarify their rankings.

Fifty percent of all participants chose teacher-led instruction as their most preferable classroom activity. Fifty percent of all participants selected group presentations as their least preferable and the other fifty percent chose it as their third most preferable. No students selected group presentations as first or second most preferred. The most surprising element of this study though was that 70% of all participants chose the seminar as their second most preferred, while 20% chose it as their most preferable, none for third, and 10% for least preferred. Based on past experience with other classes, and based on performance of these particular sections, I would have imagined the ranking of seminars to be lower than it was. This surprising and favorable perception of the seminar will be discussed in more detail later.

Three participants selected solo presentations as their most preferable classroom activity. Two of the three were extroverted Accommodators. One participant had auditory learning
preference and one had kinesthetic preference. The third participant who favored solo presentations was an introverted Assimilator with kinesthetic preference. One other extroverted Accommodator with visual preference chose solo presentations as their second most preferred classroom preference.

**Accommodators.** Three of the Accommodators were found to be extroverted, and two were actually found to be introverted, which was an unexpected result. Of the three extroverted Accommodators, one had a preference for auditory, one had a preference for visual, and one had a preference for kinesthetic. Of the two introverted Accommodators, one had a preference for auditory and one had a preference for kinesthetic. See Table 8 for a lay out of the percentages of Accommodators who preferred different modalities. Out of the five Accommodators, two had kinesthetic preference, two had auditory, and one had a preference for visual learning. Both kinesthetic Accommodators, one introverted and one extroverted, chose the seminar as their second most preferred classroom activity. Two extroverted Accommodators, one auditory and one kinesthetic, ranked solo presentations as their preferred classroom activity and one extroverted visual learner favored the Socratic seminar. The most interesting result was that both introverted Accommodators, one with a preference for kinesthetic and one for auditory, ranked teacher-led instruction as their most preferred classroom activity.

**Accommodators and preference of classroom activity.** What really stands out as we step back and examine the percentages are the number of Accommodators who ranked group presentations last and second to last. No participants regardless of learning style ranked group presentations as first or second most preferred. I have encountered moans and groans through the years as I assigned group presentations at every level from secondary to university seniors. It should be noted that there is only one group presentation in my English 101 course. Students are
expected to collaborate their similar project-based research paper findings and compile one PowerPoint presentation for the rest of the class who had different topics. The participants in this study may have based their ranking on previous experience with group projects. Four out of five Accommodators actually preferred solo presentations over group presentations, which was surprising since Accommodators have been found to enjoy working with others.

Table 8

*Most to Least Preferred Method of Classroom Learning for Accommodators*

<table>
<thead>
<tr>
<th>Type of classroom learning method</th>
<th>Most preferred</th>
<th>Second most preferred</th>
<th>Third most preferred</th>
<th>Least preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher-led instruction</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Solo presentations</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Seminar</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Group presentations</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: This table shows five students’ rankings of the four classroom activities

Another interesting but expected finding for the Accommodators was the heavy 80% preference for the seminars in the top two rankings. While the seminars were more independent in that the students did not collaborate in groups, the seminar is still quite social. One Accommodator ranked the seminar as the most preferable method, while three ranked it as their second most preferable. This demonstrates a strong desire for social and vocal learning for Accommodators, who are known to be more extroverted. Social constructivist teaching methods will appeal to Accommodators, but personality type and actual academic performance may complicate this generalization, as discussed later.
**Assimilators.** All five Assimilators were identified as introverted. Two Assimilators preferred kinesthetic learning, two preferred auditory, and one had a preference for visual learning. However, one subject who tested as kinesthetic disagreed with the results, claimed he may not have paid attention to the survey when taking it, and argued he was more of an auditory learner. His interview and my classroom observations of the participant confirm this to be correct. This changed the numbers to three assimilators who preferred auditory learning, one for kinesthetic, and one for visual. One Assimilator ranked solo presentations as their preferred classroom activity, one ranked the seminar as the highest, and three ranked teacher-led instruction as their preferred learning method.

*Assimilators and preference of classroom activity.* What stands out for the Assimilators like the Accommodators, once again is an aversion to group presentations. Three participants ranked group presentations as their third most preferred and two ranked them as least preferable. All of the participants recounted how preparation and reliance on others were obstacles. One introverted Assimilator exclaimed, “with group work if someone doesn’t show up or do their part you’re stuck.” Three out of five Assimilators preferred solo presentations over group presentations, which was more expected of introverted students. One introverted Assimilator ranked solo presentation as most preferred classroom activity. A strong preference for solo presentations destroys the myth that introverts are quiet and inactive. This may also indicate an academic need for more solo presentations in classrooms in order to appeal to the introverted Assimilators. While group presentations are easier for teachers to plan, they are generally more complicated for all students, regardless of learning style or personality.

Where both the group and solo presentations fail at engaging introverted or extroverted students collaboratively, the seminars may make up for it. More Assimilators actually preferred
the seminar than Accommodators, though the prediction based on the literature would have been the opposite. Four out of five Assimilators chose the seminar as the second most preferable classroom activity and one chose it as their most preferable. The favorable perception of the seminar shatters the stereotype of timid, anti-social introverts, but the reality of these experiences, as demonstrated by recollection of the introverted participants’ performance, tells its own story and will be discussed later. The low performance of these participants, marked by few or no comments during the seminar contradicts their stated preferences.

Table 9

Most to Least Preferred Method of Classroom Learning for Assimilators

<table>
<thead>
<tr>
<th>Type of classroom learning method</th>
<th>Most preferred</th>
<th>Second most preferred</th>
<th>Third most preferred</th>
<th>Least preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher-led instruction</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Solo presentations</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Seminar</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Group presentations</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: This table shows five students’ rankings of the four classroom activities

Ranking of Classroom Activity

The diverse learning styles, personality types, and learning preferences of the participants are shown in tables 10 and 11. Such rich diversity among so few participants shows the complexity in trying to determine the factors that go into how one perceives and experiences the various classroom activities. Overall, half of the participants in this small sample ranked teacher-led instruction as their most preferred classroom activity or learning method. All five of
these students were introverted; three had auditory preference, one had visual preference, and
one had kinesthetic learning preference. Two other students out of the ten chose teacher-led
instruction as their second most preferable classroom activity. One of these participants was an
introverted Assimilator with auditory preference and the other was an extroverted
Accommodator with auditory preference. Regardless of learning style, every introvert, except
for one, chose teacher-led instruction as his or her first or second most preferable method in the
classroom. Since constructivist theory moves away from direct forms of instruction, the strong
preference for teacher-directed instruction found in these students may indicate the need for
more inquiry into the causal explanations for these preferences.

Only two participants choose the seminar as their top preference for classroom methods,
but an astounding seven chose the seminar as their second most preferable option in the
classroom. Six of those seven were actually introverts. This finding justifies the use of some
social constructivism, such as a seminar, in an English classroom. The introverts like the
seminars because they like to hear other people talk. Extroverts like the seminars simply because
they like to talk. In terms of preference and perception, everyone wins with a seminar.

Not one single student chose group presentations as their first or second preference.
Group project presentations were ranked as the least preferable by half of the population and
second to last by the other half. Three out of the five who selected group projects as their least
preferable were actually Accommodators and two of these individuals were actually extroverts.
Three out of the five who selected group projects as their second to last preference were
Assimilators. The reasons for these opinions of group projects differ. More independent
students seem to dislike the reliance on other students. Some students dislike group projects
simply because they have more complications. Others prefer not to present in any format.
Table 10

Final Breakdown of Assimilators

<table>
<thead>
<tr>
<th>Subject and Alias</th>
<th>Learning Style</th>
<th>Personality Type</th>
<th>Learning Preference</th>
<th>First Preference</th>
<th>Second Preference</th>
<th>Third Preference</th>
<th>Fourth Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Laurie</td>
<td>AS</td>
<td>Introvert</td>
<td>Visual</td>
<td>Teacher</td>
<td>Seminar</td>
<td>Group</td>
<td>Solo</td>
</tr>
<tr>
<td>2 Miriam</td>
<td>AS</td>
<td>Introvert</td>
<td>Auditory</td>
<td>Teacher</td>
<td>Seminar</td>
<td>Group</td>
<td>Solo</td>
</tr>
<tr>
<td>3 Joseph</td>
<td>AS</td>
<td>Introvert</td>
<td>Kinesthetic</td>
<td>Solo</td>
<td>Seminar</td>
<td>Teacher</td>
<td>Group</td>
</tr>
<tr>
<td>4 Dorothy</td>
<td>AS</td>
<td>Introvert</td>
<td>Auditory</td>
<td>Teacher</td>
<td>Seminar</td>
<td>Group</td>
<td>Solo</td>
</tr>
<tr>
<td>5 Anthony</td>
<td>AS</td>
<td>Introvert</td>
<td>Auditory *</td>
<td>Seminar</td>
<td>Teacher</td>
<td>Solo</td>
<td>Group</td>
</tr>
</tbody>
</table>

Group = group presentations / Solo = solo presentations / Teacher = teacher-led instruction

AS = Assimilator / AC = Accommodator / * originally tested as kinesthetic

Table 11

Final Breakdown of Accommodators

<table>
<thead>
<tr>
<th>Subject and Alias</th>
<th>Learning Style</th>
<th>Personality Type</th>
<th>Learning Preference</th>
<th>First Preference</th>
<th>Second Preference</th>
<th>Third Preference</th>
<th>Fourth Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Bella</td>
<td>AC</td>
<td>Introvert</td>
<td>Auditory</td>
<td>Teacher</td>
<td>Seminar</td>
<td>Solo</td>
<td>Group</td>
</tr>
<tr>
<td>7 Suzy</td>
<td>AC</td>
<td>Extrovert</td>
<td>Auditory</td>
<td>Solo</td>
<td>Teacher</td>
<td>Group</td>
<td>Seminar</td>
</tr>
<tr>
<td>8 Richard</td>
<td>AC</td>
<td>Introvert</td>
<td>Kinesthetic</td>
<td>Teacher</td>
<td>Seminar</td>
<td>Group</td>
<td>Solo</td>
</tr>
<tr>
<td>9 Carmella</td>
<td>AC</td>
<td>Extrovert</td>
<td>Visual</td>
<td>Seminar</td>
<td>Solo</td>
<td>Teacher</td>
<td>Group</td>
</tr>
<tr>
<td>10 Emily</td>
<td>AC</td>
<td>Extrovert</td>
<td>Kinesthetic</td>
<td>Solo</td>
<td>Seminar</td>
<td>Teacher</td>
<td>Group</td>
</tr>
</tbody>
</table>
Research Question #1: How do Assimilators defined as introverted reflective learners, and Accommodators defined as extroverted socially active learners, experience social discourse in contrast to teacher-directed pedagogical methods in my English classroom?

The proceeding section will describe the experience of Assimilators with both teacher-led and social learning methods and then the experience of Accommodators with both teacher-led and social learning methods. This section is followed by an exploration of the perception of the participants about the different learning methods. Later on, the more detailed personalized accounts of four participants are presented.

Two themes emerged from these findings: discomfort and fear. Both of the introverted participants who experienced the emotion of fear within the classroom with social discourse had different learning styles and learning preferences, so there does not seem to be any connection. It is therefore fair to assume fear and anxiety are not related themes to consider and are on more of an individual basis regardless of learning style or personality. Still, these emotions should be considered when planning and using social discourse in the classroom. Teacher-directed instruction did not elicit any of these anxious feelings from any participants.

The aspect of fear will not be explored in more detail in this paper for the reasons described above, but student comfort recurs throughout the remainder of chapter four and chapter five as a prominent theme discovered in this research. Out of the ten participants, five expressed being uncomfortable in the social learning environment, while two expressed discomfort during teacher-led instruction.

Experience of Assimilators. Below is a summary of Assimilators’ commentary related to teacher-led instruction and social learning in the classroom.
**Teacher-led instruction.** As expected, the introverted Assimilators felt better during teacher-led instruction. When asked how they felt while listening or observing, one introverted Assimilator with auditory preference responded, “I feel fine. I tend to remember more when I hear and write it down. So lectures are just my learning preference.” Another introverted Assimilator with auditory preference said, “I think I’m a visual learner so it helped when you wrote things down on the board.” Another introverted Assimilator with visual preference said, “I could pay closer attention. I felt comfortable.” Yet another said, “I felt more comfortable. I could just take notes.” One introverted Assimilator with kinesthetic preference remarked how the teacher-led lessons “broke it down into more laymen’s terms so I could understand what it actually meant” but also shared how they struggled with the visual content and found it hard to relate to or keep up with the PowerPoint presentations. Several participants noted the visuals during the teacher-led instruction: “When you had the visuals. When you would bring the YouTube videos or just pictures, to give perspective.” Or “I enjoyed the videos the professor used and it kind of helped…”

**Social learning.** Based on the literature, I expected the introverted Assimilators to turn away from the social learning methods, but there were some surprises. In regard to group presentations, only one Assimilator participant expressed how they felt more comfortable because other peers were up there at the front of the room with them. The other four Assimilators expressed discomfort and frustration with group presentations. This is not surprising because 3 out of 5 ranked group presentations second to last preference and two ranked it last.

There were a number of positive comments towards the seminars though. When asked how they felt when others were speaking, one explained, “I went through my answers and it just made me look closer at the book and I wanted to have good questions. I thought it was a good
experience.” Another said “It was good because it made you read into the book and you could find answers.” Some students liked the interaction and claimed, “that’s always one of my best ways of learning.” One participant said, “I felt that everybody could relate to each other better. It kind of gave students a connection to each other.” These comments were not surprising, but only because they came from introverted participants who ranked seminars as the second most preferable method, excluding one who actually ranked it first.

However, all five Assimilator participants also showed mixed or indifferent feelings about the seminar experience. Despite enjoying seminars, one participant said how their points were “mentioned in other conversations, so I didn’t have as much as I wanted to talk about.” Lack of student preparation was another complaint: “for some of the essays it seemed some were unprepared, so it had awkward silence while people collected their thoughts.” Another said he enjoyed the seminar “but people have to actually do the reading” for the process to work. The participant elaborated later in the interview, “When everyone read, it was fine because we could actually go somewhere with our conversation but when they didn’t it was just awkward silence. So it’s just hit or miss. Unless everyone reads. If everyone reads it’s a good idea…”

Assimilators had their share of feedback that indicated a level of discomfort with social learning. When asked about an uncomfortable learning environment one participant described “somewhere where I would have to be expected everyday to share something with the class.” One participant said, “having to talk all the time.” One cited giving presentations as problematic. One said group projects are uncomfortable because they have to talk. One participant said, “For me it would be doing stuff solo or projects having to stand up would be uncomfortable.” Another said, “I hate public speaking.” Referring to the seminar, another said, “I don’t like
talking about it out loud.” Four out of five introverted Assimilators expressed how they did not like to talk in class. One even called it “scary.” One participant named Laurie explained:

I just get kind of nervous in the group in class. Speaking out loud. It’s just something I’ve had a problem with for a long time. Like my teachers have said it to me all the way back to middle school, you have to speak more, participate. It’s something I’m aware of.

Introverted assimilators certainly seem to keep with the researcher’s expectations about their classroom experience.

