Perceptions of Transactional Distance from Black Males in Asynchronous Online Math Courses

Shontale M. Bryant

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PERCEPTIONS OF TRANSACTIONAL DISTANCE FROM BLACK MALES

IN ASYNCHRONOUS ONLINE MATH COURSES

by

Shontale M. Bryant

A Dissertation Submitted in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Education

Major: Instruction and Curriculum Leadership

The University of Memphis

May 2023

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Dedication

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Abstract

Transactional distance theory (Moore, 1973, 1993, 2013, 2019) identifies transactional distance as a psychological or communication gap that can be perceived by learners based on their personal educational needs and/or preferences. These perceptions of distance can occur in any learning environment but especially in distance learning or online learning environments and can influence course satisfaction, participation, and persistence (Tinto, 2009). Perceptions of transactional distance are observed through interactions (learner-instructor, learner-learner, learner-content; Moore, 1989) and are influenced by the theory’s three main tenets of course structure, dialogue, and learner autonomy through instructional design and personalization. Qualitative interviews were conducted with Black males taking online asynchronous math courses at a mid-sized southern university to determine how the participants’ perceived instances of transactional distance in their online asynchronous math courses. Semi-structured qualitative interview questions were developed based partly on Monica Aixiu Zhang’s quantitative measuring tool (2003) for measuring transactional distance based on learner interactions (learner-instructor, learner-learner, learner-content, learner-LMS, and learner-institution) which was updated by Paul et. al. (2015), including Zhang in 2015. Perceptions were recorded, analyzed, and organized per tenet and type of interaction. Results of the study support the theory’s purport that learners perceive levels of transactional distance based on their personalized educational needs and/or preferences. The findings also support empirical research findings stating that educational disadvantages can be exacerbated in distance learning environments, especially for marginalized or underprepared populations (Paul et al., 2015; Salvo et al., 2019; Stewart et al., 2010; Xu & Jaggars, 2013). Reportedly, the findings of this study support the
need for learners to experience varied interactions with options available to meet their personal educational needs and or preferences. Participants experienced levels of transactional distance concerning dialogue within the learning environment, concerning autonomous learning management and support, and concerning their reactions to course structures based on their personalized needs and preferences. Instructors, instructional designers, and stakeholders have the opportunity to support learners through professional development for instructors and course designers, cycles of feedback, learner support programs, options for personalization, and varied course design which should include interactions, dialogue, opportunities for autonomy, and course structures appropriate for online learning environments.
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List of Abbreviations

American College Test (ACT)
Association for Supervision and Curriculum Development (ASCD)
Center for Digital Instruction (CDI)
Center for Academic Retention and Enrichment Services (CARES)
Community of Inquiry Model (CoI)
Complete College Tennessee Act (CCTA)
Corona Virus Disease 2019 (COVID-19)
Empowered Men of Color (EMOC)
Educational Support Programs (ESP)
Family Educational Rights and Privacy Act (FERPA)
General Education Degree (GED)
Government Alliance on Race & Equity (GARE)
Grade Point Average (GPA)
Hooks African American Male Initiative (HAAMI)
International Association for K-12 Online Learning (iNACOL) – now the Aurora Institute
Informational Technology Department (IT Dept.)
Learner-content interaction (LC)
Learner-institution interaction (LINST)
Learner-instructor interaction (LI)
Learner-interface interaction (LLMS)
Learner-learner interaction (LL)
Learning Management System (LMS)
National Association for the Advancement of Colored People (NAACP)
National Council of Education Statistics (NCES)
Office of Institutional Research (OIR)
Organisation for Economic Co-Operation and Development (OECD)
Seamless Alignment and Integrated Learning Support (SAILS)
Student Support Programs (SSP)
United States Department of Education (USDOE)
Zone of Proximal Development (ZPD)

* To review codebook codes and abbreviations, please see Table 5 on pg. 90.
CHAPTER ONE: INTRODUCTION

In the United States, 1.9 million bachelor’s degrees were conferred during the 2015-16 school year; of that number, 65% were conferred to Caucasian students, 13% were conferred to Hispanic students, and 11% were conferred to Black students (NCES, 2019). The U.S. Department of Education reports that 34% of Black males enrolling in 4-year colleges graduate with a bachelor’s degree within six years, compared to 61% of Caucasian males (NCES, 2017). Tennessee’s six-year college-level cohort of 2010 yielded 29.7% of Black students as successful graduates compared to 47.9% of Caucasian students (Tennessee Higher Education Commission, 2018).

Black males are graduating from both high school and higher education institutions at consistently lower rates than their peers (Barthe, 2016; Depaoli et al, 2018; Meehan & Kent, 2020; NCES, 2017; Rickles et al, 2018; Shapiro et al, 2018; Tennessee Higher Education Commission, 2018). Research indicates that Black males are repeatedly identified as a group most underrepresented, (NCES, 2019) underprepared, (Jaggers & Bailey, 2010) and at-risk for low academic performance in high school completion and college readiness (Addis & Withington, 2016; Xu & Jaggers, 2014). This disparaging gap can have lasting effects on college and career opportunities.

Educational studies conducted with Black males have produced feedback citing concerns such as inadequate access to technology (Kimble-Hill et al., 2020), limited instructor feedback and one-on-one interaction (Kimble-Hill et al., 2020), the skills to keep up with pacing, motivation and time management (Kimble-Hill et al., 2020; Jaggers & Bailey, 2010; Scott, 2017), and ample academic, financial, and cultural support in the online environment (Salvo et al., 2019; Scott, 2017). Likewise, instructors and institutions offering courses online have
expressed that academic progression could possibly be undercut when students who are
academically underprepared, low-income, or a part of otherwise marginalized groups (including
but not limited to males and specifically Black males) participate in online education (Jaggers
and Bailey, 2010). Xu and Jaggers (2014) suggest that educational gaps that are present in the
face-to-face environment can be exacerbated in the online environment, thus worsening
educational inequalities. Research data has suggested that Black male high school students
regularly underperform their peers in math courses (ACT College Career Readiness African
Americans, 2013; Tennessee State Report Card, 2019) this information could serve as an
indicator to look at how meeting the needs of this population could translate into the online
learning environment.

National and global discussions around social and educational topics of racial equality,
equity, and privilege have been reignited in recent years. From organizations such as Black Lives
Matter and the National Association for the Advancement of Colored People (NAACP) to
campus-wide higher education social injustice initiatives, conversations are being facilitated
concerning the educational disparities spotlighted and experienced by Black and other minority
populations (Barth, 2016; Bryant, 2015, Gorski, 2018; Leonardo, 2019; Warikoo, 2016).

The scope of this study is designed to explore the connections between course
completion, satisfaction, and persistence in the online learning environment for Black males as
impacted by transactional distance. Transactional distance could be described as a perception of
separation or detachment experienced by participants in a learning environment. While
transactional distance can occur both in-person and at a distance, this study will focus
specifically on asynchronous online higher education courses. The theory of transactional distance can serve as a lens to help examine course offerings for their effectiveness at meeting the needs of Black males in the online learning environment by considering how the implementation the theories main tenets, course structure, dialogue, autonomy and interactions meet the needs of this population and potentially influence satisfaction, persistence, and retention.

Distance Education

Distance education describes teaching and learning that takes place outside of the traditional classroom. In 1968, the Association for Supervision and Curriculum Development (ASCD) stated “…instruction refers to the activity which takes place during schooling and within the classroom setting” (ASCD 1968, p. 123); however, this definition did not include other types of learning that took place, such as learning through correspondence mail courses, television and radio broadcast education, or recorded video courses. This omission prompted a need to define other types of learning that were taking place. In 1972, an early definition of distance education, which would later be developed by Michael Grahame Moore into the theory of transactional distance, began taking shape. The definition described distance education as “…the family of instructional methods in which the teaching behaviors are executed apart from the learning behaviors… so that the communication between the learner and the teacher must be facilitated by print, electronic, mechanical, or other device” (Moore, 1972, p.76).
Moore continued his work on distance education updating the definition over the years until in 2019 where he included more current trends such as blended learning, social networking technologies, internet-based courses (also referred to as online or virtual courses), and personalized learning using learning management systems (LMS), such as Blackboard, Canvas, and Desire2Learn (Moore, 2019). In a 2018 report for the U.S. Department of Education, Seaman et al. similarly described distance education, while also acknowledging that continually evolving technological advances will impact the tools available to deliver instructional content and complete coursework.

Online courses have been in use for decades and provide both alternative and interventive support to traditional education (Allen & Seaman, 2014; Kebritchi et al., 2017) by offering benefits such as additional routes to meet graduation requirements, increased accessibility to student populations (Luyt, 2013), more flexibility in course scheduling and location, and greater flexibility to address university fiscal changes (Limperos et al., 2015). According to the National Center for Education Statistics, 7,313,623 students were enrolled in distance education courses at degree-granting postsecondary institutions during Fall 2019 (NCES, n.d.); this is an increase compared to 6,932,074 students in 2018 (NCES, n.d.).

While online education alternatives provide many benefits to the higher education community, concerns have been raised pertaining to educational effectiveness (Limperos et al., 2015), to equal access of technology for all student groups (Katz et al., 2017), to discrimination amongst special populations (such as students with special needs, minority populations, and underprepared students (Figlio et al., 2013; Jaggers & Bailey, 2010), to students with lower
grade point averages (Cochran et al., 2013; Figlio et al, 2013; Xu & Jaggers, 2014), and to low-income students (Katz et al, 2017; Kimble-Hill et al, 2020; Jaggers & Bailey, 2010). Social constructs, such as historical and institutional racism potentially target Black males to be more likely to fall into multiples of the aforementioned marginalized or at-risk populations, raising the likelihood of experiencing completion difficulties or perpetuating educational inequities when participating in distance education programs (Koppie, 2017; Lederman, 2013; Salvo et al, 2019; Xu & Jaggers, 2013).

Education Amidst an Epic Pandemic

March 2020 proved to be a turning point for online education when the COVID-19 pandemic forced many schools to resign from returning to in-person sessions after Spring Break and instead enact an unprecedented reliance on technology by moving courses and materials fully online to complete the 2019-20 school year. The U.S. national and local health departments outlined guidelines to protect public health including temporary closures or reduced service capacity of public businesses, services, restaurants, and other gatherings.

The education system was one of the largest institutions affected by the COVID-19 pandemic and closures (d’Orville, 2020; Yan, 2020). During March 2020, many school districts and institutions of higher education closed physical campus locations and moved instruction fully online. Still school districts and higher education institutions chose to reduce the number of students they serviced in-person by supplementing instruction online (ElSaheli-Elhage, 2020; Kimble-Hill et al, 2020).
While the use of online education tools and platforms has been slowly increasing for decades, the rapid and vast influx of populations into online learning environments due to the COVID-19 pandemic placed a magnifying glass on the educational system as a whole and the pedagogy of online education itself. Reports during this phenomenon have specifically exposed concerns about online learning. Equal access to adequate resources such as updated technology like laptops and internet access proved to be a challenge not only in low-income communities but various types of communities globally; the issue extended to corporate businesses, the health care industry, and other communities (Ramsetty & Adams, 2020; Vogels et al., 2020). Some neighborhoods and cities lacked the infrastructure to support the sharp increase in data usage and internet access needed for both the educational and corporate communities to transition online so quickly (Kimble-Hill et al, 2020). Parents and caregivers had to adjust schedules and accommodations to help facilitate education for one or more distance learners, often of varying ages and with differing needs, in shared physical environments; sometimes parents tacked this responsibility onto working remotely from home themselves (Midcalf & Boatwright, 2020). Lack of educator training, specifically in distance education pedagogy, LMS platforms, and online technology tools became a source of concern that impacted interactions between students, teachers, and the learning of content (Elsaheli-Elhage, 2020; Kebritchi et al, 2017). The massive and swift migration into online learning environments presented a potential threat for educational communities the world over but may have especially had the potential to impact marginalized groups.
Theoretical Framework

Michael Grahame Moore describes a “transaction” as “an interplay between teachers and learners in environments in which they are in separate places and have to communicate through a technology” (Moore, 2019, p. 33). This interplay and communication can create a perceived distance or gap (transactional distance) between the teacher and learner resulting in a disruption in the cycle of learning. Transactional distance encompasses three main tenets or building blocks, which according to Moore, can increase or decrease the perception of transactional distance: course structure, dialogue, and learner autonomy. Course structure primarily refers to the way a course is designed or organized. Dialogue involves two-way communications between members of a learning environment. Autonomy refers to the extent to which a learner can independently participate in and manage their own learning. The constructs are observed through interactions within the learning environment; Moore initially identified three: learner-instructor, learner-content, and learner-learner (Moore, 1989). Additional types of interactions have been recorded into research. Two of these include learner-interface and learner-learning organization/institution (Shearer & Park, 2019; Zhang, 2003) interactions. Interactions can also be found in other learning theories and methods; the Community of Inquiry method shares some commonalities with the Theory of Transactional Distance. (Shearer and Park, 2019). The perception of transactional distance weighs heavily on learner interactions. Zhang (2003) shared that the level of distance a student perceives between themselves and their teacher, peers, content, or the institution can affect their level of persistence. How connected a learner feels can
affect their level of satisfaction within a course, program, or institution and can affect the level at which they reciprocate efforts of participation and interaction (Tinto, 1999).

Course Structure

Moore defines course structure as “… the rigidity or flexibility of the course’s educational objectives, teaching strategies, and evaluation methods; it describes the extent to which a course can accommodate or be responsive to each learner’s individual needs and preferences” (Moore, 2019, p. 35). Course structure is the result of instructional design and planning; given the instructor’s ability to manipulate design to accommodate and respond to student needs, it can be used to create personalization and differentiation in the learning space (Boelens et al, 2018; Huang et al, 2016; Jaggars & Xu, 2016; Saba & Shearer, 1994). When considering course structure and perceptions of transactional distance, the level of transactional distance experienced by a learner is relative to the learner’s needs and preferences. A course could feel highly structured and challenging for example to a learner working through a preset module path containing content the learner has not previously mastered and is struggling to grasp. If the coursework appears too difficult, it could cause the learner to feel like their needs are not being met; like there is distance or a breakdown in communication between the learner and instructor or a gap that stands between the student and understanding the content. The same prescribed modules in this example could be assigned to a learner performing above the proficiency level assigned; this learner could also perceive feelings of distance or feel like their needs have not been met because the experience may not present a challenge or provide an opportunity for growth (Jaggars & Xu, 2016; Saba & Shearer, 1994). The key is to design
courses with both the structure and flexibility to meet student needs, resulting in a reduction of transactional distance for learners (Moore, 2019). The way in which course structure is implemented shapes the online learning environment to influence both course satisfaction and persistence to complete a course or program (Tinto 1999; Zhang 2003).

Dialogue

Dialogue is the communication that takes place between the participants in a learning environment – mainly between instructors and learners as well as dialogue between learners. Each participant actively listens, contributes to the conversation, and builds upon the contributions of other participants (Moore, 1993). The dialogue may include open participation with alternating exchanges of questions, responses, redirections, and building upon statements; dialogue is a sequence that is continuous and developmental (Moore, 2019). Here, dialogue is seen as a tenet which is necessary in the exchange and construction of learning. Moore hypothesizes that increased dialogue decreases perceptions of transactional distance; alternatively, low levels of dialogue can contribute to increased feelings of distance and/or isolation for the participants in the learning environment. Saba and Shearer (1994) tested this hypothesis about dialogue and found evidence in their research data to support Moore’s ideas. According to Tinto, the more a learner participates in their learning environment, the more they persist (1999). Dialogue can become a vehicle to decrease perceptions of transactional distance and potentially increase a sense of community and belonging. The more a student participates in communication exchanges with his or her teacher and peers, the more the student becomes invested and feels like a member of the environment by using dialogue to build understanding.
and psychological feelings of connectedness (Shearer, 2009). Similar to the Community of Inquiry (CoI) model’s construct of social presence, which supports the idea of increasing the capacity to build opportunities for learning by actively engaging and building one’s online presence, dialogic interactions between students and instructors can likewise increase the capacity to construct opportunities for learning, build psychological connection, and lead to increased motivation and satisfaction in the online environment (Shearer & Park, 2019).

**Autonomy**

The function of autonomy is two-fold; first, it refers to the student’s ability or inability to manage their own learning. Second, it is inter-related to the teacher’s proficiency to recognize the level and ability or inability of the student to manage parts of their own learning in different facets, situations, and/or courses (Moore, 2019). Autonomous activities can include activities such as tracking grades, developing a learning timeline based on given due dates, developing and executing learning plans based on given objectives, determining how and when to communicate with teachers and other learners, developing a routine for learning, making choices about how, when, and where to learn, and determining when assistance is needed among other factors (Moore, 2019; Shearer & Park, 2019). Moore hypothesized that levels of autonomy do not directly correlate with transactional distance but may inform levels of transactional distance on an individual level and based on the readiness of a student to perform various autonomous activities across educational situations, activities, and courses (Moore, 2019). A high-autonomy activity might include allowing a student to choose the due date and provide a self-designed project plan and timeline for a semester project. Whereas a low-autonomy activity might include
assigning the same semester project in the previous example but accompanied by project steps, a
given timeline, and a pre-set due date. While autonomy is neither good nor bad, it is important to
gauge levels of autonomy and align them to students’ needs and abilities to help construct the
best experience at an optimally functional level for the learner (Huang et al, 2016; Vasiloudis et
al, 2016).

Transactional distance theory seeks to build a bridge in learning environments between
instructors and learners who may be separated and communicating through technologies;
additionally, the goal is to lessen feelings of distance, separation and isolation, especially online,
by studying course structure, dialogue, autonomy, and interactions to construct meaningful and
can potentially affect student satisfaction and its direct links to student persistence and retention
(Schreiner, 2009; Tinto, 2009).

Problem of Practice Statement

Black males are an underrepresented population both in enrollment to institutions of
higher education and in degrees conferred (Barthe, 2016; Depaoli et al, 2018; Meehan & Kent,
2020; NCES, 2017; Rickles et al, 2018; Shapiro et al, 2018; Tennessee Higher Education
Commission, 2018). This trend points toward the increased potential for this group to experience
socio-economic challenges such as poverty or incarceration (Gibson, 2014; Salvo, 2019). With
little change in degree conference for 4-year degrees to Black males, despite state-wide,
university-wide, and demographic-specific initiatives specifically implemented to increase
retention and graduation rates at the University of Memphis, continued progress toward
addressing these low rates remains a necessity and focus of the university (University of Memphis Social Justice Initiative, 2020). This research seeks to approach the issue of low completion by and conferment of 4-year degrees to Black males, through a lens of academic pedagogy and social learning theories primarily how perceptions of transactional distance in the online learning environment affect Black males.

Tennessee’s Plan to Boost Degree Attainment

In 2018, the revised Complete College Tennessee Act showed that 14% of adults have less than a high school education; only 30% of students from low-income households in Tennessee enroll in postsecondary education; and 1 in 10 Black students will complete a community college degree (Complete Tennessee, 2018). This data prompted Tennessee to revise its plan to boost degree attainment in 2018 by including specific goals addressing under-represented groups, specifically Black and Latino populations (Tennessee Master Plan, 2018). While Black students accounted for 27.4% of the overall enrollment headcount at Tennessee public higher education institutions in 2016, data from the six-year cohort of 2010 showed that White students were graduating at a rate of 47.9% compared to the Black student rate of 29.7% (Tennessee Featured Facts from SREB Factbook of Higher Education, 2019).

Beginning with the Complete College Tennessee Act in 2010 and continuing into 2017 with Tennessee Reconnect, the state of Tennessee, in collaboration with its Tennessee Board of Regents, has constructed and is currently engaged in a plan, with the goal of increasing higher education degree attainment for Tennesseans state-wide. Pointedly, this initiative directly targets the issue of low degree attainment by students of color by specifically including a goal of 50,000
additional degrees for students of color by 2025 (Tennessee Master Plan, 2018). Foundational initiatives and policies of the plan include: an outcomes-based funding model; Seamless Alignment and Integrated Learning Support (SAILS) Remediation Reform; a co-requisite college remediation model; Drive to 55, which calls for a 55% postsecondary attainment rate by 2025; Tennessee Promise; and Tennessee Reconnect.

Tennessee began remodeling its college completion model with the Complete College Tennessee Act (CCTA) of 2010. The goal was to enact reform initiatives that would increase higher education attainment and put measures of accountability in place for higher education institutions. By 2011, an outcomes-based funding model was set in place allocating 85% of base funding to public colleges and universities based on a range of student outcomes; factors included degree and high-quality certificate completions, credit milestones, student transfers, and other measures of success (Meehan & Kent, 2020). 2013 saw college reform reaching back to strengthen the transition from high school to college with Seamless Alignment and Integrated Learning Support (SAILS). SAILS was set in place to increase college readiness and positively impact time-to-degree completion. “Drive to 55” was enacted in 2014 and seeks to raise the postsecondary degree attainment rate for Tennesseans to 55% by the year 2025. To assist with this raise in degree attainment, two specific initiatives came about; Tennessee Promise (instated in 2015) allows recent graduates to attend Tennessee’s community and technical colleges tuition free. Tennessee Reconnect (instated in 2017) provides grant money to first time and returning adult college students and veterans looking to attain an associate degree or technical certificate (Tennessee Higher Education Commission Postsecondary Attainment, 2018).
In addressing attainment gaps for students, Tennessee's 2015-2025 master plan identifies adults, students from low-income households, and academically underprepared students as populations critical in meeting the goals of Drive to 55 by 2025 and establishes a goal of 50,000 additional degrees for students of color by 2025. To close gaps in attainment for students, Tennessee's master plan highlights initiatives to advance student access and success, including Tennessee Promise and Tennessee Reconnect, co-requisite remediate, and strategies at the state and institution-level that support black and LatinX students in their completion goals (Meehan & Kent, pg. 8, 2020).

The aforementioned initiatives have been put into place at the state level in response to the underrepresentation of students of color who have attained 4-year degrees (Meehan & Kent, 2020; Tennessee Higher Education Commission Postsecondary Attainment, 2018). Despite the structures and state policies in place, data reflects that the issue persists for example on the University of Memphis campus (University of Memphis, Office of Institutional Research, 2021). This prompts a look into university level initiatives, programs, course design, and pedagogy implementation and strategies.

University of Memphis

The University of Memphis resides in Memphis, Tennessee, a large southern metropolitan city within Shelby County. According to 2019 U.S. Census data, Shelby County reported a racial make-up of 53.7% Black or African American residents compared to 39.1% White residents. Fall 2020 student enrollment data shows that of 22,205 students, 7,431 identified as Black or African American and 2,297 identified as Black or African American
males (University of Memphis Office of Institutional Research, 2020). Data shows that of all bachelor's degrees conferred during the Fall 2020 semester, 8.90% of all bachelor's degrees were conferred to Black males in comparison to 23.89% of bachelor's degrees conferred to white males (University of Memphis Office of Institutional Research, 2020). Data also confirms that the fall rates for bachelor’s degrees are consistent over the past ten years; from the 2011-12 school year to 2020-21 graduation rates averaged 23.5% for White males compared to 9.27% for African American males (University of Memphis Office of Institutional Research, 2020).

The University of Memphis has enacted the Social Justice Initiative; fourteen active workgroups function with the goal of “eradicating systemic racism and promoting social justice” (University of Memphis Social Justice Initiative, paragraph 1, 2021). The goals of some of these workgroups include: closing gaps in retention and completion of students from historically underrepresented, first-generation, and low-income populations; training faculty, staff, and students in cultural competence, developing new academic programs related to eradicating systemic racism and promoting social justice; fostering a sense of belonging and support for diverse groups on campus; and addressing the correlations between health disparities and academic achievement (University of Memphis Social Justice Initiative, 2021).

The university offers several academic and non-academic support programs for all students. The Student Success Program focuses on increasing graduation and retention for first-generation students, low-income students, and students who are learning with a documented disability. Student Success also hosts The Federal TRiO Programs which is federally funded and designed to reach students from disadvantaged backgrounds from sixth grade through college
graduation; this program provides tutoring, counseling, mentoring, financial guidance, and other services to support educational access and retention (University of Memphis the Federal TRiO Programs, 2021). Similarly, academic, personal, and student success workshops are hosted by the Center for Academic Retention and Enrichment Services (CARES) Department to increase retention and graduation rates of current university students who are identified to be academically at-risk.

On a more granular scale, some initiatives and student programs have been designed specifically to address the gap present in the data. Per each groups university webpage and posted mission statement, The African American Male Academy, The Hooks African American Male Initiative, and Empowered Men of Color have been designed to support the retention and graduation journey of African American males on campus. The African American Male Academy seeks to increase recruitment, retention, persistence, and graduation of young African American and Black males aged from middle school through post-graduate studies (University of Memphis, 2021). The Hooks African American Male Initiative (HAAMI) is a university academic program with a goal of supporting and guiding students, especially males of color to college graduation (University of Memphis Hooks African American Male Initiative, 2021) and is funded by the Ben Hooks Institute advisory board which includes both local and national organizations such as the FedEx Corporation, SunTrust Bank, and Baptist Memorial Health Care. Finally, Empowered Men of Color (EMOC) is a student organization intent to promote enhanced awareness and understanding of issues concerning male minority students (University of Memphis Empowered Men of Color, 2021). University stakeholders and community members
are working tirelessly to support Black male student populations in an effort to raise retention and graduation rates; however, the issue persists with little change in the data in the past ten years, per the university’s Office of Institutional Research tables (2021). Efforts to address this problem at the state and university level imply that drilling further into the data and learning communities could offer more insight into the issues at hand and reveal potential solutions.

**Purpose Statement**

The purpose of this qualitative study is to document and analyze perceptions of transactional distance of Black males in online asynchronous math courses attending a mid-sized southern university. Qualitative interviews will be conducted to collect data. Qualitative inquiry seeks to “...interpret how human beings construct and attach meanings to their experiences...” and provides context around the ideas, systems, and people groups of interest (Patton, 2015, p. 13).

This inquiry is designed through the lens of transactional distance theory, initially developed by Michael Grahame Moore (1993, 2003, 2013, 2019). The theory’s foundational constructs identify course structure, dialogue, student autonomy, and interactions as key components to building strong distance education programs that compliment online instructional design principles for teaching and learning. Aixiu (Monica) Zhang’s tool, originally developed in 2003 to measure levels of transactional distance, was later updated by Paul, Swart, Zhang, and MacLeod in 2015. Zhang’s transactional distance tool builds upon Moore’s (1989) types of interactions (learner-instructor, learner-learner, and learner-content) and correlates perceptions of
transactional distance to student satisfaction and persistence. Zhang’s tool was taken into consideration when developing the interview questions for this research.

**Research Questions**

1. Research Question 1: How do Black males perceive transactional distance in college-level online asynchronous math courses?

2. Sub-question 1a: What impact do Black males perceive course structure has on course satisfaction in college-level online asynchronous math courses?

3. Sub-question 1b: What impact do Black males perceive dialogue has on course satisfaction in college-level online asynchronous math courses?

4. Sub-question 1c: What impact do Black males perceive autonomy has on course satisfaction in college-level online asynchronous math courses?
Definitions

**Asynchronous Course.** A course which occurs in an online learning environment with intermittent communications when the learners and instructor are in separate locations. Asynchronous learning is time-delayed and independent of a particular location. Asynchronous courses offer flexibility as learners are not required to engage in learning and activities at the same time. (Carr, 2012).

**At-risk Student.** “At-risk” students are defined as those failing to achieve basic proficiency in key subjects or exhibiting behaviors that can lead to failure and/or dropping out of school (USDOE, 2018).

**Autonomy.** In transactional distance theory, autonomy refers to both the ability for a student to manage their own learning and for an instructor to identify and recognize the extent to which a student can manage their own learning (Moore, 2019).

**COVID-19 Pandemic.** A disease caused by the SARS coronavirus 2 with mass infections that have spread across the globe (Centers for Disease Control, 2021).

**Course Structure.** In transactional distance theory, course structure refers to the organization of lesson design, tools, and activities to organize educational content and interactions (Moore, 2019).

**Dialogue.** In transactional distance theory, dialogue refers to the interactive exchange of ideas between the members of a learning community (Moore, 2019).

**Distance Education.** Modern-day distance education refers to teaching and learning that may occur in separate locations, synchronously or asynchronously, perhaps with the aid of a
technology device, online, or in a virtual environment (Moore, 2019).

**Equality.** Equality in education is achieved when students are all treated the same and have access to similar resources (Barth, 2016).

**Equity.** Equity in education is achieved when all students receive the resources they need so they graduate prepared for success after high school (Barth, 2016).

**Face-to-Face Education.** This term refers to synchronous instruction when two or more people meet in a physical location (iNACOL(c), 2011).

**Synchronous Course.** A course designed with learning interactions that happen simultaneously in real time. (Seel, 2011). A course designed with electronic delivery of instructor-led training available to geographically dispersed learners at the same time (Clark and Mayer, 2016).

**Transactional Distance.** Transactional distance refers to a psychological or communications gap perceived by the learner in a physical or digital learning environment which affects interactions between instructors, learners, and/or content (Moore, 2019).

