COURSE-TRIGGERED IDENTITY EXPLORATION, MOTIVATION, AND SUCCESS AMONG COMMUNITY COLLEGE STUDENTS

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ABSTRACT

In this dissertation, I seek to extend motivational and identity research conducted in other educational contexts to the community college setting in an effort to provide insights into the relatively lower rates of academic success experienced by community college students. The purpose of this dissertation research is to explore the nature and prevalence of motivational orientations, identity processing styles, and course-triggered identity exploration among community college students, the relation of these orientations/processing styles/exploratory actions to one another and to students' academic outcomes, and to attempt to promote adaptive identity exploration around an academic curriculum for remedial college students.

The theoretical frameworks that guide this dissertation research are Achievement Goal theory (Ames, 1992), Brezonsky's (1989) identity processing style, and Flum and Kaplan's (2006) perspective on identity exploration and its promotion in educational settings (Kaplan, Sinai & Flum, 2014). This dissertation comprises three studies that utilize data collected over the course of two semesters: the fall semester of 2012 and the fall semester of 2014 at Montgomery County Community College in Pennsylvania.

The three studies encapsulate a progressive process that aimed to map community college students' goal orientations, identity processing styles, and experiences of course-triggered identity exploration and their relations with expected course outcomes, to establish conceptual and empirical support for the relations between identity exploration in the community college classroom and students' adaptive goal orientations and identity processing styles, and to implement an intervention aimed to facilitate remedial community college students' identity exploration within the curriculum and investigate

these students' experiences of motivation, identity processing, and course-triggered identity exploration over the course of the semester.

The first study investigated the nature of and the relations amongst students' course-triggered identity exploration, identity processing styles, achievement goal orientations, self-efficacy, and expected academic outcomes in the community college classroom. The study involved analysis of community college students' self-report data from a survey (assessing the aforementioned constructs) administered to 100 students (39 males, 61 females) in an introductory psychology course. Results indicated that students most strongly adopted mastery-approach orientations and informational-oriented processing styles in the course. Results also suggested that mastery orientations and informational-oriented processing styles are conceptually related, as are performance orientations and normative and diffuse-avoidant processing styles. Additionally, mastery-avoidance orientations and self-efficacy were found to be significantly positively correlated with students' expected course grades.

The second study investigated the qualitative manifestations of these community college students' experiences of identity exploration in the introductory psychology course, in order to arrive at conceptual insights as to the personal and contextual features involved in adaptive identity exploration in the community college classroom, as well as the conceptual definition and experiential meaning of course-triggered identity exploration in the community college context. This study involved analysis of open-ended qualitative data collected from the same survey used in the first study, which asked students to explain, in their own words, their experiences of identity exploration in the course. Of the 100 students who took the survey in Study 1, 92 provided qualitative feedback to the open-ended item. Results from the qualitative analysis of students' responses indicated that 70% of student responses (*n*=65) indicated course-triggered identity exploration. Additionally, analysis of these students' qualitative feedback suggested that five dimensions characterized students' descriptions of course-triggered identity exploration: trigger, cognitive action, self-target, purpose, and time.

The third study investigated the relations among students' motivations, identity processing styles, course-triggered identity exploration, and academic outcomes studied in the first two studies; only this time within a unique context in the community college – remedial English courses. This study also sought to use a design-study approach to investigate the effects of course activities implemented to promote students' identity exploration and to examine the trajectory of identity exploration over the course of a semester, and its relation to changes in students' motivational orientations and identity processing styles. The study involved a semester-long researcher-instructor collaborative intervention in two developmental English courses at the community college. The intervention consisted of a theory-informed collaborative design of course activities that aimed to facilitate students' identity exploration within the curriculum. Data collected included pre-post intervention surveys assessing students' identity processing styles, achievement goals, and self-efficacy, post-intervention scales assessing students' course-triggered identity exploration, reflective writing assignments that students completed as part of the intervention during the semester, a final identity-related assignment that students completed at the end of the course, and students' expected course grades. A total of 17 students participated in at least one facet of Study 3 (e.g. surveys, reflective writings, etc.). Demographic information was provided by 13 students (males=6,

females=7). Overall, results from the study supported the dimensional framework of course-triggered identity exploration derived in Study 2. However, results also indicated variation, with regard to the frequencies with which dimensions were evidenced in students' writing, between the students in Study 2 and Study 3. The qualitative analysis also suggested that while students' experiences/trajectories of identity exploration over the course of the semester may be individualized, prototypical trajectories may exist and certain course features may be more conducive to facilitating exploration than others for particular students.