Only one Assimilator with kinesthetic learning preference mentioned something related to discomfort when in a teacher-directed class, but the comment emphasized the difference between lecturing and teaching. The participant named Anthony said he would feel most uncomfortable, “Where the teacher was just up on the podium talking, all technicalities, with no explanation and then he just sends you home to work, do it or fail.” When asked if he had ever had a professor like this, he said no, but that he had heard they’re out there. This may be referring to unguided straight lecture with little explanation and no guided practice. Anthony also said he felt better when I talked rather than relied on PowerPoints because he had a difficult time following the visuals. He recommended more explanation of the presentations, but actually praised the teacher-led instruction that lectured without PowerPoint. He enjoyed being questioned in class by the instructor as well as the practice element of the teacher-led instruction. Anthony also had the most favorable comments toward the seminar out of all introverted Assimilators, but he also expressed skepticism over what they actually learned, which was a common finding and will be explored more in chapter five.

Summary of themes in relation to the question: How do Assimilators, defined as introverted reflective learners, experience social discourse in contrast to teacher-directed
pedagogical methods in my English classroom? One assimilator clearly expressed “fear” in response to a class that was socially-driven. And several assimilators expressed “discomfort.”

**Fear.** In one instance, one introverted Assimilator, Laurie, expressed fear of the learning environment when talking out loud in front of others. The experience of fear may have academic ramifications for any student mandated to participate in social discourse. Remarkably, this same participant has performed in theater productions and went on to explain how they are more confident speaking when they are in character because the words and actions are their character’s and can not really be attributed to them. The participant, who has a preference for visual learning, said they could not be judged by what their character on stage says. Laurie will be explored in more detail in the narratives section below.

**Discomfort.** Four out of the five Assimilators commented on feeling uncomfortable when speaking in class. The fifth Assimilator commented on hypothetically feeling uncomfortable in a different lecture only setting where only the teacher talked. The two introverted Assimilators with the most reflections of discomfort also failed to express any positive comments about social learning.

**Experience of Accommodators.** Below is a summary of Accommodators’ commentary related to teacher-led instruction and social learning in the classroom.

**Teacher-led instruction.** The expectation of Accommodators is that they would prefer hands on or verbally social interaction while being frustrated and uncomfortable during teacher-led instruction. One extroverted Accommodator surprisingly ranked teacher-led instruction as their most preferred method. This participant said, “I’d rather listen to the professor talk and take notes on it.” Another extroverted Accommodator participant explained the importance of teacher-led instruction, “If we don’t have the lecture, where do we go? We need that.”
asked whether anything helped their learning in the teacher-led environment one introverted Accommodator remarked, “Visuals were good. When you explained things and showed me the graph, the illustration with the graphics helps a lot because you can concentrate with the words and the graph. You learn more efficiently.”

But other Accommodators struggled through the teacher-led instruction. When asked how they felt as they were listening or observing, one extroverted Accommodator said, “I didn’t catch it all because I couldn’t multi-task.” They said they felt rushed and that they were always trying to catch up in their writing notes. Another extroverted Accommodator said they were good with listening, “but sometimes I completely forget what they just said, so I like have to, it’s not difficult for me, but I have a hard time not comprehending, maybe remembering…” Another introverted Accommodator said they enjoyed listening to the teacher, but “I have a better time understanding hands on, or to try it out on my own.”

Reflections on teacher-led instruction included the desire for more questioning: “Yes, maybe you could ask more [questions]. You could have involved us a little more in a way, let’s say maybe you could make us all make one question each class,” said one extroverted Accommodator. Accommodators seemed to express more desire to change or improve classroom instruction to meet their own learning style standards.

**Social learning.** One Accommodator explained, “They make good points and everything they say I was thinking the same thing.” Some extroverted Accommodators enjoy talking in class, as illustrated by this student’s comment:

I felt like talking. Cause I like to ask and I like to be very active. In all my classes, I like to be very active. You know, we're all different. So maybe for most of the students that was the best thing, but for me I like to be more involved and doing things.
Another extroverted Accommodator especially enjoyed their experience as a seminar leader:

I liked that. I worked really hard. I just read out loud to myself. I could imagine what the author was saying. I could picture myself in the same situation. And I guess I led it pretty good. I made the students become part of the reading. I made them think about what the author wants them to think about...I really made them think about the reading with the questions and I saw their faces, really thinking.

Overall, Accommodators stated that they had a better experience in the social learning environment than did the Assimilators.

Only one extroverted Accommodator expressed a negative experience in social learning activities and that was due to anxiety as described above in the summary about fear. This participant shared that they had a lifelong speech impediment that led to stuttering in public. Though the participant functions in school and the workplace, he/she said it is not without struggle. This may be a general disadvantage, regardless of personality or learning style.

Some comments reflected a frustration towards other peers in the class. One participant wanted their peers to create better questions rather than just report what they learned; reporting was not even part of the seminar assignment. The frustrated participant said,

I feel like maybe the other students should have made more questions. They were not very creative. So maybe they needed a little more motivation to make something different ‘cause if I was listening and wasn't the leader I wanted more from the... I think they needed more, they need to work harder ... be creative make different questions. It was a little bit boring. They weren’t creative.

The participant believed motivation was part of the problem and a lack of peer motivation actually hindered their learning. Several Accommodators explicitly expressed the desire for
more social interaction and better questioning. Three Accommodators specifically complained about their peers not reading the material or preparing sufficiently for the seminar. One participant even suggested changing the seminar so that the teacher is part of it. Another participant recommended somehow enforcing the reading more.

When asked to reflect on an uncomfortable learning experience one participant said, “maybe I could participate more in class.” When asked whether not participating in class is uncomfortable, the participant said, “For me, yeah, I like to always be engaged and making sure I know everything going on in the classroom. Because if I don't do that I get a little bit upset.” One Accommodator had a fear of presenting due to a fear of public speaking, as discussed above. One described discomfort as “When it’s just a lot of talking all the time and we have to write a lot of notes.” When asked whether they were referring to a lecture, they replied, “Yes.” Another described a course environment where they weren’t friends with anyone in the class, but had to present their project for at least half an hour: “So I would say not being familiar with the other people in the class” would be the most uncomfortable setting.

One introverted and one extroverted Accommodator each voiced their feeling of discomfort if they did not have the opportunity to speak in class and interact. Interesting enough, both of these participants, each in a different section, were originally from Brazil and were relatively new to the American education environment. Both seemed to always itch for verbal sharing in class.

*Summary of themes in relation to the question: How do Accommodators, defined as extroverted socially active learners, experience social discourse in contrast to teacher-directed pedagogical methods in my English classroom?* Only one introverted Accommodator expressed
“fear” in response to a class that was socially-driven. But three of the five Accommodators expressed “discomfort.”

**Fear.** No extroverted Accommodators expressed any fear of classroom activity. Only one introverted Accommodator expressed a fear of the social learning environment, and like Laurie the fear was of talking out loud in front of others. Bella, who has a learning preference for the auditory, explained a fear of presenting. The anxiety was so great, she admitted that she actually skipped the day she was supposed to deliver an oral presentation of her research topic. Since this Accommodator has an introverted personality, we might assume personality is the common denominator, but many other introverts enjoyed talking and presenting, so the assumption has no causation.

**Discomfort.** Three Accommodators said they felt mildly uncomfortable in a teacher directed setting. Three out of five Accommodators described three different uncomfortable situations in a learning environment.

**Summary.** Assimilators seem conflicted over social learning. Most of them were new to the experience and thought it was great in theory. Some were disappointed, some were confused, but they still ranked seminars high on the list of preferred teaching method. Many of the Assimilators were very quiet regardless of what activity, teacher-led or seminar, was occurring that day. Accommodators enjoyed social learning, but only two extroverted Accommodators thrived in these conditions. Those same two Accommodators were less comfortable when the teacher-led method restricted their ability to orally participate. Only one introverted Assimilator with kinesthetic preference expressed concern with the teacher-led lessons and proved to be the most vocal of Assimilators. More introverted Assimilators had a more favorable experience
under teacher-directed activity. Most students seem to value both the teacher-led instruction and the social learning seminars.

**Research Question #2: How do students of contrasting learning styles and personality types perceive different modalities of teaching and learning as beneficial to their learning in my community college English class?**

As presented in the section directly above, Assimilators’ and Accommodators’ perceptions in relationship to teacher-led instruction and social learning in the classroom will be reviewed, but this time in relationship to their identified learning styles and personality types.

**Perception of Assimilators.** The perceptions of Assimilators to teacher-led instruction and social learning in the classroom in relationship to their learning styles and personality types are presented below. An analysis of whether these participants also perceived the different modalities as beneficial to their learning will also be presented below.

**Teacher-led instruction.** Half of the study population ranked teacher-led instruction as most preferable and two others ranked it as their second most preferable. Three Assimilators, two with auditory learning preference and one with a visual preference, ranked teacher-led as their number one preferred method of learning. One Assimilator with an auditory preference ranked teacher-led as second most preferred and the fifth Assimilator ranked teacher-led as their third most preferable. More introverts than extroverts selected teacher-led as their first preference. More Assimilators than Accommodators selected teacher-led as their first preference. Three out of five learners who ranked teacher-led as their first method also had an auditory preference. Overall, the majority of participants perceived teacher-led instruction as being beneficial and critical to their learning.
Visuals were a significant element of this teacher-led instruction, which included PowerPoint presentations, photographs, and video. Assimilators liked the visuals on the screen and were more comfortable in the teacher-led setting. When asked about how they felt as they were listening or observing during teacher-led instruction, one Assimilator with auditory preference named Miriam simply explained, “I feel fine. I tend to remember more when I hear and write it down. So lectures are just my learning preference.” These introverted participants liked that they could take notes and that the teacher directly explained the lesson. “I could just take notes,” said one introverted Assimilator named Dorothy. Laurie went on to contrast her positive teacher-led experience with her confused experience during the seminar:

I get a better sense of the questions and it has more to do with the reading because I feel like the student questions are opinion based… and sometimes the other students get off track and then I don’t feel like I have anything to say.

Only one introverted Assimilator with a kinesthetic preference named Joseph raised an issue with teacher-led instruction concerning the PowerPoint presentations sometimes administered. Joseph explained his issue:

I liked it when you were talking. Because you broke it down into more laymen’s terms so I could understand what it actually meant, but your PowerPoints were all technical words and it didn’t really stick. They were just there for a second and then we kept going.

Joseph went on to explain that the technical jargon was part of the barrier and that explaining the vocabulary of the presentations the way I explained other topics orally would alleviate the confusion they were having. This student was one of three who ranked teacher-led instruction as third most preferable. The other two, Carmella and Emily, were extroverted Accommodators, but Emily also had the kinesthetic preference in common with Joseph.
Social learning. Seven of the ten participants expressed a positive perception of social learning through the seminar, regardless of what their performance was. This would be accounted for in the 70% who chose the seminar as their second most preferable method. One introverted Assimilator who ranked seminar high on their list of preferences explained that it was because he felt like he was more a part of the class. Another introverted Assimilator believed the seminar showed them ways to understand the reading or a new way how to read it.

Laurie, an introverted Assimilator with visual preference, remained quiet during the seminars. Like some of her fellow Assimilators, Laurie was very quiet throughout the semester in all class settings. She was confident in one on one conversation, but seemed to clam up in the group environment. Despite her quietness, she had positive feedback about the seminar experience and explained her perception of the learning that occurs during the seminar:

There’s a lot of points I probably would not have thought of. Like in our seminar, another person had a really different opinion so I learned about their perspective. What was relative to her wasn’t relative to me, so you get that perspective.

It may be that some of these introverted Assimilators just prefer to listen to their peers.

While the introverted Assimilators were much quieter than the extroverted Accommodators, besides one outgoing Assimilator with Kinesthetic preference, several of the participants seemed to have a positive reflection of the seminar experience and ranked it high. The performance of the students, along with the stereotype of introverts, did not seem to match the perception of these participants. They perceived the social learning environment as another opportunity to listen. However, as discussed in chapter five, several participants also lost focus on what they were supposed to be learning in a seminar discussion, and thus had a difficult time determining how social learning would specifically contribute to their learning.
**Perception of Accommodators.** The perceptions of Assimilators to teacher-led instruction and social learning in the classroom in relationship to their learning styles and personality types are presented below.

**Teacher-led instruction.** Despite other perceptions and experiences, six participants explicitly acknowledged a need for a lesson or lecture, and three of those expressions were from Accommodators. Three participants ranked teacher-led as third place, and two of them were extroverted Accommodators. One of those Accommodators still expressed a favorable view of the teacher-led method. Two Accommodators named Richard and Bella actually ranked teacher-led as first. Richard was an introvert and Bella was an extrovert. I would have expected Richard the introvert to be quieter, but it was Bella the extrovert who remained quiet during classes and said, “I’d rather listen to the professor talk and take notes on it.” Richard the introvert was one of the most vocal students of the entire semester.

Regardless of learning style or personality, the need for instructor guidance and direction is still a valued necessity, as voiced by these participants. An extroverted Accommodator named Suzy exclaimed “If we don’t have the lecture, where do we go? We need that.” Suzy was one of the two most vocal of students in this study. The other was Richard as previously mentioned. As an introverted Accommodator, Richard also agreed, “The teacher is the key.” When asked whether they were just telling me (the teacher) what they wanted to hear, Richard responded, “No, no, the teacher gives the example… You show us the work and then we do it.” Other Accommodators added how the teacher-led instruction helped them understand the material.

While no Accommodator expressed overwhelming problems with teacher-led instruction, there were some suggestions and minor problems. The most verbal of the Accommodators, Suzy and Richard, voiced their desire for more questioning. Richard was more introverted with a
preference for kinesthetic while Suzy was an extrovert with auditory preference. Suzy was quite vocal and assertive in class, and felt the need to participate and interact with the teacher more, but also understood that time to do so with all members of the class was limited.

One extroverted Accommodator named Emily with a kinesthetic preference had a problem following along and would lose focus during the teacher-led lessons, but it should be noted this student also had minimal oral participation in class, failed to purchase and bring the required text to class, and was often observed violating class policy by checking the text messages on their cell phone. The student kept apologizing when confronted, but continued the behavior, which led to a loss of classwork points.

Social learning. It was expected that the Accommodators, especially the extroverted ones, would be outgoing in class. However, this was not the case with three of the four. One quiet Accommodator named Bella was an introvert with auditory preference. The other two quiet Accommodators were extroverts though: Carmella with a visual preference and Emily with a kinesthetic preference. The latter two extroverts may have been quiet in the seminars, as well as teacher-led instruction, but they shared their reflections of the course with no hesitation, and actually perceived the seminars to be positive learning experiences.

Altogether, four Accommodators expressed how they like to talk and prefer the instructor to pose questions during the teacher-led instruction. Suzy, Richard, Carmella, and Emily perceived the social learning experience of a seminar to be a good learning experience. Interestingly enough, the more vocal participants, Suzy and Richard had some idea of what their mission was during the seminar. The less vocal participants Carmella and Emily both found it difficult to define their objective during the seminar. The fifth Accommodator, and an introvert,
named Bella failed to contribute to the discussion, expressed a disinterest in educational
dialogue, and was unsure of what she actually learned or was supposed to learn.

Richard was an outgoing introvert and seemed to celebrate social collaborative learning
and praised the seminar: “Yes, so for the seminar, you learn a lot. So like when we read from the
50 Essays book… I learn two things. What the description is and what the author writes. Like for
example, the modes, narrative, description…” He was the only participant that identified some
specific objective to the seminar on his own without being asked to do so. When he was asked
why he ranked solo presentations last, he explained, “You’re by yourself. Many people have
problems in English writing; maybe they don’t see the process. They just want to sit down like
McDonalds coffee. They don’t brew the coffee. Learning is in groups. Motivation.” When asked
whether anything helped his learning in the seminar, Richard replied: “Yes, people’s
perspectives. It helps a lot because you can add choice to have opinions about subjects and have
more possibility to share more things. You have to know that there’s another perspective.”
Richard, who has a kinesthetic preference, enjoyed the seminars and ranked them favorably.
When asked whether anything hindered his learning during the seminar, Richard replied:

No, as I said before the seminar helps a lot because you improve your knowledge, your
vocabulary gets increased, you get new knowledge about the topic, the subject. You learn
a lot by talking, participating. The seminar is very helpful.