**Transactional Distance Theory.** Transactional distance theory purports that perceptions of psychological or communication gaps between participants in a learning environment can increase or decrease dependent upon the interactions that are facilitated through the design of a course’s structure, instances for dialogue, and opportunities for autonomy (Moore, 2019).
CHAPTER TWO: REVIEW OF THE LITERATURE

Researchers have proposed the theory of transactional distance as a lens to both frame the study of learning in online environments and to provide a pedagogical foundation for this rapidly developing field (Gokool-Ramdoo, 2008; Paul et al, 2015; Zhang, 2003). Researchers recommend the continuation of studies focused specifically on understanding the benefits and challenges experienced by various types of learners in the online learning environment (Stewart et al, 2010; Xu & Jaggars, 2013). This study draws from empirical research of online learning environments, transactional distance theory, student satisfaction, persistence, and the perceptions of Black males. The argument outlined here asserts that the perception of transactional distance may have an equitable impact on course satisfaction and persistence while providing insight to support the retention of and graduation of Black males taking higher education courses in the online learning environment.

From Distance Education to Online Learning

Distance education once referred to teaching and learning that occurs in different locations; sometimes this learning occurred using the support of electronic and traditional mail correspondence, using radio or television lessons, or even using telephone communications (Moore, 2019). The term “distance education” as a method of teaching and learning and the field of distance education itself has evolved rapidly over several decades. Today’s distance education, with the support of the internet and digital learning management systems, is known as virtual school, online courses, online learning, blended or hybrid learning, and often integrates
social media platforms (Graham & Borup, 2019; Kebritchi et al, 2017; Moore, 2019; Seaman et al, 2018).

Researchers have made assertions about how distance education, especially learning in online environments, affects different types of learners in various ways (Salvo et al, 2019). Xu and Jaggers (2014) noted that under-prepared students may fare worse in the online environment versus in-person environment. In their data set of 40,000 community college students and comparing several factors between face-to-face and online courses, Xu and Jaggars found that while every student subgroup showed negative coefficients for online learning for both persistence and standardized course grade, men showed stronger negative estimates compared to women. Further, while all ethnicities showed negative coefficients, Black students had more than two times the negative coefficients than Asian students; from the data set, Black students already performed more poorly in face-to-face courses and the gap widened in online courses (Xu and Jaggars, 2014). Katz, Gonzalez, and Clark (2017) as well as Kimble-Hill et al. (2020) found that students in varying socioeconomic tiers may experience online courses differently based on technology access and familiarity navigating the online learning environment. Many researchers agree, however, that additional studies are needed, especially considering the rapid turnover and constant improvement of digital technologies (Paul et al, 2015; Weidlich & Bastiaens, 2018; Zhang, 2003). Studies on best practices and pedagogy have been conducted to identify effective teaching practices in the online environment. Keengwe (2010) shares a review of literature citing practices such as a focus on pedagogy versus the simple addition of technologies, building strong learning communities within institutions and courses alike, practicing ongoing and meaningful
communication between instructors and students, and course design and professional development that is specific to online course delivery.

Theoretical Framework: The Theory of Transactional Distance

History and Origins

“Trans-action” as an idea that can be traced back to John Dewey and Arthur Bentley’s work, Knowing and the Known Dewey and Bentley describe the process of knowing as cooperative, an inseparable ecosystem of organism to environment, gathering and exchanging information about the other each with a unique point of view of the relationship (1960). Robert Boyd pulled from this work as he developed the term transactional distance in adult education (Boyd & Apps, 1984). Michael Grahame Moore had been building on concepts that supported the work of distance education as noted in early papers (1972, 1973, 1976). Adult distance education researchers were developing the tenets of what would later become Moore’s theory of transactional distance; their work focused on structure, dialogue (Boyd, 1980; Moore, 1972, 1976), and autonomy (Maslow, 1968; Rogers, 1969; Tough, 1971; Wedemeyer, 1971). Transactional distance was more fully developed into a theory by Michael Graham Moore as noted in his work “Distance Education Theory” in 1991 and in Desmond Keegan’s book The Theoretical Principles of Distance Education in 1993. For a segment of education that had been considered “separate” from traditional teaching and learning, the theory provided a potential framework and foundation to begin building pedagogy and best practices specifically around distance teaching and learning.
“The transaction that we call distance education occurs between individuals who are teachers and learners, in an environment that has the special characteristic of separation of one from another, and a consequent set of special teaching and learning behaviors. It is the physical separation that leads to a psychological and communications gap, a space of potential misunderstanding between the inputs of instructor and those of the learner, and this is the transactional distance” (Moore, 1991).

Moore updated the theory in his book, The Handbook of Distance Education in 2013 and revised the book in 2019. The term “transaction” is described as “an interplay between teachers and learners in environments in which they are in separate places and have to communicate through a technology” (Moore, 2019, pg. 33). Transactional distance is a psychological and emotional perception based on one’s interactions in a learning community. It is important to note that perceived transactional distance can occur within any learning community, physical or digital; the interplay between teachers and learners is relevant in both spaces. The theory’s purports that three main tenets influence various vital interactions within the learning environment; these tenets are course structure, dialogue, and autonomy. The organizational design of these three tenets heavily influences the way that members of a learning community, such as instructors and learners, interact with each other, the course content, learning management systems or interfaces, and even the greater educational institution.

**Course structure.** Within transactional distance theory, course structure or course organization refers to content delivery, management of interactions, and the flexibility or rigidity
of responsiveness to student needs (Boelens et al, 2018; Huang et al, 2016, Jaggars & Xu, 2016; Saba & Shearer, 1994). Course structure can include components such as content, communication tools, learning environment (whether physical or digital), lesson design, and activities (Moore, 2019); all contribute to the perceived ease or struggle of teacher and learner interactions with one another. Course structure heavily relies on instructional design and provides an opportunity for course designers and/or instructors to combine strategies, tools, and content in a way that enhances the experience of students and meets their differentiated needs (Boelens et al, 2018; Huang et al, 2016, Jaggars & Xu, 2016; Saba & Shearer, 1994). Boelens et al. (2018) conducted research at two adult learning centers with twenty instructors and their students. The study found that fifty percent of instructors found it necessary to fully transform their instruction to tailor blended learning to fit the characteristics and diversified needs of the students. In a case study exploring five types of scaffolding techniques (conceptual, metacognitive, procedural, strategic, and motivational) in online higher education, Richardson et al., (2021) state that the goal of scaffolding is to provide the right amount of support for each individual learner in a learning environment. A good fit for a learner might be one where certain pedagogical and foundational components are present while leaving room for differentiation to meet the needs of the individual learner through choice or scaffolding. For example, all students may be working towards a particular learning objective, such as foreign language pronunciation; a student with less familiarity with the French alphabet may require scaffolded support such as a verbal demonstration of individual letters and accents along with a guide depicting visual cues. A student who is already familiar with the French alphabet may also work on language
pronunciation but works on full words or short phrases focusing on pitch and pacing as they read.

**Dialogue.** Dialogue is an active exchange of communication between two or more individuals. Dialogue supports learning through active listening, providing responses, and building upon ideas with other members of your learning community (Moore 2019). Burbules (1993) and Shearer (2009) found that dialogue is used to guide discovery and new understanding, to build knowledge and insight for participants. Whether the dialogue is enacted towards understanding or conversation, it reduces psychological separation (Shearer, 2009). Researchers have found that increased dialogue decreases feelings of transactional distance (Saba & Shearer, 1994), increased communication correlates to increased feelings of connectedness between participants in a learning environment (Shearer, 2009), and that increased feelings of connectedness relate higher reports of satisfaction and motivation (Shearer & Park, 2019). Environments with higher degrees of interactive dialogue theoretically decrease the perception of transactional distance between participants. Conversely, environments with lower degrees of dialogic interaction would theoretically increase the perception of transactional distance between participants. Whether increased or decreased, the perception a learner has about the distance they feel between themselves, their instructor, peers, content, and learning environment, can influence their satisfaction with the course, academic success in the course, and ultimately their persistence (Paul et al., 2015; Tinto, 1997; Zhang, 2003).

**Autonomy.** Per Moore (2019), autonomy refers to the ability for a learner to manage components of their own learning in conjunction with an instructor’s ability to understand or be
aware of the level or ability of the learner. Building upon the works of Alan Tough (1971) and Carl Rogers (1969), Moore married the ideas that “managing transactional distance requires knowledge about the ability of each student to manage his or her engagement…” (Moore, 2019, p. 36). In a study of higher education students, Vasiloudis et al. (2015) found that over the course of their research project there was no significant change in student autonomy levels most likely because the participants were adults with steady levels of autonomous function. This study showed that many adult learners come into higher education courses with autonomous skills; however, it is important to understand that learners are individuals, levels of autonomous function and needs for support vary per learner and across content and learning objectives (Richardson et al.; 2021). Instructors must be constantly aware of student needs; taking inventory prior to a course or assessing throughout can help to inform the instructor of how to provide the best individualized support. Determining appropriate levels of autonomy are essential to success within any learning environment and supports differentiation and scaffolding strategies when seeking to meet individualized student needs (Shearer and Park, 2019).

Transactional distance and autonomy are not relative; students can experience transactional distance despite their operational level of autonomy (Moore, 2019). Huang et al. (2016) found that high amounts of course structure and dialogue could support learners and lower the perception of transactional distance especially when lower levels of autonomy were present. The researchers suggest that knowing students’ level of autonomy could better help instructional designers to develop courses that meet student needs. Levels of autonomy can vary within a course and between course components. For example, because transactional distance is
a variable and not fixed, it can be decreased by providing students with automaticity opportunities at levels that support individual needs; these needs can be met through an interplay of course structure, dialogue, and autonomy (Moore, 2019). Perhaps a student can handle more choice in assignments or choose the type of assessment they will complete. Meeting the needs of a highly autonomous student by providing an environment where they can demonstrate those abilities can lower the perception of transactional distance or disconnectedness students sometimes feel with instructors, peers, or even the content they are interacting with (Moore, 2019; Shearer and Park, 2019). Conversely, students experiencing high levels of autonomy when they are not prepared to handle such decisions, can increase perceptions of transactional distance, disconnectedness, or feelings of being overwhelmed. The relationship of autonomy and feelings of transactional distance for adult learners can relate to Vygotsky’s zone of proximal development (ZPD) and scaffolding based on the learner’s needs (Zhang, 2003). The zone of proximal development represents the range in a learner’s ability to solve problems from independently to solving problems with the assistance of an adult or more capable peers (Vygotsky, 1978); a learner’s needs can be met, and levels of frustration can be minimized through differentiation specific to that learner’s unique ZPD and schema. Similarly, for example, by working with students to determine and operate within optimal levels of autonomy as determined by the instance or activity, levels of experienced transactional distance can be decreased.

**Interactions.** Moore initially identified three relationships of interaction which take place in the distance learning environment: learner-instructor (learners interact or engage with the
instructor), learner-content (students interact or engage with subject matter), and learner-learner interactions (students interact or engage with each other) (1989). The theory relies heavily on interactions to define levels of transactional distance and looks to the main tenets (course structure, dialogue, and autonomy) as a framework for observing the interactions.

**Learner-Instructor Interactions.** Learner-instructor interactions can be described as exchanges of interaction which take place between instructors and learners individually (one-to-one) or in group settings. These exchanges may include but are not limited to conferences (in-person, video), feedback cycles, instruction, digital communications (emails, messages, etc.), demonstrations, discussion boards. Similar to the Community of Inquiry model and especially in online learning environments, student-teacher interactions help to build social presence or the ability to project oneself socially and emotionally as a real person for the purpose of building knowledge (Garrison, 2009; Cleveland-Innes et al., 2019). Learner-instructor interactions can create opportunities for participants to build relationships with one another while also adding social and dialogue elements Xiao, 2017. According to Moore (1989), instructors can learn information about learners to help meet their needs, stimulate interest, address misunderstandings, provide additional resources, encourage self-motivation and self-direction, and curate application and practice of the content in real-time; these are elements of course structure and design. Learners have the opportunity to more aptly communicate their needs and gain understandings on how to navigate the learning environment. Jaggars and Xu (2016) found that frequent and effective interactions between the student and instructor helped to build online learning environments which encouraged student persistence in the course.
**Learner-Learner Interactions.** Learner-learner interactions involve communicative exchanges with other learners in their learning environment; it allows for the building and application of knowledge in a community setting. These exchanges can occur one-to-one or in groups, with or without the instructor present. (Moore, 1989). Moore (1989) elaborated that group interactions in distance education settings may allow increased opportunities for individual participation as well as learning vital skills for group and social interaction (including dialogue) which translate to both educational and business settings. Early distance education, such as correspondence courses, video, and television courses were limited in learner-learner interactions; however, the development of communications technologies, including social media tools and platforms, has increased opportunities for these types of interactions to be designed into the structure of the present-day distance course (Moore, 1989; Xiao, 2017). Vasiloudis et al. (2015) found that over the course of their research on transactional distance and interactions, through student-student interactions, sensitivity toward other students increased; they also found that participants reported decreased feelings of transactional distance.

**Learner-Content Interactions.** Learner-content interactions involve “the process of intellectually interacting with content that results in changes in the learner’s understanding, the learner’s perspective, or the cognitive structures of the learner’s mind” (Moore, paragraph 3, 1989). The interaction can be internal and reflective in nature (Shearer & Park, 2019). In an asynchronous or distance course, learners typically engage in content interactions by the guidance and design of an instructor. Learner-content interactions can include reading, writing about, viewing, or discussing content; it could involve, but is not limited to analyzing, applying
ideas, synthesizing, or summarizing content. According to Moore, it is likely that learners may not know enough about content to determine if they are applying it correctly or extensively enough. Learners may not be able to determine if they are interacting with the course content in a way that is going to meet their educational objectives (Xiao, 2017); this is where the expertise and guidance of the instructor is key (1989). Learners can experience levels of transactional distance based on their interactions with the content. Self-guidance, self-motivation, and self-assessment are all highly autonomous skills – elements that are typically facilitated by an instructor or content expert and preferably based on student need (Moore, 1989). A highly autonomous student may be able to navigate their own content interactions better than a less autonomous student; however, levels of autonomy can change depending on the content, learning situation, and/or requirements. The level of support and structure provided for learner-content interactions can influence a learner’s experience or satisfaction within a course (Xiao, 2017); satisfaction and whether a student’s needs and learning objectives have been met within a course can affect levels of transactional distance.

**Learner -Interface and Learner-Institution Interactions.** Further research has proposed that additional types of interactions exist. “There are several forms of interaction – some verbal and some nonverbal… all of these forms of interaction come into play during a distance education course” (Park and Shearer, p. 267, 2019). Students interact with LMS interfaces to access content, courses, and/or communication with others, and students interact with the greater learning organization or institution such as with the school or university faculty, staff, and community outside of learning are examples of additional interactions that have been cited by
researchers (Hillman et. Al, 1994; Shearer & Park, 2019; Xiao, 2017; Zhang, 2003). Shearer and Park (2019) have written how these interactions have contributed to methods such as the Community of Inquiry (CoI) and the cognitive, social, and teaching presences it outlines as integral elements in support of building effective online and blended learning experiences.

Further Developments: Tools, Persistence, Student Satisfaction, and Retention

To further the work done by Chen (1998) and Bischoff (1993) to verify and measure perceptions of transactional distance, Zhang (2003) used interactions to gather data and draw connections to student satisfaction and persistence. Zhang noted in her background research that Tinto’s (1993) work and model on retention in higher education communities centered around social interconnectivity and can help researchers better understand transactional distance and the importance of interactions, especially student-student interactions. However, Tinto’s work is focused more on traditional in-person education, leaving opportunities to expand the research to online learning environments. Questions on Zhang’s tool directly pertaining to the intent to persist were removed from her research questionnaire for fear of the lengthiness of the assessment during the execution of the research with the participants. She notes in her limitations section the opportunity for continued research to capture more information concerning links between perceptions of transactional distance, the intent to persist, and retention. Zhang also notes the rapid development and advancement of technology tools used in online or web-based spaces and suggests that the research be repeated often to capture new information and expand upon and revise research concerning transactional distance theory. In 2015, Zhang’s tool was scaled down, by a team including the researcher, further removing some categories to shorten,
update, and modernize the tool to accommodate the changing landscape of distance learning spaces (Paul et al., 2015). Additional transactional distance research tools have been created to study online interactions between the student and interface as well as the student and learning institution (Huang et al., 2015; Stuart et al., 2014; Swart et al., 2014; Wengrowicz et al., 2014). Weidlich and Bastiaens (2018) created a tool to measure transactional distance specifically as a factor for determining student satisfaction in online courses as related to delivery and communication tools and how they impact interactions.

The theory has been further examined, explained, and lauded as a framework by distance education researchers (Gokool-Ramdoo, 2008; Giossos 2009; Stein, 2005). It has been applied by educational researchers for the purpose of providing a framework and foundation to further the study of online teaching and learning (Gokool-Ramdoo, 2009; Jimenez, 2016; Xiaoxia, 2015). The theory has also been criticized for the nature of its circular arguments and initially ill-defined tenets by Gorsky and Caspi (2005). The researchers have suggested a need for additional explanation of the key theory components and further research to test the theory and add to its empirical data.

The state of the literature and research

A long-standing debate exists comparing online learning to face-to-face learning (Keengwe & Kidd, 2010; Moore, 1973; Patrick et al, 2009; Jaggars & Bailey, 2010; ) however, researchers argue for the need to move past the comparison of these two teaching and learning styles and towards a recognition of the styles as related but separate in their own pedagogical and research rights (Barbour, 2019; Giossos et al, 2009; Limperos et al., 2015; Paul et al, 2015;
Wedemeyer, 2010; Xiao, 2017; Zhang, 2003). Studies have shown that the outcomes of the two styles on student achievement are mixed; these arguments include but are not limited to which type of learning environment yields higher test scores, persistence, ratings of student satisfaction, opportunities for interactions, and so forth (Cavanaugh, 2013; Hart et al., 2019; Stallings et al, 2016; Vaiana, 2017). Effectiveness may have more to do with teacher preparation and the learning outcomes than simply the medium (online versus face-to-face) through which the learning takes place (Barbour, 2019); however, consensus stands that ongoing research specifically concerning distance education is needed. Researchers would rather focus on the facets and characteristics of online learning as its own entity, with its own potential for effectiveness (Giossos et al, 2009; Limperos et al., 2015).

Benefits of online learning

Online courses have been praised for benefits such as increased and flexible scheduling (Jaggars, 2019), increased access to a wider demographic (Luyt, 2013), and decreased costs (Limperos et al., 2015). It has been proposed that students in online learning environments have more opportunities to build social presence and community with peers and instructors (Moore, 1989; Shearer & Park, 2019). Twenty-first century learning management systems (LMS), through intentional instructional design, have been constructed and are continually upgraded to provide platforms that can house differentiated, diversified, and user-friendly lesson components such as videos, discussion boards, interactive tools, images, internet links, communication tools, and spaces to author original content. Online course offerings have not only increased access to students across geographical locations, but also access to an increased pool of instructors.
(Jaggars, 2019). As noted earlier in this paper, distance education and how it relates to interactions is a field of study that is constantly and rapidly growing as education continues to move and develop in modern-day digital spaces and environments. Some of the benefits include increased and easier management of learner-learner interactions; increased opportunities for learner-instructor interactions; increased individualized and differentiated participation and feedback. Instructors have the ability to influence course structure, dialogue, autonomy, interactions, and transactional distance through tools and spaces which are unique to distance and digital spaces.

Challenges of online learning and Limitations of Current Research

Though often compared with traditional learning, researchers argue that online learning has its own pedagogy and challenges (Barbour 2019) not excluding the aspect of transactional distance theory within that argument (Gokool-Ramdoo 2008). Student success in the online learning environment, such as course completion and grasping of content, is debated when compared to traditional in-person course offerings (Anderson, 2003; Barbour, 2019; Xiao, 2017). Researchers have noted that adult learners have cited, or the researchers observed the following reasons for dropping online courses: feelings of isolation, disconnectedness, and/or technological problems (Willging & Johnson, 2009); levels of educational self-efficacy, teaching presence, and ease of use of the LMS system (Jung & Lee, 2018); required levels of self-regulated learning, and autonomy demands (Jansen et al.; 2019) including as self-motivation and self-assessment (Moore, 1989). Translating components of the learning environment from traditional spaces to online or digital spaces can present unique challenges. Interactions between the learner,
instructors, content, LMS interface system, institutional support staff, and self-management systems require intentional design, without which can negatively affect a student’s learning experience, perceptions of transactional distance, satisfaction, persistence. (Moore, 2019; Paul et al., 2015; Shearer & Park, 2019; Tinto, 1999; Zhang, 2003). Some research published on distance education has been criticized for its limitations or methodological oversights that have resulted in gaps in the literature (Barbour, 2019). Michael Barbour discusses some of this research in Moore’s Handbook of Distance Education (2019). Some of these criticisms include that some studies represent a lack of triangulation with little student perspective recorded, lack of validated instruments, lack of theoretical or conceptual frameworks, use of self-reported practices, or dated findings. He continues that the field and use of online learning has grown so rapidly, that much of the literature produced is based on self-reporting and perception-based studies versus data-based research.

While levels of perceived distance or disconnection can be present in any learning situation, the flexible and digital nature of online courses has the potential to create levels of transactional distance that may not be conducive for the ideal learning environment. For example, one study on “help-seeking” found that some students did not have the proper skills in place or had other barriers when needing to ask for help. These students may have tried other alternatives to help-seeking such as searching the internet, trying to work through the content again, or giving up as an alternative to physically or electronically asking their teacher for help. The study concluded that help-seeking in an online course is a skill that must be taught to students (Darling-Aduana, 2019; Joyer, 2017). Another study suggested after conducting a
research project between two groups of students taking the same course where one group participated in only live instruction and the other group participated in only internet media instruction, that of the students who received only internet media instruction Hispanic, males, lower-achieving, language-minorities, and students who may have trouble pacing themselves through the instruction (autonomy) did not perform as well. While the researchers note the need for additional research and cite limitations, the data suggests discussions around course structure, dialogue, and autonomy in support of these student populations (Figlio et al.; 2013).

Technological issues can affect digital learning spaces (Willging & Johnson, 2009). The year 2020 brought the COVID-19 global pandemic, which was instrumental in bringing to light some disparages of learning online. Due to health restrictions, many higher education institutions implemented emergency efforts to move courses online (Kimble-Hill et al., 2020) to abide by health and safety guidelines set by local, state, and federal governments (Orville, 2020; Yan, 2020). 2020 quickly revealed how ill-prepared many learning institutions were to provide these services, while at the same time exposing inequities for specific student demographic groups (Kimble-Hill et al., 2020). Many students were faced with technology access issues, including unreliable or unaffordable Wi-Fi connections and bandwidth, and ineffective hardware such as working laptops, tablets, webcams, and so forth (Kimble-Hill et al., 2020). Institutions and the public quickly became aware that many instructors had not received training specific to the development of courses in the online environment (Elsaheli-Elhage., 2020; Kebritchi et al., 2017). Likewise, many students lacked the skills to operate and maneuver effectively in online learning spaces (Kimble-Hill et al., 2020). Awareness of differentiated student needs and
designing courses to help students to meet those needs in digital environments, allows educators to provide a more equitable learning experience for all student groups.

**Considering Black Males in Online Courses**

Researchers have disaggregated the study of learning in online environments to explore how different groups of students achieve, perform, struggle, and experience this type of learning (Paul et al., 2015; Salvo et al., 2019; Stewart et al., 2010; Xu & Jaggars, 2013). One study found that of a group of students experiencing a change from in-person to online learning, those who experienced the greatest academic decreases included males, younger students, Black students, and students with low grade point averages (Xu and Jaggers, 2013; Xu and Jaggers, 2014). A study completed specifically with Black males taking online higher education courses found that many students struggled in the online learning environment, with a lack of professor interaction, lack of communication and immediacy, lack of specific feedback, and a desire for more teacher-directed instruction versus an imbalance of asynchronicity (Salvo et al., 2019). Learners have differentiated needs; failing to address or meet those needs can result in increased perceptions of transactional distance and decreased levels of persistence, motivation, and course completion. Instructors and learning institutions have opportunities to design distance and asynchronous courses which meet the needs of Black males by paying close attention to course structure, dialogue, autonomy, and interactions through intentional and informed course design. The study by Salvo et al. additionally notes that students reported that a more holistic approach to support their online experience such as financial assistance, attention to prior academic achievement, previous technology training, use of personal hand-held devices, and support with continuous
academic enrollment all served as positive factors toward online course completion. The research suggests that Black males are more likely to have encountered a number of factors based on financial, educational, and other inequities which could negatively affect their experience and completion of courses in online learning environments because they may fall into more than one group of students reported as struggling in educational environments generally and online environments specifically. A systematic literature review by Koppie (2017), aimed at identifying causes for low graduation rates of Black males in high school cites classroom climate, mentorship, and culturally responsive teaching, among other themes, as factors that can contribute to disengagement or dropping courses (or school overall); high school is a gateway to college; therefore, understanding issues that the population could be experiencing prior to college enrollment attempts could be both informative and beneficial. The literature suggests that additional research can help to deepen our understanding about factors affecting the persistence and retention of Black males and other affected populations so that educators and institutions can address them when designing instruction and support. This aim of this research is to engage Black males taking online asynchronous math courses to collect their experiential feedback on perceptions of transactional distance through specific questions pertaining to course structure, dialogue, autonomy, and interactions within their course.

**Equity and Education**

Educational equity ensures that all learners will receive educational resources and support based on their individual needs. When educational equity is in place, it enables learners to succeed regardless of the challenges or barriers they face (Barth, 2016). The Government
Alliance on Race and Equity (GARE) explain that inequity exists between race, income, and wealth in the United States; inequity affects education, job opportunities, incarceration, and housing (Nelson et al.; 2015). “Until the 1960’s, inequality was planned and intentional, engineered and reinforced through racially discriminatory policies” (Bensimon et al.; pg. 98, 2108). The GARE Resource guide cites that in 2010, African Americans comprised 13% of the U.S. population but only 2.7% of the country’s wealth; in the same year the median net worth for families was reported as the following: White families $134,000; Hispanic families $14,000; and African American families $11,000. The Organisation for Economic Co-Operation and Development (OECD) reports that in the U.S., poor students are four times more likely to fail math than their wealthiest counterparts (2008). African Americans are far less likely to be ready for college, and those experiencing high poverty are typically the least prepared (ACT, 2013). In a report by Carnevale, Smith, and Strohl (2013) for the Center on Education and the Workforce, data trends suggested a change in the job market estimating that by the year 2020, two-thirds of jobs would require college experience with 30% requiring a bachelor’s degree and 36% requiring an associate degree or some college. Individuals without degrees or some college education are typically referred to low-wage work or trade schools after high school (Bryant, 2015); this can be a deterrent to enrollment into 4-year college degree programs. Another potential deterrent to enrollment and completion of 4-year college degrees is referred to as the “school-to-prison pipeline” or STPP. The school-to-prison pipeline refers to the relationship between school disciplinary policies, typically K-12, and mass incarceration in the U.S. (King et al.; 2018). STPP disproportionately affects students of color who are punished at higher rates than their white
counterparts. The U.S. Department of Justice and the U.S. Department of Education recognized the need to address this issue by creating a special initiative in 2014. According to King et al., STPP can influence high school dropout rates and college enrollment. College enrollment is not attainable without a high school diploma or general education degree (GED). STPP can also result in adult criminal records which can cause, for example, adult felons to be rejected for public assistance, government subsidized housing, consideration for employment, or result in poverty.

Researchers have explored the possibility that poorly constructed online learning environments and courses can negatively affect student equity and potentially harm the advancement of historically marginalized populations and educationally under-prepared students. Based on a meta-analysis sponsored by the U.S. Department of Education, Jaggars and Bailey (2010) wrote that online courses may undercut low-income and academically underprepared students taking fully online, semester-long college courses due to issues surrounding access and previous academic success. In a comparison of 500,000 courses, comparing online and face-to-face academic performance at 40,000 community and technical colleges, Xu and Jaggars (2013) found that while all types of students experienced decrements in performance in online courses, males, younger students, Black students, and students with lower grade point averages (GPA’s) struggled more than their counterparts. Normalizing discussions about race are necessary to advance racial equity (Nelson et al., 2015). Historically, structures of inequity and inequality have plagued communities of color in the United States (CDC “Tuskegee Study,” 2021),
especially among Black males; the effects of these challenges extend into the educational sphere (Pruitt et al., 2019).

Helping Black Males Graduate

Black males are enrolling in institutions of higher education (Richardson et al, 2019), but attrition rates are having a great affect specifically on Black males and thus decreasing attainment of 4-year degrees on their communities overall (Salvo, Shelton, and Welch, 2019). In their 2019 study, Salvo et al. explored factors that promoted online course completion for Black male undergraduates. Participants reported the following as positive factors that encouraged course completion: financial assistance, prior academic achievement, previous information technology training, continuous academic enrollment, how prior knowledge of topics influenced perceptions difficulty or demand, use of handheld devices, and non-prejudicial learning environments. Alternatively, the study cites the following challenges to course completion: lack of learner-instructor interaction, lack of immediate feedback, insufficient examples, lack of notifications, lack of teacher-directed instruction, and lack of teacher-mediated assessments.