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CHAPTER 1. INTRODUCTION

Community colleges serve almost half of the college going populous in this country (American Association of Community Colleges, 2013). Yet these two-year institutions, which have historically been marked by their “open door” admissions policies, are failing to measure up to their four-year peers. Specifically, recent data suggests that community college students are graduating at rates 20% lower than their counterparts attending four-year institutions (U. S. Department of Education, 2011). The disparity in graduation rates is even greater for those community college students taking remedial or developmental courses, many of whom belong to groups traditionally underrepresented in higher education settings (Bailey, 2009; VanOra, 2012). The magnitude of this inequality in graduation rates is alarming, as it represents a considerable loss of human and financial capital. Moreover, it represents a failure to adequately support the racially, ethnically, economically, and academically diverse populations that these colleges typically serve through the higher education process (Lamkin, 2004).

Community colleges and researchers have not been blind to this failure (Nitecki, 2011). In fact, considerable research has been undertaken in an effort to identify the reasons for community college students’ struggles with degree completion. Much of this research has focused on examining the role that students’ demographics, prior achievement, and socioeconomic status play, as well as the effects of institutional characteristics and pedagogical practices (Burns, 2010; Calcagano et al., 2008; Goldrick-Rab 2010; Goldrick-Rab, 2007; Waycaster, 2001). These lines of research have, in turn, facilitated the adoption of practices at community colleges that are focused on institutional level changes (Nitecki, 2011), as colleges are obviously unable to modify students' demographic characteristics, such as prior achievement, or low socioeconomic status. Despite adoption of these interventions though, community college students' graduation rates continue to remain low.

Interestingly, researchers have noted that little research has been undertaken to examine how, and the extent to which, motivational processes might be involved in community college students' academic difficulties (Liao, Ferdenzi, & Edlin, 2012). And yet, motivational processes including self-efficacy, achievement goal orientation, need for achievement and self-regulation have already been identified as important factors in students' success *at four-year institutions* (Friedman & Mandel, 2012; Hsieh, Sullivan & Guerra, 2007; Hoyert & O'Dell, 2009; Taing, Smith, Singla, Johnson, & Chang, 2013). Until recently though, it has been common to generalize these findings from four-year institutions to the community college context, despite the fact that community colleges are understood to be quite different from four-year institutions (Barnett, 2010).

Thus, a domain of research with the potential to meaningfully impact community college student success has gone relatively unexamined. As such, this dissertation sought to extend the motivational research conducted in other educational contexts to the community college setting, with the specific goal of providing insights into students' motivations that could be applied to classroom-based interventions to promote students' adoption of adaptive motivational orientations and facilitate academic success. However, given the lack of research on motivation within the community college context, as well as the diversity of motivational constructs implicated in successful educational outcomes for students attending four-year institutions, countless routes for exploring motivation within the community college context were apparent.

To determine the course of exploration to be undertaken for this dissertation, several factors were considered. First, a motivational framework was sought, which was well established within the motivational literature and which also offered theoretical differentiation between the quantity and quality of an individual’s motivation – as I hypothesized both dimensions to be important. To that end, Achievement Goal theory (Ames, 1992), a prominent motivational theory that has been extensively studied (Hulleman, Schrager, Bodmann, & Harackiewicz, 2010), was selected. This motivational framework was also selected given that it accounts for the integration of environmental structures and cues and can (and has been) applied to contextually based interventions – this latter point being an aforementioned goal of the current dissertation.

As intervening around students’ motivations was a goal of this study, it was also critical that, in addition to selecting a motivational framework to guide the current dissertation, an avenue through which students’ motivations could be impacted via classroom-based interventions was identified. Ultimately, the recent perspective proposed by Flum and Kaplan (2006), which emphasizes the integrative nature of identity exploration as a process that can harness and facilitate adaptive motivational engagement, was adopted. This approach was adopted for several reasons, most prominently for its alignment with the aims of the current dissertation (to promote adaptive motivation and achievement) and the fact that prior research in other educational setting has demonstrated the potential for course-triggered identity exploration to positively impact students’ motivations (Sinai, Kaplan, & Flum, 2012a).

Additionally, the perspective was adopted due to the fact that identity exploration has been argued to be an important academic outcome in its own right (Flum & Kaplan, 2006). The fact that such an outcome could be facilitated in conjunction with the motivational goals of the study, made the perspective that much more attractive. Moreover, the perspective was also adopted as it allowed for exploration of the proposed conceptual link between social-cognitive identity processes, specifically Identity Processing Styles (Brezonsky, 1989), the manner in which individuals “make decisions, resolve problems, and process self-relevant information” (Berzonsky & Kuk, 2005, p. 236), and achievement goal orientations. Indeed, Flum and Kaplan (2010) have asserted that, among other similarities, achievement goal orientations and identity processing styles both provide mental frameworks and standards for engagement. Kaplan and Flum (2010) also highlight that the styles of engagement outlined by both theories align. For example, they describe mastery goal orientations and informational identity-processing styles as both being rooted in self-development and growth, whereas performance goal orientations and normative identity processing styles are both based on normative standards (Kaplan and Flum, 2010).