As one of the most vocal students out of all of the participants, Richard had a clear perception of
what he thought the objective was.

When asked why they ranked seminars so high, even though they did not participate,
Emily, an extroverted Accommodator, replied, “Even though I was quiet, I like to listen. It’s cool
to hear what others have to say. Especially when I have my own complete opposite thinking
about it.” This leads to the question of whether the objective of the seminars is fully understood or achieved. In other words, do the students know what it is they are trying to accomplish with the seminar? Even though the seminar assignment states an objective, the students may not recognize it, they may not remember it, and they may not achieve it. They may not see how the seminar benefits their learning. Only a few participants voiced awareness of this issue and skepticism of the seminar’s mission.

Although the perception of learning in seminars was positive, what they actually learned is unclear. Even though the mission was described to the participants with an initial explanation and recurring reminders, most had forgotten what it was they were trying to accomplish in the discussion. Every lesson must have a learning objective. Employing the seminar just because it is a seminar would not seem pedagogically justified. The seminar is a method to teach a lesson on the use of different rhetorical strategies or to analyze content. The method is the means of getting to the lesson; the method is not the lesson. The students seem to confuse the latter.

**Discrepancies.** There are some discrepancies between how participants say they perceive social learning and how they behave in the setting. Two extroverted Accommodators had positive reflections of the seminar, despite hardly participating in the discussion. In fact, one of these extroverted participants actually resembled what one would normally stereotype as a quiet introvert. They explained, “I liked listening. Sometimes I didn’t have anything to say, but I would try to chime in with what I could.” This participant hardly contributed to any of the seminars and was completely silent for two out of the four seminars. Despite this they claimed, “I liked the seminars a lot because I like speaking out loud and expressing my opinions and I like to hear other people’s thoughts, so those were probably one of my favorite things in class.” This conflict among perception, behavior, and objective will be discussed in chapter five.
The Narratives of Four Learners with Differing Learning Styles, Learning Preferences, and Personality Type

In order to better address the research questions, the following section explores a select number of narratives regarding four learners with differing learning preferences, learning styles, and personality types. The following four stories include the direct words of each learner to provide to evidence their experiences and perceptions in relationship to each of the research questions. These narratives were drawn directly from the interviews and serves to illustrate the participants’ differing perceptions of how the differing teaching modalities either benefitted or hindered their learning. I also include my observations of each learner in the classroom to further elaborate on their perceptions and experience in the classroom.

Laurie – Introverted Assimilator with a visual preference. Like all of the participants, Laurie was a first year college student. She was in her second semester of full-time college as an art major. She was identified as an introverted Assimilator with a self stated preference for visual learning. In a feedback survey during the course, she indicated that she would prefer less group work and less solo presentations, but despite her problems with the seminar method she would still opt for more seminars. Her order of classroom activity preference began with teacher-led instruction in which she reflected:

I get a better sense of the questions and it has more to do with the reading because I feel like the student questions are opinion based… and sometimes the other students get off track and then I don’t feel like I have anything to say.

When asked how she felt listening and observing during the teacher-led lessons, she said she was fine and that she tends to remember what she hears after writing it down. “So lectures are just my learning preference,” she said.
To my surprise, Laurie’s second most preferred activity was the seminar. This was an assignment she reminded me she did not gain any points for because she failed to participate, even on the day when she was the scheduled leader. She reflected, “I thought it might be okay because others were assigned as leaders too, but then I got nervous anyway.” On the day Laurie was supposed to lead the discussion, she clammed up and sat in silence with her head down. The class waited awkwardly, but she did not speak. Other students jumped in and led the discussion. In hindsight, Laurie believed she could have benefitted from more guidance before the seminars began. In addition to the other seminars before hers and a warm up seminar before any of the graded seminars began, and despite the assignment sheet, she says she would have liked a better written guide that she could have out in front of her during the seminar.

When asked how she felt on the other days as a participant, she said, ”I’m okay, I listen to what they have to say and sometimes I think about things to say, but I never get the courage to say them out loud.” Laurie seems to genuinely like to listen to her peers during the seminar: “I get to hear other people’s thoughts and stuff. There are a lot of points I probably would not have thought of. Like in our seminar, another person had a really different opinion so I learned about
their perspective. What was relative to her wasn’t relative to me…” She seemed optimistic about the experience despite her failure to excel under those conditions.

Laurie was also asked about how she felt during the group presentation, but it occurred to us that she failed to participate in this activity as well. “I had a couple of slides, but I didn’t feel like I had enough to do a presentation,” she said. Her second to least preferred activity was the group presentations and then solo presentations in last place. Laurie said, “Group presentations, I feel better, more comfortable because everyone’s standing up there, and because not all the focus is on me, but I also think it’s harder to get work done because it’s harder to get everyone together.” This frustration with group work is a common response on student feedback.

While Laurie may have had more favorable comments towards the seminars, her experience differed. She said she felt nervous in the group in class and explained her problem with speaking in class: “It’s just something I’ve had a problem with for a long time. My teachers have said it to me all the way back to middle school, you have to speak more, participate. It’s something I’m aware of but I can’t do anything.” When I asked her “You called it a problem, do you think it’s a problem?” Laurie responded, “I’ve been told it's a problem. I don't think it’s too much of a problem. I understand I need to participate more, but I don’t feel like it's a bad thing if I don’t.” When asked to rate the problem on a scale of one to five, she said “Somewhere in the middle. It comes up in my school studies, but even out with other people I just like to listen to other people.” Both her experience and perception seemed to be at odds with social discourse.

However, in a strange twist, she revealed how she had been in a theater group in high school: “This was fun. I felt like it wasn’t me on stage, it was me as a character, so if I said something strange it wouldn’t matter.” She was completely comfortable on stage in character, something I told her I had read about shy famous actors and musicians.
Laurie described her most uncomfortable learning environment as one where she had to talk all the time. She does not face this problem in too many of her community college classes, especially her studio art classes, and said that her English 101 class was actually better than some of her high school classes when it came to the amount of speaking she was expected to do. She talked of surviving four years of non-stop presentations and group work in high school. In contrast to those taxing learning environments, Laurie likes to see the work she must do as a model first and generally learns best by observation. She explained:

I feel like I need to see examples. I like having a guide and then following the guide. Even with my art stuff, I look up something and then try to copy it, then I branch out and experiment with it. I like having the rules first and then being able to follow them. I get stressed when I get an assignment, like I got a paper once that just asked us to write four pages on something and it just wasn’t specific enough for me.

Overall, Laurie does well listening, observing, and actively constructing work based on a model. This kind of learning is better supported by teacher-directed instruction, which she thought was more beneficial to her learning. Although she is uncomfortable in social learning settings, she is flexible and her eagerness to listen to others is an asset.

**Anthony – Introverted Assimilator with an auditory preference.** Anthony was in his second semester of full-time college as a computer science major. He is an introverted Assimilator with a preference for auditory learning. Although his VARK showed a slight preference for kinesthetic learning, he disputed these results and insisted that he learned best by listening. In a feedback survey during the course, he indicated that he would not change the amount of seminars, but would opt for less group presentations. His order of preference began with the seminar in which he reflected:
I’ve never done anything like this. I’ve done book talks before, but this had a different feel because it was more student led and the professor sat off on the side and let us do stuff on our own and I felt that everybody could relate to each other better. It kind of gave students a connection to each other.

Anthony did not seem to think anything about the seminar hindered his learning, but did reflect that he had had a difficult time sharing original thoughts because his points were “mentioned in other conversations so I didn’t have as much as I wanted to talk about.” He said more preparation on his part would have helped.

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<th>Illustrative Quotes from Anthony</th>
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<td>• I don’t particularly like talking in front of others. I need more time. If someone says look at this picture and analyze it I need more time.</td>
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<td>• I’m not one to talk about it, but I love listening to it. To see what they have to say about the story.</td>
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<td>• I appreciate my alone time a lot. Zen. There’s no better friend than yourself.</td>
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Teacher-led instruction was Anthony’s second most preferred method. He contrasted the benefits of this part of the class with “how badly” he learned in high school. He said he felt good while observing and listening, only zoning out a few times “because of personal reasons.” When asked whether anything about teacher-directed instruction hindered his learning, Anthony replied: “Not particularly. We were always asked if we had any questions, and made sure we understood what we were doing.” This reflection reinforces the need for teacher questioning and recurring feedback during teacher-directed instruction.

When asked to describe an uncomfortable learning environment, Anthony responded: “Somewhere where I would have to be expected everyday to share something with the class.” When asked to clarify whether this was verbal sharing, he said, “Yes, verbally.” So despite his
stated preference for the seminar, this is not the type of learning he would want every class session. He said that his preference for seminar and teacher-led instruction were very close and that the only reason he chose seminars as first preference was because he felt like he was more part of the class. Relying on other students was the reason he chose group projects as the least favorable. The confusion over perception versus experience will be examined in chapter 5.

Anthony enjoys his time alone and agrees with the personality type assessment. He also agrees with the reflective learning style and said he needs more time to analyze the work. However, he disagreed with the VARK results and says his auditory learning is far more superior than his kinesthetic learning. In his defense he said, “I listen to books and I absorb them like a sponge.” The difference between kinesthetic and auditory was only one point on the scale. Since he strongly believed auditory was his strength, and based on observations of him in the classroom, we decided to classify him as an auditory learner. An auditory preference for listening may also be why Anthony perceived the seminar as a good experience.

**Suzy - Extroverted Accommodator with auditory preference.** Suzy was a first year, extroverted, Accommodator with an auditory learning preference. Unlike the first two participants profiled, she was a part-time student and full-time worker and parent. As a recent U.S. immigrant, English was also her second language. She was in the general studies program.

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<th>Illustrative Quotes from Suzy</th>
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<td>• In all my classes, I like to be vey active.</td>
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<td>• If we don’t have the lecture, where do we go? We need that.</td>
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<tr>
<td>• I like to always be engaged and making sure I know everything going on in the classroom.</td>
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Suzy’s first preference was solo presentations. She was only one of three who placed solo presentations first. She really thrived in a setting where she could talk, share, and teach others. Suzy preferred to talk and “be active” in class “doing things.” She actually recommended that the seminar be improved with more of a presentation format rather than dialogue with her peers, which she saw as ineffective.

Suzy’s second preference was teacher-led instruction. She explained, “If we don’t have the lecture, where do we go? We need that.” She enjoyed the explanations of the rhetorical modes of writing and the lessons on the process of writing. This preference may explain the high auditory preference on the VARK. She also said “I like visuals, I liked the videos. I could never forget those.” The videos shown in class were either tutorials about writing or content related for journal reflections, and ranged from one minute to twenty minutes long. Of course, the videos also have an auditory component.

Despite her desire to talk and interact, she was the only participant in the study who actually placed seminars as least preferable. Part of her problem with the seminar was her frustration and disappointment with other student’s performances. At some points, Suzy actually contributed to the seminars more than the leaders for that chosen day in her duty as participant. This is indicative of her extroverted nature and preference for aural learning. She reflected:

They were not very creative. So maybe they needed a little more motivation to make something different cause if I was listening and wasn't the leader I wanted more from the... I think they needed more, they need to work harder … be creative make different questions. It was a little bit boring. They weren’t creative.
Suzy went on to say that her peers also lacked preparation and voice. She did not feel that her peers were asking enough thought out questions. She did, however, enjoy the seminar experience as a leader and reflected:

I worked really hard. I just read out loud to myself. I could imagine what the author was saying. I could picture myself in the same situation. And I guess I led it pretty good, I made the students become part of the reading I made them think about what the author wants them to think about… I really made them think about the reading with the questions and I saw their faces, really thinking.

Even if she did inspire her peers to think, Suzy still felt that her peers were unresponsive. In contrast to her peers, Suzy had spent four to five hours on the reading and preparation and was well prepared to lead the class through the seminar. However, Suzy would have liked the seminars to be more of a presentation of the essay rather than a discussion. This goes back to her preference for solo presentations. In terms of groups, she thought groups could work, but only if everyone did the work. Her two group members did not follow through with their portion of the assignment and she was left presenting alone, probably to her preference anyway.

Suzy described an uncomfortable learning environment as one where she does not get to participate in class. She explained, “I like to always be engaged and making sure I know everything going on in the classroom. Because if I don't do that I get a little bit upset.” For Suzy, participation equals control of her education and balance. She would have liked more questions and more opportunity to participate during the teacher-led instruction. Observations confirm her personality type as a high extrovert; She was very sociable in the class and expected others to be. She needs to speak and ask questions and needs the instructor to ask her questions. Her preferences matched the Accommodator profile well, and she agreed with the results.
**Emily – Extroverted Accommodator with kinesthetic preference.** Emily is an extroverted Accommodator with a preference for kinesthetic learning. She was a first year, full-time web design major with multiple part-time jobs. Like Suzy, she was one of three participants who preferred solo presentations the most; the third was an introverted Assimilator named Joseph, who like Emily had a preference for kinesthetic learning, which may be an indicator of why she preferred solo presentations. She was one of the only students who presented alone because her peers with the same topics withdrew from the course. Emily excelled in her solo presentation with one of the highest scores on that project. She explained, “Because whenever I have a big assignment to do, I get it done and I always want things done my way.” Her presentation was noted as professional and informative and she was praised as a natural teacher. In her closing statements she pointed out, “The seminars and presentations are good. But If I could present every week I would.” The presentation was Emily’s prime setting as compared to other methods in terms of both perception and experience.

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<td>• Even though I was quiet, I like to listen. It’s cool to hear what others have to say.</td>
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<td>• The seminars and presentations are good. But If I could present every week I would.</td>
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Despite her success in presentations, Emily performed poorly on the seminars. She was quiet, unresponsive, almost timid or perhaps severely unprepared. Whether this is because she did not take them serious enough or could not perform to her best ability is another question. One factor was her lack of access to the texts for some unexplained reason. Surprisingly though,
like others, despite her poor performance, she ranked seminars as her second most preferable method. When asked why she ranked seminars high, even though she was very quiet in most of them, she replied, “Yeah, even though I was quiet, I like to listen. It’s cool to hear what others have to say. Especially when I have my own complete opposite thinking about it.” When asked about her experience as a participant in the seminars, Emily surprisingly said, “I liked the seminars a lot because I like speaking out loud and expressing my opinions and I like to hear other people’s thoughts, so those were probably one of my favorite things in class.” This was interesting since she hardly spoke out loud during any of the seminars as a participant and barely as a leader. Later in the interview she seemed to correct the record, “I liked listening. Sometimes I didn’t have anything to say, but I would try to chime in with what I could.” Elsewhere Emily acknowledged her lack of participation and preparation.