Richardson, Jones-Fosu, and Lewis (2019) share in their report titled “Black Men are Present: Examining Enrollment Patterns in Education Degree Programs” that a false narrative is sometimes adopted due to the low graduation rates of Black males. The narrative is that they are not enrolling in colleges and universities in the first place; this is not true. According to their research Black males are enrolling into online degree programs, followed by predominantly white institutions, followed by historically black institutions. The researchers suggest further study to determine the reasons that Black males are enrolling in online degree programs, how
recruiters are attracting them, and what are the specialized needs of this group of learners (2019). The goal of this research is to shed light on the attrition of Black males through the investigation of satisfaction in online courses using the constructs and sub-constructs of Transactional Distance Theory. Four ideas inform this line of thinking: satisfaction correlates to persistence; equity promotes satisfaction; learning communities promote satisfaction; and finally continuous improvement in online course design promotes satisfaction. These four ideas relating satisfaction to persistence can help to inform efforts of retention.

Satisfaction correlates to persistence.

Zhang’s work on a tool for measuring transactional distance (2003) highlighted that the theory’s constructs and sub-constructs inform student satisfaction; she made connections between her tool and the work of other educational theorists, in this argument, Tinto (1997). Tinto shared that the development of learning communities, both academic and social, feed student satisfaction and persistence. Further support for these connections is noted by Swart, McLeod, Paul, Zhang, and Gagulic (2013) in “Relative Proximity Theory: Measuring the Gap Between Actual and Ideal Online Course Delivery.” The researchers define relative proximity as the gap between actual and ideal transactional distance and correlate their measurement tool to Zhang’s (2003) to support the use of transactional distance theory as a framework for gathering and collecting information on student satisfaction. Likewise, Paul et al., (2015) assert that the sub-constructs of Transactional Distance Theory, when used to collect feedback, are significant and unique predictors of student engagement, learning, and satisfaction. The researchers suggest that any tools measuring transactional distance must be continually updated through repeated and
updated research as the effects of transactional distance on engagement and persistence will always change with time based on the social, economic, and technological advances affecting different groups over time and cyclical basis; these ideas also apply to the feedback cycle and constant updating of online courses through instructional design (Paul et al, 2015; Swart et al, 2014). Continuous improvement in online course design promotes satisfaction; if we are to increase retention of Black males, course satisfaction, based on their implicit feedback about transactional distance and the constructs of its theory should be considered.

Equity promotes satisfaction.

In a study exploring adaptability to online learning and differences across types of students and academic subject areas, Xu and Jaggars (2013) found that differences in online learning experiences can occur across types of students and content areas. The study was comprised of a statewide dataset including both online and face-to-face community college courses in the dataset. Overall, students taking online courses experienced difficulties persisting and with course grades than students taking face-to-face courses; males, Black students, and students with lower levels of academic preparation struggled the most compared to their counterparts (Xu and Jaggars, 2013). The researchers suggest the continuation of research with an expansion into 4-year colleges to increase empirical evidence on these topics. Understanding how different groups of students experience online learning, meeting the needs of those students, collecting feedback, and building programs that support those student needs can inform perceptions of transactional distance, provide feedback on course structure and autonomy, and lead to increased student satisfaction. Supportive, equitable learning communities not only
benefit students within online learning environments, but also in social environments; this may include the development or enhancement of educational policies that support equity, access, and financial support (Bryant, 2015; Salvo et al., 2019).

Learning communities promote satisfaction.

In a study conducted to identify factors that support graduation rates for Black males, Koppie (2017) found that learning communities that include opportunities to create personalized relationships such as mentorship (Koppie, 2017) can enhance student satisfaction through support. Koppie suggests studying institutions and programs reporting high success rates from interventions designed to support Black males with persistence, retention, and graduation. Supportive learning communities can be designed and constructed in online spaces, including learner relationships with their organization or institutions, through course design, dialogue, autonomy, and interactions. Darling-Aduana, Good, and Heinrich (2019) suggest further research on how learner-instructor relationships transfer into online spaces; additionally, Salvo found that students reported that a lack of assumptions about racial identity, culture, socio-economic status, and spaces that include cultural neutrality were included in feedback as a part of students’ reported satisfaction factors (Salvo, 2019).

Satisfaction correlates to persistence; any feedback or data we can collect on student satisfaction can inform retention efforts, including course design, to counter high attrition rates for Black males.
Conclusion: The Ties That Bind

Empirical literature presents a compelling groundwork for research that has been conducted to continuously build upon our understandings of learning in web-based and online environments. A call to further the development of the transactional distance theory, especially as a pedagogical framework for 21st century distance education stands evident. Literature supports the need to continue the exploration of social interactions in online learning communities and how they affect historically marginalized groups, including but not limited to males, minorities of color, the educationally under-prepared, and low-income students with an intent to further efforts to understand and improve satisfaction, persistence, and retention of these students in higher education settings.
CHAPTER THREE: METHODOLOGY

Introduction

The purpose of this qualitative inquiry was to analyze how the perception of transactional distance influenced the educational experience and persistence of college-level Black males who participated in online asynchronous math courses.

The Investigation Plan

The following section outlines the plan and protocols for this inquiry including a methodology overview, data collection procedures, protocols, reference documentation, and a timeline.

Positionality

As a middle-aged Black female with advanced education, experience living in both lower and lower-middle classes households, more than twenty-five years in the field of education, and a propensity toward philanthropic service, I felt a need to help the educational community in its efforts to support learners who come from a background similar to mine. Both historical and current events intensified the spotlight on the need for continued research toward the support and retention of Black males in higher education, especially in online environments. The opportunity presented itself to collect and share participant experiences with invested stakeholder groups through the dissemination of this research for the sake of providing a greater scope of
understanding to the leaders who are developing programs and initiatives aimed toward improving and supporting educational opportunities for young Black men.

As researchers, relativism allows us to take a constructivist approach where the researcher can collect various participant perspectives and analyze their meanings to illuminate the topic at hand (Yin, 2018). Collecting experiences requires the assumption that “…the perspective of others is meaningful and knowable and can be made explicit” (Patton, 2015, p. 426). Qualitative interviewing can provide space where researchers can move beyond observation to interact with participants more directly while recording their stories. This study utilized semi-structured qualitative interviewing as a methodological framework.

Research Method

The qualitative interview method was selected for its pragmatic or practical benefits and was highly useful in collecting the innermost perspective of young Black male college students about their online learning experiences. The purpose of qualitative research is to gain insights that the researcher may not be able to observe directly (Patton, 2015). Qualitative interviewing can also suggest explanations for events and the relative perspective of participants (Yin, 2018).

Semi-structured interviews allow the researcher to craft a set of questions, directly related to the research, that can be used between participants, or in the case of multiple researchers, amongst all researchers and still allow comparisons to be made in the data. While this set of prepared questions provides structure, the researcher has the flexibility to allow participants to elaborate on responses. To gather more information about a particular response, the researcher can follow-up with open-ended prompts. Semi-structured interview questions tend to be focused
and specific versus broad (Savin-Baden & Howell Major, 2013).

**Strengths.** Qualitative interviewing allows the researcher to more fully understand feelings, thoughts, intentions, behaviors, and situations that may have taken place previous to the research; it helps to uncover how people organize their world and meanings. Interviewing can allow people to express how they interpret the world and the meanings of things in their own mind; it allows the researcher to gain the shared perspective of the participant which may not be observable (Patton, 2015). In-person interviews allow the researcher to craft a protocol which helps participants, especially students, to express their thoughts more openly and fully versus the responses that may be gathered from an open- and closed-response survey questionnaire.

The preset questions of the semi-structured interview will increase the comparability of responses between participants. Reliability is increased with standardized questions by allowing research procedures to be repeated with more potential to yield the same results (Yin, 2018). Standardization minimizes the variation in questions asked per participant. See Appendix C5 for the semi-structured interview questions and protocol accompanying this study.

**Weaknesses.** Interviewing is a method used frequently today. Without explicit methodological steps, it can be perceived as a weakness to the credibility of the data collection process (Patton, 2015). It is possible for researchers to input their own implicit biases into the research and analysis phases through questioning techniques and by leading the participant to conclusions that they may not have arrived at themselves (Savin-Baden & Howell Major, 2013; Yin, 2018). Qualitative interviews and surveys can sometimes be viewed as less credible than
quantitative data collection methods because they can be dependent on the honesty, recall, or articulation of the participant (Savin-Baden and Howell Major, 2013; Yin, 2018).

To increase credibility, these issues were addressed in this study first, by explicitly citing research-based methodology for qualitative interviewing, second, by designing and outlining a research plan and protocol, and third, by including accountability partners and triangulation methods such as member-checking and the use of critical colleagues (Gall, Gall, and Borg, 2015). Further description of these accountability measures can be found in the section titled “Interview and Data Collection Methods.” Finally, the interview template included a section for participants to offer any additional information they feel would be helpful to the study.

**Research Design**

Qualitative inquiry often focuses on interpreting an individual’s expressed experiences; this type of research is quite commonly documented and shared through thick descriptions based on data collected by interacting with participants. In this case, the researcher becomes an active participant in the research by conducting live interviews (Savin-Baden & Howell Major, 2013). Qualitative inquiry was used to collect the expressed experiences of Black undergraduate males participating in web-based asynchronous mathematics courses. The goal was to analyze these shared experiences for perceptions of transactional distance and to consider the implications on degree completion as it relates to persistence. The following research questions were addressed in this case study:

1. Research Question 1: How do Black males perceive transactional distance in college-level online asynchronous math courses?
2. Sub-question 1a: What impact do Black males perceive course structure has on course satisfaction in college-level online asynchronous math courses?

3. Sub-question 1b: What impact do Black males perceive dialogue has on course satisfaction in college-level online asynchronous math courses?

4. Sub-question 1c: What impact do Black males perceive autonomy has on course satisfaction in college-level online asynchronous math courses?

Participants

Population and Sampling

According to the Office of Institutional Research at the University of Memphis, 22,205 students enrolled during the Fall 2020 semester. 8,660 or 39% of the enrollment self-identified as male (University of Memphis, 2020; Office of Institutional Research). Of the undergraduate male population, 3,142 or 51.35% self-identified as White or Caucasian and 1,832 or 29.94% self-identified as Black or African American (University of Memphis, 2020; Office of Institutional Research).

The sample group consisted of participants from a mathematics course offered asynchronously in a web format during the Spring 2022 semester. Math 1420 WEB was selected to target incoming undergraduates participating in entry level, asynchronous, 16-week mathematics course. The registrar’s office was contacted; a class roster containing the names and email addresses of self-identified Black males from Math 1420 WEB was requested. A research invitation was extended to all students. A $25 Amazon e-gift card was offered in the invitation to
each participant who completed a 60-minute interview. The desired number of respondents was seven to ten participants.
Table 1

Course Selection

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Name</th>
<th>Course Number</th>
<th>CRN</th>
<th>SEC</th>
<th>Location</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Term</td>
<td>Foundations of Math</td>
<td>MATH 1420</td>
<td>25354</td>
<td>M5</td>
<td>WEB</td>
<td>84</td>
</tr>
</tbody>
</table>

Setting

Census data from 2019 showed that while 77.2% of Tennesseans self-identified as White or Caucasian and 16.7% of Tennesseans self-identified as Black or African American, on a local level, this percentage for Shelby County residents who self-identified as White or Caucasian dropped to 39.1% and increased for residents who identified as Black or African American to 53.7%. In Tennessee, it was reported that 28.7% of state residents earned a bachelor’s degree or higher while 31.6% reported earning a bachelor’s degree or higher in Shelby County.

The University of Memphis is a large institution located in the southern region of the United States. The university can be found in the urban metropolis of Memphis, Tennessee where the greater surrounding area of Shelby County comprises 936,374 residents (U.S. Census, 2019). The course selected for this study, MATH 1420 Foundations of Mathematics, was a 1000 level mathematics course; this course typically enrolled undergraduate freshmen and sophomores. Nine sections of the course were offered during the Spring 2022 semester either face-to-face or asynchronously and either part-of-term for 8 weeks or full-term for 16 weeks. Two sections were offered asynchronously; the section selected for this study included an
enrollment of 84 students at the time of this research and was selected to ensure greater chances of participant participation (see Table 1). Research data has suggested that Black male high school students underperform their peers in math courses (ACT College Career Readiness African Americans, 2013; Tennessee State Report Card, 2019); as high school students transition into college courses, it could be helpful to look at the performance of this population in college level math courses and especially those taught online to determine if the courses are meeting the needs of these students. Xu and Jaggers (2014) suggest that educational gaps that are present in the face-to-face environment can be exacerbated in the online environment, thus worsening educational inequalities. Courses taught online, otherwise denoted as asynchronous or WEB on the university’s platform, were selected because studies such as this have illuminated concerns reported from Black males such as inadequate access to technology (Kimble-Hill et al., 2020), limited instructor feedback and one-on-one interaction (Kimble-Hill et al., 2020), the skills to keep up with pacing, motivation, and time management (Kimble-Hill et al., 2020; Jaggers & Bailey, 2010; Scott, 2017), and ample academic, financial, and cultural support in the online environment (Salvo et al., 2019; Scott, 2017). Likewise, instructors and institutions offering courses online have expressed that academic progression could possibly be undercut when students who are academically underprepared, low-income, or a part of otherwise marginalized groups (including but not limited to males and specifically Black males) participate in online education (Jaggers and Bailey, 2010).
Instrumentation & Data Collection Methods

Ethical Considerations

Due to the personal implications that can arise as participants share experiences through interviewing, several measures were put into place to ensure the safety of and fairness toward those participants. This research was meant to do no harm; therefore, participants were provided with a clear statement of the research purpose, asked for informed consent, and assigned confidential pseudonyms to protect their identity. Additionally, as the research population included higher education students, risks such as psychological stress and ostracism were considered. A list of campus support groups and intervention programs were forwarded to students with their member-checking survey at the close of the project (see Appendix D2). The groups and programs listed included both professional and support personnel employed by the university. The groups were designed to support students in academics, socio-economic and cultural challenges, and emotional and mental well-being. Leaders were contacted from each organization to discuss the purpose of the service or group, and students were referred to these professionals either when they requested assistance or by the researcher to simply make them aware of the services available on their campus. Research was and will be stored on a removable drive in a locked safe in the researcher’s home for the span of five years prior to disposal. All sensitive data such as the list of actual student names and pseudonyms were solely accessible to the lead researcher in a locked and password protected spreadsheet. All guidelines of the University of Memphis Institutional Review Board were followed and executed.
Methods

*Semi-structured Interviews*. Semi-structured interviews were utilized to collect data from each participant. The interviews included an interview protocol, guidelines, and an interview guide. The following triangulation methods were utilized to increase credibility of this study: critical colleagues, inter-coding, reflexivity journaling, and member-checking.

*Critical Colleagues and Inter-coding*. Critical colleagues are individuals from the scholarly research community who provide support in the form of checks and balances to a research study (Yin, 2018). Critical colleagues can help the lead researcher reduce bias and strengthen a study’s validity, reliability, and credibility by contributing to reflexivity activities and triangulation procedures (Creswell and Creswell, 2018). In addition to the lead researcher, this study included a research and dissertation advisor, Dr. Craig Shepherd, Ph.D., and two inter-coders to provide code-checking support. Dr. R. Dale Hale, Ph.D. is the Director of the Center for Digital Instruction (CDI) and the Dean of the Global College at Christian Brothers University where he leads a team of instructional designers who develop training and support in online higher education learning for faculty, staff, and students. Dr. Lurene Kelley, Ph.D., is the Director of Academic Operations and Student Engagement and serves both on the CDI team and in the Global College; Dr. Kelley is trained to identify and analyze student needs in the online learning environment and provide support, advisement, or connect them with campus resources. The inter-coders agreed to review and provide feedback on the interview questions for researcher bias. Each agreed to participate in a coding activity using the coding guide developed by the lead researcher and to provided sample results that were compared to the lead researcher’s findings to
discuss similarities and differences to help strengthen the study (Gall, Gall, and Borg, 2015). See intercoder letters in Appendix E3.

**Reflexivity Journal.** Investigator bias can occur when a researcher excludes data from analysis or interprets data based on preconceived beliefs that may not have been present in the data (Howell Major & Savin-Baden, 2010). For this reason, a reflexivity journal was used; the researcher kept detailed notes prior to, during, and post data collection sessions and interviews concerning their personal thoughts and reflections on the processes, interactions, and information collected (Gall, Gall, and Borg, 2015). The journal was then reviewed by the researcher to reflect on personal experiences, check for biases, and serve as a reminder for the researcher not to insert personal experiences into the research (Creswell, 2016; Creswell & Creswell, 2018).

**Member-Checking.** Member-checking was utilized to allow participants to review the researcher’s results prior to dissemination. This allowed participants to confirm, deny, or offer additional clarification of the data collected (Gall, Gall, and Borg, 2015). This process was conducted as a short response survey that was sent out just after the approval of the research analysis and writing of Chapter 4. The results will be added to the end of Chapter 4 Results prior to dissemination (publishing) should participants complete the optional survey. See the member-checking protocol in Appendix C7-C8.

**Instruments**

**Interview Guide.** The interview guide was organized to conduct a semi-structured interview (See Appendix C5). The guide began with protocol reminders, participant information, a short overview of the research project, and the purpose for the interview. Next, questions were
organized into the following five sections: course structure, dialogue, autonomy, transactional
distance, and open response. Similar to Zhang’s tool (Paul, Swart, Zhang, & MacLeod, 2015;
Zhang, 2003;) and other transactional distance research tools (Huang et al., 2015; Stuart et al.,
2014; Swart et al., 2014; Wengrowicz et al., 2014), each question aligned with a type of
interaction: learner-instructor (LI), learner-learner (LL), learner-content (LC), learner-interface
(LLMS), and learner-institution (LINST). The guide outlined next steps for participants,
including the expectation of a focus group survey for member-checking, and finally, closed with
words of appreciation.

*Reflexivity Journal.* The reflexivity journal template included the researcher’s name,
date, entry purpose, and entry space. A note section was included where additional remarks
could be added by the researcher after reviewing the initial entries. (See Appendix C2).

*Interview Transcription Template.* The interview transcription template is a form that
was created to assist the researcher to transcribe recorded participant interviews. The document
included a transcription key, sample transcription, and numbered table. Each row of the table
was numbered and contained either the interviewer’s question or the interviewee’s response. Per
the key, the interviewer’s statements were recorded in italic type; the interviewee’s responses
were recorded in plain type. Time stamps were in bold type. A key was created to help the
researchers quickly identify the speaker, time stamps, and navigate through the document using
the line numbers for reference. A column was added for post transcription coding and notes. (See
Appendix C6). The researcher used transcription software to translate audio recordings into
written documents. The transcribed documents were then copied and pasted into a spreadsheet
for coding. Many of the elements from the transcription template were integrated into the coding spreadsheet; however, the transcription template was not used solely. Audio recordings were password protected and downloaded to a secured removable drive.

**Coding Protocol Guide.** The codes in this guide were used to indicate potential constructs, themes, patterns (Gall, Gall, and Borg, 2015), and interactions related to transactional distance theory as identified in the transcribed interviews. (See Appendix C7). Per Gall, Gall, and Borg (2015) the researcher engaged in constant comparison, or the revisiting of the data to discover meaning and relationships, during the process of interpretational and reflective analysis. The coding protocol for the researcher(s) was as follows:

1. Read the transcribed interview in its entirety.
2. Re-read the transcribed interview; using the specified column, insert initial codes per the guide below organizing into initial topics and categories; include any other relevant notes.
3. Re-read the transcription, initial codes, and notes to analyze for convergence; how do similarities fit together; how do major differences apply to their own category (Patton, 2015)?
4. Re-read the transcription, codes, and notes to analyze for divergence; look for extensions, bridging, and surfacing (Patton, 2015). Can patterns and themes be revealed? Can connections be drawn between patterns and themes? Does the data present new categories?
5. Repeat the process as necessary.
6. Record notes about the coding process in the Reflexivity Journal upon concluding each coding session per transcribed participant interview (lead researcher only). Refine the codes, categories, themes, etc., if necessary, per the fit to the data and per member-checking and intercoder feedback (Patton, 2015).

**Member-Checking Protocol.** These documents included the protocol (Part 1) and feedback form questions (Part 2) were used with participants in a post-interview survey. A QR code and link were provided by email to access a digital feedback form in the form of a Qualtrics survey (See Appendix C8). Participants will read a brief summary followed by an invitation to provide feedback on the researcher’s findings. Feedback was collected digitally.

**Data Collection and Procedures**

The following section includes investigation steps, protocols for live interviewing, a timeline, and a communication plan for participants, stakeholders, and critical colleagues.

**Investigation Steps**

The investigation took place adhering to the following steps and order by the researcher:

1. IRB Approval. Obtained approval from the University of Memphis Institutional Review Board.
2. Data Request. Requested a class roster including name and email address from Registrar’s Office (per population requirements).
3. Participant Invitations. Email participants with a brief introduction of myself, the research project, how they were identified, and an invitation to participate in the research.
study. The invitation included a link to a Qualtrics survey including a form for consent and a link to select an interview appointment.

4. Informed Consent. Reviewed consent documents in Qualtrics for confirmations and denials. Sent a receipt of confirmation for consent and confirmation of appointment selection to consenting participants. Added individuals to the confirmed participant list.

5. Reflexivity Journal. Completed a journal entry about consent approvals, denials, and any email responses to the email invitations. Shared with the Research Advisor.

6. Participant Interviews. Completed individual interviews per the guidelines and protocols outlined.

7. Reflexivity Journal. Completed a journal entry following each interview. Shared with the Research Advisor.

8. Interview Transcription. Transcribed recorded interviews with transcription software.

Interview Scheduling Protocol

Consenting participants were sent a link to a Qualtrics electronic survey containing a consent form to participate in the research project. A page was included with instructions and a link to sign up for an available meeting time using Calendly.com to schedule a video interview or to call for alternative arrangements. Scheduled meetings were returned with a confirmation email containing a WebEx Personal Meeting Room invitation, link, meeting ID, and password. Multiple email reminders were scheduled and sent to participants.
Meeting with Participants

The following protocols were followed by the researcher when meeting with participants in addition to using the Interview Guide:

1. The researcher opened the private online chat room 10-15 minutes early to allow access for the participant and to begin the session on time.
2. The researcher reviewed all consent documents (informed consent and recording consent) with participants and asked if there were any questions or concerns.
3. The researcher set the timer to respect the participant’s time and keep the interviews to one hour or less as advertised.
4. The researcher set the recording device.
5. The researcher was mindful not to lead the participant; and was mindful to avoid researcher bias as much as possible by using the interview guide.
6. The researcher followed the Interview Guide including a welcome, research overview & purpose, questions, and words of appreciation.
7. The researcher asked questions as outlined in the guide.
8. The researcher encouraged elaboration when appropriate.
9. The researcher used follow-up questions for redirection or deeper exploration as needed.
10. The researcher completed a Reflexive Journal entry following each interview.

Timeline

The following graph represents a tentative timeline of the process required to execute this
research inquiry.

**Table 2**

*Timeline*

<table>
<thead>
<tr>
<th>Procedure</th>
<th>JAN 2021</th>
<th>FEB 2021</th>
<th>MAR 2022</th>
<th>APR 2022</th>
<th>MAY 2022</th>
<th>MAR 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRB &amp; Approvals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invitations &amp; Consent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant Interviews</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Analysis &amp; Member Checking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finalizing &amp; Reporting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Analysis

The analysis phase included interview transcription, coding, journaling, collecting, and reviewing feedback, a focus group session, and writing and revisions. These steps were followed to complete this phase:

1. Transcribe. The lead researcher transcribed recorded interviews.

2. Initial Coding. The lead researcher coded transcriptions using the coding guide and protocol. The guide includes a code, name, and description for each type of interaction, instance, or component related to transactional distance theory. Interactions include learner -instructor (LI), learner -learner (LL), learner -content (LC), learner -interface (LLMS), learner -institution (LINST). These instances and components are included: transactional distance (TD), course design (CD), dialogue (D), and autonomy (A). The following protocol steps were followed:
   
   a. Read the transcribed interview in its entirety.
   
   b. Re-read the transcribed interview; using the specified column, insert codes per the guide; include any other relevant notes.
   
   c. Analyzed for convergence and divergence. Determine themes and patterns.
   
   d. Refined codes and categories to fit data as needed; consider data, intercoder and member-checking feedback.
   
   e. Repeated the process as necessary.
f. Recorded notes about the coding process in the Reflexivity Journal upon concluding each coding session per transcribed participant interview (lead researcher only).

3. Critical Colleagues.
   a. Participated in regular scheduled meetings to discuss research progress and coaching with the research advisor.
   b. A codebook was shared with critical colleagues; colleagues completed a coding activity of their own using one of the transcribed participant interviews. The lead researcher and the critical colleagues compared coding notes as a cross-checking protocol. Codes and/or the coding process was revised when needed.

4. Revisions. Made revisions or added research notes per feedback from advisor and critical colleagues.

5. Second Coding/Review. Reviewed the coded transcripts and notes; organized into common ideas.

6. Write Analysis. Answered the research questions; highlighted themes and common ideas that were revealed through the coding process.

7. Critical Colleagues. Provided a draft of the Analysis to the critical colleagues for review and feedback. Repeated as necessary.

8. Revise. Revised the Analysis draft based on feedback from advisor and critical colleagues. Repeated as necessary.

9. Focus Group. Shared a summary of the Analysis/findings with participants to collect
feedback via Qualtrics survey tool as a triangulation method and member-checking exercise.

10. Revise. Revised the Analysis based on feedback from the focus group.

**Stakeholder Communication**

Stakeholders will be informed of the research project and invited to a presentation after the analysis phase is complete. The presentation will be organized via video conference (i.e., WebEx, Zoom, or Teams); calendar invitations and reminder messages will be scheduled.

Targeted University of Memphis and Shelby County Schools groups will include representatives from the following:

1. College Admissions department
2. Cultural Affairs department
3. Hooks Institute African American Male Initiative (HAAMI)
4. Empowered Men of Color (EMOC)
5. Student Support Programs (SSP)
6. Educational Support Programs (ESP)
7. African American Male Academy for 8th Graders
8. African American Completion Academy for Seniors
9. Center for Academic Retention and Enrichment Services (CARES)
10. University of Memphis Social Justice Workgroups
11. University of Memphis Instructional Design and Technology Department
12. Shelby County School Equity Office
Conclusion

In conclusion, this study sought to understand how online coursework could be affected by transactional distance and how these experiences could influence the persistence of Black males working to complete undergraduate degrees. The stories and experiences of these young men were collected via qualitative interviewing. The data was analyzed through the process of interpretational and reflective analysis to draw connections and extract meaning. The data was then crafted into narrative and shared with stakeholder groups to inform and further efforts already in progress to increase graduation and success rates for this demographic.
CHAPTER FOUR: RESULTS

Introduction

Participants & Conditions. Participants were Black males who had been enrolled in one of three online asynchronous math courses either during the Fall 2021 semester or the Spring 2022 semester. Participants ranged from first-time freshmen of varying ages, transfer students, and military professionals. Each participant was or had been enrolled in a 4-year degree program and was classified as either a freshman or sophomore per their accumulated credit hours. Participant interviews took place with approximately 3-4 weeks remaining in the Spring 2022 semester. At that time, one participant, Tyrone, was not enrolled in the current semester and was sharing his experience from the previous semester. Another participant, Robert, was a transfer student from an in-state institution; he was still considered a freshman and shared that he was retaking math courses (similar to some previously taken at his former institution) that may not have been accepted as transfer credit for his degree path. Jeremiah was also an in-state transfer student who had previously completed the equivalent of an associate degree prior to transferring into the university and fully changing his major. The remaining participants were enrolled in the Spring 2022 semester, were considered freshmen or sophomores, and were sharing their experience from the current or previous semester. 30–60-minute recorded interviews were conducted through Zoom; these recordings were used to generate transcripts. Participants were assigned a pseudonym, and references to any identifiable names or locations were removed.
## Participant Fast Facts

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Year</th>
<th>Admissions Path</th>
<th>Major Area</th>
<th>Course Load*</th>
<th>Online Math Course</th>
<th>On/Off Campus</th>
<th>Work PT/FT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lewis</td>
<td>Sophomore/Junior</td>
<td>Non-transfer</td>
<td>Finance</td>
<td>3IP, 1OL</td>
<td>Statistics</td>
<td>Off</td>
<td>PT</td>
</tr>
<tr>
<td>Lamont</td>
<td>Freshman</td>
<td>Non-transfer</td>
<td>NR**</td>
<td>3OL</td>
<td>Statistics</td>
<td>Off</td>
<td>FT</td>
</tr>
<tr>
<td>David</td>
<td>Freshman</td>
<td>Non-transfer</td>
<td>Music</td>
<td>2IP, 4OL</td>
<td>Statistics</td>
<td>Off</td>
<td>n/a</td>
</tr>
<tr>
<td>Paul</td>
<td>Freshman</td>
<td>Non-transfer</td>
<td>Psychology</td>
<td>2IP, 3OL</td>
<td>Foundations</td>
<td>Off</td>
<td>n/a</td>
</tr>
<tr>
<td>Andry</td>
<td>Freshman</td>
<td>Non-transfer</td>
<td>Health Sciences</td>
<td>3IP, 3OL*</td>
<td>Algebra</td>
<td>Off</td>
<td>PT</td>
</tr>
<tr>
<td>Tyrone</td>
<td>Freshman</td>
<td>Non-transfer</td>
<td>Nursing</td>
<td>4OL</td>
<td>Statistics</td>
<td>Off</td>
<td>FT</td>
</tr>
<tr>
<td>Robert</td>
<td>Freshman</td>
<td>Transfer</td>
<td>Business</td>
<td>4</td>
<td>Algebra</td>
<td>Off</td>
<td>n/a</td>
</tr>
<tr>
<td>John</td>
<td>Sophomore/Junior</td>
<td>Transfer</td>
<td>Business</td>
<td>3IP, 3OL</td>
<td>Algebra</td>
<td>Off</td>
<td>PT</td>
</tr>
</tbody>
</table>

* OL – online courses; IP – in-person courses

** NR – no response; topic not discussed
Table 4

Participant Profiles

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lewis</td>
<td>Lewis was a non-transfer, approximately 18-20 years old, student taking one online course and three in-person courses at the time of this interview. Lewis was a Finance major who participated in an online Statistics course. He lived off-campus, worked two part-time jobs, and participated in various extracurricular activities and hobbies including a singing group on the weekends. Lewis described himself as “on the go at every second.” Due to the COVID-19 protocols that were put in place during the Spring 2020 semester and several semesters following, the Spring 2022 semester was Lewis’s first time taking in-person courses on the college campus for which he commented “It's like completely different. I like it way more in person than online. Online is just way harder to keep up with, and I kind of lose track of where I'm going, but in person, the teachers will at least remind me to some extent or do something with me, so that's cool.” Two of Lewis’s reasons for choosing this university were the option to share living space and expenses with a roommate off campus and that the cost of tuition was more affordable than his first choice.</td>
</tr>
<tr>
<td>Lamont</td>
<td>Lamont was a first-time freshman taking three online courses. He described himself as an “adult working [my] way through college.” At the age of 34, Lamont made the decision to deep dive into his regular hobbies by pursuing them as a degree in the higher education setting. He worked a full-time job, lived off campus with his mother, and at the time of this interview was a second semester Freshman taking courses fully online. Lamont shared that he preferred online courses because the asynchronous schedule allowed him to work a full-time job.</td>
</tr>
<tr>
<td>David</td>
<td>David was a first-time freshman, approximately 18-20 years old, taking six courses: two in-person, and four online. David lived off campus with his mother; after completing the previous semester with high marks, she purchased a car for him due to his busy class and extracurricular schedule. David changed his major several times narrowing down to mixture of business and music. David described himself as a student with a vibrant personality who likes to assist fellow students when and where he can. David chose to take a gap year after high school because while he didn’t want to take his first year of college fully online due to the asynchronous structure being offered in the height of the COVID-19 pandemic, he also believed that taking a full load of courses online could’ve helped him to gain more skills to manage online courses like his peers that chose to start college at the time.</td>
</tr>
<tr>
<td>Paul</td>
<td>Paul was a first-time freshman, approximately 18-20 years old, taking two in-person courses, and three fully online courses. Paul lived off campus and was majoring in Psychology. He shared that he was local to the area and the university was always an option when deciding where to go for college. Paul shared that he built community in his online math course by pairing up with a friend taking the same asynchronous math course. Though they didn’t share physical space, they called each other for math support from their perspective locations.</td>
</tr>
<tr>
<td>Andry</td>
<td>Andry was a first-time freshman, approximately 18-20 years old, taking three in-person courses, and three online courses as a Health Sciences major. Andry was new to online</td>
</tr>
</tbody>
</table>
During the interview, Andry presented as frustrated and dismissive; he shared that he’s had some trouble with time and task management concerning some of his online courses. At the time of this interview, Andry had already been informed that he would fail the course in question; therefore, he had dropped the online math course prior to the close of the semester and intended to retake the course during the upcoming summer semester in-person. Andry’s schedule included academic courses, regular participation with an organized basketball team in some capacity, and a part-time job.