Thus, in choosing to adopt the “identity perspective” developed by Flum and Kaplan (2006) as a lens through which to examine and extend motivational research into the community college context, the current dissertation was also able to attempt to further current understandings of community college students’ identity processes and the potential relationships between those processes and students’ achievement goal orientations and academic achievement. Moreover, the dissertation was also then able to attempt to use those insights to positively impact students’ motivations, identities, and achievement via classroom-based interventions aimed at prompting course-triggered identity exploration.

Overall Research Questions

Given the aforesaid central aims of the current work, this dissertation focuses on the following general research question:

1. What motivational orientations do community college students adopt in their courses?
2. How do community college students explore their identities in relation to courses?
3. What are the relationships among students' motivations, identity processes, and course success?
4. How and to what extent do students' motivations, identity processes, and identity exploration change over the course of a semester?
5. What elements of course design may facilitate adaptive identity exploration, motivation, identity processes, and achievement?

To answer the questions listed above, three studies were undertaken as part of this dissertation. The studies were structured to build upon one-another, with the first examining the motivational orientations and identity processes community college students reported adopting, the degree to which students' experienced course-triggered identity exploration, and the relations among students motivations, identity processes and expected achievement. In doing so, the goals for the first study was to advance the theoretical understanding of the relationships between achievement goals and identity processing styles, to detail the extent of students' adoption of particular motivational orientations and identity processing styles, and to shed light on the nature of the relationships among students' motivational orientations, identity processes, and academic achievement in ways that might indicate both the relative utility of, and the potential format for, course-trigger identity-based interventions aimed at facilitating students' adoption of adaptive engagements and academic achievement.

The second study was designed to provide insights into the prevalence of students' course-triggered identity exploration, as well as a deeper contextual understanding of students' exploration, through analysis of students' qualitative descriptions of their course-triggered exploration. Additionally, the results of this analysis were intended to provide the basis for the construction of a conceptual definition of course-triggered exploration for students in the community college setting. To be sure, though not a primary goal of the current study, the results from the qualitative analysis of students' responses could also be used to further the extant literature surrounding task value and interest, given that, in the Study 2 design, the prompt for the qualitative responses was designed to elicit feedback regarding the course features/content that led to students' engagement.

The third study sought to extend the findings of the first two studies to a different context within the community college setting – the remedial classroom. The goal was to examine the extent to which the findings from the first two studies held in a different context, and also to explore the trajectory of motivational and identity processes, with significant attention paid to instances of identity exploration, over the course of an academic semester. The study was also intended to provide insight into the effects of activities designed to prompt identity exploration, with the expectation that triggering such exploration would positively impact students' adoption of adaptive engagements (based on the hypothesized relationships between adaptive achievement goal orientations and identity processing styles), and vis a vis, students' expected achievement. Here again, though not a focus of the current study, the data resulting from students' engagement in the identity prompting activities could also be relevant to the literature on task value and interest, as the activities were designed in accordance with the guidelines for promoting identity exploration within the curriculum put forth by Kaplan, Sinai and Flums (2014), of which facilitating self-relevance is one.

Overview of Chapters

The lines of inquiry outlined above are addressed in the subsequent chapters. In Chapter 2 of this dissertation I review the community college context and the literature on community college student success, which primarily has been defined in terms of degree attainment or transfer. I then review existing research pertaining to individual characteristics of community college students and institutional characteristics associated with student success, and highlight the lack of attention and need to investigate the role of students' motivation in these outcomes. I follow this by providing an overview of a prominent motivational perspective – achievement-goal orientation theory – that I adopt for conceptualizing and assessing students' adaptive motivation in the current dissertation. I then discuss the way identity processes (identity exploration and identity processing style) and their facilitation in the community college classroom may relate to students' adaptive motivational processes, and I summarize theory and research on identity exploration and motivation in the educational context, paying particular attention to a model proposed by Flum and Kaplan (2006) for intervening to promote students' identity exploration and motivation, and to Brezonsky's theory of identity processing style, which I use to conceptualize and measure identity processes in this study. After this, I highlight the specific construct-based research questions guiding the studies comprising this dissertation. Following this, in Chapter 3, I outline the methodology for the three studies undertaken as part of this dissertation. In Chapter 4, I identify the findings resulting from the studies, respectively. Finally, in Chapter 5, I discuss the findings and note limitations and implications for future research.