Emily declared teacher-led instruction as third place in her order of preferences. She said she enjoyed listening, but expressed her need in understanding hands on. She said that she likes to try things out on her own. When asked about how she felt while listening or observing she said, “I’m good with listening. I could remember things, but sometimes I completely forget what they just said, so I like have to, it’s not difficult for me, but I have a hard time comprehending, maybe remembering.” There seems to be some difficulty for Emily with the teacher-led method. She reflected on a time when her older sibling brought her to their university class one day in a large lecture hall and how overwhelmed she was. One positive aspect of teacher-led instruction Emily emphasized was the use of video clips: “It showed me exactly what you were saying.” These video clips were used in the form of tutorials about writing and content related documentary film excerpts to prompt ten-minute journal writing assignments.
Emily was among the 50% who ranked group projects as least preferable. She reflected on the challenges: “I’m not difficult to work with, but I have my own ideas. And I don’t like waiting for other people to give me their information.” Her most uncomfortable learning environment was described as one where she did not know any students and had to talk about her project for thirty minutes. It seems this assignment was less formal and more of a discussion than the solo presentation that she so excelled at in ENG 101. As a web design art major, Emily spends a lot of time working independently with her hands, very much the way Laurie does. It seems the significant difference between Emily and Laurie is personality type. Laurie did not enjoy speaking in class at all, while Emily enjoyed giving formal presentations. Both enjoyed listening, but the introverted Laurie was more focused during teacher-led instruction and benefitted more than the extroverted Emily.

**Connections to research questions.** Both introverted Assimilators perceived the teacher-led instruction as beneficial and critical to their learning. They also both remarkably perceived the seminar as beneficial. However, in terms of experience, the Assimilator with visual preference struggled, while the one with auditory learning preference excelled.

The two extroverted Accommodators also perceived both the teacher-led instruction and the seminar to be beneficial to their learning, but like the Assimilators, their experiences were different. The Accommodator with auditory preference excelled at the seminar, while the one with kinesthetic preference floundered.

In sum, it appears the students with auditory learning preference had a better experience engaged in the social learning activity than students with other preferences. It also appears that experience does not always match perception. Despite a positive perception of social discourse, the learning experience differed for the two participants with kinesthetic and visual preference.
We cannot tell from this small sample whether these results relate to all students in all places, but it was still interesting to hear these participants reveal their inner thoughts and feelings about their experiences and perceptions in the classroom. Furthermore, these results open up the question of whether we should still assume that all social discourse in the classroom truly benefits all students all of the time.

**Summary**

Overall, both types of learners, Assimilators and Accommodators, had positive comments about their experience with both social learning and teacher-led instruction. Every subject in the study had at least something positive to say about teacher-led instruction. Two Assimilators and one Accommodator refrained from positive commentary about social learning. Overall, there was slightly more positive commentary about teacher-led instruction, than social learning, but the difference was not significant. There was nearly the same number of negative reflections from both types of learners. These close numbers suggests that there is no clear divide between these two types of learners when it comes to perception of preference.

Half of the population was considered to have an auditory learning preference according to the VARK, as confirmed by the individual. Four out of five of those participants excelled under teacher-led instruction and three ranked it as their most preferable. The other two ranked teacher-led instruction second most preferable. The surprising significance of auditory learners' preferences will be discussed more in the following final chapter.

Another surprising finding was the popular perception of seminars, especially among introverts. Only one student ranked the seminar as least preferable and to my surprise that student was an extrovert. No one ranked the seminar as third place. Seventy percent ranked the seminar as the second most preferable method and six out of seven were introverts. Out of the
seven introverted participants, they all ranked seminars as second except for one participant who ranked it as their most preferable. These findings suggest that introverted students actually liked the seminar, despite their performance, though it seems to be because they could just sit quietly and listen. Therefore, the nature of the seminar being defined as social learning is in question. The significance of perceptions of social learning will be further explored in chapter five.

One result worth examining in the next chapter was the lack of preference for group work across the board regardless of personality type, learning style, or learning preference. Half of the population ranked group presentations as least preferred and the other half ranked it as third, with no real significance among learning styles or personality types. Based on commentary, it seems students did not prefer group work because they did not trust or want to rely on fellow students. Students see the value of group work and appreciate it in theory, but most seem to prefer individualistic assignments. This aspect of group work will be discussed in chapter five as well.

Chapter V: Discussion of Research Findings

Revisiting the Problem of Practice

Classroom discussion is enjoyable and has benefits in any classroom at any level. As I was reminded during this study by what the participants shared in their interviews, extroverted Accommodators benefited the most by having an opportunity to share their voice in class. The English classroom is typically constructivist in in nature, where students read, write, and sometimes orally present their ideas, thinking, interpretations, and arguments. Typical social constructivist thought recommends that teachers do little to none of the talking most of the time. Let the students talk it out, they say. Let the teacher “facilitate,” they say. The concern is that many students, perhaps the majority of students, may not really learn best this way. Social constructivist practices in the classroom may not provide the appropriate amount of guidance that students need for some students to learn. There may be too much emphasis on student
dialogue and not enough on reading and writing. It is the question of this inquiry that social constructivist practices in the classroom (e.g., small group conversations and Socratic dialogues) might have a tendency to make introverted reflective learners feel uncomfortable.

Course dialogue through a seminar is a staple of the social constructivist philosophy of learning. This is the main focus of this study. But it is worth reviewing the related approaches and other labels seminars may be classified under, which include: active-learning, cooperative and collaborative learning, problem based and discovery learning, and student-centered learning. These labels have become mantras within the education community, which have gone unchallenged (Senechal, 2012). Even though some scholars like Diane Ravitch and E.D. Hirsch have questioned educational fads, Senechal (2012) points out that so many of “those who push for more group work are convinced that they must battle the bad old days of teachers doing all the talking” (p. 16). These arguments for cooperative learning are often circular and built out of assumptions (Senechal, 2012).

Yet these arguments are often the only ones heard in schools of education and from the graduates who go on to positions where they try to influence others. Many job descriptions now proclaim that “Blank and Blank is a Student-Centered institution. The successful candidate will be expected to join faculty and staff with a commitment to active learning…” We can debate what this means, but this may not be welcoming of others’ learning preferences or be substantiated. According to Professor Steven T. Bossert, the cooperative learning movement has an imperialistic quality (Senechal, 2012). There are a number of voices that have come out recently against the group-think philosophies being pushed by schools of education and theorists. As the literature review in chapter two presented, many writers, psychologists, and learning experts have testified that direct instruction and transmission of information are not negative and
are actually essential to productive learning, especially for introverted reflective learners, and sometimes particularly those students most in need. As Senechal (2012) suggests, “Traditional teaching cannot be reduced to a single method [and should include]…lectures, discussions, laboratory work, and many combinations of them” (p. 90). There is no reason why we cannot have a balanced classroom with various methods and multiple pathways.

Discussion of Major Findings

This chapter reviews the findings as related to the two research questions inquiring how Assimilators and Accommodators experience and perceive different modalities in the classroom. To explore the answers to these research questions, first, we must examine the findings for learning preferences and ranking of classroom activity. Next we review the stark differences between experience and perception, particularly of the seminars. The next section is a brief discussion of the findings in relation to the theoretical framework, as originally introduced in chapter one. This section is followed by a discussion of the findings in relation to the literature review. Recommendations and limitations are discussed next. After an expansive conclusion, further research is recommended. The chapter closes with a personal reflection.

Learning preferences. Fifty percent of the population in this study had auditory learning preferences, which is roughly in keeping with research done elsewhere. Across several studies, it has been established that about thirty percent of the overall population are auditory learners, 65% are visual learners, and 5% kinesthetic (Brown, 1998). Auditory learners prefer to acquire information through lecture notes, and Zapalska and Brozik (2006) argued that active learning approaches to teaching and learning could pose a problem for these auditory learners. In keeping with this statement, all of the students that identified a preference for auditory learning selected teacher-led instruction as either their first or second preference for classroom
activity, and three of the five auditory learners chose teacher-led instruction as their first preference. Four of five of these participants were also introverted. The one extrovert was the only participant in the entire study who ranked seminars as their least preferable method and the only one to rank seminars below second place. For this extrovert, a solo presentation was more desirable. Three out of five auditory learners chose the seminars as their second most preferred activity and one selected seminars as their most preferable.

Because four out of five were introverted and three out of five were Assimilators, these auditory learners may be affected the most by teaching methods directed to either extreme of the learning style spectrum – the Assimilators or Accommodators. All participants reiterated the importance of teacher-led instruction regardless of their learning preferences, learning styles, or personality types. Therefore, the instructor who uses a lot of active learning strategies may appeal more to those students who prefer kinesthetic learning while putting the majority of their students – who are not kinesthetic learners – at risk.

**Perception versus behavior.** There was conflict among the perception and behavior of the participants. One participant, an introverted Assimilator with visual preference (Laurie) said that an uncomfortable learning environment would be “having to talk all the time,” and shared how she gets nervous in class, “Speaking out loud. It’s just something I’ve had a problem with.” Laurie then contrasted the teacher-led instruction versus the seminars and said teacher-led instruction led to “a better sense of the questions” because in the seminars “I feel like the student questions are opinion based and have to do with the readings and sometimes the other students get off track and then I don’t feel like I have anything to say.” Laurie, who ranked teacher-led instruction as her most preferred classroom activity, barely said a word during the seminars and
even admitted to skipping class on presentation day. Yet despite all of this, Laurie still ranked seminars as second most preferable classroom activity.

Likewise, it was observed that an introverted Assimilator with an auditory preference (Miriam) remained quiet in class. She expressed how she was more comfortable in the teacher-led environment where she could just take notes. In the seminars, she said she could not participate as much as she would have liked due to her nerves. Despite this, Miriam ranked seminars as second most preferable, behind teacher-led instruction.

Another introverted Assimilator with an auditory preference (Dorothy) also expressed her disinterest in social learning and exclaimed, “I hate public speaking.” She claimed to love the teacher-led instruction and enjoyed listening. Dorothy contributed minimal participation to the seminars, yet like Miriam, she ranked seminars as second most preferable.

An introverted Assimilator with an auditory preference (Anthony) also shared his problems with verbal participation in the college classroom. He described an uncomfortable learning environment as “Somewhere where I would have to be expected everyday to share something with the class.” As a result of these feelings, Anthony participated minimally in the seminars, yet he surprisingly chose seminars as his number one preference.

Another participant, an introverted Accommodator with auditory preference (Bella) also did not like talking in class and did very little of it throughout the semester. In the interview she described her anxiety and a speech impediment that led her, like Laurie, to skip out on presentation day. Like Laurie and Miriam, Bella also oddly placed seminars as her second most preferable classroom activity, right behind teacher-led instruction.

Finally, another Accommodator, an extroverted one with a kinesthetic preference (Emily) described her discomfort of having to talk in front of strangers. She excelled in a solo
presentation, but rarely contributed to the seminars, yet she still ranked seminars as her second most preferable method.

These six participants behaved nervously and quietly in the seminar sessions. They all expressed disinterest or discomfort in speaking to others in a social setting, yet they all ranked seminars high on the list of classroom activity preference. In some cases they even stated they would opt for more seminars in class if given the opportunity.

What explains this odd contradiction? I can offer two possible explanations. First, some of these students may find some element of safety in the seminar setting. Since they can choose to speak or not, perhaps they are relieved that the teacher will not formally call on them to speak. Maybe they are relieved because they are in a circle with others in the same boat. Maybe they can hide behind the more assertive extroverts who are far more willing and likely to speak up. The second possible explanation for why these students may have ranked the seminars so favorably yet fail to participate or express their views in class is that they simply enjoy listening.

For the auditory learners like Miriam, Dorothy, Anthony, and Bella, all expressed their preference to listen. For Laurie, a visual learner, and Emily a kinesthetic learner, listening was still mentioned as a favorable part of their learning experience. In fact, their VARK scores showed that they leaned towards being auditory learners, scoring fairly high on this preference scale. However, no comments were made about student enjoyment while listening to group presentations, so listening under those conditions is inconclusive. Perhaps it is the conversational nature of the seminars that made it an enjoyable experience.

Counter to my expectations and unlike the other introverts, Joseph participated quite actively in the seminars and teacher-led classes. He verbally contributed a great deal to all of his classes and engaged in a great deal of thoughtful dialogue with his peers. As an Assimilator with
a kinesthetic learning preference, he ranked teacher-led instruction as his third most preferable, only one of three to rank it so low. Joseph described a lecture type environment as an uncomfortable setting. Yet despite his participation and high ranking of the seminar, he admitted the method was doomed without active student participation. He also expressed skepticism about how much they actually learned about writing through such interactions.

The other two participants who were fairly verbal in the seminars were an extrovert with an auditory preference named Suzy and an introvert with a kinesthetic preference named Richard. Both were Accommodators and were quite verbally active in both discussions and the seminars. Unlike Joseph, both praised the seminars as being extremely educative experiences. However, both had the same concerns Joseph had about low peer participation. It seems all of the participants also lacked an understanding of the point of the seminars, in other words, what they were supposed to be getting out of these classroom discussions.

**Confusion over the purpose of the seminars.** The conflict between perception and behavior was perhaps due to a lack of understanding the purpose of the seminars. In regard to the seminars, Laurie said she did not learn anything about writing. Despite her participation in earlier seminars, a warm up seminar before any of the graded seminars began, and an assignment sheet, she says she would have liked a better written guide that would have helped her to participate in the seminar. Despite modeling by the teacher and pre-seminar practice, Laurie was confused over the whole process and did not understand the purpose of the seminar. Unfortunately, she was not the only student to voice this lack of understanding and clarity.

In fact, every participant had a difficult time finding any value of the seminar to the development of their writing skills. Some participants questioned the value of the assignment altogether. And many participants did not take the activity seriously. They claimed that too
much time was wasted and complained that some members of the class did not contribute. The more extroverted participants appreciated learning about others’ opinions, but did not see the connection to learning about writing. Maybe more time should have been spent on modeling the literary criticism and analysis of text to ensure that the students would see the benefit of the seminars, which focused on these two activities.

It could be argued as well that one problem with the dialogue objective in a seminar is that it does not accommodate all learning styles and personality types, as was commented on by the participants in this study. Roberts and Billings (2012) have claimed that seminars are for the purpose of speaking and listening and that these skills are not connected to personality. But how do we ever remove one’s personality from their actions, interactions with others, and everyday experience? Perhaps dismissing the importance of personality is a convenient way of assuming that introverts are content with pretending to be extroverted in a setting that demands it.

If the objective of a seminar is to get students engaged in dialogue about opinions, then the seminar may be a great instructional tool. While I personally see this objective as important in any school setting, it may not necessarily be a good objective for an English course aimed at improving literacy. In an age where testing is more and more important and literacy skills are threatened by media, games, and other distractions, classroom time has never been as important. What is it the teacher is trying to accomplish in the lesson with a seminar? That is the question that best needs to be addressed. Both teacher and student need to be fully aware of the objective.

English at the college level is naturally less reliant on testing than other courses, so my objective would not be to prepare students for an exam. However, high school English classes seem to be moving away from writing assignments and moving towards more testing. While this researcher and instructor values and advocates for more writing in high school English
classrooms, there is also no reason to see an English course as an inappropriate place for tests. Exams hold a lot of value in the learning process. Carey (2010) wrote, “cognitive scientists see testing itself—or practice tests and quizzes—as a powerful tool of learning, rather than merely assessment” (p. 4). Tests also help keep the English classroom objective in grading. Regardless, it is not entirely clear how seminars or other social constructivist methods contribute to test preparation. In a college course where the class meets less than thirty sessions, or in some cases less than fifteen sessions for courses that meet once a week, there is a lot less time to prepare students for writing papers. Therefore, the limited time must be utilized effectively.

**Discussion of the Findings in Relation to the Theoretical Framework**

This study was informed through the perspective of Jung’s theory of psychological types otherwise known as personality types and Kolb’s learning style theory. These theories served as a lens through which to investigate and understand the experiences and perceptions of my community college writing students. Within these frameworks, an additional theory of learning preference (VARK) by Fleming was also added as complementary analysis. Personality type, learning style, and learning preference was also applied to a contrast with social constructivist learning theory.