Tyrone

Tyrone is a military reservist using his veterans benefits towards a Nursing degree; he completes his courses fully online. He was a first-time freshman, approximately 27 years old, during the Fall 2021 semester prior to this interview. At the time of the interview, Tyrone had taken the Spring 2022 semester off to work but intended to continue his college education during upcoming semesters. Tyrone worked a full-time job, was an active military reservist, and lived off campus. Tyrone shared that while he did not typically participate in the campus community and activities, he did feel very welcome through the messaging and invitations that were directed towards him. He also shared that the veteran support services offered by the campus were high quality, responsive to his needs, and supportive of both his educational career and acquisition of veteran benefits.

Robert

Robert was a freshman transfer student from an in-state university, approximately 18-20 years old, working towards a degree in Business. Robert was re-taking a course that he had failed at his previous institution and was not accepted in transfer credit. Robert shared that this experience with retaking a course gave him some familiarity with the content. At the time of this interview, he was taking four courses; the division of online to in-person courses was not discussed, but Robert did mention that this was his first year on campus and not all of his classes were in-person which limited his connections with other members of the university community except for his advisor whom he was in regular contact with. Robert lived off campus, traveled often, and recently stopped working a job to focus more on his coursework. He shared that because of his schedule, he likes to manage his assignments by planning his study sessions and content submissions a month at a time.

John

At the time of this interview, Jeremiah was a second semester transfer student, approximately 20-21 years old, working towards a bachelor’s degree in business at one of the university’s satellite campuses. He had previously earned an engineering related associate degree from an in-state university. Jeremiah’s schedule included three in-person courses, three online courses, multiple part time jobs on campus, and extracurricular activities. He lived off campus but was highly involved in the campus community and shared his excitement for the opportunity to build community on his campus.

**Evolution of the Codebook.** The original codebook began with nine codes consisting of transactional distance as an instance; course structure, dialogue, and autonomy as components or tenants of the theory; and five types of interactions where transactional distance can occur: learner-
instructor, learner-learner, learner-content, and learner-interface, and learner-institution interactions. The initial code book can be viewed in the appendix (see Appendix C7). The need for an extended codebook became evident after codebook activity #1 with critical colleagues and upon the first round of analytical review. It became clear that first, more codes would be needed to identify and separate the verbal accounts into smaller pieces of information that could be correlated to transactional distance theory through an instance, tenet/component, or interaction. Second, a spreadsheet would be needed to organize and easily filter for points of correlation in addition to other pieces of integral information such as background demographics, course load, descriptions framed by emotional words, descriptions framed by satisfaction or dissatisfaction, and other types of information that could provide additional insight to the analyzation process. The filtering option became extremely helpful as attributes of the core tenets tend to share overlap; this was also evident in participant accounts.

Figure 1 (Appendix C12) is an example from the codebook showing how tenets could overlap for one piece of evidence. In this example, Lewis has shared a recollection where he needed to correct some work to improve his grade; towards the end of the course, the instructor re-opened all homework assignments to allow students to make corrections at will. This example was coded for course structure, autonomy, and an instance of transactional distance; learner-instructor and learner-content interactions are noted. The actions of the instructor to open the assignments falls under course structure; the actions of the learner to go back and revise previously submitted work falls under autonomy. It is implied that the learner experienced a psychological gap around the idea that he might fail his course if something was not done to
correct the situation with his grades and work. Finally, the learner interacted with both the instructor and the content in this example. As there were eight participants, hundreds of responses and many codes, the filtering option became integral for narrowing the scope of the information in order to organize it into chapters and sections. The Revised Code Book is available in Appendix C10.

**Figure 1**

*Codebook Sample 1*

| Lewis | I didn’t, I didn’t think that at first, but then my professor just went and opened up every single one of my assignments at the end. So towards the end, I’d say yes. I felt like that because if it wasn’t for them opening up everything, I definitely would’ve failed the course. Okay. So I feel at very, very accessible. |
|-------|-------------------------------------------------------------------------------------------------|---|---|---|
|       |                                                                                                 | CS | A | LI, LC | TD |

Audio recordings of each interview were transcribed into text. The transcripts were uploaded into spreadsheets, reviewed, and coded to organize and analyze the data. Table 5 contains the updated list of codes with brief definitions of their application.
Table 5

Description of Codes

<table>
<thead>
<tr>
<th>Category</th>
<th>Code</th>
<th>Description</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance</td>
<td>TD</td>
<td>transactional</td>
<td>Recorded when noting an instance of transactional distance as defined in this paper; Example: a learner feels separated from other learners in the course.</td>
</tr>
<tr>
<td>Tenet</td>
<td>CS</td>
<td>course structure</td>
<td>Recorded when a participant’s response referred to the structure of a course; Example: a course uses an online textbook or includes optional synchronous sessions.</td>
</tr>
<tr>
<td>Tenet</td>
<td>D</td>
<td>dialogue</td>
<td>Recorded when a participant’s response referred to exchanges of dialogue; Example: instructors and learners discuss content in a forum, or an instructor and learner meet for a one-to-one session by video chat.</td>
</tr>
<tr>
<td>Tenet</td>
<td>A</td>
<td>autonomy</td>
<td>Recorded when a participant’s response referred to autonomous activities or characteristics either designed into a course’s structure by the instructor or described as actions or behaviors made by the participant; Example: A learner reviews the gradebook to assess their overall course grade, or a learner seeks assistance from a tutor for help with content acquisition.</td>
</tr>
<tr>
<td>Interaction</td>
<td>LI</td>
<td>learner-instructor</td>
<td>Recorded when a participant’s response referred to interactions between the instructor and the participant (as a learner) or the instructor and other learners in the course.</td>
</tr>
<tr>
<td>Interaction</td>
<td>LL</td>
<td>learner-learner</td>
<td>Recorded when a participant’s response referred to interactions between the participant (as a learner) and other learners in the course.</td>
</tr>
<tr>
<td>Interaction</td>
<td>LC</td>
<td>learner-content</td>
<td>Recorded when a participant’s response referred to interactions between the participant (as a learner) and the course content (in this case math) such as reading, completing activities and assessments, viewing content, listening, writing, analyzing, etc.</td>
</tr>
<tr>
<td>Interaction</td>
<td>LLMS</td>
<td>learner-LMS</td>
<td>Recorded when a participant’s response referred to their interactions with the learning</td>
</tr>
<tr>
<td>Interaction</td>
<td>LINST</td>
<td>learner-institution</td>
<td>management system(s) that housed their online course and/or course materials; Example: a learner describes the process for logging into their course.</td>
</tr>
<tr>
<td>-------------</td>
<td>-------</td>
<td>---------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>Other Codes</td>
<td>RQ</td>
<td>answers research question #</td>
<td>Recorded when a participant’s response might inform a particular research question</td>
</tr>
<tr>
<td>Other Codes</td>
<td>C</td>
<td>community</td>
<td>A theme that emerged from the data; recorded when a participant’s response referred to the presence, absence, or desire for community as a support in their online course or online courses in general</td>
</tr>
<tr>
<td>Other Codes</td>
<td>SS</td>
<td>synchronous sessions</td>
<td>Recorded when a participant’s response referred to participating in synchronous sessions that may have been included in the structure of their online asynchronous math course</td>
</tr>
<tr>
<td>Other Codes</td>
<td>AS</td>
<td>additional software</td>
<td>Recorded when a participant’s response referred to the use of a secondary LMS platform, software integrations, and/or learning tools necessary to access the course content or communication channels; Example: the participant refers to their online textbook and software package.</td>
</tr>
<tr>
<td>Other Codes</td>
<td>CL</td>
<td>course load</td>
<td>And indication of a student’s total number of in-person and/or online courses taken during the semester of the targeted online math course(s)</td>
</tr>
<tr>
<td>Other Codes</td>
<td>BG</td>
<td>background information</td>
<td>Recorded to denote when a participant’s response included background and/or demographic information about the participant</td>
</tr>
<tr>
<td>Other Codes</td>
<td>SA</td>
<td>satisfaction</td>
<td>Recorded when a participant’s response included the use of emotional descriptors to express satisfaction or dissatisfaction related to the participant’s stated or inferred ideals as compared to the description of their perceived experience</td>
</tr>
<tr>
<td>Other Codes</td>
<td>Code</td>
<td>Description</td>
<td>Recorded when</td>
</tr>
<tr>
<td>-------------</td>
<td>------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Other Codes</td>
<td>PE</td>
<td>persistence</td>
<td>a participant’s response referenced a desire to complete a course or degree program</td>
</tr>
<tr>
<td>Other Codes</td>
<td>GQ</td>
<td>good quote</td>
<td>a participant’s response provided a quote that might be useful to support a claim or explanation referring to an instance, tenet, or interaction concerning transactional distance theory</td>
</tr>
<tr>
<td>Other Codes</td>
<td>DIFF</td>
<td>differentiation</td>
<td>A theme that emerged from the data; recorded when a participant’s response referred to either the need for or the actualized receipt of adjustments in course structure, dialogue, and/or autonomous activities that addressed the individual needs or preferences of the learner/participant.</td>
</tr>
<tr>
<td>Other Codes</td>
<td>TAR</td>
<td>targeting</td>
<td>the participant’s response to the additional question about targeting.</td>
</tr>
<tr>
<td>Other Codes</td>
<td>MB</td>
<td>most beneficial aspect</td>
<td>the participant’s response to the additional question about the most beneficial aspect of taking an online course</td>
</tr>
<tr>
<td>Other Codes</td>
<td>MC</td>
<td>most challenging aspect</td>
<td>the participant’s response to the additional question about the most challenging aspect of taking an online course</td>
</tr>
<tr>
<td>Other Codes</td>
<td>NCC</td>
<td>needed course component (suggestions)</td>
<td>the participant’s response to the additional question about suggestions they would make to an online course designer</td>
</tr>
<tr>
<td>Other Codes</td>
<td>NSGC</td>
<td>needed support group component (suggestions)</td>
<td>the participant’s response to the additional question about components they would suggest being included in a supportive group that was created for the participant</td>
</tr>
<tr>
<td>Other Codes</td>
<td>OC</td>
<td>references to other courses</td>
<td>when a participant’s response specifically referred to a course other than the online math courses targeted in this study</td>
</tr>
</tbody>
</table>

**Notation of transactional distance.** The researcher referred to the following definition of transactional distance while analyzing the responses provided by the participants concerning
their online asynchronous math courses: Transactional distance theory purports that perceptions of psychological or communication gaps between participants in a learning environment can increase or decrease dependent upon the interactions that are facilitated through the design of a course’s structure, instances for dialogue, and opportunities for autonomy (Moore, 2019)

Transactional distance was noted when the researcher detected a gap or misalignment between the participants stated or implied learning needs and/or preferences in contrast to the perceptions or interactions being described. Degrees of transactional distance were both inferred and relative to the participants description and use of emotional or situational vocabulary. When a participant’s perceptions closely aligned with their needs, preferences, or expectations, lower levels of transactional distance were recorded. In contrast, when a participant’s perceptions seemed to be misaligned with their needs, preferences, or expectations with structure, dialogue and autonomy, increased levels of transactional distance were recorded. Descriptive and emotional words used by the learner were taken into account; a participant’s use of emotional, satisfactory, and/or dissatisfactory words were taken as clues to ask follow-up questions to clarify why the participant felt satisfied or dissatisfied; during the interview, participants were asked “why do you feel this way, or does this meet or not meet your needs or expectations?” After the interview the researcher analyzed the responses for instances of transactional distance – specifically psychological or communication gaps, feelings of separation, and distances concerning interactions. If a participant remarked for example, “I really didn’t like that part because I needed more one-to-one time with my professor” transactional distance was noted because the participant has perceived that their needs or ideals of dialogue were not met. If a
participant remarked for example, “the online textbook was good; no complaints here” the researcher might note an inference that transactional distance appears to be low or non-existent because the learner has described the textbook tool using the term “good” and the phrase “no complaints” signaling that the learner’s expectations and/or needs for structure and learner-content interaction were met.

**Coding Spreadsheets.** The coding spreadsheet was organized as one book with multiple sheets. Sheet 1 contained the codebook and research questions for reference. Sheet 2 contained a compilation of all transcribed interviews from each participant. The vertical axis contained interview responses chunked into rows first by participant name and second by responses in chronological order (see Figure 2). The horizontal axis contained columns organized by the various codes from the codebook. A column for notes was added to allow the researcher to record ideas, conclusions, or other pertinent information during the analyzation phase. Sheets 3-10 contained the coding and notes for each participant individually. The use of the spreadsheet allowed the researcher to analyze the participant responses as a whole group, as individuals, by single codes, or by code combinations. A sample of the coding spreadsheet can be found in Appendix C11.

**Analyzing Participant Responses.** Figure 2 (Appendix C13) is a sample response from the coding spreadsheet. This example is being included to provide context on the researcher’s analyzation process.

**Figure 2**

*Codebook Sample 2*
In the sample, the first column is filtered to the participant “Tyrone”. The second column contains Tyrone’s response to the question: “How were lessons and course content delivered?” Column-headers are as follows: T1 = tenet 1; T2 = tenet 2; I = interaction; TD = instance of transactional distance; RQ = refers to a research question; O = other codes; and researcher’s notes. Codes could overlap; in the following example, the participant’s response warranted multiple tenet codes. The researcher recorded that this response referred to course structure (CS) because the participant names the textbook publisher LMS, describes days and times that synchronous sessions were offered, and states that recordings were made available of the sessions. The researcher recorded dialogue (D) because the student describes an instance where dialogue can take place between learners and the instructors during the synchronous session. The researcher recorded the interactions learner-content (LC) and learner-instructor (LI) because the participant describes that they were able to interact with the content on an LMS platform, that they were able to interact with the content through synchronous sessions, and that they were able to interact with the instructor through synchronous sessions. Transactional distance (TD) was noted because the student used descriptive words such as “easy and digestible” to describe their perception of the course structure, dialogue, and interactions. Transactional distance was noted by the researcher as low because the participant’s use of “easy and digestible” suggest a close alignment to their expectations, needs, and/or preferences.
Dialogue & Transactional Distance

In Transactional Distance theory, dialogue is the communication that takes place between two interlocutors through interactions in a learning environment. Each participant actively listens, contributes to the conversation, and builds upon the contributions of other participants (Moore, 1993). Some examples of dialogue include open participation with alternating exchanges such as questions, responses, redirections, and building upon statements (Moore, 2019). In transactional distance theory, dialogic exchanges can increase opportunities to construct learning (Shearer & Park, 2019).

Learner-Instructor Dialogue

Participants described a range of learner-instructor dialogic interactions which varied in type and intensity yet were common across courses. These interactions ranged from basic communications such as emails, reminders, and syllabus postings to recorded video messages, phone calls, in-person conferences, and optional synchronous sessions. Due to their online asynchronous structure and content matter, communications across courses were quite similar. The main LMS platform, while different for participants depending upon the semester they took the target course, contained similar communication tools. The components within these platforms supported communication through tools such as a course home page, announcement channel, and module pages which could be used to post one-way communications to and for students.
Email communications. Instructors used email messages to share general course information, special announcements, and to contact learners individually. Lewis, David, and Paul each shared that their instructors were very helpful and friendly citing the use of email to communicate information. David shared that his professor sent regular updates about such things as extra credit points being made available or deadline reminders. Paul shared that if he had questions or was falling behind, he could email the professor; “…she was very helpful and flexible allowing us to do it [work] after the due date.” Paul described communication with his instructor as follows,

“It was more email-based. You had to check your email and they would give you reminders on deadlines. It was more like a self-management kind of thing; you did [the course] yourself, but they still gave you the courtesy of [sending] updates.”

While email communications and reminders were helpful, David and Robert each described some lack of dialogue with their instructors. David shared that he once emailed his professor for assistance finding access codes and information for purchasing his online textbook, and they answered as he was sure they would do in any case; however, he went on to say “…that was it… there wasn’t much dialogue really… just me saying, hey I need this access code and [them saying] you can find it here. That was it.” David’s example implies some level of distance between he and his instructors; while he was able to ask a question and receive a response, his comment “that was it… there wasn’t much dialogue” could imply that a lack of dialogue overall may have contributed to perceptions of transactional distance for him. Robert shared that he was able to find everything he needed to access the LMS and complete assignments; however, “…as
far as communicating with this specific professor, [it wasn’t] the best because he doesn’t really respond to emails, so communication was lacking.” In Robert’s recollection, his statement implies that he sensed a separation or disconnect with his instructor and infers a transactional distance gap.

**Placement & Intensity of Dialogue.** Some ideas that arose concerning dialogue and student support included the placement and amount of dialogue, synchronous sessions, and one-to-one sessions such as a phone call, video chat, or in-person meetings. Lamont described the dialogue he experienced with his math instructor as a good fit first in a comparison to his English class and then by giving an example of how dialogue can feel misplaced to him.

“For me, it really depends on the course. If I had my math professor for my English professor, I would totally be unsatisfied because I feel like English is my weaker subject, and I would need a lot of guidance with English…math is easy. Like I said, it’s perfect. I really don’t need to speak to my professor. If I don’t understand something, I look for tutorial videos; I go to YouTube or Khan Academy…I know how to pull resources to understand things. But it was English that I really needed assistance with and that’s what I got. So, for this particular [math] course, the interaction with my professors has been pretty spot on.”

Lamont went on to describe when dialogue with an instructor might feel misplaced. He shared that sometimes, receiving dialogue from a professor when he doesn’t feel it is warranted makes him feel nervous. He explained that he begins to wonder if he’s done something wrong, missed an assignment, or if a new un-planned assignment will be sprung on him. He continues,
“with the math class, just show me a video,” and reiterates that for him “math is pretty straightforward; I don’t need a lot of back-and-forth dialogue. Too much dialogue makes me nervous sometimes.” Through his examples, Lamont seems to be expressing his preference as a learner to work independently and in a self-guided nature when he is comfortable with the content but to have the assistance of an instructor when he is not. When he does not feel he needs assistance, Lamont also does not expect dialogue; for this learner, increased dialogue could signal an alert or a need for assistance or correction. This would imply that in these instances, Lamont may perceive little to no levels of transactional distance separation when he feels confident with learning the content, whether that be in a self-guided nature or in an instructor-supported nature when he finds it appropriate. Alternatively, Lamont may perceive increased levels of transactional distance if he feels he’s receiving increased levels of dialogue without purpose.

David suggested that more dialogue with instructors would’ve encouraged learners to ask for assistance more easily. He shares these thoughts:

“I hope I don’t sound selfish when I say this, but if you’re taking an online course, it’s really difficult already because it’s online. I think any extra conversation, any kind of dialogue, any extra pizzaz will really make it more like an in-person course. There are some students who really do not like to ask for help, and they feel like they are a burden if they do. I really believe it’s best to make everyone feel as comfortable as possible because, you know, that is what helps people reach out for help; that’s what helps them
[ask] ‘can someone meet with me on Zoom,’ or ‘let’s do this together.’ [Things] like that will make it more like an in-person course.”

David implies here that he may experience some perceptions of transactional distance when the need arises to seek help. He suggests that instructors increase dialogue and reach out more to make learners feel more comfortable seeking help; David also makes a comparison to in-person courses. An inference can be drawn that increased learner-instructor dialogue decreases perceptions of transactional distance for this learner.

**Dialogue and Instruction.** Two participants shared perceptions related to learner-instructor dialogue specifically related to content instruction. Lewis shared,

“…if he had lectures, I didn’t know he had them. [If there was] something that was supposed to teach me how to do it [the math content], I didn’t know. He had notes on the website, and they were kind of helpful, but they only helped me for one part of each homework…everything else you kind of had to click the hint and figure it out yourself. I had a tutor, and luckily my tutor loves [math]. I thought I was going to fail the class because I couldn’t understand the material at all.”

Lamont’s response to dialogue around instruction was “…none. It was all [in the LMS]. It gave a grade in the corner where you got the questions right or wrong and that’s all.”

He continued, “I’m having the least interaction with my instructor. She sent out a mass email at the beginning of the semester, and I haven’t heard from her since… which is fine, because the work is easy. It’s pretty self-explanatory; we copy down notes, you do the homework assignments, and
you take the test; so, if you need more interaction from an instructor, [an online math course is] probably not the best way to go.”

Some courses included online synchronous sessions where instructors would provide short lectures and demonstrations, model procedures, and facilitate question-and-answer segments; these online synchronous sessions were either optional or counted towards a student’s participation grade. Paul and Tyrone both mentioned dialogue sessions with their instructors. Paul shared “…it was voluntary, like optional… just if you had questions or needed help. I never did the Zoom meetings, but I think they [were] one-on-one.” Upon request, participants could schedule office hours with instructors both in-person and online; phone calls and video chat calls were offered as one-to-one meeting options. Tyrone recalled the experience from his online math course and described his instructor as “very accommodating.”

“It was an open-door policy. Most of the time she would stay back [from synchronous sessions] maybe 10 minutes after class to answer any questions. From there, she would try to accommodate you by setting up a Zoom meeting. She had office hours where you could come and speak with her directly…she was working from home as well. She always tried to be available and would respond within 24-48 hours. If you sent her an email, she would try to [make] time to accommodate you [even if she was at home].”

Dialogue and Relationships. As participants shared about dialogue with instructors, the idea of building relationships within the learning community presented itself. David and Robert recalled feelings of loneliness and detachment. In a comparison to his in-person courses the
previous semester, David said that he felt he received both more face-to-face inquiries and messages asking how he was doing versus his online courses. David explained,

“I felt very detached this semester. Online courses are very nice and convenient, but I think I’ve learned to take them if you can… if you are available to focus solely on those courses. You definitely need to focus a lot more on online courses than in-person. [That’s] not to say that in person, you don’t focus, but online courses require a special type of attention.”

When asked if he dialogues with his instructor, Robert replied, “Not in this course, no. [This is] the only online course that I haven’t. I never met the professor. I never saw a student. No, nothing. I just logged in and did the work.” He goes on to explain that he feels that introductions are important, especially at the start of a course, and that when they do not occur or happen mid-way into the course, it feels misplaced and less useful. At the time of this interview, Robert was just over halfway through his online math course. He shared this about introductions.

“At this point, I feel like it’s more like an introductory thing… like it would be out of place; it would kind of serve less of a purpose at this point. [For example] if midway you say, ‘I’m your professor,’ I really don’t care. That’s something I would’ve [liked to] know in the intro. I would’ve liked to see faces of students and my professor. He has all of his contact information in the syllabus, but somebody telling you what the contact information is and how to reach them versus just putting it on paper means a lot more. You feel like you’ve got more [of a] connection with them. I think that would’ve been very useful at the beginning of the course.”
Participant Suggestions About Learner-Instructor Dialogue. Some ideas came up in the interview that were related to what learners wanted versus what they feel occurred during their online math courses. Lamont and David wished for more dialogue with their instructors when assistance with content and instruction was needed. David shared,

“It’s very difficult [to ask for help] especially when you’re not doing so good. [You may think] ‘Ooh, I’m really embarrassed,’ or there are things that make you feel like you really don’t want to ask [a specific question]. But, when someone is like, ‘hey, how are you doing,’ or ‘hey, I’m seeing you’re not doing really well,’ or if you have a group of people [say], ‘hey, do you need anything? Would you like to join us?’

He describes that these gestures of dialogue make a learning community feel “more open, making it more warm.” Lamont would’ve liked for his professor to be more accessible. Robert would’ve found mid-semester updates very helpful explaining, “…a status update, like in the middle… [sharing] how you are doing compared to how everybody else is doing… things you need to work on… like feedback. More interaction like set meeting dates [would’ve been helpful].”

Learner-Learner Dialogue

Descriptions of learner-learner dialogic exchanges were either significantly limited or non-existent. Participants described the following types of learner-to-learner exchanges from their online asynchronous math courses: student-initiated study partners, and student-initiated virtual introductions to ask questions for clarification. Rarely, the following were experienced: chat interactions during synchronous sessions, discussion boards, group work, and instructor-
encouraged forums for communication using third-party applications such as Slack. While most participants described little to no learner-learner interaction, sentiments about interacting with other learners was split.

**Forums for Learner-Learner Dialogue.** Several participants shared that learner-learner interactions were limited but encouraged using a third-party app where students in the course could use the space to chat with their course mates in a private group. The use of third-party apps seems to be an attempt by instructors to include a forum for learner-to-learner dialogue within the structure of the online asynchronous math courses. Tyrone felt dialogue with his peers helped to gauge his learning progress, especially using third-party apps like GroupMe. He echoed the sentiment that peer-to-peer dialogue was or would be helpful to support one’s learning by having a forum to ask questions, clarify ideas, and verify general course communications (such as due dates, instructions for assignments, etc.) Tyrone explained that while his instructor tried to foster mini discussions between learners during synchronous sessions, “it was a lot of material, so we were limited on time.” Instead, learners turned to the app for help and discussions. “We did what we could; we would try to help each other when we could. If somebody had a question about something, we would communicate so that we were on the same page. Sometimes people had similar situations…so, we would communicate with each other to resolve the issue, and then we would reach out to the teacher.” Through his example, Tyrone seems to imply some perceptions of transactional distance possibly concerning his understanding, academic standing, or with the content from the course. To address the gap, he dialogues with other learners to check facts, for reassurance, and to gauge his progress in comparison to his peers. Inferences could be drawn that
for Tyrone, some perceptions of transactional distance are decreased with leaner to learner dialogue.

Concerning discussion boards, David tries to recall if they were used in this course but admitted that if they were used in this course, “I didn’t interact with anyone, unfortunately… there weren’t many discussion boards if I remember correctly.” David refers to his lack of interaction with peers “unfortunate,” implying perceptions of separation and regret for that.

**Expectations for Learner-Learner Dialogue.** Some participants held no expectation to interact with their peers in an online asynchronous math course. Lewis shared, “I was all on my own. For me, that was fine because I had such a busy schedule, and I’m kind of an introverted [person] because of COVID. I kind of shy away from people now, so it was perfect for me, but maybe some other people didn’t like it.” While David shared that there wasn’t much dialogue between anyone in the course, but “…I don’t think that would come up as a problem for anyone who doesn’t really communicate much.” Learners who had no expectations or preferences to dialogue with other learners did not seem to perceive transactional distance gaps or feelings of separation from their peers.