CHAPTER 2. LITERATURE REVIEW

Community Colleges

The community college system has been in existence in the United States for more than a century. Historically, these customarily two-year institutions have adopted missions aligned with multiple community-focused goals. Traditionally, these goals have included providing community members with general, occupational, continuing and developmental (remedial) education, supporting student transfer to four-year institutions, and providing student guidance and community service (Cohen, Brawer, & Kisker, 2013).

Central to achieving these diverse goals is making higher education accessible to a wider array of individuals than those characteristically served by four-year institutions (Hartley, 2008). In doing so, the more than 1,000 community colleges in this country (American Association of Community Colleges, 2013), end up serving a student population that typically lacks the financial resources, academic credentials, and/or "cultural capital" to enter baccalaureate granting institutions (Treat & Barnard, 2012), as well as a disproportionate percentage of students who hail from social groups traditionally underserved by four-year colleges (Freeman, 2007).

Graduation Rates & Associated Costs

Unfortunately, while community colleges provide *access* to higher education for traditionally underserved populations (e.g., first generation and low income students), these students do not attain *degree completion* rates approaching those of their peers who attend four-year colleges (U. S. Department of Education, 2011). Specifically, the graduation rate for community college students within four years of their entering college is approximately 37% (U. S. Department of Education, 2011). Comparatively, the graduation rate for students attending four-year colleges within 6 years of their entering college is approximately 57% (U. S. Department of Education, 2011). Consequently, even though community college students are tracked for a proportionately longer period of time, they still evidence rates of graduation 20% points lower than their peers at four-year colleges. As noted, the disparity appears even greater for those students taking remedial courses at community colleges, with one study noting that only 28% of such students graduate within 8.5 years of their entering college (Attewell, Lavin, Domina, & Levey, 2006).

These results are particularly alarming given that community colleges currently enroll approximately 45% of all undergraduate students in the United States (AACC, 2013) and between 40%-60% of these students are referred to or required to take remedial coursework (Gilroy, 2010; Horn, McCoy, Campbell, & Brock, 2009; Zeidenberg, 2008). This combination of high enrollment and proportionally worse outcomes not only results in staggering numbers of non-graduates, whose well-being and life-prospects will be hampered by their lacking academic credentials, but also in an annual cost to tax payers, by conservative estimates, of approximately one billion dollars (American Institute for Research, 2011).

The Role of Student Characteristics and Institutional Factors in Community College Students' Academic Success

Student Characteristics

Why do community college students generally, and remedial students particularly, graduate at such low rates? A recent in-depth review of the research examining factors that may affect community college student success (Goldrick-Rab, 2010) identified fifteen overarching factors that have been investigated in this domain since 1985. The variables investigated include those relating to institutional funding and goals, faculty, social inequality, pedagogical practices, financial aid, academic preparation, and access to “credit-bearing” courses. While the findings from this review suggest that the factors affecting community college students’ success are varied and complex - a sentiment supported elsewhere (Hoyt, 1999) - they also suggest that individual-level variables are *highly important* factors in students’ success, alongside those pertaining to institutional characteristics.

Other reviews (Burns, 2010) support the importance of students’ individual characteristics (e.g. socioeconomic status, academic preparation, etc.) as predictors of academic success and note that many community college students “possess characteristics negatively associated with educational attainment” (p. 3). More recent studies (Nakajima, Dembo, & Mossler, 2012) have also supported this notion, but highlight that the effect of such characteristics may be indirect.

In one such study, Nakajima, Dembo and Mossler (2012) surveyed 427 community college students on a variety of demographic, psychosocial, and institutional variables. They then explored, via logistic regression, the extent to which those characteristics predicted student persistence from one semester to the next. The results of their study indicated that psychosocial and demographic variables were significantly correlated with students’ college GPA, which was, in turn, the strongest predictor of student persistence. It is important to note that GPA should also be considered an academic outcome in its own right, as students must surpass a minimum GPA threshold in order to graduate, and many programs require students to obtain certain grades to access higher level courses in their field of study.

Other recent studies (Windham, Rehfuss, Williams, Pugh, & Tincher-Ladner, 2014) have highlighted the importance of individual characteristics, while also exploring potential institutional-level interventions that may positively affect student persistence. Windham, et al. (2014) surveyed 1,740 community college students to investigate the role of student characteristics (e.g. age, gender, and ethnicity) and participation in a study skills course in year-to-year retention. The results of their study indicated that several student level characteristics (including age and gender, though not ethnicity) were significant predictors of student persistence, as was participation in a study skills course. However, the greatest predictor was again a student level characteristic: gender.

That individual-level characteristics appear to be strongly linked with academic outcomes leaves community colleges in a difficult position, as they do not have the option of promoting better outcomes by simply becoming more selective in their admissions process. Such a course of action would directly conflict with their goal of providing greater access to higher education.