**Personality theory.** As the section of chapter one that highlighted the theories discussed, there are vast differences between how introverts and extroverts function and learn. Most of the introverts in this study lived up to the definitions, or stereotypes of their personality type. But a few were far more assertive and sociable than expected. Many of the introverts also ranked the seminar high on their list of preferable methods, even though they did not perform well during class. Unfortunately because of the population and because the selection was based more on learning style, this study only featured three extroverts. Only one of the extroverts
proved to be vocal in class and the other two were actually quite reserved. The latter did not perform well in the seminar setting, but like the introverted participants, they too found some satisfaction in listening to their peers.

**Learning styles.** The study was arranged by two contrasting ends of the Kolb’s Learning Style quadrant, the Assimilators and the Accommodators. Assimilators learn best by what Kolb labels Reflective Observation. In other words, these learners learn by reflection and watching a modeling of the lesson. This definition fits with what the students shared about their experience and perception, but there were variables that affected their overall reflection like the VARK learning preference and personal background. The same variables altered how the Accommodators in this study may have perceived and experienced the lessons in contrast to how they were expected to. These Accommodators seemed more introverted and more independent than the defined expectation. These learners learn by what Kolb called Active Experimentation. In other words, these learners like to be active and experiment. This study contained Accommodators who did not seem as social as expected.

**Learning preferences.** As mentioned, the VARK, which measured learning preferences was an added variable to this study, but did not have any preconceived expectations. The lack of a base was due perhaps to a gap in research available linking preference to personality types and learning styles. VARK examines how individuals take in new information as opposed to how they process the information. Half of the participants in this study were revealed to have auditory preference, meaning they prefer to take in new information by hearing it. Two out of ten were visual, and three out of ten had a preference for kinesthetic learning. No participants had a reading/writing preference. It is important to note that all students have scores for the other three learning preferences and only their top score was recorded as their final preference.
The auditory preference among more introverted Assimilators was the most significant, but warrants further research. The learning preference findings did not show any significant connections among personality, learning style, and learning preference.

**Constructivist theory.** The learning preference finding of the majority having auditory preference may be at odds with the constructivist claim that we learn by saying and doing. The constructivist theory seems to put a lot of weight on kinesthetic learning by doing, yet this study only produced a minimal number of learners with kinesthetic preference. However, we should accommodate all learners and should not assume there are no learners with reading/writing preference just because there were no learners with that preference in this limited study. Where the social constructivist theory is most challenged in these findings is in how the participants struggled with clarifying their learning objective, regardless of the enjoyable experience most had. The success of the social learning model through a seminar was in how the participants enjoyed listening, though not necessarily contributing to the dialogue.

**Discussion of Findings in Relation to the Literature Review**

As the literature review noted, English instruction is a constructivist approach to learning in so many ways. Students build their written papers from the ground up, sometimes in collaboration, but often alone late at night racing to a deadline. The concern that evolved in this study was how the more reflective students reacted to social constructivist approaches. In the context of lessons that focused on leaning about the elements of an essay, most students said they benefitted from the teacher-led instruction. In the other setting, the seminar, most students said they also enjoyed that type of instruction. Two Accommodators in particular did seem to desire more interaction during the teacher-led instruction, which matches the literature on learning styles. Most of the Assimilators were more reflective and reserved, as reflected in the literature.
There have been studies showing the benefits of the application of learning style theory. One study (Sternberg, 1997) found that “students whose instruction matched their pattern of abilities performed significantly better than the others” (p. 23). Sternberg (1997) reported that exposure to a wide range of abilities led to an expansion of the student’s range. Whether the students in this present study found that the range of activities allowed for them to better engage in learning or not is unclear. There was no direct comparison among the students regarding performance. Some participants seemed to thrive in some conditions, while others seemed to have floated through the activities. The only conclusions drawn in this study relate to their personal experience and perception of the methods under differing conditions.

**Problems with social constructivist classwork.** Like the participants in this study, students elsewhere have shared uncertain sentiments towards social learning. Taylor (2011), an associate professor of chemistry, had a class that was particularly vocal in their opposition to collaborative classwork. The students complained that it was hard to focus, difficult to understand the material, and that working in groups actually added to their confusion. As they argued, “If we want to work in groups, we can form them on our own; in class we would rather hear someone who understands the material explain it.” To add, the value of collaborative learning is inconclusive with mixed findings (Sweller, Ayres, & Kalyuga, 2011). There were more studies showing problems with social constructivist methods than expected.

Group discussions, like the seminar featured in this study, are different from teacher-led whole class discussions because the latter has direction and defined focus (Senechal, 2012). Group conversations many be confusing to some students (Senechal, 2012). Evidence of learning in groups is often trivial and group work can feel superficial or rushed and does not allow time to ponder (Senechal, 2012). The participants in this study seemed to echo these
concerns. One study by the Virginia Tech Carilion Research Institute shows that group work can actually have negative effects on aptitude by inhibiting expressions of intellect (Higgins, 2012). Higgins (2012) reported:

“Our study says that some individuals are harmed by being in an implicitly competitive group,” Kishida said. “Being in these competitive groups is not good for everybody; some people are harmed. But people can start to think about the effects that groups have on individual performance in groups.” (n. p.)

Unfortunately, as Senechal (2012) pointed out, “We are surrounded by collective slogans, such as ‘There’s no ‘I’ in ‘team’” (p. 11). The pro social constructivist theorists “who push for more group work are convinced that they must battle the bad old days of teachers doing all the talking” (Senechal, 2012, p.16). As a result of these beliefs, group learning is promoted more in schools.

Even though a seminar is not technically group learning in the way my students collaborate on research project presentations in groups of three to four, there is still a group dynamic. For example, students lead seminars, which means there are always three or four students with the same role. They do not necessarily collaborate prior to the seminar, but they essentially work together to run the student-led discussion in a large group setting. Like collaborative and cooperative learning, there is more student-to-student reliance in the seminar and less teacher intrusion, especially if the teacher steps out of the seminar as I did. It is important to consider that fifty percent of the population ranked group presentations as the least preferable learning method and the other fifty percent ranked it as second to last. However, seminars were favored by two and were ranked in second place by the majority. This indicates a significant difference between the seminar and presentations.

As I know from my student surveys of the past, most students dread group work. Many of
the students in this present study echoed the same negative sentiment towards group learning. As indicated in the literature, collaborative learning only appeals to Accommodators and Divergers, while experiential learning only appeals to Accommodators and Convergers (DeLeon & Jerri, 2000). These kinds of active approaches to learning leave out the Assimilators. But even the most extroverted, and even the Accommodators who supposedly thrive in the more active environments, expressed negative opinions of group work in this study.

Such low rankings for group presentations in the feedback surveys in this study may indicate a justification for a decrease in application of this type of learning activity, if we should take student preference as a driver. If on the other hand we suppose students ought to work through their frustrations and complete tasks that are less favorable, then perhaps group work is justified. How student preference drives instruction is a debatable topic. What the results do suggest is that learning styles may not have any such influence on preference for activities in the classroom. Since the fact that most participants in this study were introverted, however, may indicate some element of personality influence.

**Personality type.** Extroverts have been found to actually benefit from talking about their topic (Jensen & DiTiberio, 1984). Only one extrovert in this study thrived with the opportunity to talk in class, though two introverted participants also expressed a need for engagement. Whether any of these students learned more or learned better is undetermined. Even though introverts enjoyed the seminars because they liked to listen to their peers, they also struggled to perform and questioned the objective. More participants in this study were introverted and thus more were also quiet during the seminar. Hardly any of these students hesitated in asking or answering a question in class during the teacher-led instruction, and all comfortably sat down to talk with the instructor on several occasions for conferencing about their writing progress.
**Learning styles.** Diaz and English (1987) concluded that learning styles in fact do exist and play an identifiable role in a person’s education. Learning style awareness is beneficial Cook, 1991) because they are useful methods for students to adopt (Ogundokun, 2011). In one study, there was a significant difference in achievement for those who had learning style knowledge (Cook, 1991). The findings in one study (Ogundokun, 2011) also show “that learning styles had significant correlation with learning outcomes” (p. 330). Ogundokun (2011) found that “learning styles, classroom environment, and text anxiety jointly predicts the learning outcomes…” (321). What is unclear about those studies is when is the best time for students to become familiar with the learning styles; we did not have time to in a general education course like ENG 101, so perhaps a college success skills course could provide an opportunity.

In this study, like several other studies, Assimilators were the majority of the population. Divergers were the second highest number of students. Both Assimilators and Divergers are the two learning styles that consist of learners who thrive in the Reflective Observation zone. This is concerning because if we only acknowledge social constructivist theory we may be failing to accommodate the majority of students in any given classroom.

**Populations.** The literature on how Asian Americans in particular learn shows how social constructivism may pose a threat to this population. As the literature review noted many Asian American students learn by listening, observing, reading, and modeling, all reflected in this study by non-Asian introverted Assimilators. While American education theorists seem to believe transmission of knowledge and skill through imitation is redundant, teachers of music, drama, art, and some general education core subjects are still teaching this way. After all, you don’t learn the tuba by talking about it with other people who don’t know how to play the tuba; you learn by practice, imitation, and direct instruction.
Seven females and three males ended up as final participants of the group as a result of the three pre-data surveys and an already low enrollment of males. Since several sources found more males to be Assimilators (Jones, Reichard, & Mokhtari, 2003), it was of interest to the researcher to review whether social constructivist methods might be frustrating for male students. This might be of concern since there are a high number of males dropping out of high school and a low number of males enrolling in college. Males prefer note-taking (Lincoln & Rademacher, 2006), which is a standard activity preference for Assimilators and auditory learners. Two out of the three males in this study were introverted Assimilators and testified how they liked to take notes in class. The third male was also introverted but fell under the Accommodator learning style. Only one Assimilator leaned toward feeling awkward during the seminar; the other two males performed well and expressed positive feelings about the experience. Other males who did not perform well in the seminar setting fell under the Diverger learning style, still a Reflective Observation zone, but were excluded from this study for the sake of contrasting the two extreme sides of the spectrum.

The largest percentage of students looking at learning styles across multiple studies is Assimilators. One of the questions of this study was whether more social-based teaching practices in line with social constructivist methods might have an unfavorable effect on these students. Teachers may be expecting them to simply adapt. Perhaps they may be able to adapt to this learning strategy, adapting to meet the requirements of the learning task (Jones, Reichard, & Mokhtari, 2003). But the question remains to be how much they can adapt? And who is best able to adapt? Female or male? Accommodator or Assimilator? Extrovert or introvert? And if some students are not able to adapt to teaching strategies or practices not in alignment with their preferred learning style they may be at a disadvantage in such classrooms. Truly successful
teachers use a variety of strategies (Jones, Reichard, & Mokhtari, 2003), but social constructivists do not seem to value the kind of direct instruction that benefits introverted reflective learners (Sweller, 2009; Tobias, 2009), regardless of gender.

**Benefits of teacher-led instruction.** All of the participants valued teacher-led instruction. Most said it was a necessity in the learning environment. Whether they academically reaped the benefits is undetermined in this study. Gleason (1995) found that direct instruction of text structures help improve writing, particularly with students with learning disabilities. Though critics might label any direct instruction as teacher centered, Hollingsworth and Ybarra (2009) pointed to Jeanne Chall’s 2000 research that revealed how “teacher centered” teaching produced higher achievement than other approaches and was effective for students who are at-risk, minority, or have learning disabilities. None of the participants of this study were explicitly identified as at-risk, minority, or learning disabled, though representation is quite feasible.

**Instruction of writing.** Hirsch (1977) wrote, “the most important device for teaching effective writing is probably directed revision” (p. 161). E. B. White said he learned how to write the way he learned how to drive a car—“without understanding what went on under the hood” (as cited in Hirsch, 1977, p. 92). This reinforces the desire to move away from direct instruction of grammatical terminology. As Hirsch (1977) argued, direct comments may very well be the best way to teach composition, even better than lecture and Socratic questions. With all of the newer methods like direct instruction and explicit instruction, the teaching of writing may be on the verge of a new pedagogical frontier. The obstacle, however, may be the tendency to adopt more and more social constructivist methods or to place all dependence on untested technology. If Hirsch was right about direct comments, each individual teacher might do what suits them best in terms of their teaching and personality type. The problem is when students
land in a class taught by the opposite personality type, who does not consider their needs.

**Limitations**

This study was carefully conducted to elicit the feelings and thoughts of community college students who may be learning course material through classroom activities that go against their natural personality type or preferred learning style. However, there are still several significant limitations of this study that warrant future and continuing research.

There is still quite some debate over the reliability of the learning style theory. Santo (2006) points to several studies that show conflicting results in learning style studies. For example, Hawk and Shaw (2007) actually recommend lecture and examples to accommodate every learning process except for Reflective Observation. Carey (2010) also cited research that disputes the evidence for a learning styles approach to education. A team of scientists argued that there is a “lack of credible evidence” for the utility of a learning styles approach (Carey, 2010, p. 2). Several studies reviewed by Santo (2006) did not show a significant relationship between learning and learning styles. Santo (2006) concluded that the “record for the Kolb instrument and online learning is not promising” (p. 79). Santo (2006) claimed that students may not answer correctly on the Kolb survey and that the construct of learning style is vague. Santo (2006) also argued that results are mixed on research and lack evidence. Learning styles and multiple intelligences may very well be theoretical fads actually causing many other problems (Senechal, 2012). There is also a possibility that learning preferences simply do not exist (Santo, 2006). I am willing to accept these possibilities, since there is no scientific way of confirming the learning style or preference theories. The most we can do is continue to demonstrate the differences through documentation. As this study shows, there are some observable opposing sides of the spectrum when it comes to student preference in the classroom. Simply put, one
student likes to talk a lot and one student likes to listen. If anything, this confirmation
strengthens my belief in personality types.

The participants’ perception of the methods is clear, though it should be noted that
perception could be deceiving (Chabris & Simons, 2010). Just because a student enjoyed one
classroom method, does not mean they learned better, or learned anything for that matter. What
if a student preferred the seminar because they felt they could escape direct questioning from a
teacher? But what does that mean for their learning? The answers are limited to how far I
pressed the questions, and I am afraid I could have done a better job. But even if the students
were truthful in their responses and even if they were conscious of the limitations of their own
responses, there was no way of connecting their narratives to performance.

This study did not determine actual performance, which could be studied in the future
using a mixed methods approach. What this study accomplished was to elicit how they felt
under certain conditions of learning, the different kinds of activities in the classroom. How those
conditions change from day to day, from instructor to instructor, from course to course depends
on multiple variables not possibly acquired in one course in one semester. The very small
sample size itself warrants further research to determine if the trends observed in this study are
legitimate across a broader more diverse American population.

Significance and Possible Implications of the Study

As expected, there was a difference in how students perceived the learning environment
associated with their identified personality type and learning style. The extroverts favored the
solo presentation and seminar, while the introverts favored the teacher-led instruction and the
seminars. The seminars were favorable to most despite confusion over the purpose of the
activity. Solo and group presentations seemed either feared or disliked by most students.
Revealing student frustration with these methods is an important step in addressing student needs in the English classroom. However, the importance does not lie in just pleasing students and making it easier or more comfortable; the importance lies in how much they’re learning and what they are learning. If spending preparation and class time for presentations or seminars is going to be justifiable, then it needs to be connected to one of the major objectives of a writing course.

While a presentation can be justified as a product of the written paper the student just completed, a seminar is involved more in the pre-writing stage where the student analyzes other writing models. Seminars might be useful as a tool for that type of analysis when engaged in the study of professional essays, but the trouble is they require time and sometimes ramble off into non-academic directions. To succeed at seminars, the supporters tell us we need to do more and more of them, but that means less and less time where they are actually being taught by the teacher.