When participants were asked if dialogue with other learners did or would have impacted their understanding of the math content, David and Paul responded about the potential benefits. David shared, “I definitely think that would’ve helped [me] learn the content a bit more because there’s this feature on the textbook LMS that shows the highest and lowest grades in the class [no names]. I think if we got to group together more, study together, practice and do assignments together, I think that definitely would’ve balanced out the average to the higher end of the
David implies some perceptions of separation between himself and his peers; he expressed that learner-learner interactions may have helped him to understand the math content better. We could infer that learner-to-learner dialogue may have decreased perceptions of transactional distance for David by his statement.

Paul shared that he had a study partner in the same online course; they would call each other from home for learning support. When asked if he had dialogue with other learners, Paul replied, “…everybody was separate, but with my friend, we would work together. It wasn’t a requirement; we would work together on problems and everything.” Learner-to-learner dialogue outside of the organized course is something Paul arranged autonomously; for him, it appears this type of dialogue is valuable. One might infer in this situation that learner-learner dialogue helps Paul with his learning processes.

**Dialogue and Learner-Learner Relationships.** Sometimes, participant responses about learner-to-learner dialogue pointed toward building relationships in online learning communities. Tyrone discussed how contacting other learners in an online course can be more challenging. He describes a scenario where when learning a lesson in-person, if you have a question that you’d like to ask another student, you could simply lean over and ask them. He states that one might ask, “Do you know how to do this,” or “Do you know what the instructor is talking about?” Tyrone goes on to say that when you’re in an online course, you must first reach out into digital spaces, sometimes blindly or without having any prior relationship, to other learners to ask for their contact information; you can’t just lean over and start talking to them. “That was one of the disadvantages for me when I first started online classes.” Tyrone implies a communications gap
between himself and other learners in the online environment. He describes this gap as a “disadvantage.” One could infer that the ability to build relationships in the online environment in a manner that makes it easier to dialogue with other learners may decrease communications gaps for Tyrone.

Robert, who’s previous comments alluded to the idea that initial introductions between learners and instructors were helpful, later had this to share.

“In this specific course, it’s kind of like… no interaction. Everybody is spaced out; it’s like you’re one single person in the course. It’s almost like not being in a course [at all]. You just have assignments you have to complete to get the grade. You kind of forget halfway that this is a class. I [need to] be interacting with folk. This math course [feels like] all men for themselves.”

Robert implies that he experienced increased levels of transactional distance through feelings of separation from other learners in his environment; he comments that there is “no interaction”, yet that this is a preference or need for him. We could infer with this example that learner-to-learner dialogue, for the sake of building community in the online learning environment, could decrease perceptions of separation and loneliness for some learners.

Learner-Institution Dialogue

While discussing the topic of dialogue, six of eight participants shared feedback related to dialogue about their online math course which occurred with individuals who were a part of the institution but not necessarily their instructor of record or other learners within the course. These are learner-institution interactions and included speaking with academic advisors, meeting with
tutors, and building community and relationships with other individuals who were within the same degree programs as the participants for the purpose of building networks of support as they complete each course and finally an entire degree.

Lewis shared, “I haven’t really had a chance to interact a lot with the people in the finance department… I’m a finance major.” He added, “My old advisor helped me a lot, but I got a new advisor, and I haven’t [met with] her yet; there hasn’t been a lot of communication [with others in my program or from the department]. Lewis appears to be describing a psychological and communications gap between himself and others within his degree program. The online math course is a part of the degree program, and Lewis seemed to allude to the expectation of knowing about and interacting with others who are completing the same path as himself. This example might infer that learner-institution dialogue for the sake of building relationships could support a learner by decreasing perceptions or feelings of transactional distance in online learning environments.

Lamont explained a transactional distance perception that involves his position with the university community as a whole. He values his relationship with his advisor and notes that she is one of the only and most important people he dialogues and interacts with.

“I have a student advisor who’s a god; she is an amazing woman. This college experience is new for me, and so she literally ‘advised’ me. She asked me what I was trying to accomplish… [about] my passion. We meet once every semester; she [asks me] ‘Where are you right now? Do you still want to do this or that? I want to talk to you about this.”
“Outside of my instructors, she’s the only point of contact I have with the university besides the financial office.”

Paul echoed praise for his own advisor by sharing that she checks in with him regularly while his courses are in progress to determine if he is in good standing to remain in the course or needs to make the strategic decision to drop a course. He comments that these dialogic exchanges served as “motivation” for him.

“She definitely was someone who motivated me. If I wasn’t doing good in the [online math] course, she would [ask me to] drop in. [She would ask, “You doing okay in the class? Keep it.” If I wasn’t doing good in the course, she would [say] drop it. It motivated me to stay in the class; I thought [to myself] ‘I could be doing worse in the class’ so it was motivation for me. I would speak to her… in the beginning of the semester, in the middle for a checkup, and then to schedule for the next semester. Then, I also would do random meetings… if I had questions. I would contact them [her]. I was the one who had to schedule the meetings.”

Robert shared that his advisor was his only connection on campus.

“With it being my first year on campus, I [haven’t] really met too many [people]; by not taking all in-person classes, I haven’t really been up there or connected too well. My advisor is really good with getting back with me in a timely manner and just, helping me navigate where to go and who to talk to. I don’t feel like I [have] a close connection with anybody… no group… my support really just comes from her on campus.”
Robert expresses sentiments of separation from the greater institution due to his participation in primarily online courses. He mentions not feeling connected. However, dialogue with his advisor serves as support and helps him navigate the experience. One might infer that for Robert, learner-institution dialogue decreases perceptions of transactional distance.

John shared that he’s made some friends on campus and built a support network composed of learners enrolled in various degree programs. He shared that although they are in different programs, they convene, ask each other how the others are doing, and encourage one another for moral support and specifically to make it to the end of their degree programs. John stated that the circle of friends will share celebrations and regrets about test results, listen to each other, and share encouraging words. “We give each other that big confidence boost that we all need.” John’s example alludes to the idea that he finds dialogue with the others in his educational community and building relationships to be integral to his success as a learner. Because John appears to have been successful at building these relationships, one might infer that they help to decrease or minimize perceptions of separation for him.

**Participant Suggestions About Learner-Institution Dialogue.** The following are experiences that learners wished they would’ve had concerning dialogue with the institution while taking their online math course. Lewis would’ve liked to dialogue more with degree program leaders and other participants in his degree program. It might be important to note that learners could be taking courses with other learners who are in the same degree programs as themselves and never know it. When asked if there was a way that dialogue could improve his experience, Lewis stated,
“Definitely [having] a short-term plan and a long-term plan. I want something that I can achieve during the school year or maybe during half of the semester; and then, I want a bigger plan… maybe the classes I need to take and the things I need to do with that class. Maybe [having] a schedule so that everybody can meet up and talk about what they need to talk about and do what we need to do [as a group/cohorts] while also staying on top of what we need to do [individually].”

David shared these thoughts about dialogue that he would like to see within the institution…

“… as much support as possible… even if you don’t think someone’s struggling. It always helps to check on people… [in any capacity] … a mental check, a progress check, or a social check.” He goes on to say, “Try to focus on the freshmen and the graduates; not that we shouldn’t focus on the people in between, but the people coming in and going out are going through a transition period… they can have a bit of a hard time, and you wouldn’t know. I know it’s difficult as a freshman to be like… ‘you know, I’m new to this.’ ‘I’m kind of nervous… I don’t want to ask for help.’ Also, for the seniors, it’s kind of like… ‘I’m expected to know what I’m doing, so it’s kind of hard to ask for help.’”

The Absence of Dialogue: Learner-LMS & Learner-Content

One way that participants interacted with the content (learner-content) was through the secondary LMS (learner-LMS) used to access their textbook software. As students input responses to questions and activities, the LMS generated intuitively programmed responses about those interactions. Per the definition of dialogue, “communication between two interlocutors
through interactions in a learning environment, where each participant is actively listening, contributing to the conversation, and building upon the contributions of the other participants (Moore, 1993), one could conclude that learner-LMS and learner-content interactions would not qualify as dialogue. They might rather be categorized as the absence of dialogue or non-examples of dialogue.

Some types of LMS generated feedback included automatic grading for a multiple-choice quiz, affirmations for correct response, and redirections for incorrect responses. John shared that immediate feedback was provided through the LMS through automatic grading of homework assignments, tests, or exams. “He [the instructor] doesn’t have to grade it; it automatically grades it. It shows you what you missed, and it has a calculation where we can check our scores [against] our grade in the class.” Another participant found the dialogue less helpful when he was struggling to grasp the content and felt like he needed more assistance. Lewis spoke to this point in an earlier quote where he mentioned using the hints in the LMS to complete parts of his homework but needing additional assistance. He goes on to share, “at the beginning before I got my tutor, I thought I was [going to] fail the class because I couldn’t understand the material at all.” Learner-content and learner-LMS interactions could prompt a desire for dialogue and communication with instructors (L-I), other learners (L-L), or other members of one’s institution such as tutors and advisors (L-INST).

How did dialogue affect perceptions of transactional distance?

Dialogue most notably influenced perceptions of transactional distance when learners were aware of their personal needs and preferences for dialogue and compared this awareness to
their perceptions of the course. Sometimes learners had no expectations of dialogue; this could be with instructors or other learners. In those instances, learners typically did not report feelings of separation. However, when learners did have an expectation for dialogue, and it did not meet their expectations or seemed completely absent, learners reported perceptions of psychological and/or communications gaps. Likewise, occasionally when learners did not have expectations for dialogue, yet were engaged in dialogue, perhaps with their instructor, perceptions of transactional distance could be present if the learner felt they didn’t understand the purpose of the interactions. Overall, most learners found dialogue with their instructors, other learners, and sometimes in the greater institution to be an integral part of their experience in the online learning environment and especially if they found themselves needing assistance.
Autonomy & Transactional Distance

Within the theory of transactional distance, learners and instructors act as counterparts sharing a role in learning. Autonomy is the learner’s ability to participate in, manage, and make decisions about their learning. A course’s structure can influence “… the kind and extent of autonomy the learner is expected or permitted to exercise. (Moore, 1973, p. 672). The testimonies that follow focus mainly on learner-reported acts of autonomy performed throughout their online math course as experienced through various interactions. Learners had the opportunity to exercise autonomy by interacting with their instructor, other learners in the course, math content, the LMS systems, and individuals in the greater university community.

Types of Autonomy Described by Participants

Participants described the autonomous actions, strategies, and procedures they enacted based on many of the tools and interactions designed into the course’s structure. These tools and interactions included calendars, syllabi, the posting and checking of grades and feedback, email communications and reminders, the ability to complete make-up work and multiple attempts on homework or quizzes, access to office hours and additional instruction, synchronous sessions, extensions, and early access to assignments, modules, and assessments.

Syllabi, Email, Reminders, & Other Communications. Robert shared how the course syllabus helped him to plan and manage learning for his entire semester. He said, “I found my assignments by logging in; it was in the syllabus. Everything was initially in the syllabus, and that’s how I schedule my semester.” Paul and John both commented that emails from their
instructor typically contained reminders about opportunities and deadlines supporting their autonomy to manage and plan their calendars for executing learning activities.

Andry used email to communicate with his instructor about deadlines; he shared an experience where the communications with his instructor did not yield the result he expected. “I was away for a week; I emailed him [the professor] after I came back about making up my missing work, but he didn’t remind me to make it up, so I fell behind.” He goes on to compare this experience to a similar experience in another online course by saying,

“In [my other online course] the teacher actually communicates with me very well because when I was away, she allowed me to make up my work, but my online math course teacher didn’t, so I fell behind. In my [other online course] she actually gave me the chance to make up my work, so I was actually happy about that.”

Andry’s perception of his autonomous responsibility in both situations appears to be that he needed to contact his instructors about make-up work, complete the work, and move forward. He received permission to complete make-up work in both situations; however, this is a great example of how tenets can overlap. Andry’s example points toward the structure between two courses; make-up work was a construct of both courses; however, reminders about make-up work didn’t seem to be approached the same way. This difference may have affected the autonomy of the learner. Andry’s explanation for not completing makeup work in the online math course was faulted to the instructor with no ownership from Andry. “He didn’t remind me to make it up, so I fell behind.” Andry seems to be experiencing some gaps concerning
expectations, his autonomous ownership as a learner, concerning his beliefs around his instructors’ roles in these similar examples, and concerning communication.

**Make-up Work, Multiple Attempts, & Extensions.** Andry, John, and Lamont shared their feedback on utilizing the opportunity for multiple attempts on homework assignments. Andry shared, “We get the opportunity to correct ourselves, and we get unlimited attempts. They explain it to us… why we get the answers wrong or why we didn’t get it wrong…They give us opportunities to make up for our mistakes.” Andry’s comment, “we get the opportunity to correct ourselves…” alludes to the participant’s autonomous responsibility to take ownership of his learning. Andry’s comment, “they give us the opportunity to make up for our mistakes,” and his actions to follow-through infer that taking advantage of multiple attempts is a method that he uses to become more closely aligned with his goal to learn the content.

Participants were asked questions pertaining to how and when they interact with the learning content. The following testimonies contain autonomous examples of self-management, time-management, help-seeking, and self-assessment.

**Self-management.** Lewis commented on his ability to organize his learning by comparing his experiences both in-person and online by saying, “…it’s completely different. I like it way more in person than online. Online is just way harder to keep up with… in person, the teachers will at least remind me [of assignments and tasks] to some extent…” Lewis’ comment that online courses are more difficult to manage than in-person courses infer a disconnect or distance; his statements imply that communication differs per course mode and subsequently makes one more difficult to manage than the other.
David shared that he could have used the instructor-provided resources to better manage his learning. He commented that he apologized to his instructor after speaking with them about the matter sharing, “a lot of my issue with the course was simply me being forgetful… not keeping track of what was due and when it was due. Once I found out [by looking at the syllabus], I was really bummed out.” He followed up by saying, “I felt very detached this semester” and explained that in his opinion online courses require more focus and “a special type of attention” than in-person courses. David’s experience seems to imply that he may have experienced a disconnect concerning his autonomy; he was having trouble managing his learning and he brought the issue to his instructor.

**Time Management.** Lamont shared that his instructor provided support by posting a syllabus, the LMS course calendar, and email reminders. Referring to his autonomy, Lamont commented that he receives reminders repeatedly from different sources and refers to this as “redundant.” He shared, “I get reminders…which is nice because it reminds me to check my email. I have a problem not checking it every day [for critical things]. It is redundancy; it’s pretty good, actually.” Lamont shares a self-awareness about his forgetfulness to check his email but acknowledges that the various supports in-place by his instructor support his efforts to manage his own learning. Lamont’s forgetfulness may have contributed to the perception of transactional distance, yet the resources and support from his instructor may have provided a level of support that decreased that gap.

While Robert has since opted out of working to focus more on school, he shared that he still has a full life and schedule to manage which includes frequent travel. “I plan out the
month… I’ll plan to do two or three assignments a day, and I do them a month ahead of time before they are due.” Robert likes to give himself enough time to complete assignments that result in at least a two-day buffer before they’re due to avoid stress. When he was working, he found himself managing a part-time job at the bank and participating in a singing group among other regular social activities. He said, “I worked [at the bank] Monday, Wednesday, Friday; I did my homework on Tuesdays and Thursdays between my 8:00 AM and my 1:00 PM classes.” Like Robert, Paul also professed to managing his time in a way that allowed him to interact with the content and complete assignments at least a week early. He said, “I like to give myself time and space to not wait until the last minute.” One might infer that taking advantage of the opportunity to organize their time and schedule to meet their needs allowed Robert and Paul to use their autonomy to close or lessen potential transactional distance gaps that could have developed between competing priorities and time.

Lamont approached this topic right away by saying, “I feel like the whole point of taking online classes is that you work at your own speed… I could set my own pace. It’s never too slow because everything is there whenever you want to get it done.” He goes on to explain how the combination of his goals and the ability to manage his learning around his schedule has improved his time-management skills and his motivation.

“Before this, I [wasn’t good] at time management, but because I want this so bad… I’ve never felt more motivated in my life to get something accomplished. I paid for this out of my own pocket, so there’s no playing around. I have four days off [work], and three days I have to work, so during those four days I have to get [my coursework done].”
Lamont’s comment points toward an area for him that could result in a transactional distance gap; he is actively working to manage his educational goals, time, and work schedule. The way that Lamont applies autonomy to this situation infers that it has created less of a psychological gap than what could occur if he wasn’t able to manage these integral pieces of his learning in a way that met his needs.

When asked about interacting with the content and how he felt about his ability to manage his time, David replied that it was “…not as good as I would’ve liked.” He went on to compare his time-management skills during the online math course with a previous in-person course.

“Maybe it was because all of my courses were in person, but I was a lot better at managing my time versus with me being at home [online]. I’m responsible enough to hold myself accountable for online courses, but I think it was really the conditions where I started…I missed a lot of work because I really could not find it.”

David seemed to experience some trouble with time management and accessing the content. While navigation around the LMS could be attributed to course structure, David’s introspective acknowledgement of the matter and how it affected his accountability and time management skills speaks to autonomy. David seemed to be narrowing down the causes of his transactional distance disconnect.

**Location:** Where to interact with content. David worked at a desk in his room; however, he felt the space may have been too relaxed and commented, “… on campus, I would’ve been a
lot more focused and a lot more serious [as opposed to how I feel] getting out of my bed in my pajamas and hopping in front of my desk.” David seemed to be perceiving a psychological gap concerning his motivation to study and autonomously identified location as a contributing factor.

*Help-seeking, Advisors, & Tutors.* The ability to know if and when to seek help is another autonomous element that learners manage. When Lewis was struggling with the math content in his online course, he explained that he looked for help resources within the class structure. “If he had lectures… or something that was supposed to teach me how to do it, I didn’t know. He had notes on the website, and they were helpful, but they only helped for part of the homework…” When Lewis found the content resources inadequate, he sought out a tutor for help. “Luckily, my tutor loves [math], so it was very easy to understand it [the content].” He goes on, “…but at the beginning, before I had my tutor, I thought I was going to fail the class [because] I couldn’t understand the material at all.” Lewis seemed to be experiencing a psychological gap between himself and the content as well as a communications gap between himself and the instructor. By seeking help, Lewis’ and the tutor may have contributed to lessening the perceived gap by meeting Lewis’ needs.

David shared about a time when he felt he should ask for help but didn’t. He had always viewed himself as the person helping everyone else in the class, so when he began to struggle, “I turned into the quiet student.” His thought to himself was, “I’m going to take a backseat… I’ll just watch everyone else and [try to] get this on my own without asking for help.” “That’s not good.” David inferred that his interactions with the math content left him with the perception of a
disconnect both between himself and the content as well as between himself and the other participants in his online learning community.

Tyrone, Robert, and John each spoke about their academic advisor as an individual who assisted in their autonomy to manage learning in their online math courses. Robert referred to his advisor as one of his only connections in the greater learning community. He shared, “I [haven’t] really met too many [people], and I’m not taking in-person classes. I haven’t really been up there [to the campus] and met or connected too well, but my advisor is really good.” “I don’t feel like I have a close connection with anybody or any group. My support really just comes from her on campus.” Robert implies a separation between he and his learning community which seems to be lessened by the relationship his advisor fosters with him. In addition to his advisor, Tyrone also mentioned that the VA reps on campus were a part of his support network. He explained that they helped him understand his benefits and continually communicated about community and networking events on campus.

“It’s been a really great experience, especially with them. They made everything a lot easier for me considering the fact that when I came in, I didn't have much knowledge about what [benefits] I could use on the military side, what [benefits] I couldn't use. They were very knowledgeable and very helpful with explaining everything to me and getting the ball rolling as far as my educational benefits. They did [invite me to] cooperate within the community, but with working and with the school schedule that I had it, it wasn't conducive to my schedule.
While Tyrone comments that participating in campus and communities wasn’t conducive to his schedule, he still refers to the invitations and interactions with his advisor and VA reps as “a really great experience” and “easier for me.” Tyrone’s comments imply that he just didn’t have a lot of time to devote to community, but what he experienced met his needs and may have contributed to lowering the chances for potential perceptions of separation.

For John, building relationships in the greater learning community was important for the management of his online coursework. He commented, “…we give each other moral support… even though we’re all [working on] different degrees, we have each other’s back. We constantly give each other the confidence… that we all need.” John seems to value the encouragement he receives from building community and relationships to support the way he manages his learning; an inference here could be that for this learner, community and relationships help to lessen perceptions of transactional distance when participating in online courses. David also spoke about how it made him feel to build community and relationships in the midst of taking his online math course.

“Oddly enough… it felt like I had a lot more work [course work] on campus than I do now not being on campus. I feel like [being on campus] meshes better with having extracurricular activities because you’re already there, moving around a lot, and time management skills are better on campus. Don’t get me wrong, I definitely think you can [participate on campus] if you’re taking online courses and have your own transportation. [However,] last semester I was involved in quite a bit because I was on campus every day, including Saturdays and Sundays for play rehearsals and whatnot… I was on campus
at least three hours every day, which I enjoyed. It was tiring, but looking back, I think I enjoyed it a lot.”

In his reflection, David considered how learning in-person in the previous semester affected his participation in the wider learning community compared to learning online in the current semester. From his statement, one might infer that David perceived a distance or separation from the greater learning community when his courses changed from mostly in-person to mostly online. While he acknowledges that it is possible to be involved and manage oneself in either situation, David mentions that for him, it was easier to manage his time and course work when he was present on campus.

**Self-Assessment.** Self-assessment was the final subtopic addressed by learners as it related to interacting with content while autonomously managing their own learning. Participants identified self-assessment activities by reflecting on their abilities, preferences, and needs during learner-content interactions. David said that he felt the content was “at my level and higher… the first couple of chapters were very easy,” but he found that in later chapters as the content increased in difficulty, “I need[ed] to buckle down and start studying.” David implied that through self-assessment and introspection he may have perceived when transactional distance gaps were increasing between himself and the understanding of the content. Self-assessment also included checking one’s grades, comparing their progress to peers, and judging if they were satisfied with their experience, performance, or progress. While John didn’t share his feelings or expectations for the math course, he did reflect that the content in his online math course paralleled content that he’d already worked through in high school. “It’s pretty much a
review...It’s nothing I haven’t seen before.” “I have a B+ plus which will most likely go up to an A.” John seems to imply that he is comfortable with his ability to grasp the content and thus may be perceiving very little to no transactional distance with this particular learner-content interaction.

Paul recalled an instance where he used self-assessment to determine that an increase in his effort was necessary. He shared that he felt the resources and assignments were adequate, but he wasn’t performing well on tests. “It was kind of rough… I didn’t do good on the tests in the beginning. It was really hard for me at first.” He goes on to explain why and how he changed his efforts. “I really like self-management, so it fell on me to learn everything for the test. It was different, but I caught on. I would say that I was set up and prepared for it [using the resources and activities provided in the course]. Here Paul implies that through self-assessment and introspection he identified some shortcomings and transactional distance gaps as he interacted with the content. In response, Paul began to take advantage of the resources and activities posted by the instructor to proactively close those content gaps to the best of his abilities.

David, John, and Lamont all commented that they use tools such as the primary LMS gradebook, the secondary LMS gradebook tied to their online text, grade category weights listed in the syllabus, or a combination of these items to check their grades. Lamont explained that one way he monitors his overall grade, is to check the course gradebook regularly. He looks at the categories listed in the instructor’s syllabus for weights to determine his progress. “Doing a little quick math, you can get your grade point average.” He goes on to explain how he uses this process to meet his goals. “I know I’m not failing because I do all of my assignments… that’s
my only concern really.” The ability to use the gradebook and listed weightings to self-assess during the course appear to be in alignment with Lamont’s goal of not failing. An implication here is that these tools combined with the participant’s effort assist in closing an emotional gap that could form around a learner’s knowledge of their grades and progress.

Managing Technology & Prior Experience with Technology. How did participants manage their learning while using technologies to access the course and content? Some of the learners seemed to experience difficulties with technology; sometimes a lack of experience with certain types of technology may have affected a participant’s ability to manage their learning as they would have liked. Robert mentioned that using a tablet combined with the LMS app resulted in a failed attempt at taking a test. He said, “I had a bad experience with it… so now, I just try to get in front of a desktop where I’m able to use a mouse and all of that.” Robert explained that he was having trouble logging into a test from his iPad. First, he wasn’t able to access the test; then, he had trouble inputting answers. Eventually, he ran out of time and failed this exam. He said he felt that asking the instructor for help would have him in “another loophole.” “They’ll just tell you, ‘I’m not the best with computers. You have to talk to IT’. It [feels like] another loophole to go through just to get the same grade. I felt like [there was] no point in talking to them.” Robert seemed to perceive several gaps: one with technology and the other with approaching his instructor for assistance. The decision not to seek help was an autonomous one; Robert felt like the interaction would not yield the desired result, so he chose not to seek help in spite of experiencing a legitimate technology access issue with his test. One might infer that Robert was experiencing some struggles with transactional distance to come to this conclusion.
As Lewis managed devices and passwords to access the content for his online course, he implied a disconnect between his autonomy and the usability of the technology. He said about logging into the LMS platforms, “it gets kind of hard,” and “I can’t do my work because I can’t log in.” Lamont also inferred that technology created a gap for him. He shared a menagerie of instances stating,

“I’m 34, so I’m not old, but I’m not young. There are a lot of things, as far as technology goes, that I can figure out if you show me, but if I don’t know something is available, then I don’t know it’s available.” “… I had an issue with my cell phone where it got locked, and I didn’t know how to log into my classes… I panicked. I didn’t know how to get portable Wi-fi. I had to look all of that up.” “Since everything is online, you need good Wi-Fi and things like that. That doesn’t come intuitively for people who are not as tech savvy as most people are, so I think a lot of tech support [is needed]. If your internet fails, this is [what you do or] where you can go.” “I’ve never [used] Zoom before in my life until college… all of these things, how to do Zoom, how to do passwords, learning how to do this, learning how to do that. The tech support is really the biggest thing.”

Similar to Robert’s experience above, Lamont perceived several gaps concerning technology; autonomously he may not have had the skills he felt he needed to manage his learning sufficiently or feel secure interacting with the platform and other technology tools.

**How did autonomy affect perceptions of transactional distance?**

Participants seemed to experience the least amounts of psychological or communication gaps when the participant was able to manage his learning in a way that met his needs or
preferences. This was usually the result of having access to varied options and tools (structure) which could be used to execute learning in a way that was pleasing to the participant. Additionally, perceptions of transactional distance seemed to be lower when participants felt supported in instances where they felt their own autonomous skills may not have been adequate to achieve the outcomes they desired.

Beyond the actions and control of the learner, a course’s structure reflects how well it has been designed to respond to each learner’s needs and preferences. Course structure influences both learner autonomy and dialogue.
Course Structure & Transactional Distance

Course structure refers to how rigid or flexible through instructional design a course’s educational objectives, teaching strategies, and evaluation methods can accommodate each learner’s individual needs and preferences (Moore 2019). Interactions, strategies, activities, and tools can fall under multiple of the three tenets of transactional distance theory; while overlaps can occur, the following section explores those most appropriately logged as course structure and design; when most appropriate, examples which overlap with autonomy and dialogue are noted. Both the rigidity and flexibility of an online course are influenced by many factors; some of those factors may include institutional decisions and purchases, instructor or course designer preferences, enrollment, availability and training of faculty, student feedback, and more. As questions around different types of interactions were explored, responses pointed toward rigidity or flexibility in course design; response topics included mode of instruction, online text and LMS, multiple attempts and make-up work, pacing and content release, course organization and navigation, and setting.

Flexibility

Flexible course structure refers to how easily a course can be altered to accommodate the needs and/or preferences of learners. This can include the willingness of the course designer to alter objectives, teaching strategies, assessments, course organization and more. Flexibility can include multiple access points to information or multiple pathways to achieve the same goal or
objective. While it could be interpreted as less structure, this research found examples of a flexible course structure to include choice and options within the design.

**Mode of Instruction.** Participants discussed the presence or absence of instruction. Instructor-led instruction included activities such as synchronous sessions; recorded lectures by the instructor of record; and audio or video recorded lesson slides and notes. Self-guided instruction included activities such as readings; online text activities and assignments; reviewing instructor-provided lectures or videos from the online text or outside sources; reviewing slides and notes independently provided by the instructor, online text, or other outside sources; and seeking supplemental resources other than those provided by the instructor. John and Tyrone shared interactions about instruction that point toward the flexibility within their online courses.

John described his experience as self-guided and in a positive light due to his preference for self-guided learning; he especially preferred using the online textbook combined with multiple attempts on homework to go over the material as many times as he liked to earn the grade he desired. The course seemed to have been flexible enough to allow John to select the modes of learning which he favored most and those which were of most benefit to him. Meeting the needs and preferences of learners can decrease perceptions of distance.

Tyrone described the flexibility of the synchronous sessions offered in his online math course with praise and to the benefit of learners with varied learning needs and demands on their time.

“…having an allotted time for lectures was a convenient thing for some and for [others] not being held accountable for getting online at a [particular] time was convenient.”
Maybe you had your kids with you or something like that making it harder to actually pay attention online. I felt like that was something that helped a lot of people. They need one-on-one time, you know, personal interaction instead of just being held accountable to read material on their own and trying to understand it on their own. I feel like that’s something that most asynchronous classes should do is to have an allotted time for a lecture… or time where students can just ask the questions they [have].” “For my math course, we would get online, go over the material, and it was always recorded, so if you had to miss that day, for whatever reason, you could always go back and watch the lecture.”