Subsequently, community colleges are left to determine how they can improve outcomes for the diverse and often less academically prepared populations they were created to serve. In light of this reality, it is rather interesting that the majority of research in the community college domain has focused on unchangeable individual characteristics, such as personal background and demographics (Bailey, Calcagno, Jenkins, Kienzl & Leinbach, 2005), and that research examining more malleable aspects of community college education (e.g., institutional characteristics) has only been recently undertaken

(Burns, 2010). However, it may ultimately be the case that the unchangeable characteristics that have been the focus of so much study are not explanatory in and of themselves. Rather, their relationship with academic outcomes may in fact be mediated by more modifiable variables (e.g., motivation). This fact, coupled with the fact that community colleges cannot become more selective, necessitates that researchers begin to explore other variables that may also play a role in shaping students' success. Fortunately, some early forays into this domain have been made.

Institutional variables

As Bailey et al. (2005) note, though much research indicates the impact of student-level characteristics in community college student success, not all of the variability in graduation rates can be explained vis a vis these variables. Rather, institutional variables must play some role, as different community colleges enrolling similar students achieve significantly different graduation rates. The sections below highlight some of the institutional variables that have been explored for their potential to impact student success.

Institution size. In their 2005 report, Bailey et al. identified that larger institution size was negatively correlated with student success. The authors suggest that this may be the case because smaller community colleges "can provide a more personalized environment" (p. 6). They also suggest that smaller community colleges may offer a more limited array of programs, and thus may attract more focused students and/or provide a more structured environment.

Conversely, after controlling for student characteristics, Clotfelter, Ladd, Muschkin, & Vigdor (2013) found no evidence of a relationship between a community college's size and academic success. It must be noted, however, that their study was confined to community colleges within the state of North Carolina.

Regardless of the ultimate effect of institutional size, it is worth considering that an institution's size, much like student demographics, is not easily modifiable. Other institutional factors, however, are more easily modified or specifically present opportunities to intervene to promote student success – for example, learning communities.

Learning communities. Some researchers have noted that creating learning communities within community colleges may positively impact student success (Barnes & Piland, 2011). The creation of learning communities fundamentally entails organizing groups of students into cohorts and exposing those students to a curriculum where their classes, and the faculty that teach them, are linked across subjects (Raftery, 2005). Investigations into the utility of creating such communities in community college settings have not produced consistent results though, and Barnes and Piland note in their study that the creation of learning communities for students in developmental reading and writing courses only had a marginal effect on students' persistence from one semester to the next. They did find, though, that participation in learning communities had a significant effect on course persistence for some specific sub-groups of students (e.g. Latino students) in the developmental writing courses.

A more ambitious study of learning communities by Weiss, Mayer, Cullinan, Ratledge, Sommo, & Diamond (2014) also found mixed results (although comparatively their results were more supportive of the positive role that learning communities can play). In their study the researchers explored the effects of learning communities by randomly assigning 1,534 students at a Brooklyn-based community college to either a single semester learning community or control condition. Their results indicated that learning community participation was positively linked to increased persistence and credit accumulation, relative to the control group. However, learning community participation was not significantly linked to degree completion, although the non-significant relationship was positive. Despite the varied findings, the available research does generally indicate some positive effects of learning community participation, a conclusion supported in a review of the relevant literature by Minkler (2002).

Student success courses. Another institutional factor that has been investigated for its relation to community college student success is the “Student Success Course.” Student Success courses typically involve orientation to the college and its resources, as well as instruction aimed at improving students’ study habits and other skills deemed relevant to college success (Cho & Karp, 2013; O'Gara, Karp, & Hughes, 2009).

In a study by Cho and Karp (2013), the researchers examined the effects of enrollment in a student success course on credit accumulation and year-to-year persistence among students attending a Virginia community college. The results of their study suggested that enrolling in such a course during the first semester of community college increased the likelihood that a student would earn credits during that year and persist until the next year. Notably, the study also found that some of the positive effects of Student Success course enrollment persisted even for those students in lower level remedial courses.

A qualitative study utilizing in-depth student interviews by O'Gara, Karp, and Hughes (2009) also found support for the idea that taking a Student Success course yields positive outcomes for community college students, including an increased willingness to utilize college resources and the development of adaptive study skills. It must be noted though, that due to the study's small sample size (n=36) and the fact that most study participants had participated in the Student Success course, researchers were unable to identify if participation in the course had a demonstrable effect on degree attainment.