This study suggests that introverted, reflective learners may respond differently to learning activities that are social in nature than teacher directed presentations. They may find social constructivist methods more difficult to learn from than non-social presentations. In contrast, the study suggests that extroverted Accommodators may find teacher-led instruction not as helpful for their learning, which could lead to withdrawal from the course activity or lower grades. If a teacher does all the talking, the extrovert may not have the opportunity to share their voice with the class and may not feel good in the classroom. These students might not be able to work through their thoughts without orally verbalizing them.

Preferences, perception versus behavior, and confusion over the objective are at the forefront of this study’s findings. Preferences were of a wide variety for different reasons. Preference as opposed to what the student actually learns deserves further investigation. The question remains to what degree is it incumbent upon the instructor to engage the class in
discussion of the objective of each assignment. Should teachers discuss “how to learn” before they embark on each lesson? Students may very well need more time to learn how to learn.

**Recommendations**

**Understanding.** We need to respect the rights and needs of introverted students (Morris, 1994). In order to do so, we need to better understand the natural differences across students who are more or less extroverted, with differing learning styles and varying learning preferences. We should not assume the students are socially incapable of completing any of these socially-active tasks. Nor should we assume they lack the communication skills to excel at them. Cain (2012) pointed out that many introverted students are actually very skilled presenters, performers, and speakers and do quite well in front of large audiences. The problem develops when the student has to work in groups or rely on a communal discussion of the academic topic. Even if they complete the task, they may do it feeling uncomfortable and as a result the student may not be learning as much or as well as they could be.

Although this study did not have any participants who were of Asian background, my semester always includes at least several Asian American students. This particular semester I did have several, but they either dropped the class before I could invite them (perhaps because of the very social constructivist methods I am concerned about) or in one notable case a student who was classified as an introverted Diverger. Even though this Diverger had a very high score of Reflective Observation, I could not include any other learning styles other than the determined Assimilator and Accommodator. Unfortunately, the population at the college featured in this study did not have a sufficient Asian American population, which hovers at around two percent. However, I previously interacted with a much higher percentage of Asian American students during my time spent in the D.C. metro area at George Mason University and Northern Virginia
Community College. Most U.S. cities have thriving Asian populations. For example, the top five destinations for Chinese immigrants are CA, NY, NJ, MA, and IL, which are also among the most populated states (Chang, 1999). In general, my observation of Asian American students in my D.C. metro area courses revealed that they were more introverted and reserved, though just as motivated as the native non Asians. But a generalization such as this must be confirmed through future research. It is important to note that while this study has implications for others elsewhere, the results may very well differ from place to place.

**Teaching.** Hopefully no teacher would teach in a singular way. However, some teachers may err to focus on student-centered active learning without recognizing how some students in their class may prefer or benefit from teacher-directed instruction. Cuozzo (2005) illuminated the successful English classroom as follows: “In the best, most productive English language arts classes, students are meaningfully engaged as storytellers, writers, editors, readers, audiences, critics, and linguists. Through modeling, instructions, and guided practice, they become fluent, practiced, and critical readers, writers, and thinkers” (p. 21). Rosenshine (2009) argued that the most effective teacher asks questions regardless of method. Burke (2010) also emphasized the importance in questioning students with different types of questions: factual and verifiable, inductive (why, how), and analytical (connections to other ideas, comparison, social context). One community college professor (Thornton, 2013) uses a careful balance of three teaching styles: directing, discussing, and delegating. In the first part of the semester he uses primarily teacher directed style. He moves to discussion toward the middle of the course, and then finishes with delegation. All three styles include an element of coaching. Thornton (2013) explained “If students have little or no experience, a directing style is appropriate” (p. 9).
Teacher-led instruction. Burke (2010) explained how modeling is an important step in writing instruction: “I do it (teacher models), we do it (create one together), they do it (independently)” (p. 14). This is the classic direct instruction model consisting of modeling, guided practice, and independent practice. Thornton (2013) justified the direct approach: “The directing style teaches students to listen, pay attention to detail, and follow directions” (p. 9). Chilton and Gurung (2008) recommended that traditional lectures be front-loaded or viewed prior to class using a web-based technology in order to provide extra guidance during class time. Class time can be dedicated to clearing up any questions that persist. However, there is no statistical evidence of the success of this flipped approach.

One new strategy for teachers is called Explicit Instruction, which is direct instruction with more teacher-student interaction where students still actively construct and process knowledge (Goeke, 2009). Because there are accommodations for diverse learners in Explicit Instruction (Goeke, 2009), I am curious about adapting future lessons using this method. Goeke (2009) suggested choral response, signaled response, random questioning, and written responses as ways to make learning more interactive during teacher-led instruction.

Award winning elementary school teacher Rafe Esquith (2003) explained his direct approach to teaching reading:

I know which passages I’ll read aloud and which will be read by the students. I know which child will handle the challenge of the most difficult paragraphs, and I carefully plan an easy paragraph for a shy youngster who needs success to begin his journey as a good reader... My reading lesson is like an orchestra, and as the conductor, I have the job to make the instruments sing. (40)

Ironically, Esquith’s whole class approach to reading might be mistaken by schools of education
as a passive, teacher-centered, and old-fashioned teaching style. His approach has not and is not likely to gain attention from schools of education, but he gets success with his students. Although Esquith is teaching on the elementary level, perhaps the most difficult and important of all levels, the approach to teach struggling readers and writers at a community college might not be too much different. Esquith (2003) asserted that learning is not easy, should not be easy, and requires a fair amount of work ethic. Those values remain the same regardless of level.

A challenging learning environment does not mean it has to be a completely uncomfortable environment that disturbs the student into learning the material. Burke (2010) argued school should sometimes disturb, and his Talk a Mile a Minute classroom activity might actually disturb introverts and reflective observation learners. Walton (2011) warned that too much dissonance in a classroom without adequate emotional support could have negative effects and actually impede learning. Mayer (2009) called this idea of dissonance a constructivist teaching fallacy that assumes “active instructional methods are required to produce active learning” (185). Alexander (1983) reported one study that showed an unsuccessful use of cognitive dissonance that left students more baffled than anything else. Esquith (2003) believes setting a positive culture is what every teacher needs to establish. Setting a comfortable climate for the students and using differentiated instruction are the keys to reaching all students (Gregory & Chapman, 2002). Even the time of the day affects student learning (Dunn, Beaudry, & Klavas, 1989), so what is needed is a lot of sensitivity to psychological needs, not disturbance.

Seminars. Research at Portland State University by Driscoll and Arante (1996) suggests that building in a structured class discussion for reflection is an important part of learning (as cited in Hatcher & Bringle, 1997), though it is not clear how this would appeal to the more introverted students. My students had a very structured environment, yet they still felt lost at
times. The social constructivist approach through dialogue assumes students learn through discussion, which they would define as active. Hale and City (2006) recommended open-ended discussion, but admit that students may need teacher correction. Because there are problems with circular conversation and unsupportable lines of inquiry, a balance needs to be found between non-participation and superficial participation (Hale & City, 2006). Hale and City (2006) recommended improvements I can make to my seminars that include more defined goals as a group or as individuals such as listening more closely, speaking out at least once, but overall their endorsement seems to be more seminars to improve seminars. The authors failed to acknowledge learning styles or personality types and never explained the students in their seminars who had their head down, were silent, or left early. Lincoln and Rademacher (2006) recommended dividing up learning preferences and placing one type of learner in each group, which I could do with the leaders of the seminar, but this still does not consider personality type and the unnatural state of social constructivist learning for introverts. This study had plenty of students who remained silent or avoided class altogether on the day of the seminar. Increasing the percentage of the grade attached to seminars would only have two effects: improve the performance of some students or push some students out. The latter is not worth the risk.

**Discussion-based learning.** Whether or not I decide to keep the seminar in my face-to-face classes, I believe discussion in some form should remain. Carnegie Mellon Eberly Center for Teaching Excellence (2013) listed the different reasons why students do not participate in class discussion:

- Students did not complete the assignment.
- Students did not focus on the relevant aspects of reading.
- Students’ individual styles or personalities may inhibit their participation.
• Students’ cultural values and norms may inhibit their participation.
• Students may not have experience participating in discussions.
• Students may not have the general background knowledge to participate.
• Students come to class late.
• The instructor did not clearly articulate the goals of the discussion, define the structure, and/or effectively manage the process within the defined structure.
• The intellectual environment is not conducive to participation.
• The physical environment is not conducive to discussion.

With so many variables around why students do not participate, it would be too easy to simplify the solutions by examining only one reason on the list such as personality. What if the extroverted student wants to speak, but the environment is not conducive? The most we can do is try to work through each of the above elements in order to improve our classroom dialogue.

**Personality awareness.** The participants in this study appeared to hold a common stereotype of introversion being a negative trait. After interviewing all the participants, I explained as Morris (1994) articulated that “Being an introvert just means that I need time by myself to recharge my battery. Extroverts need to be with each other to get their batteries charged up…” (p. 33). Morris (1994) questioned whether teachers are pushing students into uncomfortable activities. This would be counteractive in a learning environment, since introverts like to talk to one person at a time and are often uncomfortable with a group of people (Morris, 1994). Cain (2013) explained, “If we start from a vantage point of turning introverts into extroverts, it has far reaching implications...Instead of trying to change introverts, we should cultivate their natural gifts” (p. 13). Morris (1994) acknowledged “I realize that I have to be on guard in my classroom to make sure that I respect the rights and needs of introverted children”
Though the author was referring to an elementary environment, the secondary level students are still technically children, and college can be seen as a bridge to adulthood. Jensen and DiTiberio (1984) explained, “Classroom teachers who allow for discussion and activity with other students meets the extraverts' need for doing. Those that give advance notice and time for reflection (“wait time”) allow introverts to consider before becoming involved in activities” (p. 288). Gatto (2009) argued educators should challenge their students “with plenty of solitude so that they can learn to enjoy their own company, to conduct inner dialogues” (p. xxii). One school in London implemented strategies to better accommodate introverts: quiet rooms, an opt-out clause for group work, time extensions for work, and a study room (Pennington, 2012). Introverts also benefit from receiving learning materials in advance, pausing between responses, chunking of information, think-pair-share, or jigsaw activities (Cain, 2013; Fitzell, 2004).

Online learning and personality. On-line web based study is one option for students who are more introverted and reflective. Since on-line learning is independent in nature and allows much time for reflection, this may be an ideal setting, unless the online course requires live web discussions via Google Hangout or Wimba. Even the integration of these can be balanced out so students are not graded down. Online interaction with social media has actually been shown to help introverts find their place and makes them more comfortable with interacting (Amichai-Hamburger, Wainapel, & Fox, 2002). Introverts tend to do well in the online environment and prefer computer-mediated communication (Dembling, 2012). Harrington and Loffredo (2010) found that introverts actually preferred online classes and extroverts preferred face-to-face classes. Interestingly enough, Harrington and Loffredo (2010) explained that the reasons for these preferences for online learning were:
because of convenience, the enjoyment of computer technology, and a desire for innovation whereas those who preferred face-to-face classes reported they were influenced by the class structure appealing to their need to learn through listening and by their desire to better gauge the emotional reactions of others…” (p. 91).

Future research could also be conducted to determine the auditory needs of both introverts and extroverts. With time to reflect, introverted students can do quite well in online learning settings, but what about students in seated classes? Introverted students should not be pushed to enroll strictly in online classes.

Learning style awareness. Chapman and Gregory (2002) argue that teachers on all levels should provide experiences in all four areas of the Kolb learning cycle to accommodate all learners and increase the student’s range of learning styles. Since more Convergers perform better and have higher GPAs, Hai (2005) actually recommended guiding students toward the Converger style and believes students can change their styles with assistance. Whether that is possible is another question. Learners may shift into, and usually do fall into, two or even three of the Kolb quadrants (Nilson, 2003). Since “individuals vary in their preferred learning style” pedagogy should value variety and diversity (Osborne, 1996, p. 75). Constructivist pedagogy is not effective for all learning styles and a teaching approach from one perspective does not reach all learners (Osborne, 1996). Osborne (1996) reported one study that found “only ‘social’ learners showed a strong preference for group activity. In contrast, ‘conscientious’ learners actually exhibited a preference for didactic teaching and experimental work with instructions…” (p. 75). Chan (2012) found that community service learning effectively touched on all the cycles of learning and led to deeper learning, at least for university students.
Online education and learning styles. Zapalska and Brozik (2006) recommended that all learning styles should be considered, especially in online courses. Lincoln and Rademacher (2006) recommended teaching to learning styles and claim this could attract more English language learners into ESL classes. Constructivist-based instructional design has had promising effects for online learners (Ruey, 2010). Online learning is an opportunity for shared inquiry and teacher to student partnership (Ruey, 2010). Harrington and Loffredo (2010) argued that matching preferences to learning styles of online students could lead to better performance; therefore, future research should be conducted to explore online learning and learning styles.

Using technology. Learning preference theory would suggest technology holds great appeal to different types of learners, especially those with visual and kinesthetic preferences. I personally utilize some elements of technology like an e-book with built in exercises, PowerPoint presentations, Blackboard discussion boards, and video tutorials. VoiceThread is also a wonderful online tool that I use to have students post presentations and then return for responses. Since these VoiceThread assignments are for homework, it allows ample time for students to reflect. This approach would allow Assimilators the time they need, but also give Accommodators the forum they desire, in either a seated or online learning environment.

I am by no means living in the stone age of teaching, though there are far greater teachers who have no need for any of my devices. I use technology to complement instruction, not substitute it. However, many theorists and tech-savvy instructional designers seem to promote substitution of instruction with technology, the way I fear those passionate about classroom dialogue are doing with discussions. The assumption is that we need to accommodate the digital natives and that technology holds all of the solutions for a better education. As Senechal (2012) pointed out, “Instead of giving students a break from the buzz, many schools try to ‘catch up’
with the kids, bringing in more technology, using cell phones in class, and encouraging the use of online networks” (p. 8). Senechal (2012) warned “the pressure to keep up with the times not only distracts and dizzies us; it upsets and distorts our values. Once we subscribe to the ‘cutting edge’, we lose the ability to judge it.” (p. 35).

Senechal (2012) pointed out the drawbacks to clickers, claiming they slow down, fragment, and trivialize lessons. One student said the presentations using clickers “don’t hold a candle to a lecture, because they simply highlight issues from the reading…” (Senechal, 2012, p. 49). The use of clickers also assumes students will learn on their own and removes the explanatory lecture leaving students on their own to struggle with material outside of class (Senechal, 2012). The justification for these clickers is that they promote active learning and engagement, which theorists hope will replace a boring teacher at the front of a room reciting facts. The argument goes: Low student attention spans require us to accommodate these learners in whatever fashion, even if it means competing with their sources of entertainment or becoming like it. Senechal (2012) reflected, “It is a strange era where a teacher must compete with other forms of entertainment; it suggests an end not only of concentration but also of respect and wisdom” (p. 50). Senechal (2012) posed the question, if students grow used to videos, games, and other computerized instruction, how will they function in the face-to-face classrooms, or even worse, how will they function in the real world environment of a workplace?

Both teacher-led instruction and seminars are counter to the game-based, technological approach. Seminars actually get students talking to each other live in person, as opposed to through texting and social media in the already overly technological dependent world. Both methods can be corrupted by technology though, since the desire for kinesthetic appeal with clickers or I-Pads can override other considerations. However, using some limited technology to
complement and not replace instruction can add to the learning experience of visual and observation learners. I would not rule out future but careful use of these technologies to complement teacher-led instruction and seminars while also appealing to visual and kinesthetic learners, but this is another area for researchers to explore.