Tyrone seems to have valued the choice to participate in synchronous sessions, the option for one-to-one sessions, freedom to manage his time, and the surety of knowing support was available if he needed it. These options seemed to be aligned with Tyrone’s needs and thus infers that these options could have aided in closing transactional distance gaps for this learner.

**Make-up Work & Multiple Attempts.** Participants described make-up work as assignments they were permitted to complete after missing deadlines, missing assignments, and sometimes completing alternative assignments. Multiple attempts usually referred to completing a homework activity or quiz in the online text program (secondary LMS) multiple times to achieve the desired score or result; however, make-up work and multiple attempts could have included both works assigned in the primary LMS or in the secondary LMS. Typically, learners found these structures favorable.
John shared that the ability to take advantage of multiple attempts when completing homework through the online text LMS prepared him for the one-attempt, timed exams and allowed him to review practice questions as many times as he desired. John shared that perfect homework scores were important to him, and that the flexibility to take advantage of multiple attempts allowed him to repeat the work until he had achieved his goal. Andry referred to the importance of multiple attempts by explaining that the online text program would explain why his response was correct or incorrect and then “gives us the opportunity to make up for our mistakes”. Tyrone called the feature “very accommodating to someone who didn’t necessarily get the material off the bat.” For these learners, multiple attempts seemed to be a structure of value to them; by including it into the course, learners were able to take advantage of an option that met their needs and potentially lessened any gaps that could have distanced them from their educational goals in this math course. Lewis and Paul commented that the ability to complete make-up work helped them to pass the class. The examples these participants shared may imply that the inclusion of multiple attempts and make-up work in the structure a course can support learners reaching their educational goals if the learner finds the structures valuable; this could potentially lessen gaps of transactional distance between the learner and achieving their educational goals.

**LMS, Online Text, Course Organization, & Navigation.** Course organization and navigation refer to how the components, activities, resources, pages, tools, etc. are organized within the LMS and how easy or difficult learners perceive navigating or moving from item to item. Participants of the study shared their perceptions about moving between LMS platforms to
complete assignments and find grades; they noted how easily or difficult it was to find resources such as the syllabus or lesson notes; participants also made note of the click path and logins required to reach a destination. Seven of eight participants commented that overall, the LMS platforms were either easy to use or eventually easy to use after a week or so.

Concerning grades and feedback, John, Lamont, and Lewis shared an appreciation for being able to use the information between the two platforms to average their grades at any time. John said, “We can check our scores [on the online text LMS] and then check our grades in the class [on the primary LMS]. John was concerned with gradebook alignment between the two LMS systems; however, having the ability to check grades in both systems allowed him to compute his cumulative grade as a checkpoint for his personal goals. While this action overlaps with autonomy, it is activity that would not be possible without flexible and intentional course design. Because knowing his grade average at any time was important to John, the ability to do so may have decreased perceptions of transactional distance pertaining to this need and goal.

Lamont praised his online instructor specifically for providing notes about the weekly content in the main LMS platform that aligned with the lessons from the online text and practice assignments in the secondary LMS platform. “Kudos to the professor actually coordinating the notes with [the secondary LMS] … they link very nicely…that was very helpful.” For Lamont, cohesion between the instruction in the main LMS and instruction from the online text in the secondary LMS seemed to provide a level of support that he needed. It can be inferred that this attention to detail and course organization met the needs of this learner and may have influenced a lower level of frustration, feelings of distance, or feelings of being lost between the content in
the two platforms. David was happy to use an app to access the LMS system for which he replied that it made “logging in a little bit easier than [the last LMS].” Lamont and Tyrone both appreciated having an electronic book versus a physical book, and Tyrone added that he appreciated the step-by-step nature of the online text and activities. Platform ease-of-use, multiple access points to the LMS, content and grade cohesion between the two LMS systems, and ease of navigation seemed to be points of flexibility that were present and reported as important by these learners. One might infer that these qualities can help to meet learner needs and lessen feelings of distance and/or frustration when trying to navigate their courses and course content.

Lewis commented how technology can sometimes create a gap between him and his online coursework. He started by mentioning that there are many options and differences presented between using different types of technology to access one’s course. He included school and personal laptops, desktop computers, phones, and other devices. Lewis uses his personal desktop, laptop and phone; however, per the reflection below, flexible course access may have contributed to an increased perception of transactional distance for this learner.

“I log on all three of those equally for my schoolwork. I just can’t keep up with everything. I’ll have my calendar on one of those devices, or I’ll have something on another device. It gets kind of hard, especially with saved passwords. We have to go to a bunch of different websites. I’ll have the password on this one [device], but I won’t have a password [saved] on the other [device]… so then, [depending on where I am and which device I have] I can’t do my work because I can’t log in.”
Setting. While we’ve discussed the topic of setting, both time and location in previous sections of this paper – especially the autonomy section, I would be remiss to exclude them from the course structure section. The course offerings being online asynchronous, whether per the design of the institution, the instructor, or both have impacted the ability for learners to participate in flexible learning environments. Like our other findings, the benefit of this flexibility is to be interpreted by the learner, their preferences, and their needs. However, time and again, participants praised the multiplicity of options and arrangements by which they could arrange and manage the time and location in which they participated in learning. For most learners, this flexibility in time and location greatly decreased perceptions of distance that could lead to chasms between the learner and the opportunity to participate in both learning and the learning environment. However, though rare, one learner found the flexible setting to be less helpful. Lewis shared, “I had so much time because I took online courses… I had too much time on my hands, and I think… it definitely brought me away from doing my work instead of just goofing off.” For Lewis, a flexible setting seemed to create greater perceptions of transactional distance. In contrast, John, Tyrone, and Lamont all spoke extensively about how the asynchronous nature of the online math courses allowed them the opportunity to manage both working and learning amongst other responsibilities thus pointing toward decreased levels of transactional distance.

Rigidity

Rigidity refers to how difficult it appears a course can be altered to accommodate the needs and/or preferences of learners. It could present as structures that cannot be changed within
a course such as an LMS system selected by the greater institution, the modes of which a course is offered such as asynchronous online or face-to-face. Rigidity could also present as the level of difficulty to or unwillingness to change structures within a course such as where to locate resources, grade or weight schemes, or whether multiple attempts is allowed on assignments and/or assessments.

**Mode of Instruction.** Revisiting mode of instruction, when considering instructor-led versus self-guided, Andry had this to say,

“He sent out videos and PowerPoints, and then we just did the homework, but that wasn't working for me… “I'm not really an online learner, so it was kind of hard for me to learn math. Math is my best subject, and I can't really learn math online… I have to be in person writing the formulas down, solving it. I can't just do it with the video… He didn't have any Zoom meetings to explain it to us. We literally had to figure it out on our own… so, I just dropped the class.”

While Andry’s math course included varied types of instructional resources, Andry implies that he would prefer instructor-led instruction. When he doesn’t perceive this in his experience, it seems to have caused a learning gap for Andry. The structure of this course seems to have been rigid in design because to Andry it lacked instructor presence and support. In addition, the structure of this course may have caused challenges that competed with Andry’s level of autonomous function perhaps with grasping the content in a self-guided manner. His response was to drop the course – a complete separation from the learning, online environment, and course community.
Robert and David expressed gaps in the process of acquiring the content for the course with the provided resources. Robert described the instruction he received as “surface level” and felt like in order to master the course’s content or “… to get a good grade in the class… I would have to do my own extra practice or extra research if I wanted to really master the skills… what they provide is surface level.” David shared,

“There were a few shortcomings; in the math course… basically everything I learned was solely on the course website. There were video links, but there weren’t tutoring links… or a link for how to do this, et cetera et cetera… we had to go find everything ourselves.”

David continued,

“Online, especially in my math class, you find yourself… being your own teacher. Of course, the professor is there, but a lot of times you’re watching these videos. I don’t know about anyone else, but after I watch the videos, I Google the different concepts online. I’m basically teaching myself [while thinking] how do I do this [math concept]? It’s great when you get it, but when you don’t, and it’s a little above your head, it can be very difficult.” “I definitely needed more help and practice. I really think if I had someone teaching me – going through it – the videos were very helpful; don’t get me wrong. They were very insightful, and I got by on them, but the second half of the course got rocky. It went from more terminology-based to… application and equations very suddenly. It was very difficult.”

Robert’s and David’s accounts seem to point toward a rigidity in the structural design of their courses. The learners perceive that the content provided may be inadequate to meet their
learning goals. Both learners referred to searching for additional resources to aid supplement their learning and understanding of the content outside of what was provided in the online text LMS or by the instructor. These learners seem to have enacted autonomous skills to find resources to fill a gap, caused by the rigidity of the course design, that they perceived between themselves, understanding the content, and meeting their educational goals.

David described self-guided instruction as both a positive and negative experience citing that when he understands what he’s doing, guiding himself through the course and resources felt comfortable; however, when he started to feel like he was unfamiliar with the concepts, the course became very difficult. David’s experience infers that he may have experienced increased feelings of separation from his instructor when he felt he needed more support with the coursework. Some learners preferred instructor-led instruction, some preferred a self-guided nature to the course, and some learners had mixed sentiments. The examples here reinforce the idea that perceptions of transactional distance are unique to learners, their needs, and their learning preferences; however, it also strongly supports the findings that most learners preferred the option to participate in instructor-led content instruction especially when they perceived a need for assistance.

**Pacing and Release of Content.** Participants discussed course calendars and timelines, the alignment of those calendars between LMS platforms, and how these things affected the way they interacted with content. John and Lamont reported an issue with pacing and release of content due to misalignments between the university calendar and the online text LMS schedule. These two participants said that this misalignment affected their ability to learn at their own
speed or to work ahead during school breaks. Lamont initially believed that the early availability of content would help him balance time between his coursework and work schedule, however; he found that a discrepancy in the process caused more of a hinderance than help to both his self-management and learning processes. Lamont explained that he liked to work ahead on homework assignments and lessons. The lessons would open early; he could work as far ahead as he liked; however, the corresponding quizzes were scheduled to open one week at a time consecutively. He explained that he may have used his time to get ahead and study up to lesson six for example, but when he went back to take quizzes, he was only allowed to complete the quizzes for lessons one and two. Lamont commented that this caused him to forget or mix-up information. He was trying to recall information and find his notes on those lessons. “So now, my goal is not to jump ahead. I used to do math every day; I do math maybe once every two weeks now just to give the quizzes time to catch up to where I’m at.” He goes on, “I decided to slow down. I don’t do as much math as I used to… I just try to keep pace with the [online textbook] and her [the instructor’s] notes. Lamont further explained that he would prefer to work ahead due to his work schedule. He said,

“I think it’s the way she set [it] up in the syllabus. If you let me do three lessons a day, I’m going to do three lessons a day. Other professors lock out the lessons because they know people are going to do them [early]. I work; I have a full-time job. If I could get this [my coursework] knocked out, and then focus on my job without having to [go back and forth between the two] … I’m tired and [may] not perform as well. If I have days off and [the course] is set up where I can get this [the coursework] done in this time period
While Lamont’s recollections are certainly related to the nature of his autonomy as a learner, here we can see how the rigidity of the designed into the course caused some perceptions of transactional distance for him. The instructor designed the pacing of the content lessons in the online text so that learners could work ahead; unfortunately, the assessment schedule was not aligned to the content schedule. This affected Lamont’s autonomy to manage his time. Faced with discrepancy and subsequent gap, the learner chose to follow the assessment schedule rather than his preferred schedule. The learner commented, “I guess it’s okay,” but expressed disappointment because he could not fit the learning around his work schedule as he’d liked.

**LMS, Online Text, Course Organization, & Navigation.** Robert noted that locating feedback and grades was not the simplest process for him. He said, “It’s almost like you’re dreading it… we [have to] go hunt for it [grades and feedback]; it brings a different connotation toward the class.” Comparing this experience to other courses, Robert goes on to say “… I don’t like the difference… I like to know what I’m doing [and] be able to see my progress right in front of me. That’s the type of student I am.” Robert went on to share that while he wasn’t doing bad in his math class, of all his courses this is the course he was doing “the worst” and that it was ironic alluding that challenges around finding grades and feedback were contributing factors. Robert alludes to the point that not knowing his standing in a course might create some type of stress or frustration for him; one might infer that the organizational or navigational design within this course for locating grades and feedback could have contributed to an increased perception of
transactional distance for Robert. Lamont’s example spoke to navigation; he found switching between LMS platforms to be “tedious at times,” and followed up with, “the platform is easy, but just too many steps to get what you need.” Like Robert, Lamont also alluded to a perception of distance or a frustration between themselves and getting to the information needed caused by the organization and/or navigational design of the course.

Lewis shared about moving between LMS platforms stating, “You have the lessons on [the main platform], but in order to do the tests and homework, you have to go to a different website… I’d rather keep it all in one place.” Lewis continued,

“I hated that one [referring to online text LMS] so much. [There was] a tab that went right to it [from the main LMS], but nothing ever correlated. I tried to set it up to [receive] notifications, but they were never working. There was always some kind of technical issue that caused me to miss work and stuff like that. Luckily the teacher was understanding, but it was very, very difficult.”

The use of two LMS systems and the notification system represent rigid course design that was not altered even after the learner notified the instructor; most likely the rigid design is outside of the instructor’s hands, yet an inference can be drawn that technical or usage difficulties caused by the design could have contributed to transactional distance gaps for the learner.

Tyrone on the other hand seemed to appreciate the online textbook and platform and shared no issues using it. He stated, “… with math, they had the electronic book online; that made things a lot easier, too… everything was condensed under that software; it just was really,
really accommodating.” This is an example of how the rigid structure of the online textbook, activities, and resources all in one primary location was found to be amiable to the learner and infers that this design did not contribute to transactional distance gaps and possible decreased levels of distance for the learner.

**Make-up Work & MultipleAttempts.** Paul touched on this topic adding, “it was up to me if I wanted to get a 100 on assignments or not,” which he seemed to appreciate. However, Paul went on to explain that test grades didn’t follow the same methodology. He recalled an instance when he knew his test score would bring down his overall grade and hoped he could have another attempt to make improvements.

“When you take the test, that was your grade… I went to [the instructor] the first that it happened… she told me if you failed the test, you failed the test… I wasn’t really satisfied with this… but those were the rules. I just accepted the way it was. I passed the class… but it was [my lowest course grade of the semester].

Paul’s example highlights that while the addition of multiple attempts on homework and quizzes attributed to flexible course design, the rigidity of not extending that structure to exams seemed to be unexpected and possibly undesirable to Paul. He says, “I wasn’t really satisfied with this.” It might be safe to infer that the flexibility with some coursework versus rigidity of other course work may have contributed to some perceptions of transactional distance as Paul considered his options for meeting his educational goals in the course.
How did course structure affect perceptions of transactional distance?

Much like we have found for dialogue and autonomy, course structure appears to impact a learner’s perception of transactional distance the most when the structures and/or elements of the course either meet or fail to meet the needs and/or preferences of the learner. The level or intensity of the transactional distance seemed to be influenced by how rigid or how flexible the structures and the design of the course were relative to the learner’s perception of their own learning needs and preferences being met or not. Highly flexible courses with multiple options and paths for learning were more preferred by learners and yielded lower levels of transactional distance; however, rarely this was not true. For some learners, no matter the level of flexibility, if the options presented, for example a student needing additional assistance with content, but the instructor was not available, did not meet their level of need, they still perceived higher levels of transactional distance. Typically, highly rigid courses with little choice or options were less preferred by learners and yielded higher levels of transactional distance; however, this also was not always true. Occasionally, a learner thrived with highly rigid course structures in place because it aligned with their learning needs or preferences; for example, Tyrone liked having an online text and only doing work with that text and in the secondary LMS platform versus working in both platforms for instance to review notes in one place and to complete homework in another.
Concluding Results

How did dialogue, autonomy, and course structure affect perceptions of transactional distance?

In online asynchronous learning environments, interactions are crafted from a mixture of a course’s structural elements, instances of dialogue, and opportunities to exercise autonomy. A learner’s perception of those interactions is dependent upon their educational needs and preferences and the extent to which they perceive those needs and preferences have been met.

What We Learned About Dialogue and Perceptions of Transactional Distance.

Varying levels of dialogue are integral to online asynchronous courses because dialogue supports learner interactions and influences perceptions of transactional distance per each learner’s needs and preferences. Online asynchronous courses introduce distance between learners and instructors both in location and time; dialogue builds bridges in the psychological and communication gaps that can occur in online learning environments. Without dialogue, instructor and learner presences diminish and courses can become grossly self-directed or self-guided. In this study, learners had an expectation for others to be present within their learning environment whether they had a desire to dialogue with them or not. When learners expected dialogue and didn’t receive it, the likelihood for perceptions of transactional distance was prevalent. When learners received dialogue that they deemed unwarranted, without purpose, or misplaced, perceptions of transactional distance were prevalent. When learners expected dialogue, participated in it, and felt like it met their needs, perceptions of transactional distance were less prevalent. Varying levels of dialogue must be designed into a course’s interactions and
options because varying levels of dialogue are necessary for different types of interactions and for meeting differentiated needs.

**What We Learned About Autonomy and Perceptions of Transactional Distance.**

Learner autonomy is a personal and fluid construct essential to online asynchronous learning because it supports learner interactions and influences perceptions of transactional distance; learner autonomy is dependent upon learner self-awareness, intentional course design, and differentiated instructor support. Management of one’s own learning is highly multi-faceted; it is composed of many elements such as time management, self-management, introspection, awareness of one’s learning needs and preferences, and so on. Learner autonomy can expand or restrict when the variables of learning change. The vast combination of learning variables crossed with the variables of learner autonomy, course design, and instructor support can expose the vast and intricate nature by which psychological and communication gaps, distances, and misunderstandings can occur in online asynchronous courses. In this study, learners autonomously navigated courses both by paths of their own design using the resources and tools available to them and by paths designed or influenced by the instructor. When learners felt their autonomous efforts and supports were meeting their needs, perceptions of transactional distance were less prevalent. When learners felt the autonomous management and support of their learning was unable to fully meet their needs, perceptions of transactional distance were prevalent. When learners felt they needed assistance managing their learning and were met with assistance that they perceived to meet their needs, perceptions of transactional distance were less prevalent. Learner autonomy is a personal and unique combination for each individual; meeting
the autonomous needs of online asynchronous learners requires course design that considers differentiation, varied options, flexibility, and a willingness to build relationships for the sake of providing targeted support.

What We Learned About Course Structure and Perceptions of Transactional Distance.

Course structure is the vehicle by which interactions, dialogue, autonomy, teaching, and learning are delivered in online asynchronous courses; perceptions of transactional distance are influenced by the design of a course and its ability to meet the personalized educational needs and preferences of learners. The extent to which the elements within a course’s structure could or could not accommodate a learner’s needs directly influenced perceptions of transactional distance to varying degrees. When learners found structures and resources within a course that supported their autonomy and learning goals, perceptions of transactional distance were less prevalent. For example, some learners wanted direct instruction of content and were pleased to find options to meet this need such as optional synchronous sessions, one-to-one sessions, video recordings, and narrated slides from their instructors. In another example, many learners appreciated multiple attempts on homework or quizzes because it allowed them to repeat an activity until they reached a score they felt satisfied with; potentially this structure helped to lessen the perception of psychological gaps that could have occurred for learners who found that multiple attempts at homework and quizzes aligned with their needs and preferences. However, that same structure seemed to increase potential perceptions for transactional distance for a learner who expected multiple attempts to be applied to exams and it was not; his response and
emotional description of the interaction implied that his needs and preferences had not been met and that he was dissatisfied with the rigidity of this particular course structure.

When learners found the structures within a course to fall short of meeting their needs or preferences, maybe because the course was too restrictive, lacked structure, or had missing elements, perceptions of transactional distance were more prevalent. For example, if learners were interacting with content in a self-guided manner perhaps when using the online text LMS, if that learner came to a point where they felt they needed live support from an instructor, but the course lacked instructor presence through instructional support, a learner may perceive a transactional distance gap. In this research we found that like dialogue and autonomy, learner needs are varied and influenced by their personal preferences. Course elements designed to provide choice and meet various learner needs seemed to allow learners more flexibility to participate in learning as it suited them. Course design that had the flexibility to respond to or meet learner needs and preferences, whatever the constructs may have been, seemed to elicit fewer perceptions of transactional distance.

Member-checking Results

All participants were contacted by email (see Appendix B4) with an explanation outlining the purpose of the contact and task. Participants were provided a short 3.5-page written summary and 9-minute audio recording (of written summary) of findings from Chapter 4. A link to a 3-question Qualtrics survey was included. The questions were as follows:
1. On a scale from 0 to 10, how much do you agree or disagree with the summary results shared here compared to the experience you shared about your online asynchronous math course? Please select the response you find most appropriate on the scale.

2. Are there any thoughts in the short summary that you disagree with? If yes, what are they? Please explain in the space provided.

3. Are there any additional thoughts about your experience in the online asynchronous math course that you'd like the researcher to consider? Please share your thoughts in the space provided.

The survey was open for 10 days. One participant replied to the member-checking feedback survey. His response to Question 1 on a scale of 0-10 was 5. No response was entered for Question 2. For Question 3, the respondent replied, “No thoughts as of now.”
CHAPTER FIVE: DISCUSSION

This research opened with the statistics that according to data published in 2017, 34% of Black males enrolling in 4-year colleges graduate with a bachelor’s degree within six years (NCES, 2017); this is considering that of the 1.9 million degrees conferred in the United States during the 2015-2016 school year, only 11% were conferred to Black students (NCES, 2019). Historically, Black males have been and remain an underrepresented population both enrolling in higher education 4-year degree programs and of the population being conferred those same degrees. This research sought to look at the issues of enrollment, persistence, and program completion for Black males enrolled in online asynchronous courses through a lens of transactional distance in online learning environments.

Michael Grahame Moore defined transactional distance, from the theory of transactional distance, as a psychological and communications gap that can take place in the learning environment. Moore’s theory includes that learning environments consist of an interplay between the interactions which occur based on a course’s structure, instances of dialogue, and opportunities for learner autonomy. Per Moore, a learner’s perceptions of transactional distance are personalized and dependent upon the learner’s educational needs and preferences (Moore, 2019).

Aligned with Moore’s findings, the data from this research supports the ideas that learner’s perceptions of distance and the degrees to which they may feel psychologically or communicatively separate from their instructor or other learners is dependent upon the learner’s personal educational needs, wants, goals, and preferences. The data from this research supports
the idea that personalization through course design has the potential to lessen perceptions of transactional distance and according to Tinto (2009), positively influence course satisfaction, participation, and persistence. In Chapter 2 we stated that Tinto shared that the development of learning communities, both academic and social, feed student satisfaction and persistence. Participant testimonies from this research on perceptions of transactional distance support those purports especially when inclusion to learning communities aligned with the learner’s educational needs and preferences. Repeatedly throughout the data, and in the section labeled “data outside the scope of research,” participants referred to community or relationship building as a desired asset to support them through their educational journeys. While building community and relationships was not the sole focus of every learner and typically was dependent upon the components they were managing in their education-work-life balance, every learner was open to relationships especially when assistance of any kind was needed.

The findings from this research of perceptions of transactional distance from Black males support the findings of Kimble-Hill et al in their 2020 publication “Insights gained into marginalized students access challenges during the COVID-19 academic response.” The researchers found that Black males participating in online distance learning cited limited instructor feedback, limited one-on-one interaction, lacking skills to keep up with pacing, motivation, time management (Kimble-Hill et al., 2020; Jaggers & Bailey, 2010; Scott, 2017), and ample academic, financial, and cultural support in the online environment (Salvo et al., 2019; Scott, 2017) as concerns when participating in online learning environments. These same concerns were cited during participant interviews on perceptions of transactional distance as
challenges while learning in college-level online asynchronous math courses. Just as the researchers who are cited above have sought after and collected very specific feedback, and the participants of these studies, including this study, have provided very specific perceptions from their lived experiences, Black males, and all learners, must tap into self-awareness and use the information that is personal and specific to their learning path to advocate for themselves in learning environments and communities. Self-awareness and advocation are learned skills that fall under the umbrella of autonomy; while it may take time to sharpen these skills, they are integral to the shared role that befall learners and instructors when it comes to the dualistic nature of autonomy.

Per Chapter 1, Black males are more likely to enter into higher education at risk for low academic performance and college readiness (Addis and Withington, 2016; Xu and Jaggars, 2014). Black males are at higher risk of attempting college careers underprepared (Jaggers and Bailey, 2010). Black students have graduated with bachelor’s degrees at a conferment rate of 11% of 1.9 million degrees conferred in 2015 (NCES, 2015). These statistics speak to urgency and the instrumental nature that the data collected from this and related research could be to serve Black males, and all learners, by diligently and intentionally working to design courses that will diminish transactional distance gaps through the use of course structures, dialogue, autonomy, and interactions which are crafted to meet and support learners’ educational needs and preferences.
Conclusions

Perceptions of transactional distance are comprised of psychological and communication gaps that can cause a learner to feel a distance, separation, or gap between themselves and the instructor or other learners in a learning environment. Per the work of previous researchers and per the findings of this research project, these gaps can extend to content, LMS, the greater learning community, educational goals, and more. Perceptions of transactional distance are comprised of psychological and communication gaps that can increase and/or decrease based on a learner’s educational needs and preferences. Perceptions of transactional distance are influenced by instructional course design. Instructional course design should include the main tenets of transactional distance theory being course structure, dialogue, and learner autonomy. Perceptions of transactional distance can be lessened through personalization, through meeting and supporting learners’ needs, and through varied interactions within the learning environment. The findings of this research implicate a call for learning communities to support learner needs and preferences, including varied learner populations such as Black males, by addressing transactional distance gaps.

Dialogue

**Key Points, Implications, and Recommendations.** What impact do Black males perceive dialogue has on course satisfaction in college-level online asynchronous math courses? Participants typically perceived the least levels of transactional distance when levels of dialogue with their instructor, other learners, and members of the greater learning community met the preferences and expectations of the learner. For example, a participant may have perceived
decreased levels of transactional distance if that learner both expected to discuss learning with the instructor and other learners and experienced this type of communication within the course. This data fell in line with the findings of Shearer (2009) and Shearer and Park (2019) on building understanding and connectedness through dialogue in online learning environments. However, another learner may have perceived increased levels of transactional distance if they seemed pressured to participate in dialogic interactions, such as synchronous sessions or group projects, when the learner felt they did not desire, need, or have time in their schedule for the additional communications.

When learners felt they were struggling to acquire content, struggling to build relationships that would support their completion of coursework, wanting to build supportive relationships that would help them to persist through a course, or had high expectations for dialogue and did not experience it, they typically expressed a desire for increased learner-instructor and learner-learner dialogues. To support learners with an increased need or desire for dialogue, some suggestions might be for instructors to increase their presence in a course by including instances for explicit instruction of the content and to increase opportunities for learners to dialogue with both the instructor and other learners. Explicit instruction in online asynchronous courses could include optional synchronous sessions that include teaching, modeling, discussion, and question-answer sessions. Additionally, opportunities to dialogue more with the instructor might include one-to-one sessions (office hours) while opportunities to dialogue more with other learners might include introductory forums, discussion boards, or protected social boards and spaces where
participants can ask one another questions and/or build relationships separate from graded or required course assignments.

When learners felt they had a perceptively sound grasp on content, felt their needs for community support were being met (whether from within the course or from elsewhere), had little to no expectations of dialogue exchanges, or the dialogue seemed to meet the learner’s ideal preference for dialogue in an online asynchronous math course, the learners typically were satisfied or indifferent about exchanges of dialogue. In this case, it might be suggested that instructors and course designers take inventory of the instances for dialogue designed into the course and collect feedback from the learners on about if and how the dialogue met or did not meet their needs. Instructors might also pose open-ended prompts to allow learners to suggest types or instances for dialogue they would find helpful or have experienced in other learning environments. This information can be used for future course design.

Meeting learners' dialogic needs and preferences requires building relationships with them and in some cases, providing differentiated or personalized support. To build relationships with learners, some suggestions might be for instructors to capitalize on collecting and reviewing academic and demographic data on the learners they serve as well as conducting one-to-one mini conferences when possible. Academic data, such as pre-assessments and course or content surveys, combined with demographic data could help to inform instructors on the types and frequency of dialogue to design into their particular course. Mini-conferences might consist of one or several 15-minute one-to-one sessions with each learner; during this time, learners and
instructors have an opportunity to build relationships while discussing the learners needs and if they’re being met.

In short, levels of dialogue that met the learner’s needs and/or preferences seemed to yield lower perceptions of transactional distance; alternatively, perceptions increased when the learner perceived too little or too much dialogue based on their needs and/or preferences. Building relationships while also collecting data and feedback are useful tools and pieces of information for instructors, course designers, and support groups, and institutions to use as they build and design courses with elements to serve both individuals and groups of learners alike.

**Autonomy**

*Key Points, Implications, and Recommendations.* What impact do Black males perceive autonomy has on course satisfaction in college-level online asynchronous math courses? Participants typically perceived the least levels of transactional distance when their autonomous skills were sufficient to manage their learning to both the expectations of the learner and the instructor. In this case, open and clear communication of expectations and the progress at meeting those expectations could be, or could continue to be, helpful to both the learner and instructor.