In a similar vein, a study by Rutschow, Cullinan, and Welbeck (2012) looking at the effects of a randomized implementation of a Student Success course on a community college campus, found that the course positively impacted students' socioemotional skills and adaptive engagement, but failed to uncover any effect on academic achievement. Notably, this lack of an effect was present across several indicators of academic success, including credit accumulation, GPA, and course persistence.

Interestingly, with student success courses and learning communities, colleges are specifically creating structures aimed at promoting adaptive engagement with course content, peers, faculty, and/or academic resources, and increasing students' knowledge in ways that will help them successfully navigate their academic tracks. That the limited study of these structures in the community college context supports the notion that they beneficially impact student success is suggestive. Specifically, it may be that interventions directed toward helping students develop more adaptive engagements and promoting increases in knowledge provide an important avenue through which community college student outcomes can be impacted.

Faculty. As Barnett (2011) writes, "for community college students, most of their college experience is classroom based." Given this, it is logical to consider the extent to which students' interactions with faculty and faculty characteristics may affect student success.

It is well known that community colleges rely heavily on part-time/adjunct faculty for course instruction. The question arises though as to the effect that this reliance has on student achievement. A study by Bailey et al. (2005), which looked at 2,196 community college students across 536 institutions, reported that an increase in the percentage of part-time faculty teaching at an institution was negatively associated with degree completion. This finding was also supported by the 2006 study by Jacoby, which looked at data from all public two-year colleges and found the same negative relationship between the ratio of part-time faculty at an institution and student degree completion. Unfortunately, despite the negative relationship between the use of part-time adjunct faculty and student outcomes, it appears unlikely that this practice will change at any point in the near future. However, the manner in which faculty interact with and teach students, though potentially somewhat bound by their status (full-time vs. part-time), may be more easily changed - and may offer another pathway through which to affect student success.

Pedagogical practices offer just such a means and have been implicated as an important variable in student success. Hynes, Perez, and McShannon (2012) found that faculty who participated in a 15-week professional development course designed to orient faculty to student-centered learning approaches improved student outcomes (specifically course completion with a passing grade) by nearly 8%, compared to controls. However, no impact was detected on year-over-year student persistence. This lack of a finding may be due to the small number of courses analyzed in the study.

Additionally, Lundberg (2014) found evidence suggesting that the frequency of student-faculty interaction affected student outcomes (specifically self-reported learning) for community college students. In her study, Lundberg surveyed 239 community college students using the Community College Student Experiences Questionnaire (CCSEQ). The CCSEQ measures self-reported learning in addition to student engagement, student demographics, and student perceptions of the quality of a college's social environment. Notably, the CCSEQ considers gains in personal knowledge/understanding as part of self-reported learning. Analysis of the results indicated that the frequency of student-faculty interaction was the strongest predictor of self-reported learning.

Faculty-student contact was also identified as a potential factor in student retention in a 2005 study by McArthur. In this study, a faculty advising outreach initiative, which entailed faculty receiving training in advisement and contacting their advisees via phone or email, was associated with semester-over-semester retention rates for students part of the initiative that were 15% greater than for similar students during the previous three years. Here again though, such practices require increased faculty-student contact (in essence, increased faculty time). Such practices may be especially difficult to implement at community colleges, given the high percentage of part-time staff that comprise the faculty. Conversely, classroom-based interventions do not require a consistent increase in temporal resources, and therefore may offer a more feasible route through which to impact student success.

Remedial education. One further factor that has received considerable attention in the community college setting for its potential relationship with student success is that of remedial (i.e. developmental) education. As noted earlier, success levels for students in remedial courses is considerably lower than for those not enrolled in such courses. It warrants mentioning here though, that this relationship only appears to hold when looking at students taking remedial courses as a whole, or only those students in the lowest levels of remediation (Gilroy, 2010). That is, students in higher level remedial classes appear to do about as well as students who were referred to higher level remedial courses, but did not take them. Conversely, students in the lowest levels of remediation are significantly less likely to complete their degrees than those not referred to remedial courses. Such findings seem to call into question the utility of remedial courses. For if enrollment in remedial courses does not improve outcomes for those in higher level remediation courses, nor help those in the lowest levels of remediation attain degree completion, what purpose do these courses, as currently constructed, serve (Gilroy, 2010)?

Regrettably, despite the fact that we know that remedial community college students, as a group, experience significant difficulties with degree completion, little “rigorous” research has examined the effectiveness of remedial education (Zeidenberg, 2008). Moreover, the research that has examined the effects of remedial education on community college student success has produced equivocal results (Bahr, 2012; Gilroy, 2010).

For example, in a study looking at the efficacy of math remediation for California community college students, Bahr (2008) found that students who successfully completed remedial math classes were almost as likely to earn academic credentials as their counterparts who did not require remediation. However, more than 75% of students taking remedial math did not successfully complete their remedial coursework (Bahr, 2008). Of those students who did not successfully complete remediation, less than 20% earned any academic credential or a successful transfer to another institution.