**Intrapersonal needs.** Returning to Gardner’s theory of multiple intelligences, we are reminded of society’s intrapersonal needs. For students with intrapersonal intelligence, “Alone time for them is a must” (Shirley, 1998, p. 8). Senechal (2012) argued that we are losing our “private relationship with the written word” (p. 4). Instead of being immersed in literature, students are distracted in the reactions of their peers (Senechal, 2012). Seminars have the potential to give license to those kinds of distractions. We should also not be forced into thinking we teachers have to oblige to the interpersonal wishes of the education theorists. We are in the classrooms, and we must contend with the students, administrators, and parents. Gleason (2011) recommended using narrative writing and reflective journaling to increase the intrapersonal form of intelligence in all students.

**Final recommendations.** In regular seated classes, introverted and reflective students need a balance of instruction consisting of teacher-directed lessons that include methods such as direct instruction, integrated, inductive, and teacher-led discussions. Instructors should spend more time developing these teaching methods, and administrators should promote these methods through professional development opportunities. A variety of instructional methods will benefit all students and create multiple pathways to learning. Student presentations and seminars can still be a part of the equation and ideally would increase as students moved up through the levels of education. A general core undergraduate 101 course, especially at a community college, would need to be centered around teacher-led instruction that grounds the novice student with a
foundation. A graduate or professional course might naturally have a heavier reliance on student participation.

If any collaborative work is to be done at all in a first year community college course, it should be minimal and in small groups or pairs. The larger the group the more complicated it is. In an English course, there are ample opportunities to share your independent work and peer review is one option.

Another possible solution is independent work, which is quite natural in a writing course. Individualized instruction has been traditionally used with workbooks in developmental writing courses and journal writing and grammar worksheets in composition. Now individualized instruction can be used with e-books and software. Developmental math has already begun to take advantage of technology and many colleges now offer self-paced independent courses that are completed in modules. Developmental English and composition also have many options for instructors. I happen to use an e-book titled *Writer’s Help*, published by Bedford St. Martins, which features assigned readings and interactive exercises. The students can retake these exercises as many times as they need to in order to master the skills, and the instructor has a much easier time assessing each student. The work can be completed in class for instructor guidance or for homework. Individual learning does show students learn more when mixing the type of material studied in a single setting, much the way a person works out multiple parts of the body during a gym workout (Carey, 2010). If we keep all of this in mind, independent work could be especially useful for the Converger and Assimilator learning styles.

In conclusion, teachers at all levels can benefit from acknowledging learning styles and other forms of brain-based learning. While not all classes have the opportunity to administer more complex surveys like the Kolb Learning Style Inventory, there are simpler and quicker
surveys an instructor can use during the first week of classes. Pre-assessment can be an invaluable part of the learning process. Class activity that relies on heavy student participation can be better structured and students can be paired up or placed in small groups of three instead of large groups. Even simple awareness of the styles and different personalities can help instructors plan a course that appeals to a diverse student population. Instructors should resist the notion that there is anything wrong with direct teaching methods. Collaborative activities and groups discussions can be used along with teacher-led instruction and individualized instruction. A balance among the three approaches can lead to a better learning environment.

**Conclusion**

Introverts and extroverts behave differently (Cain, 2012), while Assimilators and Accommodators learn differently (Kolb, 1984). This is the one conclusion that seems to echo through the findings. Why they learn differently may depend upon the biological factors several authors have explained. How they learn differently may be more difficult to identify. The concept of learning preference and how it connects to learning styles and personality types is now somewhat unclear. What is apparent after the interviews in this study is how the students perceive social constructivist and teacher-directed methods. Their opinion seems favorable of the seminar, even though they are skeptical of its learning potential or objective. Despite an age of self-paced module-based math courses that seemingly remove the instructor from the forefront, all the participants in this study seemed to value the teacher-led instruction of English.

The pedagogy debates will continue over what we ought to be teaching and how we ought to be teaching it. Skills are often pitted against knowledge and facts, as if they cannot exist simultaneously. Constructivism moves away from a foundation of knowledge in education, but Osborne (1996) argued that epistemology still matters. Social constructivism has resulted in a set of activities that fail to recognize “that there is a role for telling, showing, and
demonstrating” (Osborne, 1996, p. 67). Even the most extroverted, independent, or social students in this study confirm a strong desire for guidance with teacher-led instruction.

**Active-learning.** One social constructivist assumption is that students learn only when they are active. The definition of active is up for debate though. Wolfe (2006) defined active learning as students who are engaged in activities. But why is speaking considered active while thinking or observation are not? There are certainly times when we are physically active, but are not engaged intellectually. Many of the participants in this study expressed how much they benefitted from just listening to their peers or instructor. Active learning could also be defined by reading, writing, listening, and pondering, but not according to the cone of learning.

**Return to the Cone of Learning.** As mentioned in chapter one, many academicians have relied on a cone of learning argument from a source attributed to Edgar Dale, even though Dale himself warned not to attach numbers to his cone. The cone or pyramid has been recreated again and again in both non-scholarly and scholarly sources with numbers that have never been verified. The argument claims that we learn more by saying and doing and gives little weight to visual observation and aural learning, the latter of which contradicts the high number of auditory learners in my classes. Lalley and Miller (2007) have more recently tested the cone of experience and concluded that methods should “be thought of as on a continuum as opposed to in a hierarchy. Therefore, the less prior knowledge students have the more likely it is that effective methods would be found toward the direct instruction end of the continuum...” (p. 76).

Despite this, I reckon theorists and believers in the social constructivist cause will continue to cite the learning cone as their source for why we should abandon direct instruction. Whether or not their influence is working is another question. Many teachers in training will face the realities of the classroom once out of the ivy tower. Many administrators will promote
direct instruction to reach higher scores for their school. Many college professors will continue
to use direct instruction and lecture to advance their short quarters of fifteen weeks or less.
Practical instruction like first aid and CPR will also continue to ensure certified persons have
some direct instruction, thankfully.

*Collaborative learning.* Another social constructivist assumption is that students only
learn in collaboration. Collaboration is necessary in the real world. Entire governments would
collapse. Corporations would cease. World peace would turn to chaos. The benefits of
collaboration in a learning environment cannot be denied. Collaboration has value, “but it’s
gone too far overboard” (Cain, 2013, p. 13). We should not forget that many great
accomplishments and creations have come from individuals. This study seemed to confirm
something often heard in teacher evaluations: how much students do not like group projects and
their struggle with relying on others in the classroom setting.

*Problem-based and discovery learning.* Another line of thought says students should
solve problems and learn by discovery. The seminars used in this study are essentially discovery
in nature because the students discover themes in a reading. Seminars could also include
problems to sort out. I also like to use book or web quests for effective discovery learning,
where the students seek out information in the text. These quests are guided discovery learning
because the teacher directs them to what specific answers they should be looking for. There is
concern about unguided discovery learning like seminars because “cognitive load associated
with unguided discovery is too high to promote learning because novices lack well-developed
schemas” (Moreno & Park, 2010, p. 22). This means students are overwhelmed by stimulus.
Discovery learning also violates all five cognitive principles and is an extremely “slow,
ineffective way of accumulating information… with minimal emphasis on building knowledge in
the... long term memory, which should be the primary goal of instruction” (Sweller, 2010, p. 43). Mayer’s (2009) argument that discovery learning and social interaction may not add up to effective learning supports my findings.

**Teacher-led instruction.** Even though lecture can be just as effective for conveying knowledge and can be quite motivational (Nilson, 2003), direct instruction is not the same as a teacher lecturing straight from their notes. Direct instruction is the type of teacher-led instruction used in this study. There is great confusion over the two methods. Some of the confusion exists because there are some theorists who oppose a knowledge-based education and transmission of facts. They see education more as a development of skills. Because both the lecture and direct instruction have a component of knowledge acquisition, both methods are confused and demonized. My research makes me concerned that we have arrived to a point in history where theorists have settled for one way to get students’ attention—through hype and sensation. Hence, we have a talk show type of education.

**Text-less.** One other concern is the diminishing emphasis on texts. Gould (1996) argued for no textbooks, no lessons, and no worksheets in language arts classes and advocated a class that uses conversation and games. Gould (1996) argued that we should be focused on “big ideas rather than facts” but what do these “big ideas” look like? But I wonder why should we value opinion over truth? Fosnot (1996) made the argument that students learn more about their neighborhood by investigating than they do in textbooks. The problem here is students are not in school to learn about their neighborhoods. They go to school to learn about things other than their homes and neighborhoods. School is an escape from the bubble where you come from and a view of possibilities that your neighborhood does not always provide. Destroying the purpose of school oppresses those in most need and keeps them where they are: in their neighborhoods.
The most alarming aspect to these arguments is that Fosnot (1996) argued for a change in schools of education so they could better influence teachers to teach the way they want them to teach, with games and conversations.

On the other side of the spectrum, Fish (2008) recommended that content and themes should be avoided in writing classes. Those content and theme-based approaches leave the students with banal opinions and do not contribute to their learning how to write (Fish, 2008). In a Fish English class, a student would not use an anthology of readings, and would instead focus on learning grammar and rhetoric (Fish, 2008). The strong emphasis on grammar and rhetoric itself is an old-school approach to English instruction. I would not argue as some would that there should not be any grammar instruction, but I would not make it the entire course curriculum. Remarkably, both the progressive and conservative approaches to English instruction leave out the most important part of English instruction: the texts we should be reading. The learning context in this current study has been built entirely around the philosophy that we learn about writing by reading texts.

**Instructional objectives.** The elicitation of opinions in an English classroom appeals to democratic education theory where students are prompted to make connections between the content and their own personal lives (Mayer, 2012). However, this was not the objective of the seminars in this course. On one occasion several participants even recalled the difficulty relating to a Latino author who wrote one of the assigned essays. Mayer (2012) suggested that, “developmental, cultural, and individual differences between people cause each of us to understand the world somewhat differently” (p. 55). The seminars may have accomplished this task, and the participants in this study seemed open to sharing with others, even if they were confused. Conversational learning could be seen as an experiential learning process where
learners move through the four cycles (Baker, Jensen, & Kolb, 2002). It would be difficult to determine if the students in this study actually went through different cycles, although the students were not specifically examined for which learning phases they cycled through.

As mentioned, seminars mock the behavior seen on television talk shows. Either the students are found to express something overly sensational for effect or they remain quiet and confused over what they should be sharing in the class discussion. I can remember as a student in graduate teacher education courses how many of us meandered our way through seminars just to get through them. If we were doing that, what makes us think undergraduates and high school students are any different? Most of the participants in this study were not entirely sure why they were discussing the texts and what they were getting from the seminars, yet the time in the setting seemed to give them an enjoyable break from teacher-led instruction.

On the other hand, a teacher-led lesson might be used to teach the more specific form or structure of writing (Mayer, 2012). The participants in this study valued the teacher-led modeling and had more confidence in this method in terms of reaching a clear objective. Mayer (2012) argued that teacher-led learning “is most appropriate for demonstrating to students how to think about or to accomplish something in close to the same way as others have before them” (p. 58). These demonstrations were my instructional objectives for both methods, but the success of teaching form or structure through the seminar is questionable. Because different types of lessons ultimately require different methods (Mayer, 2012), I am unsure whether the seminar was a successful method to teach students about the features of an essay, whereas the teacher-led instruction seemed to be a simple informative approach to the same lesson. However, teachers are told they “should ‘negotiate,’ ‘facilitate,’ ‘co-construct,’ ‘mediate,’ ‘socialize,’ ‘provide experiences,’ …but never ever will they tell” (Osborne, 1996, p. 67). I wanted to provide
experiences, but too many of the participants had empty experiences.

The significance of these findings is that we get to hear all of these student thoughts directly, instead of through the filter of a theorist or philosopher. The words of the participants stand on their own as a testimony to how they perceive and cope with varying methods in a college general education classroom.

**Future Studies**

Because this study in the end only involved a sample of five students identified as Assimilators and five students that were identified as Accommodators, and all were participants in my particular class, a future study could expand the size of who participates as well as being used across different instructors in different disciplines across various teaching communities. Future studies could involve bringing in multiple instructors with a broader sampling of students. One element to keep in mind is that other instructors may change their instruction due to Hawthorne effect if they know they are part of a study. Other instructors might be better or worse at using direct instruction methods. Student, time, and setting variables are also considerations.

Here are just some of the many possibilities that would begin to contribute to our understanding of learning styles, preferences, and personality types in the classroom.

- Apply a variation of this study to a larger institutional sampling
- Apply a variation of this study to multiple settings nationwide
- Apply a variation of this study that isolates and probes just the Reflective Observation learners
- Apply a variation of this study that brings in all four of the learning styles
- Apply a variation of this study that isolates and probes just the introverts
- Apply a variation of this study that contrasts by gender
• Apply a variation of this study to replace online learners as the subjects
• Apply a variation of this study to introduce technology and test different modalities against varying personality types and learning styles

The discomfort felt by Assimilators and introverts is perhaps the most concerning when it comes to the Asian American population, which is culturally more introverted and reflective. A future study might examine how Asian American students in particular fare in multiple American learning environments. It would have also been interesting to elicit the thoughts of the Divergers on the social learning, since they too fall into the Reflective Observation zone. More large-scale studies should be conducted to determine more reliable percentages and the impact of teaching to one preference.

**Personal Reflection**

Throughout my career in education, I have heard many colleagues and professors complain about the lack of student participation in class. “Why don’t they talk?” “Is there something wrong with them?” “They must not be reading!” As a student I watched many professors and teachers (often introverts themselves) engage with the one or two extroverts in the room and leave everyone else in the room to be a spectator of the dialogue between teacher and “teacher’s pet.” I have also observed classes that pushed introverts into a mosh pit of required participation with a heavier portion of the grade, which is a subjective way of grading. No one wants a class to be silent, but do we really want a class that is all talk and no action, no reading, no reflection, no instructor guidance and no modeling? I teach writing, not talking.

It could be said that the two extremes hold their equivalent consequences: “Totalitarian authority crushes other voices, while laissez faire egalitarianism can produce aimless talk” (Baker, Jensen, & Kolb, 2002, p. 21). But it does not need to be one or the other in an either/or
false dichotomy. A false dichotomy is when an arguer sets up two categories and then pushes you toward the one they want you to pick. The one category they don’t want you to pick is knocked down or moved away from and you are left with the one they wanted you to choose. Zins et al. (2007) and many other social constructivist theorists have argued that learning is a social process and that “students do not learn alone but rather in collaboration” (p. 191). However, this may be a rigid definition of learning that is faulted by its false dichotomy of either learn together or not at all. There is no place for false dichotomies in academic writing (Rubin & Rubin, 2012). There is no place for false dichotomies in academia, period. There is no reason why we cannot teach using a set of balanced tools, strategies, and activities. My personal belief is that we can improve education by being both collective and reflective.

Nilson (2003) went as far as asserting that “persistent non-participation may be a symptom of a deeper problem” (p. 111) and that you should see the student in your office. Again, this seems to be a misunderstanding of introversion and reflective learning. Many critics would argue that education is not supposed to be like a tour, but an extroverted education for the introvert is very much like being on an expedition with an incompetent tour guide. They need a director who sets up each scene for them. Sometimes that scene will involve contributing something verbally, and sometimes that scene will involve quietly listening and thinking. We need to understand and accommodate personality types.