When the learner’s autonomous efforts were supplemented by instructor support (organizational resources, syllabi, calendars, reminders, grade postings, personalized emails, accountability, etc.) learner’s perceived lowered instances of transactional distance. For example, a learner may perceive lowered levels of transactional distance when they feel they’ve successfully used the course resources to develop a time-management plan that allows them to
participate in the course as learner but that also respects the other demands on their time such as work or family. The same learner may feel increased levels of transactional distance if for instance due dates unexpectedly change on the course calendar causing the learner to therefore make adjustments not only to their learning schedule, but potentially their work and family schedule as well. The ability of an instructor to provide useful organizational resources and tools for autonomy at the start of the course seems to be extremely helpful to learners in the quest to manage their own learning. Alternatively, unexpected changes such as due dates, expectations, or lack of transparency with grades could negatively influence learner autonomy.

Learner autonomy and help-seeking appeared in both the literature review and findings. A learner with a list of incomplete or missing assignments neither contacted the instructor for help nor to arrange make-up work; likewise, the instructor did not contact the learner to gather information about the situation or follow-up on the missing work. Autonomy is a dual-sided construct. It involves both an instructor's skill to identify, design, and provide support for the levels at which a learner can autonomously function in a course while also involving a learner's ability to identify, develop, and enact the autonomous skills necessary to manage parts of their own learning experiences (Moore, 2019). In cases such as this one, it might be helpful for instructors track progress, reach out when expectations aren’t met, and follow-up if needed. For learners, it is suggested to communicate regularly with instructors when expectations have not been met, to ask for assistance when needed, to track one’s grades and progress regularly, and to follow up about decisions when needed.
Like Huang et.al (2016) and Vasiloudis et al (2016) in support of instructor’s gauging autonomy and providing support to help construct the best experience for learners, the findings in this research support the fact that learners are individuals; just as levels of autonomy can range from learner to learner or from situation to situation for a single learner, autonomous support should be differentiated per the learner and can be designed into a course’s structure and dialogic interactions. Differentiation for learners could look like offering multiple submission types for an assignment or allowing learners to drop a quiz of their choosing without penalty; it could also include an instructor speaking to a learner to ask how they could be of support and accommodating where possible.

Some learners may be quite aware of their strengths and areas of improvement pertaining to autonomous skills such as self-management, time-management, help-seeking, monitoring grades, internal learner-content feedback cycles, etc., while some learners may not be so aware. Institutions and support groups should inform, equip, and empower learners to be self-advocates when participating in online learning environments. Inform learners how to advocate for themselves; this might include help-seeking strategies, researching the differences between course offerings such as in-person, hybrid, self-paced, asynchronous, synchronous, etc. and which would best meet their needs and/or preferences. Learners should also regularly offer, or be asked for, specific feedback to instructors and advisors when course structures are highly satisfactory or dissatisfactory. Equip learners to introspectively examine their own autonomous skills, or lack thereof, and how to address the development of those skills to positively influence their experience and satisfaction from course to course. Many universities have student support
programs in place to teach these types of skills. Empower learners to participate in and design learning scenarios, such as selecting course offerings, that are appropriate for them by meeting their needs and preferences. Some questions to help students reflect on their own autonomy might include: (1) Does a particular type of course delivery fit your autonomy, organizational skills, and time availability better than another? (2) Which type of course components do you enjoy and help you to be the most successful? (3) Have you taken courses with a particular instructor whose instructional design and facilitation styles best meet your needs and preferences? (4) What are the qualities of that instructor or facilitation style?

**Course Structure**

*Key Points, Implications, and Recommendations.* What impact do Black males perceive course structure has on course satisfaction in college-level online asynchronous math courses? Participants typically perceived the least levels of transactional distance when options were designed into a courses structure which allowed the participant to personalize their learning in a way which aligned with their educational needs and preferences; alternatively, participants perceived the greatest levels of transactional distance when they found elements of a course contrary to their preferences or if they felt their educational needs were not being met. Because a course’s structure involves numerous components, it may not be possible to add options and choices to every element; however, it is suggested that instructors incorporate options and choice into courses where it might be most helpful for learners and ideally using feedback and best practices to determine those instances. Findings from this research point toward areas such as
flexibility with multiple attempts and synchronous meetings or offering varied types of content instruction as valuable and helpful to learners.

As an example, a learner may have had trouble acquiring content through the third-party online text activities and desired a follow-up session with an instructor for additional content instruction. The learner may have experienced decreased levels of transactional distance when options to engage with the instructor, such as office hours or optional synchronous sessions were available. Another learner, for instance, may have perceived increased levels of transactional distance if they felt they needed to communicate with their instructor for content clarification, but the instructor was not accessible. It is suggested that instructors outline and clearly communicate with learners how and when they are available for contact. Instructors might consider multiple modes of contact, such as in-person office hours, video conferences, phone calls, optional synchronous sessions, LMS messaging, and email as options to serve different needs and/or preferences.

If it was communicated to learners that they can move as quickly as they’d like through modules, but later they found that while content for all modules was open and accessible, correlated quizzes remained on a schedule and locked, this could influence increased perceptions of transactional distance and miscommunication. Prior to the start of a course, instructors should review the policies and guidelines they’ve outlined and test them within the course to ensure they are accurate. In the example above, checking the schedules and settings placed on the supplemental digital text and LMS system as compared to the calendars and schedules outlined in the main LMS and/or syllabus may have prevented this miscommunication. Additionally,
asking learners for feedback regularly throughout a course, versus solely at the end of a course, could help to identify opportunities for improvement or to correct course structures that may be frustrating learners.

Designing flexible learner-content interactions in online asynchronous courses such as self-guided modules, notes provided by the instructor, live and recorded lectures, and/or optional synchronous sessions allows for learners to engage and interact per their level of need. Learners will have different levels of need; learners will have different preferences for learning. Instructors can also benefit from flexible design because they can offer options which complement the content, course type, and needs of the learner while also including options which complement the needs and preferences of instructor. The data appears to present the underlying theme that offering and designing varied course structure options with the intention of meeting learner needs and preferences may decrease perceptions of transactional distance. Design courses with the following in mind: flexible course structure, instances of dialogue, learner autonomy, and interactions which support personalized learning based on a learner’s educational goals and preferences. Consider that the amount of interaction designed into online learning environments can contribute to the degree of isolation a learner may feel or the level of transactional distance that may be perceived between a learner and instructor (Shearer and Park, 2019).

**Recommendations for Policy Makers.**

While the learners in this study participated in the same course, this may have occurred during different semesters with varying instructors. Participant perceptions and descriptions of
instructor presence, direct instruction, dialogue with instructors and other learners, expectations for and support of autonomy, and types of interactions seemed to vary widely. To support consistent learning experiences and the use of research-based best practices, it is suggested that training specific to teaching and learning in online learning environments should be provided for instructors, facilitators, and course designers interacting with learners in online learning environments. Training should include topics such as: interactions, designing with autonomy in mind, dialogue and communication in online spaces, direct instruction in online spaces, building relationships and creating community in online learning environments, educational pedagogy and online learning theories or frameworks such as the Community of Inquiry model, Transactional Distance Theory, backward design, project-based learning, and LMS systems and tools.

**Recommendations for Future Research**

*Study the tenets separately.* The breadth of research for this theory was quite wide as it includes three main tenets and several sub-tenets – each quite significant and the owners of many implications in their own rights. While this study may serve as a brief introduction or overview of the theory of transactional distance, it is suggested that future researchers separate the theory into smaller research studies to build the library of empirical knowledge on each tenet, sub-tenet, and their relationships to one another. First, it is my recommendation to study dialogue, autonomy, and course structure both independently and in relation to one another as they pertain to the perception of transactional distance in online learning environments.
**Consider these correlations.** Second, it is recommended that future researchers consider how the perception of transactional distance correlates for learners, if at all, with the following constructs: satisfaction, motivation, persistence, differentiation and personalization, and zone of proximal development. The data collected from these studies may provide researchers more insight into indicators towards completion and non-completion of learning activities, courses, and degree programs for all learners.

Per Chapter 2, Zhang noted that Tinto’s (1993) work and model on retention in higher education communities centered around social interconnectivity and could help researchers to better understand transactional distance and the importance of interactions. However, because Tinto’s work was focused more on traditional in-person education, the opportunity to expand the research to online learning environments persists.

**Consider support for mental & emotional health of learners online.** Third, while interactions do not solely involve person-to-person transactions (i.e., learner-content, learner-LMS/interface), many interactions such as learner-instructor, learner-learner, and learner-institution/organization do involve person-to-person transactions. Some participants from this study shared feelings of isolation when participating in online asynchronous courses. Additionally, several expressed a desire for or difficulties in establishing the learning community beyond the online course, such as those within their degree program, year, or otherwise. Studies examining correlations between perceptions of transactional distance and mental and emotional health of online learners might provide data to help educational institutions expand their support of learners.
Quantitative instruments to determine transactional distance. Fourth, the work of Aixiu Monica Zhang (2003) and Swart, Zhang, and MacLeod (2015) was created to provide a qualitative tool to be used to help measure perceptions of transactional distance through interactions as reported by learners. It is recommended that additional research be applied to expand the work on tools such as these to help provide specific learner feedback to stakeholders who are reviewing, designing, and facilitating educational courses as well as to help learners to be more aware and introspective of their learning experiences, needs, and preferences.

How does transactional distance influence Black males to complete online courses and/or degree programs? This topic deserves its own dedicated research and was beyond the bounds of this research project; therefore, it is suggested that future researchers consider investigating perceptions of transactional distance and persistence in and/or the completion of online asynchronous courses. All learners have differentiated needs and preferences; and therefore, both require and deserve differentiated, personalized course design. A commonality between the Black male experience and the experience of other student demographics is that they are all individualized. Learners may fall into different demographic populations, but they are nonetheless learners individually and collectively. No two learners are exactly alike; however, we can accommodate them by taking inventory of their needs, goals, and preferences and serving them through instructional design informed by pedagogy and research to craft interactions through course structure, dialogue, and autonomy that meet needs in a personalized, learner-centered manner.

Other Collected Data Outside Scope of This Research.
Over the course of these qualitative interviews, participants shared additional information of note that may fall outside the scope of this research. To review participant responses pertaining to (1) most beneficial aspects of online asynchronous courses, (2) most challenging aspects of online asynchronous courses, (3) suggested or desired online asynchronous course components, (4) suggested or desired elements of a support group please see Appendix D2.

Participants were also asked several questions about how they perceived racial bias in online learning environments which may be more closely tied to diversity, equity, and inclusion versus transactional distance theory. A summary of those responses resulted in the following information. Participants were asked if they ever felt targeted in their online asynchronous courses due to race, socio-economic status, or academic preparedness. 100% of participants responded that they had not felt targeted in any way. The majority of students expressed satisfaction at this outcome, while a few participants noted that the vagueness of identity which can happen online can add to a sense of feeling overlooked in a course. Lamont shared “online, you only know how someone looks if you post a picture, and it’s not required. [Sometimes] you go to a traditional class, and you make some unfounded snap decisions about people before you kind of understand who they are and what they’re trying to do. In the beginning, you might have a little bias about how you might interact with a student. In online classes, you don’t have to worry about things like that.” David shared that while he doesn’t feel targeted, he acknowledges that he feels that the spelling of his actual name suggests that he is an African American student, and he wouldn’t want people to think he couldn’t do well in his course because of his racial demographic. He says it causes him to rethink asking for help sometimes. Paul describes that
online courses feel semi-anonymous and that “everyone gets the benefit of the doubt, equally.” Andry shared that his instructors are “very welcoming”, and Robert explained “[it’s] pretty anonymous… but that kind of leads to the disconnect, too.”

Limitations

*Researcher’s perceptions and biases.* Transactional distance is a psychological and communication gap that is perceived by individuals in learning environments. This perception is subject to interpretation first by the participant in their description and recall of events and/or feelings, and second by the researcher as they categorize the events and filter through their own biases and lenses.

*Assumptions.* This research assumes that transactional distance, or perceptions of psychological and communication separation, inherently exist in online learning environments and distance education, and is therefore always present on some quantifiable scale. Levels of transactional distance can therefore be described as increased or decreased but not non-existent.

*Math-only autonomous courses.* Participants from this study were asked questions pertaining to one of three online autonomous math courses; additional and valuable information could be gathered by canvassing other content areas.

*Population.* While the population for this research was purposefully and specifically narrowed to Black males participating online at a southern university, the educational and research communities could benefit from the expansion of the population to include Black males from various regions, Black males from secondary education, as well as both males and females.
from various socio-economic backgrounds and ethnicities participating in varied types of courses both online and in-person.

**Multiple LMS platforms.** The higher education institution in this study adopted a new LMS platform during the Spring 2022 semester; therefore, participant responses may reflect the use of two different platforms in addition to the use of secondary, third-party platforms purchased to access online texts and math curriculum packages.

**A matter of semantics.** One theme that pointed toward semantics was the understanding and implementation of the following terms: hybrid, asynchronous, synchronous, self-paced, self-guided, and independent study. Many of the interactions and experiences explained by participants covered various types of course structure and delivery categories in light of the fact that these courses were listed as online asynchronous. The expectations of a course may be judged by both instructors and learners based on the category the course delivery falls into. Whether instructors and learners agreed on the expectations and categorization of a course’s delivery and interactions could contribute to perceptions of transactional distance, satisfaction, or dissatisfaction.
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Southern Regional Education Board - Tennessee Featured Facts


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LIST OF APPENDICES

Appendix A: IRB Approval

A1: IRB Approval Letter

Appendix B: Communications

B1: Letter of Introduction & Informed Consent
B2: Letter of Introduction to Stakeholder Groups
B3: Member-checking Invitation
B4: Member-checking Feedback Survey Email Invitation

Appendix C: Protocols and Instruments

C1: Chain of Evidence Log Template
C2: Reflexivity Journal Template
C3: Zhang’s Transactional Distance Tool 2003
C4: Zhang’s Revised Transactional Distance Tool 2015
C5: Interview Guide
C6: Interview Transcription Template
C7: Initial Coding Protocol Guide
C8: Focus Group Feedback Guide
C9: Focus Group Feedback Questions
C10: Revised Coding Protocol Guide
C11: Coding Spreadsheet Samples
C12: Figure 1 (page 95)
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D2: Campus Support Groups and Programs

D3: Intercoder Agreement Forms
APPENDIX A
Appendix A1: IRB Approval Letter

IRB #: PRO-FY2022-178
Title: Perceptions of Transactional Distance from Black Males in Asynchronous Online Math Courses
Creation Date: 11-3-2021
End Date: 
Status: Approved
Principal Investigator: Shontale Bryant
Review Board: University of Memphis
Sponsor: 

Study History

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Key Study Contacts

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<th>Contact</th>
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<tr>
<td>Craig Shepherd</td>
<td>Co-Principal Investigator</td>
<td><a href="mailto:cshphrd2@memphis.edu">cshphrd2@memphis.edu</a></td>
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<tr>
<td>Shontale Bryant</td>
<td>Principal Investigator</td>
<td><a href="mailto:smhmptbf@memphis.edu">smhmptbf@memphis.edu</a></td>
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<tr>
<td>Shontale Bryant</td>
<td>Primary Contact</td>
<td><a href="mailto:smhmptbf@memphis.edu">smhmptbf@memphis.edu</a></td>
</tr>
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</table>
Appendix B1: Letter of Introduction and Participant Informed Consent

Research on Online Course Experiences

January 2022

Dear Student,

Greetings! My name is Shontale M. Bryant; I am a fellow student at the University of Memphis conducting graduate study research about students’ experiences in online courses.

The study is framed by a theory that seeks to study the sense of community, presence, and or distance that can occur in any learning environment but especially online learning environments.

The study is designed to collect the educational experiences of African American and Black males participating in online college-level courses by conducting short interviews. The information will be used to better understand concerns and celebrations experienced by the participants in their online courses. This data from this research will be shared with stakeholders to improve programs that are already in place and targeted towards supporting the overall experience of African American and Black males on campus and to influence higher rates of course and degree completion.

I would love to talk with you about your experience taking courses online. Would you be willing to participate in a short recorded Zoom interview with me? We would talk online for 60 minutes or less. All collected data, names, and locations will be replaced with pseudonyms for confidentiality purposes. Your voice and support would be greatly appreciated! Please follow the link below or scan the QR Code to complete the consent form. Feel free to contact me if you have any additional questions or concerns.

Student Consent Form (click here)
or scan the QR code

With appreciation,

Shontale M. Bryant
University of Memphis
Late Ed.D. Candidate
Instructional Design & Technology
shontale.bryant@memphis.edu
Appendix B2: Letter of Introduction to Stakeholder Groups
Appendix B3: Focus Group Invitation

"Perceptions of Transactional Distance from Black Males in Online College-level Asynchronous Math Courses"

Final Focus Group Presentation

March 2022

Dear Participant,

All research interviews have been completed, and we are ready to hold our final focus group discussion. The purpose of this brief meeting is to allow participants to review the results and overarching ideas gathered from the interviews. You will also have an opportunity to add any additional information. This process is called “member-checking” and assists the researcher in reporting ideas correctly.

Please join us (campus location) at (time) or log on by accessing the Zoom link below. We’d love to see you in person! We will be providing pizza and following COVID-19 social distancing procedures.

(Zoom link)

With appreciation,

Shontale M. Bryant
University of Memphis
Late Ed.D. Candidate
Instructional Design & Technology
shontale.bryant@memphis.edu
Greetings Research Participants,

I hope you’ve been well since the last time we spoke! I also hope that you are having a wonderful Spring semester!

Last year, during March 2022, you participated in an interview to assist me with my graduate research project. First, I want to sincerely thank you for taking the time to help me. Second, I wanted to let you know that after a full year, I’ve finally completed the project. I just have a few items to complete before crossing the finish line later this month. One of those things is asking you to read a very short summary (or listen to the audio summary) and complete a very short 3-question survey. The survey will be open until Sunday, March 27th at 11:59 PM.

First, take a look at a short summary of the interview results. This is not the full dissertation; a link to the full project will be sent out upon completion. Read the short summary here or listen to the audio summary here. Please let me know if you have trouble accessing any of the links.

Next, complete the very short 3-question survey.

Finally, if you haven’t yet received the link to your Amazon gift card, it will be sent soon. I apologize for any inconvenience; the project took a little longer than expected. Please be sure to add both your school email address and your personal email address at the end of the short survey; the gift card links will be sent to your email. If I can’t reach you at the UoM email, I’ll use your personal email. Thank you for your patience and participation!

University of Memphis - Campus Support Groups and Programs

Sincerely,
Shontale M. Bryant
shontale.bryant@memphis.edu
msbryantscloud@gmail.com
Appendix C1: Chain of Evidence Log Template

"Perceptions of Transactional Distance from Black Males in Online College-level Asynchronous Math Courses"

**Chain of Evidence Log**

**Purpose:** This log will be used to document researchers who come into contact with the data and to track the movement and actions taken with data as it moves between researchers.

<table>
<thead>
<tr>
<th>Date</th>
<th>Researcher's Name</th>
<th>Data/Documents</th>
<th>Purpose</th>
<th>Notes</th>
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Appendix C2: Reflexivity Journal

<table>
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<tr>
<th>Reflexivity Journal</th>
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<tbody>
<tr>
<td><strong>Purpose:</strong> The researcher will record detailed notes prior to, during, and post data collection sessions and interviews concerning their personal thoughts and reflections on the processes, interactions, and information collected. The journal is then reviewed by a critical colleague to check for biases the researcher may need to be aware of before data analysis.</td>
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</table>

<table>
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<th>Researcher:</th>
<th>Reviewer:</th>
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<td>Purpose:</td>
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<th>Reviewer’s Notes:</th>
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Appendix C3: Zhang’s Transactional Distance Tool (2003)
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<tr>
<td>ST</td>
<td>The instructor generally answers the students' questions</td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>The instructor pays no attention to me</td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>I receive prompt feedback from the instructor on my academic performance</td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>The instructor was helpful to me</td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>The instructors are available to answer my questions</td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>The instructor can be turned to when I need help in the course</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>The content of this course is of great interest to me</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>I don't know why I have to learn this</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>The examination in this course have challenged me to do my best work</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>This course emphasized SYNTHESIZING and organizing ideas, information, or experiences into new, more complex interpretations and relationships</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>This course emphasized MAKING JUDGEMENTS about the value of information, arguments, or methods such as examining how others gathered and incorporated data and assessing the soundness of their conclusions</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>This course emphasized APPLYING theories and concepts to practical problems or in new situations</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>I learned a lot from observing the interactions among the students</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>The students in this online class challenged me to do my best work</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>I get along well with my classmates</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>I feel valued by the class members in this online class</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>My classmates in this online class value my ideas and opinions very highly</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>My classmates respect me in this online class</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>I am good at working with the other students in this online class</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>I feel a sense of kindred spirit with my fellow classmates</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>The class members can be turned to when I need help in the course</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>There are students I can turn to in this online class</td>
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<tr>
<td>SS</td>
<td>The class members are supportive of my ability to make my own decisions</td>
<td></td>
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<tr>
<td>SI</td>
<td>It is difficult to pay attention to the instructor in the web environment</td>
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<tr>
<td>SI</td>
<td>I have adequate access to the web resources I need</td>
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<tr>
<td>SI</td>
<td>The fact that I am online does not inhibit my class participation</td>
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</tr>
<tr>
<td>SI</td>
<td>An efficient system is provided for students and instructor to exchange materials</td>
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<tr>
<td>SI</td>
<td>I am comfortable using the computer</td>
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<td>SI</td>
<td>I hate using the web</td>
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</tr>
<tr>
<td>SI</td>
<td>It was easy for me to use the technology involved with this online class</td>
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</tr>
<tr>
<td>SI</td>
<td>The technology used in this course is difficult to learn and use</td>
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**TD KEY**
- ST: Transactional distance between student and teacher
- SC: Transactional distance between student and content
- SS: Transactional distance between student and students
- SI: Transactional distance between student and interface

**Outcomes KEY**
- SL: Student Learning: I have learned a great deal in this online class
- LG: Learning Goal: I have made tremendous progress toward my goal in the subject area of this course
- SS: Student Satisfaction: Overall, I am satisfied with this course.
### Appendix C4: Zhang’s Revised Transactional Distance Tool (2015)

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<td>I receive prompt feedback from the instructor on my academic performance</td>
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<td>The instructor can be turned to when I need help in the course</td>
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Appendix C5: Participant Interview Guide

Description: This document will serve as a semi-structured interview guide for research. It will be used to collect basic demographic data and to follow protocols. The questions in this guide have been reviewed by critical colleagues and are available to both participants and stakeholders. Participants are free to elaborate on questions and/or add additional information as desired.

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<td>- Arrive 10-15 minutes early to private online space.</td>
<td>(L1) - Learner / Instructor</td>
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<tr>
<td>- Review all consent documents (Informed consent and recording consent)</td>
<td>(L1L) - Learner / Learner</td>
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<tr>
<td>- Set the timer; respect others’ time</td>
<td>(L1C) - Learner / Content</td>
</tr>
<tr>
<td>- Set recording device</td>
<td>(LMS) - Learner / Interface (LMS System)</td>
</tr>
<tr>
<td>- Do not lead the participant (be mindful of researcher bias)</td>
<td>(ONRST) - Learner / Institution or Organization</td>
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<tr>
<td>- Complete reflexive journal entry following each interview</td>
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</table>

"African American Male Perceptions of Transactional Distance in Online College-level Asynchronous Math Courses"

Interview Guide

<table>
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<th>Participant Pseudonym</th>
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<td>Participant Consent: Y/N</td>
<td>Permission to record: Y/N</td>
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<tr>
<td>Site: University of Memphis</td>
<td>Location: Zoom / WebEx</td>
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Project Overview - Smiling

Hello! Thank you for agreeing to participate in this study.

My name is Shontae M. Bryant. I am a student at the University of Memphis conducting research about students’ experiences in online asynchronous math courses.

The study is framed by a theory that seeks to study the sense of community, presence, and or distance that can occur in any learning environment but especially online learning environments.

The study is designed to support initiatives at the University of Memphis, the local school district, and community efforts towards improving the educational experiences and graduation rates of African American males. To do this, they need to know how you feel and what your experience is like. I’d like to collect your experience as an African American Male college student participating in an online math course to share with these stakeholders to improve their support initiatives.

This interview should last 45 minutes to 1 hour. All demographic data, names, and definitive locations will be replaced with pseudonyms for confidentiality purposes.

Ice-breaker Questions - 2 mins

☐ What led you to the University of Memphis? Why did you decide to enroll here?
## COURSE STRUCTURE - 20 mins

### Online Accessibility

| WIFI Access, Technology, Equity, Student Assistance | Describe your routine for accessing your online courses. Where did this usually happen? What times? What equipment did you use and where? How did you feel going through this process each time? Could anything have made this process easier for you? | LLMS 11NST |

### LMS / Platform

| Ease of Use | Describe what it was like engaging with the learning platform. What were your initial thoughts upon logging onto the platform this semester? How were you able to locate things? Was there any pre-training? Likes, dislikes? | LLMS |

### Course Components / Design

| Course Info, Expectations, Attainability, Organization | Describe how your course was organized. How did you know what to do, when, with whom, and/or how to communicate? Elaborations: syllabus, calendar, contact info, clear objectives/expectations, modules/units/assignments, etc. Do you feel like you had everything you needed to be successful in the course? Most and least helpful organizational aspects? | LC |
| Learner-Content Interactions | How were lessons and course content delivered (e.g. video, lecture, readings, discussions, slide presentations, synchronous meeting, other)? Is there a delivery method you preferred more? Why? Is there a delivery method you preferred less? Why? | LC |
| Social Presence; Learner-Instructor Interactions | Tell me about a time you needed to interact with your instructor one-to-one. How did this interaction occur? How do you feel about the interactions with your instructor? Was it enough/too much time? Why do you feel this way? | U |
| Social Presence; Learner-Learner Interactions | Describe a time you interacted with other students. What were these interactions like and for what purpose? How often did they occur? How did you feel about your level of interaction with other students? | LL |

## DIALOGUE - 10 mins

### Opportunities for Dialogue

| Instructor | What types of opportunities do you feel you had to engage in discussions about what you were learning with your instructor? If yes, what did those opportunities look like? If no, what do you wish could have happened? Do you feel like the level of dialogue with your instructor about the content was adequate or not adequate? Why do you feel this way? (One-to-one meetings, feedback, discussion boards, office hours, etc.) | U |
| Learners | What types of opportunities do you feel you had to engage in discussions about what you were learning with your other students? If yes, what did those opportunities look like? If no, what do you wish could have happened? Do you feel like the level of dialogue other students about the content was adequate or not adequate? | LL |
### Autonomy - 5 mins

<table>
<thead>
<tr>
<th>Description</th>
<th>Time Management</th>
<th>Academic / Other Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe how you know if you were doing well or not in the class. How</td>
<td>Describe how you managed your time for this course? How did you get</td>
<td>Describe how you were supported by others to complete your course. Do</td>
</tr>
<tr>
<td>often did you check your grades? Why did you do this? Were the grades</td>
<td>everything done? When did you do it? What methods worked or didn’t</td>
<td>you feel like you needed more, less, or received the correct amount of</td>
</tr>
</tbody>
</table>
| organized or posted in a way that you could regularly check your progress? How | work? How difficult or easy do you feel it was to manage your time for your | academic or other support in this online asynchronous math course? Explain your answer. Types of support could include academic, social, emotional, financial, etc. Offer list of campus support programs & groups.
| do you feel checking or not checking your grades affect your experience     | online course? Did you feel like you knew how to manage your time, or did you | |
| in the class? Did it affect your relationship with the instructor or other   | need more support? Did you ask for support with time management? What was the outcome? |
| students?                                                                   |                 |                          |

### Open-Ended Questions - 10 mins

<table>
<thead>
<tr>
<th>Description</th>
<th>Time Management</th>
<th>Academic / Other Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you feel like racial identity, socio-economic status, or academic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>preparedness influenced how you were treated as a student in this fully online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>course? Please explain. Did you discuss these ideas with the instructor or other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>students? If these feelings were present, what improvements could be made to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>help eliminate these types of feelings?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What did you like or love the most about learning in the online asynchronous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>format?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What was the most challenging or difficult for you about the online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>asynchronous format?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there anything you’d like someone to know who was designing an online class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>for you?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there anything you need to successfully graduate on your intended degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>path and timeline? Please elaborate.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEXT STEPS - 2 mins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. In a few weeks, you’ll receive an email invitation to come together in a small focus group to review the findings of my research with some other participants. This will give you an opportunity to review the responses shared and the conclusions I drew. All names will be changed to protect confidentiality.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. After all participants have had an opportunity to review the draft report by the deadline, the report will be shared with stakeholders.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>THANK YOU - 2 mins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thank you for participating in my research project! I hope you have a wonderful close to the semester. Please feel free to contact me if you or your parents have any questions about this project.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REMINDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>After each interview, the researcher should record thoughts about the session in the reflexivity journal to be reviewed by critical colleagues.</td>
</tr>
</tbody>
</table>

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Appendix C6: Interview Transcription Template

“Perceptions of Transactional Distance from Black Males in Online College-level Asynchronous Math Courses”

<table>
<thead>
<tr>
<th>Interview Transcription Template</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose:</strong> This form will be used to transcribe recorded participant interviews.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Researcher:</th>
<th>Participant Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview Platform/Method:</td>
<td>Participant Pseudonym:</td>
</tr>
<tr>
<td>Transcription Date:</td>
<td>Total Time:</td>
</tr>
</tbody>
</table>

**Transcription Key**

1. **Bold:** time
2. **Italic:** interviewer
3. **Plain:** participant
4. … hesitation/pause in response

Ex. **10:53** - that would also be a part of it; I didn’t mention it but that certainly would be a part of it. I don’t think that they really understand just how to be successful in the course - that it requires you going in - you know daily um… and so they might get in there and the first couple of days do a lot of work and might not return again for several weeks. (mm hmm)

And so, the program really had to grow, in order to understand how to assist those students. And so, we realize that we needed monitors in the building that could remind students and help to motivate students

**Transcription Template**

<table>
<thead>
<tr>
<th>Line</th>
<th>Transcription</th>
<th>Code / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Appendix C7: Initial Coding Protocol Guide**

"Perceptions of Transactional Distance from Black Males in Online College-level Asynchronous Math Courses"

<table>
<thead>
<tr>
<th>Coding Guide &amp; Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose:</strong> This codes in this guide will be used to indicate potential instances, components, and interactions related to transactional distance theory as identified in the transcribed interviews.</td>
</tr>
<tr>
<td><strong>Coding Protocol</strong></td>
</tr>
<tr>
<td><strong>Instructions:</strong> Researchers should use the guide below with the transcription template.</td>
</tr>
<tr>
<td>1. Read the transcribed interview in its entirety.</td>
</tr>
<tr>
<td>2. Re-read the transcribed interview; using the specified column, insert codes per the guide below include any other relevant notes.</td>
</tr>
<tr>
<td>3. Repeat the process as necessary.</td>
</tr>
<tr>
<td>4. Record notes about the coding process in the Reflexivity Journal upon concluding each coding session per transcribed participant interview (lead researcher only).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coding Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Code</strong></td>
</tr>
<tr>
<td>LI</td>
</tr>
<tr>
<td>LL</td>
</tr>
<tr>
<td>LC</td>
</tr>
<tr>
<td>LLMS</td>
</tr>
<tr>
<td>LINST</td>
</tr>
<tr>
<td>TD</td>
</tr>
<tr>
<td>CS</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>A</td>
</tr>
</tbody>
</table>
Appendix C8: Focus Group Feedback Form

"Perceptions of Transactional Distance from Black Males in Online College-level Asynchronous Math Courses"

**Focus Group Feedback**

Hello! Thank you, again, for participating in my research study. The purpose of this meeting is to give you and other participants a chance to review and verify the data I’ve collected from your interviews. Following the presentation, please follow the steps below to provide feedback. Presentation slides are attached for your reference. Please let me know if I can be of assistance. Thank you!