Interpreting even these results is further complicated by the fact that remedial education can vary significantly from institution to institution. Whatever the relative merits of current remedial education practices may be though, the fact that many students are not able to successfully navigate these courses (Bahr, 2010) necessitates that researchers expend further efforts to gain a better understanding of how these courses can better support student success.

Additional factors. To be sure, the variables identified above do not represent the only institutional factors pertaining to student success that have been explored by researchers interested in community college student success. Researchers have also examined factors as varied as student involvement (i.e. student engagement in college academic, social, and recreational opportunities) (Friedlander & Macdougall, 1992), student-centered learning approaches (Hynes, Perez, and McShannon, 2012), tutoring (Kostecki & Bers, 2008), and even athletics (Horton, 2009). Still others have examined how performance-based scholarships and allowing community colleges to grant baccalaureate degrees affects student success (Goldrick- Rab, 2010).

Conspicuously absent from this vast research, however, are investigations into the role of students' motivational and identity processes and their contribution to students' engagement, persistence, and, ultimately, academic success. That such research is largely absent from the extent literature is notable for three reasons. First, as the research reviewed above indicates, interventions aimed at promoting adaptive student engagement have demonstrated positive effects on student success in the community college context.

This finding, at the very least, suggests a mediating role for motivational and/or identity processes in the relationship between said interventions and the improved outcomes reported. Second, because of the constraints faced by community colleges (in both their selection process and resources), the community college classroom setting may prove to be the venue most suited to interventions aimed at impacting student success. And as adaptive motivation in the educational context is theorized to be a function of the educational environment (Kaplan, 2008), classroom-based motivational interventions would seem to offer an attractive means through which to attempt to impact student engagement and outcomes. Finally, and perhaps most critically, researchers have already identified the importance of motivational processes (Friedman & Mandel, 2012; Hsieh, Sullivan & Guerra, 2007; Hoyert & O'Dell, 2009; Taing, Smith, Singla, Johnson, & Chang, 2013) in other educational settings.

Motivation

"Motivation refers to the processes that lead to the instigation, continuation, intensity, and quality of behavior" (Kaplan, 2008, p. 6). Of the numerous theories that conceptualize these processes, the current investigation employs the lens of "achievement goal orientation" proposed by Ames (1992). This prominent perspective was selected for its differentiation between the *quantity* and *quality* of one's motivation, its integration of environmental structures and cues, and its applicability to contextually based interventions.

Achievement Goals and Student Success

Achievement goal theory holds that individuals adopt different purposes for engaging in achievement situations, and that these purposes are linked with different outcomes (Elliot, Shell, Henry, & Maier, 2005). The most prominent current model of achievement goal theory holds that there are four main types of achievement goals that individuals may adopt (although see Elliot, Murayama, & Pekrun, 2011): mastery-approach, mastery-avoidance, performance-approach, or performance-avoidance goals. Those who adopt mastery-approach goals engage with the aim of increasing competence and overcoming challenges, while those who adopt mastery-avoidance goals engage with the aim of not experiencing a decrease in competence. With regard to performance goals, those who adopt performance-approach goals engage with the aim of demonstrating their competence through performing better than others, while those who adopt performance-avoidance goals engage so as not to demonstrate relatively poorer ability than others (Elliot et al., 2005).

A significant body of research is dedicated to examining the different goal orientations. Indeed, Hulleman, Schrager, Bodmann, & Harackiewicz (2010) identified that more than 1,000 papers have been published on the topic since 1985. Among these numerous papers, the relationships among achievement goals and academic achievement have received considerable attention.

A meta-analysis by Linnenbrink-Garcia, Tyson, & Patall (2008) exploring these relationships across more than 90 studies identified several significant findings. Notably, the authors found evidence that “both mastery (approach) and performance-approach goals can be beneficial for achievement and that neither is necessarily detrimental for achievement” (p. 55). The results of the analysis also indicated that other variables may play moderating roles in the relationships among achievement goals and academic achievement. Specifically, the authors found support for the idea that both age and task difficulty may moderate the relationships. With respect to age, mastery-approach goals appear to be more positively linked with achievement for younger children, while performance-approach goals show increased positive linkage with achievement for college-aged students (although there is still evidence of a positive relationship between mastery-approach goals and achievement for college-aged students – the relationship just does not appear as strong as it does for younger children). In regard to task difficulty, mastery-approach goals appear to be of greater benefit than performance-approach goals on difficult tasks, while performance-approach goals appear to be helpful on easy tasks. Interestingly, the authors did not consider performance or mastery-avoidance goals in their review.