One of my best teachers, Professor Ray Mariels of Portland State University, would sit at the front of the room and tell stories. His dynamic lectures on literature seemed more like a story telling session, and his digressions into rich and humorous metaphors were often the most insightful part of the course. Some students asked questions and added their input along the way, but we all mostly listened. I found his literature courses intellectual and funny, enlightening and
light, academic and adventurous. Surely, someone in his class along the way found it boring, just as there will always be someone in every class, no matter what you do, what tricks you have, or what dance you perform, who does not connect or refuses to open up to the subject you are teaching. Does that mean Professor Mariels should have given up his stories, so that the bored, unengaged student could be accommodated with an alternative activity that may not be as engaging to the rest, in what results in a meandering discussion? My education would have been so empty without a teacher like Professor Mariels.

Education and pedagogy theorists from the constructivist background might not have appreciated Professor Mariels’ methods because they were “teacher centered” and not “student centered.” They might say he talked too much and expected his students to absorb his knowledge. They obviously experienced something very different in their own education. It makes me feel bad for those theorists because they miss so much from the rich experience and fail to understand the enormous intellect that evolves from such a class as the ones I had. But the constructivist theories make me feel even worse for the gifted, charismatic teacher with wonderful stories who is persuaded not to share their gifts with students and trained to sit on the sidelines as a facilitator, often demanded by theorists or administrators who lack their personality and soul. Even worse, my sympathy is with the many reflective learners who will miss out on a truly special education because their teachers were coerced to doubt their own intuitions and because students are trained to expect English class to resemble a gossip circle.

However, I do not believe good teachers give into the theoretical demands of writers and schools of education, the same way we do not let the testing companies and state policy makers dictate how our subjects should be taught. Good teachers with personality and spirit will continue to tell stories, share knowledge, and teach direct skills. Maybe it will not be accepted
by scholars, or even their colleagues, but those who have had a Professor Mariels in their education will know it is part of their job to share with the students and direct them into the future. Regardless of learning style, learning preference, or personality type, most of us still love to listen. Technology and talk-show education theory have yet to change this ancient love for listening that can be traced as far back before any written language existed, and I doubt they will. The skill for, though not the necessity for, that is presently threatened is that of writing. In addition to knowledge and analysis of great literature, an important part of Professor Mariels’ job was to help the students write better academic papers. The assignment itself, the evolutionary result of the guidance and modeling in class, and the post assignment commentary are all part of what goes on inside the student outside the classroom. For these extended lessons to work, a writing teacher must challenge a student, but also inspire and enlighten, and equip them with the skills they need to succeed. They can’t do any of that if the students are too busy talking.
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linking social and emotional learning to school success. *Journal of Educational and Psychological Consultation*, 17(2 & 3).

Signed Informed Consent Document (Appendix A)

The Experience of Contrasting Learning Styles, Learning Preferences, and Personality Types in the Community College English Classroom.

Bill Lawrence, Doctoral Candidate; Dr. Chris Unger, advisor

Informed Consent to Participate in a Research Study

We are inviting you to take part in a research study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep.

Why am I being asked to take part in this research study?

We are asking you to be in this study because you qualified as having the characteristics of a student with a particular learning style and personality type of interest. These were briefly described in the beginning of the semester as classifications of how we learn, interact, and react to different settings.

Why is this research study being done?

The purpose of this research is to share the classroom experience of certain learners and personalities with the education community for the purpose of education/awareness.

What will I be asked to do?

If you decide to take part in this study, I will ask you to sit down for a brief in-person interview made up of 5-6 questions that ask you to share your feelings about classroom environment, teaching methods, and student/teacher interaction. The interview should take no more than thirty minutes of your time. There will be only one five minute follow up where you will be asked to reflect on the interview and add anything to the record.

Identify and describe any procedures that are experimental.

Only the interviews (and follow ups) are experimental.

Where will this take place and how much of my time will it take?

You will be interviewed individually in a location of your choosing on a day that is convenient for you. The interview will take about twenty minutes. Two weeks later, we will follow-up with a reflective recap where you may add to the record. The follow ups will take place after class at a convenient time and should take no more than five minutes.

APPROVED
NU 06/02
VALID THROUGH 05/14
Will there be any risk or discomfort to me?

There will be no risks associated with this study and all recorded information will remain confidential. No discomfort is anticipated. On the contrary, talking about your learning styles and personality types often makes one feel better and aids in identifying strategies for future learning.

Will I benefit by being in this research?

While there are no direct benefits from this research, you may benefit from identifying your learning style.

Who will see the information about me?

Your identity as a participant in this study will remain confidential. The researcher is the only one who knows who the participants are, but names will be converted to numbers upon audio recording. Your name will never be used in the audio interview, analysis, and writing. No publication will use information that can identify you in any way.

Data Management

Names will be converted to code numbers such as Research Informant 01, 02, 03, etc. The data in this interview will be managed on a digital Sony IC Recorder. This is a safe and secure manner of saving the recording because it will be uploaded to a password protected computer immediately and saved as a MP3 file. Both copies will be deleted once the research is complete and approved. Since the method is entirely digital there will be no tapes to dispose of.

If I do not want to take part in the study, what choices do I have?

Simply opt out. You may decline research participation. Even if you begin, you are entitled to withdraw from this research at any time without explanation. Your participation in this research is completely voluntary. If you decide to not partake or to quit, you will not lose any rights, benefits, or services that you would otherwise have as a student.

Who can I contact if I have questions or problems?

You may contact Bill Lawrence at lawrence.wi@husky.neu.edu or

Christopher Unger, Ed. D., College of Professional Studies, Northeastern University, Boston

360 Huntington Avenue (BV 20), Cell # 857-272-8941, E-mail: c.unger@neu.edu

Who can I contact about my rights as a participant?
If you have any questions about your rights as a participant, you may contact Nan C. Regina, Director, Human Subject Research Protection, 960 Renaissance Park, Northeastern University Boston, MA 02115 tel. 617-373-7570, email: irb@neu.edu. You may call anonymously.

**Will I be paid for my participation?**

No compensation will be provided.

**Will it cost me anything to participate?**

No costs other than approximately twenty five minutes of your time. No financial costs.

**Is there anything else I need to know?**

You must be at least 18 years old to participate.

_____________________________  _________________________
Signature of person agreeing to take part  Date

_____________________________
Printed name of person above

_____________________________
Signature of person who explained the study to the participant above and obtained consent
Appendix B

Participant Recruitment Letter

May 25, 2013

Dear Student:

I would like to invite you to take part in my Northeastern University Doctoral study. For my dissertation research, I am conducting a study about how community college students experience their learning environment in English courses. I think you could offer valuable information for this research, and I am writing to you today to see if you would be interested in being interviewed.

For your participation in this activity, I will need to have your consent. In order to begin collecting data for my research, I need to initially invite you to participate in the study. Once I complete my proposal and receive final approval from Northeastern University, I will formally request your participation. At this time, I am simply looking for an initial response indicating your willingness to participate.

Your participation is completely voluntary, and you can decide not to participate at any time. Please be aware that agreeing or not agreeing to participate in this study will have no impact on your rights, benefits, or services as a student at Bristol Community College. Participation in the study will also be completely confidential; your name and any other information identifying you personally will never be used.

If you should have any questions about the study, you can contact me by phone at ------- or via e-mail to Lawrence.wi@husky.neu.edu. Thank you in advance for your time.

Thank you for your time and consideration,

Bill Lawrence, M.Ed., MA, MFA
Northeastern University Doctoral Candidate
College of Professional Studies

If you do not mind my reaching out to you for an interview once I have full approval for the study from Northeastern University and Bristol Community College, please indicate your potential willingness to participate by providing me with your name and email address below.

Name: _______________________________________________________

Email: _______________________________________________________

Appendix C

Debriefing Statement

Thank you for participating in this study. Your participation was very valuable to myself and the education community. I know how many responsibilities you have in and out of college and very much appreciate the time you devoted to participating in this study.

Here is a recap of the research objectives: This research seeks to determine how differing personality types and learning styles respond to community college classes that promote both socially active learning that requires in-class participation as well as teacher-led whole class instruction. You were exposed to both approaches: socially active (Socratic seminars and group activity), and whole class instruction (teacher-led lessons).

In the context of this study it is important to remember the definitions of introverted personality types and learning styles. Two general Personality Types, introverts and extroverts, were defined by Carl Jung in 1921. It should be understood that not everyone is 100% anything all of the time. Some people are even considered ambiverts, meaning they may go back and forth between both types. The same considerations go for learning styles. No one has just one learning style. We use them all, but many of us have a preference or one we excel at. Studies show that students who understand and have knowledge of their learning style and personality type have a better chance at excelling at school work.

The only information about the study that was withheld until now was the researcher’s intent and concerns about the issue because sharing this information may have skewed your results. For this research, I am trying to capture the inner experience of students who are introverted reflective learners who observe and reflect in order to learn and extroverted active learners who act and experiment to learn. You can read more about these theories and issues in the following recommended texts/sites:


http://www.simplypsychology.org/learning-kolb.html


or by conducting a Google search on “Kolb’s learning styles” and “personality types”

Thank you again for your assistance and for sharing your important stories. I truly believe we can all help lead to important change.

- Bill Lawrence
Appendix D

English 101 Seminar Assignment

This English 101 course will conduct six seminars. As a seminar leader you will be grouped up with other student seminar leaders for that particular class day. There is no need for collaboration or communication prior to the class. You will play a dual role as leader and participant. Your duty is to field questions to the class and promote discussion about the assigned essay from 50 Essays.

The objective is to examine the essay for its structural elements, rhetorical mode, and use of rhetorical devices and appeal. Several essays will be modeled for you in advance.

You will want to design anywhere from 5-7 questions, even though you may not get to use all of them. The time limit for each seminar is a minimum of 30 minutes, though most seminars go over if class time permits. Everyone will be a leader once. If and when the discussion fades, it is the responsibility of the leader to change the topic with a new question or subject. Keep it going. Design questions that are open to debate and discussion.

For those who are not selected leaders for that particular class date, your role is a participant. Your job is to respond to questions. I take all participation into consideration when assigning final class work grades.

Good seminars occur when the leaders (and participants) study the texts closely in advance, listen actively, share their ideas and questions in response to the ideas and questions of others, and search for evidence in the text to support. All questions and comments must be somehow connected to the assigned reading and may include biographical information about the author or historical context. Dialogue must be a serious discussion of the texts.

Expectations:
Speak loudly and clearly and listen to others respectfully
Cite reasons and evidence for support from text
Question each other in a civil manner
Be prepared in advance (reading and studying the text well before the class date)

SEMINAR SCHEDULE:
see the syllabus for dates, which will be assigned in our first class meeting.
## SEMINAR LEADERSHIP GRADING RUBRIC

<table>
<thead>
<tr>
<th>Points:</th>
<th>10</th>
<th>7</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written</td>
<td>5-7 typed questions</td>
<td>Under 5 typed questions</td>
<td>No typed questions</td>
</tr>
<tr>
<td>Discussion</td>
<td>Kept discussion flowing and fielded questions</td>
<td>Average participation; some repetition</td>
<td>No or little leadership</td>
</tr>
<tr>
<td>Preparation</td>
<td>Demonstrated close study of texts and subject and cited the essay</td>
<td>Average knowledge and use of material</td>
<td>No or little preparation</td>
</tr>
<tr>
<td>Outside Sources</td>
<td>Brought in at least two outside cited references</td>
<td>One reference</td>
<td>No references or did not cite source by name</td>
</tr>
<tr>
<td>Quality</td>
<td>Thought out questions that connected to students and subject</td>
<td>Average questioning</td>
<td>Off topic or irrelevant</td>
</tr>
</tbody>
</table>

## SEMINAR PARTICIPANT GRADING RUBRIC

<table>
<thead>
<tr>
<th>Points:</th>
<th>10</th>
<th>7</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answered several original questions with thoughtful analysis</td>
<td>Answered at least one question and showed at least two or more of the other elements in column one</td>
<td>Less than three of the skills in column one Or no show</td>
<td></td>
</tr>
<tr>
<td>Spoke clearly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributed to conversation with a response question</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respectful and civil manner towards other students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrated good listening skills</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
Appendix E
Student Interview Protocol

Institution: Northeastern University
Interviewer: William K. Lawrence, Associate Professor
Date: Summer 2013
Location of Interview: Bristol Community College
Previously attained background information (assume this has already been collected)

Learning Style / Personality Type Interviews

Part I: Introductory Question Objectives (5-7 minutes). Build rapport, describe the study, answer any questions. An informed consent form would be reviewed and signed here.

Introductory Protocol (Read and explained to the student informant)
You have been selected to speak with us today because you have been identified as someone with a particular learning style and personality. Our research project focuses on the experience of students like yourself in different learning settings. Through this study, we hope to gain more insight into this learning experience. Hopefully this will allow us to identify ways in which we can better support students during their academic experience.

Because your responses are important and I want to make sure to capture everything you say, I would like to audio tape our conversation today. I will also be taking written notes during the interview. I can assure you that all responses will be confidential and only a pseudonym will be used when quoting from the transcripts. I will be the only one privy to the tapes, which will be eventually destroyed after they are transcribed. My advisor may also help to review the transcriptions, but they will not have access to the audio files and only your pseudonym will be attached to the transcript. To meet our human subject’s requirements at the college, you must sign the form I have with me. Essentially, this document states that: (1) all information will be held confidential, (2) your participation is voluntary and you may stop at any time if you feel uncomfortable, and (3) we do not intend to inflict any harm. Do you have any questions about the interview process or this form?

I have planned this interview to last no longer than 30 minutes. During this time, I have several questions that I would like to cover. If time begins to run short, it may be necessary to interrupt you in order to push ahead and complete this line of questioning. Do you have any questions at this time?

Introduction
A. Interviewee Background
How long have you been a BCC student? How many semesters have you completed?
Are you full time or part time?
Are you employed? Full time or part time?
Part II: Objectives (30 minutes):

Prefatory Statement: I would like to hear about your learning experience in your own words. To do this, I am going to ask you some questions about the key experiences or transitions that you encountered during your time in my class and your perspective at various times. Your responses may include both academic and non-academic elements as appropriate. The initial prime interview will consist of six central questions with several sub questions each.

1. Our class recently conducted several Socratic seminars (group discussions). Can you tell me what this experience was like for you as a participant?
   a. How did you feel when others were speaking?
   b. Did anything help your learning?
   c. Did anything hinder your learning?

2. What was your experience like during the Socratic seminar as a leader?
   a. How did you feel when others were listening to your questions?
   b. Did anything help your learning?
   c. Did anything hinder your learning?

3. Our class recently completed the individual assignments using discovery worksheets and book quests. Can you tell me what this experience was like for you as a learner?
   a. How did you feel as you were completing the work alone in class? For homework?
   b. Did anything help your learning?
   c. Did anything hinder your learning?

4. Our class recently received several teacher-led direct lessons on writing. Can you tell me what this experience was like for you as a learner?
   a. How did you feel as you were listening or observing?
   b. Did anything help your learning?
   c. Did anything hinder your learning?

5. Is there anything else you would like to share about your learning experience in any of these varied settings? (follow up) Could you describe an uncomfortable learning environment?

6. In regard to the personality and learning preferences surveys you took at the beginning of this course, do you feel you have an understanding of personality types? Do you agree with the quiz results?

   Ask participant if they have any questions and thank them for their participation.
Part III: Follow up (5 minutes)

This quick follow up is used as a member check for validity. This is to be scheduled one week after the main interview and will also be recorded.

Is there anything you would like to elaborate on since we last spoke?
Is there anything you have reconsidered?
Is there anything else you would like to share about your learning experience in any of the varied settings this semester? Comparisons or contrasts?

Ask participant if they have any questions and thank them for their participation.
Provide them with the debriefing statement.