**Questions to Ponder/Group Discussion:**

A. What big ideas came to you as you participated in the interview?
B. Do you think interaction gaps can occur in a course? Why or why not?
C. If interaction gaps can occur, how do you feel they affect your learning experience and persistence to complete a course or degree program?

| 1. | Slide Presentation | Watch the slide presentation. Slides are attached for your reference. |
| 2. | Type the following link into your browser, or scan the QR code to access the feedback survey. |
|    | https://memphis.co1.qualtrics.com/jfe/form/SV_3DyNy7znNHTV91P0 |
| 3. | Complete the feedback survey. You may complete the survey again if you’d like to submit additional information. |
| 4. | Focus Group Chat: We’d like to know what you think. Join the group in a brief chat while we enjoy refreshments. |

**Thank you!**

You will receive an email when the research project is complete. This email will also contain an optional invitation to a stakeholder presentation if you’d like to learn more about the campus and city organizations this information will be shared with.
## Appendix C9: Focus Group Feedback Questions

**QUALTRICS - FOCUS GROUP FEEDBACK SURVEY**

<table>
<thead>
<tr>
<th>#</th>
<th>Type</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Short Text</td>
<td>Please enter your Full Name. This will help me match your feedback with your interview.</td>
</tr>
<tr>
<td>Q2</td>
<td>Short Text</td>
<td>Please enter your school email address.</td>
</tr>
<tr>
<td>Q3</td>
<td>Long Text</td>
<td>What was the most surprising or interesting information you learned from the research presentation?</td>
</tr>
<tr>
<td>Q4</td>
<td>Multiple Choice</td>
<td>Do you feel like your ideas were correctly represented in the presentation? (Yes, No, Somewhat)</td>
</tr>
<tr>
<td>Q5</td>
<td>Long Text</td>
<td>Which parts of the presentation do you feel represented your experience the BEST?</td>
</tr>
<tr>
<td>Q6</td>
<td>Long Text</td>
<td>Which parts of the presentation do you feel represented your experience the LEAST? Please explain these ideas in your own words so that I can revise the presentation to better represent your experience.</td>
</tr>
</tbody>
</table>

Scan QR Code to access Survey:
### Appendix C10: Revised Coding Protocol Guide

**Research Questions**

<table>
<thead>
<tr>
<th>Question</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
<td>How do Black males perceive <strong>transactional distance</strong> in college-level online asynchronous math courses?</td>
</tr>
<tr>
<td>SubQ 1a</td>
<td>What impact do Black males perceive <strong>course structure</strong> to have on course satisfaction in college-level online asynchronous math courses?</td>
</tr>
<tr>
<td>SubQ 1b</td>
<td>What impact do Black males perceive <strong>dialogue</strong> to have on course satisfaction in college-level online asynchronous math courses?</td>
</tr>
<tr>
<td>SubQ 1c</td>
<td>What impact do Black males perceive <strong>autonomy</strong> to have on to have on course satisfaction in college-level online asynchronous math courses?</td>
</tr>
<tr>
<td>Question 2</td>
<td>How does transactional distance influence the <strong>persistence</strong> of Black males to complete online courses and/or degree programs?</td>
</tr>
</tbody>
</table>

###LEGEND

<table>
<thead>
<tr>
<th>TD = transactional distance</th>
<th>T1 = initial tenet</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS = course structure</td>
<td>T2 = secondary tenet</td>
</tr>
<tr>
<td>I = interaction</td>
<td>R = researcher</td>
</tr>
<tr>
<td>D = dialogue</td>
<td>P = participant</td>
</tr>
<tr>
<td>A = autonomy</td>
<td>RQ = answers research question #</td>
</tr>
<tr>
<td>LI = learner-instructor</td>
<td>O = other codes (see below)</td>
</tr>
<tr>
<td>LL = learner-learner</td>
<td>Xtra?s = extra questions (see below)</td>
</tr>
<tr>
<td>LC = learner-content</td>
<td>C = info on community</td>
</tr>
<tr>
<td>LINST = learner-institution</td>
<td>SS = info on synchronous sessions</td>
</tr>
<tr>
<td>LLMS = learner-interface</td>
<td>AS = info on additional software</td>
</tr>
</tbody>
</table>

###Resources

- **Coding Guide & Protocol**
- **Research Questions**
- **Transcripts**

- BG = background info
- SA = satisfaction
- GQ = good quote
- OC = Other Courses
- CB = channel bias
- MB = most beneficial thing
- MC = most challenging
- TAR = targeting/profiling question
- NCC = needed course component
- NSGC = needed support group component
Appendix C11: Coding Spreadsheet Samples

*Compiled Spreadsheet
*Filtered to analyze responses related to course structure*

<table>
<thead>
<tr>
<th>Username</th>
<th>Text/Highlighted Text</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andy</td>
<td>Um, teaching yourself? Cause we don't really teach it to us. We just learn from the stuff that we get wrong or we learn from the lectures and PowerPoints.</td>
<td>CS, D</td>
<td>A</td>
<td>L</td>
<td>LC</td>
<td>SA</td>
<td>IC</td>
<td>DISRUPTION: student feels the CS is designed where the student is their own teacher; students learn from the resources posted, but not the actual instructors. Lack of interaction. To be raised by Joint DIALOGUE and student may be filtered to analyze responses related to course structure.</td>
<td></td>
</tr>
<tr>
<td>Andy</td>
<td>Just do, uh, hybrid and online. That's what I like the best.</td>
<td>CS</td>
<td>D</td>
<td>L</td>
<td>U</td>
<td>SA</td>
<td>NCC</td>
<td>STUDY SESSIONS: student feels the hybrid and online courses are not aligned with the lecture. The essence of the course is to some extent different for the student and DISRUPTION.</td>
<td></td>
</tr>
<tr>
<td>Andy</td>
<td>The best thing about taking an online course? I would say, you know, the time flexibility, like you don't, you basically don't have to be at any specific place, you can do it wherever, whenever. And, you know, whenever you want I like, I would say that's the best thing about it. It's just like, you just have to keep it in mind, you know, it's due on this date, but you can get it done whenever, whenever you want. Like, you're like, like you give yourself the flexibility to get the assignment done, you get the free time to get on there whenever you see so please.</td>
<td>CS</td>
<td>D</td>
<td>L</td>
<td>LL</td>
<td>SA, C</td>
<td>NSCC</td>
<td>STUDY SESSIONS: student feels the hybrid and online courses are not aligned with the lecture. The essence of the course is to some extent different for the student and DISRUPTION.</td>
<td></td>
</tr>
<tr>
<td>Javerid</td>
<td>Um, I would use a Daily Planner, like even that, all the things you can keep track of and organize your time. So like that and all the dates is really good. And then not just keeping to that, also like, like, if you're going to meet or you're going to do something, just like you have it straight out on the calendar and uh, maybe send out, um, notifications like on the calendar, even like on your phone or your computer or something, just because a lot of people don't have the time to go there and it works if you just put it on the calendar or/x like that way everyone's instead of just having it on, whatever they're going to do can see it on the website. It's just like, you just look at the assignment right there.</td>
<td>CS</td>
<td>D</td>
<td>A</td>
<td>L, L</td>
<td>U, L</td>
<td>D</td>
<td>DPP</td>
<td>NCC</td>
</tr>
<tr>
<td>Lewis</td>
<td>Well, yeah, like, I had started, like the third deadline, well, not the deadline, but like the kinds like weekly kinds like would like most helpful. That would be good. Then being fairly like a very period after the deadline of kinds like trying to get work, like I third two kinds period after the actual deadline.</td>
<td>CS</td>
<td>A</td>
<td>D, L</td>
<td>A, L</td>
<td>U, L</td>
<td>DPP</td>
<td>NCC</td>
<td>NCC</td>
</tr>
<tr>
<td>Paul</td>
<td>Um, I just say that like, it is really like interesting sometimes and it looks can be totally stressful when you're doing it on your own. But I do think it requires us very important with online work is having that kind of support and that kind of like that. Cause I had my friend with me, like, which is known my friends since the high school since I met them. Tho like, we are, like, we are like, like, we are pretty good friends and they're always there for me. And it's, I feel like if you would do it, it has to be your own. I would be like if you had the other person.</td>
<td>CS</td>
<td>LL</td>
<td>L</td>
<td>L</td>
<td>U</td>
<td>Q, Q</td>
<td>NCC</td>
<td>NCC</td>
</tr>
<tr>
<td>Paul</td>
<td>Being able to write ahead and Um, I just get the idea if you, if a portion of your work was easy and I'm going to get ahead and get that on done so I can get my schedule, get ahead in the class and can go ahead and do that. And um, on work ahead as, uh, I'll say that's the best thing about it being, get ahead of the curve.</td>
<td>CS</td>
<td>A</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>NCC</td>
<td>STUDY SESSIONS: student feels the hybrid and online courses are not aligned with the lecture. The essence of the course is to some extent different for the student and DISRUPTION.</td>
</tr>
</tbody>
</table>

208
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Test / Highlight</td>
<td>T1</td>
<td>T2</td>
<td>I</td>
<td>TD</td>
<td>TD</td>
<td>RQ</td>
<td>O</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Andry</td>
<td>Uh, if we had zoom meetings where he explained it to us and worked out problems with us.</td>
<td>CS</td>
<td>D</td>
<td>TD</td>
<td>1, 1b</td>
<td>SA</td>
<td>in response to &quot;what could have made this situation better?&quot; Student suggests having optional synchronous sessions for explanation, modeling. TD cause by lack of DIALOGUE, student is DISSATISFIED.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Andry</td>
<td>Just do, uh, hybrid and online. That's what I like the best.</td>
<td>CS</td>
<td>D</td>
<td>Li</td>
<td>TD</td>
<td>SA</td>
<td>DISSATISFACTION. Both hybrid and online: alludes to the missing element of DIALOGUE and Li interactions as mentioned in his responses above. The absence of this seems to cause TD for the student and DISSATISFACTION.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Andry</td>
<td>Study sessions?</td>
<td>CS</td>
<td>D</td>
<td>Li, LL</td>
<td>TD</td>
<td>SA, O</td>
<td>SUGGESTED: Study sessions; again alluding to COMMUNITY and DIALOGUE as DISSATISFACTION with these things are missing and would be helpful for this particular student</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Andry</td>
<td>Cause he didn't, he didn't have any zoom meetings to explain it to us. We literally had to figure it out on our own.</td>
<td>D</td>
<td>A</td>
<td>Li, LC</td>
<td>TD</td>
<td>1b, 2c, 2</td>
<td>PER</td>
<td>Dialogue was present through email. Student expresses DISSATISFACTION bc instructor didn't &quot;remind him&quot; to make up missing work after it appears that he had permission due to being absent/ill/illness from class for one week. TD seems to have been created because of student AUTONYMITY: student may not have managed his schedule well, or paid attention to deadlines; he seems to pass the blame to the instructor for not reminding him. When the student fell behind, he decided to drop the course. The situation appears to point to student autonomy.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Andry</td>
<td>Oh, yes, sir. He emailed, I emailed him after, I, um, came back cause I was away for a week, I emailed him after I came back and making my missing work, but he didn't remind me to uh, make it up. So I was, I'll be behind.</td>
<td>D</td>
<td>A</td>
<td>Li</td>
<td>TD</td>
<td>1b, 2c, 2</td>
<td>SA, O</td>
<td>DISSATISFACTION: student feels the CS is designed where the student is their own teacher; students learn from the resources posted, but not the actual instructors. Lack of Li interactions. TD caused by lack of DIALOGUE and student may be operating outside of their level of AUTONYMITY or ZPD.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Andry</td>
<td>Um, teaching yourself? Cause we don't really, the teachers don't really teach us? We just learn from the stuff that we get wrong or we learn from the lectures and PowerPoints.</td>
<td>CS, D</td>
<td>A</td>
<td>Li, LC</td>
<td>TD</td>
<td>1a, 1b, 1c</td>
<td>SA</td>
<td>Student refers to his actions as lazy and careless; AUTONYMITY: tried to catch up. Last resort, contacted advisor and was instructed to retake. High levels of TD were addressed by contacting advisor for an alternative.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>David</td>
<td>And I was emailing my professors, like where do I find this? Where do I find that, um, that kind of was very difficult. Um, and I think that's really what, uh, kind of made me very lazy and like, you know, very careless about my work because I was kind of like, I'm not starting off so hot and I tried to get up. And when, after the first attempt of trying to catch up, it was like, I was still doing very well. So I was like, well, this is it. And I contacted my advisor. I was like, you know, what options are there? And she instructed me, you know, just retake (math course) and try to harden to pass the other two. So that really was, uh, yeah, that was that.</td>
<td>D</td>
<td>A</td>
<td>Li, NET, Li</td>
<td>TD</td>
<td>1c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>David</td>
<td>Uh, yeah, our professor was very, um, oh, I forgot their names. Uh, yeah, they were very, um, very friendly. They sent out updates regularly, like, ok, that, if something like extra points was available, they were like, this is about to shut down this night. Um, however, there were, um, a few shortcomings and I'm not to compare courses, but, um, on the (math) course, um, they didn't have like links to free tutoring that I had on like my (other math) course, our (other math) teacher is very, very, like you know, if you need this, here's the link for free tutoring. Um, here's the link for how to learn how to do this, et cetera, et cetera. Whereas with (math), everything basically that I learned was solely on the, um, the course website. They, there were video links, but there weren't like, you know, tutoring links on the main (math) page, everything we had to find, we had to like go and find ourselves really.</td>
<td>D</td>
<td>CS</td>
<td>Li</td>
<td>TD</td>
<td>1, 1c</td>
<td>SA</td>
<td>instructors communicated regularly (maybe 1-way communication): DISSATISFACTION expressed comparing courses where one had tutoring links and the other did not. This may have caused TD to the student was struggling in this course and needed tutoring. &quot;we had to go find everything ourselves&quot; DISSATISFACTION; especially in course he was failing. High levels of TD (not being able to find the links looking for links and tutoring services while in need). This may reflect more on how lack of appropriate autonomy increases TD. It seems as if he wasn't engaging in the proper levels of autonomy, not that he wasn't capable. This caused his TD or feeling of lack, distance, gap, to be increased.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>David</td>
<td>And we, I believe a discussion board, but not many. Um, and if they didn't interact, I didn't interact with anyone, unfortunately, but if they did interact, I believe that, um, they probably did it on their own free will. There weren't many discussion boards. If I remember correctly. Yeah.</td>
<td>D</td>
<td>A</td>
<td>Li, LL</td>
<td>TD</td>
<td>1b, 1c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>David</td>
<td>I definitely think that would've helped learn the content a bit more because, um, there's this feature on canvas that, uh, like shows the, it doesn't show names, but it shows like the highest grade made it on a test and then the lowest. And I think, um, if we get to group together more and you know study together, practice do assignments together, I think that definitely would've, uh, balanced out the average to the higher end of the, you know.</td>
<td>D</td>
<td>Li, LL</td>
<td>TD</td>
<td>1b</td>
<td></td>
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</table>

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*Filtered to analyze responses related to autonomy

<table>
<thead>
<tr>
<th>Market/Speaker</th>
<th>Text/Highlight</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andy</td>
<td>Cause he didn't, he didn't have any zoom meetings to explain it to us. We literally had to figure it out on our own.</td>
<td>CS no-optinal SS for explanation, TD caused bc student feels he had to figure the lessons out on his own.</td>
</tr>
<tr>
<td>Andy</td>
<td>Oh, yes, sir. He emailed, I emailed him after, I, um, came back cause I was away for a week. I emailed him after I came back and making my missing work, but he didn't remind me to, uh, make it up. So I was, I fell behind.</td>
<td>DISABILITATION bc instructor didn't &quot;remind&quot; him to make up missing work after he appears that he had permission due to being absent/ill from class for the week. TD &quot;seems to have been created because of student AUTONOMY&quot;: student may not have managed his schedule well, or paid attention to deadlines; he seems to pass the blame to the instructor for not reminding him. When the student fell behind, he decided to drop the course. The situation appears to point to student autonomy.</td>
</tr>
<tr>
<td>Andy</td>
<td>[course online] teacher actually communicates with me very well because when I was away, she allowed me to make up my work, but my 2nd other course online teacher didn't so I'm kind of behind in there right now. Okay But my [other online course] teacher, she actually, uh, gave me the chance to, to um, make up my work. So I was actually happy about that.</td>
<td>Student describes SATISFACTION when an instructor from another course communicates with him and allows makeup work when he was away; says he was happy &quot;[power levels of TD]&quot;. Describes DISABILITATION when a second/other course teacher doesn't allow makeup work as she is behind like the math course he dropped. The two notions of desatiation point toward student AUTONOMY levels and CS</td>
</tr>
<tr>
<td>Andy</td>
<td>Um, teaching yourself? Cause we don't really, the teachers don't really teach it to us. We just learn from the stuff that we get wrong or we learn from the lectures and PowerPoints.</td>
<td>DISABILITATION: student feels the CS is designed where the student is their own teacher; students learn from the resources posted, but not the actual instructor. Lack of L. interactions. TD caused by lack of DIALOGUE and student may be operating outside of their level of AUTONOMY or ZPD.</td>
</tr>
<tr>
<td>Tyrone</td>
<td>It was very easy to uh, you know, retain the information and understand the information because it, the layout was, you know, easy to follow. But, um, and so my other courses, it was very difficult because some of the courses didn't necessarily have a lecture. We would have to read through slides and then we would do the assignments. And as, you know that at point in time, instead of just, you know, reaching out saying, Hey, you know, Carl or Jesse or whoever, Hey, do you know, you know how you can do this. Then there was a point to where I would have to get their contact for, and actually call them and say, Hey, you know, do you know how to do this? Or did you know what he was talking about with this material and type of thing. So that was one of the disadvantages for me when I first started, um, going through online classes.</td>
<td>&quot;the layout was easy to follow; it was easy to understand and retain the information&quot; (SC). TD &quot;ly other courses [were] very difficult because some of those courses didn't necessarily have a lecture.&quot; DISABILITATION (TD): student expresses TD cause by gap between he pod content/teacher when there is no lecture. Also describes TD when no DIALOGUE (LL) to work with, ask questions, gauge your own understanding with same in the course (AUTONOMY). Had to get their contact info and reach out versus learning to talk in class immediately.</td>
</tr>
<tr>
<td>Tyrone</td>
<td>Most times I um, I'm logging in from like the desktop at home or, uh, yeah, just at home, I don't really go out to the library like 'em, but I don't really do that for none of my courses, but for real, just at the desktop, most of the time in a secluded area.</td>
<td>accesses courses from desktop at home, quiet area, CS allows him to do different from the physical area</td>
</tr>
<tr>
<td>Robert</td>
<td>Yeah, it was with a, uh, I was with it, it was using a iPad. Um, and uh, I think I had, we had like a test right after my course and I wasn't able to, and I was able to access the, the test itself. But as far like inputting the answers, I couldn't input 'em using the iPad, so I ended up just running outta time and failing the test.</td>
<td>LLMS functions didn't work properly on iPad app; student ran out of time on assessment; failed a test. TD opened between instructor and LLMS, TD between student and CS. CS: &quot;was using an iPad...&quot; and was able access the, the test itself, so for inputting the answers, I couldn't input them using the iPad, as I ended up just running outta time and failing the test.&quot; TD student AUTONOMY and LLMS student should have shown proof of missed/approached with professor about what happened this is a common issue with Canvas app, but student wasn't aware and took the failing grade. DISABILITATION. This was not the student's fault, but due to TD he thought he had no options/choices.</td>
</tr>
<tr>
<td>Robert</td>
<td>Um, so usually when you log onto canvas, um, you are able to, it's an option for you to display your grade right by your class. My math class doesn't have that option. That's another weird thing, it doesn't have that option. So I don't have what I do there: I have to go in and log into, um, yeah, log into the canvas site and I have to go under, under the student grade book. And that kind of gives you a update on what you did and that's the only way you can navigate. So it's not right there, but you gotta go, you can go find it. In the student book in the, in the canvas for this math course.</td>
<td>DISABILITATED: student describing desatiation with process to check grades in this course versus other online courses. Concerning a button possibly not activated is one of the LLMS platforms, TD get between communicating grades from instructor to student</td>
</tr>
<tr>
<td>Robert</td>
<td>And that's how he does it. I don't know if that's because the grades</td>
<td></td>
</tr>
</tbody>
</table>
**Appendix C12: Figure 1**

### Figure 1

<table>
<thead>
<tr>
<th>Lewis</th>
<th>I didn’t, I didn’t think that at first, but then my professor just went and opened up every single one of my assignments at the end. So towards the end, I’d say yes. I felt like that because if it wasn’t for them opening up everything, I definitely would’ve failed the course. Okay. So I feel at very, very accessible.</th>
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<tbody>
<tr>
<td></td>
<td>CS</td>
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</table>
Appendix C13: Figure 2

Okay. So for (math course), we did that through Pearson and, um, (math course) was really, really, um, it was easy. It really was. She made it very digestible, the material. Um, she did a, have we had, um, you know, we’ll meet by zoom meeting. I believe it was Tuesdays and Wednesdays, if I’m not mistaken, Tuesdays and Wednesdays for, you know, an actual class and we would get online and she would go over the, uh, go over the material, the chapter, and then, you know, she would go over the material for that day and it was always recorded. So if you had to miss that day, for whatever reason, you could always go back and watch the lecture. Now she did, like I said, she made it digestible. So she tried to use her time accordingly where she wasn’t trying to hold people back from the people who didn’t have, who needed more time, but also got through the material that she needed for that day.

T2 | I | TD | RQ | O | Notes
---|---|---|---|---|---
D | LC, LI | TD | 1a,1b | SS, SA | lower levels of TD. Feelings: "digestible, easy". SS-LI through DIALOGUE; instructor offered to work problems, lecture, and allow students to ask questions; recorded to go back if you couldn't attend. Student seems to be SATISFIED with the CS-LC and level of interaction.
Appendix D1: AERA Code of Ethics (2011)

Code of Ethics
American Educational Research Association
Approved by the AERA Council
February 2011

PREAMBLE

BACKGROUND

PRINCIPLES
Principle A: Professional Competence
Principle B: Integrity
Principle C: Professional, Scientific, and Scholarly Responsibility
Principle D: Respect for People's Rights, Dignity, and Diversity
Principle E: Social Responsibility

ETHICAL STANDARDS

1. Scientific, Scholarly, and Professional Standards
   1.1 Absolute and Professional Standards
   1.2 Ethical Standards for Social Research

2. Competence
   2.1 Avoiding Harm
   2.2 Nonexploitation
   2.3 Nonexploitation
   2.4 Nonexploitation
   2.5 Nonexploitation

3. Use and Misuse of Expertise
   3.1 Use and Misuse of Expertise
   3.2 Use and Misuse of Expertise
   3.3 Use and Misuse of Expertise
   3.4 Use and Misuse of Expertise

4. Fabrication, Fabrication, and Plagiarism
   4.1 Fabrication, Fabrication, and Plagiarism
   4.2 Fabrication, Fabrication, and Plagiarism
   4.3 Fabrication, Fabrication, and Plagiarism
   4.4 Fabrication, Fabrication, and Plagiarism

5. Avoiding Harm
   5.1 Avoiding Harm
   5.2 Avoiding Harm
   5.3 Avoiding Harm
   5.4 Avoiding Harm

6. Nonexploitation
   6.1 Nonexploitation
   6.2 Nonexploitation
   6.3 Nonexploitation
   6.4 Nonexploitation

7. Nonexploitation
   7.1 Nonexploitation
   7.2 Nonexploitation
   7.3 Nonexploitation
   7.4 Nonexploitation

8. Nonexploitation
   8.1 Nonexploitation
   8.2 Nonexploitation
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   8.4 Nonexploitation

9. Nonexploitation
   9.1 Nonexploitation
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   9.4 Nonexploitation

10. Nonexploitation
   10.1 Nonexploitation
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   10.4 Nonexploitation

11. Nonexploitation
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12. Nonexploitation
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15. Nonexploitation
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20. Nonexploitation
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   20.3 Nonexploitation
   20.4 Nonexploitation

21. Nonexploitation
   21.1 Nonexploitation
   21.2 Nonexploitation
   21.3 Nonexploitation
   21.4 Nonexploitation

22. Nonexploitation
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   24.3 Nonexploitation
   24.4 Nonexploitation

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### Appendix D2: Campus Support Groups and Programs

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<tr>
<td><strong>Student Success Programs (SSP)</strong></td>
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<tr>
<td>Trio Program</td>
</tr>
<tr>
<td><a href="mailto:trioclassic@memphis.edu">trioclassic@memphis.edu</a></td>
</tr>
<tr>
<td>901-678-2351</td>
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<tr>
<td><strong>CARES</strong></td>
</tr>
<tr>
<td><a href="mailto:cares@memphis.edu">cares@memphis.edu</a></td>
</tr>
<tr>
<td>901-678-2393</td>
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<tr>
<td><strong>Educational Support Programs (ESP)</strong></td>
</tr>
<tr>
<td><a href="mailto:esp@memphis.edu">esp@memphis.edu</a></td>
</tr>
<tr>
<td>901-678-2704</td>
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<tr>
<td><strong>Hooks African American Male Initiative (HAAMI)</strong></td>
</tr>
<tr>
<td><a href="mailto:trammell@memphis.edu">trammell@memphis.edu</a></td>
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<tr>
<td>901-678-4654</td>
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<tr>
<td><a href="mailto:rkjones3@memphis.edu">rkjones3@memphis.edu</a></td>
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<td>901-678-1302</td>
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<td><strong>Empowered Men of Color (EMOC)</strong></td>
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<tr>
<td><a href="mailto:rawade@memphis.edu">rawade@memphis.edu</a></td>
</tr>
<tr>
<td>901-678-2054</td>
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</table>
Appendix D3: Intercoder Agreement Forms

“African American Male Perceptions of Transactional Distance in Online College-level Asynchronous Math Courses”

Intercoder Agreement

Purpose: This form will be used to provide documentation of fellow researchers participating in research coding activities.

I, __R. Dale Hale__________________________, agree to participate in the above titled research project conducted by Shontale M. Bryant at the University of Memphis as an intercoder. I agree to review the provided codebook, participate in one coding activity, and share feedback with the lead researcher to support intercoder reliability.

Printed Name: __R. Dale Hale______________________________

Signature: ________________________________

Date: __4/12/2021______________________________

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Intercoder Agreement

Purpose: This form will be used to provide documentation of fellow researchers participating in research coding activities.

I, Lurane Kelley, agree to participate in the above titled research project conducted by Shontale M. Bryant at the University of Memphis as an intercoder. I agree to review the provided codebook, participate in the coding activity, and share feedback with the lead researcher to support intercoder reliability.

Printed Name: Lurane Kelley

Signature: Lurane Kelley

Date: 03/22/22