A closer look at individual studies of mastery-approach and performance-approach goals and academic achievement at the collegiate level provides further insight into their relationships in the particular context of college. With regard to mastery-approach goals, a study of undergraduate university students by Elliot, McGregor, & Gable (1999) also found evidence of positive outcomes related to the adoption of mastery goals. Specifically, they identified that mastery goals (i.e. mastery-approach goals, as described, although the authors do not consider mastery-avoidance goals in their study) were positively associated with the use of deep processing strategies, persistence, and effort. In turn, persistence and effort were shown to be positively linked with exam performance.

The authors also found evidence of a positive relationship between performance-approach goals and persistence, effort, and exam scores (Elliot, McGregor, & Gable, 1999). Performance-approach goals, however, were also shown to be positively-related to surface processing. Moreover, effort and persistence were found to mediate the relationship between performance-approach goals and exam performance. Combined with the findings from the meta-analysis by Linnenbrink-Garcia, Tyson, & Patall (2008), such results highlight both the complexity of the relationship between achievement goals and academic achievement and the potential effects of context on the relationship.

On the other hand, performance-avoidance goals have been ubiquitously associated with negative patterns of engagement and outcomes (Elliot & Murayama, 2008; Kaplan & Maehr, 2007). For instance, in their study of 229 undergraduate students Elliot and Murayama found that a performance-avoidance orientation negatively predicted both intrinsic motivation and academic performance.

Mastery-avoidance goals were the most recently added component to the achievement goal framework, and early work suggests that these goals are associated with less adaptive patterns of engagement and processes including fear of failure and surface processing (Elliot & McGregor, 2001; Howell & Buro, 2009; Sideridis, 2008). Due to their recent inclusion in the achievement goal framework, however, it may be premature to make generalizations regarding this component.

It warrants mentioning here that adoption of achievement goals is not a mutually exclusive process, and thus individuals may adopt two or more achievement goals simultaneously (Pintrich, 2000). In fact, some research suggests that joint adoption of mastery-approach and performance-approach goals may yield superior outcomes for students (Harackiewicz et al., 2002; Pintrich, 2000).

In spite of the existence of this established literature linking particular achievement goal orientations to academic outcomes, very few studies have considered these goals in the community college context (Mesa, 2012). Thus, a useful lens through which to examine the potential relationships between motivation and academic success at community colleges has gone unused.

In addition, potentially important moderating variables in the relationship between achievement goal orientations and academic outcomes have received little attention. In particular, Linnenbrink-Garcia, Tyson, & Patall (2008) highlight that it will be critical to consider the role of self-efficacy in future studies.

Subsequently, this dissertation explores the potential relationships between achievement goal orientations and academic achievement in the community college setting. To do so, this study uses a recent perspective proposed by Flum and Kaplan (2006), which emphasizes how identity exploration can act as a conduit through which adaptive motivational orientations may be harnessed and integrated.

Identity Exploration

According to Flum and Kaplan (2006, p. 100), identity exploration involves "a deliberate internal or external action of seeking and processing information in relation to the self." Such action, they contend, facilitates development through the construction and assimilation of meaning (Flum & Kaplan, 2006).

Research on identity exploration in the educational domain has been significant, and has suggested that engagement in identity exploration is associated with a host of adaptive outcomes, including adaptive motivation and increased engagement (Sinai, Kaplan, & Flum, 2012a), well-being (Waterman, 2007), and engagement in prosocial behaviors (Padilla-Walker, Barry, Carroll, Madsen, & Nelson, 2008). Identity exploration has also been found to be related to self-regulation, achievement, and social skills

(Berzonsky & Kuk, 2005). In addition to its relationship with a wide variety of adaptive outcomes, identity exploration has also been argued to benefit students by providing them with the ability to navigate a society where rapid change is the norm (Flum & Kaplan, 2006). That is, it is argued that those who have engaged in identity exploration will be more likely to respond to situations which challenge their identities with adaptive engagements, as they will know when it is beneficial and how to engage in exploration (Flum & Kaplan, 2006).

In addition to the body of work supporting a relationship between identity exploration and student outcomes, including motivational outcomes, recent work by Kaplan and Flum (2010) has also proposed that achievement goals and "identity processing styles" (Brezonsky, 1989), a prominent perspective that has been extensively used to consider identity exploration in the educational context, may be conceptually related.

Given this proposition, the current study adopts the identity exploration perspective proposed by Brezonsky as a lens through which to explore the potential relationships among identity and motivation, proposed by Flum and Kaplan (2006), and educational outcomes in the community college context. The following section outlines Brezonky's theory of identity processing style before more fully exploring the literature on identity processing styles and student outcomes. Following that, a section highlighting the role of the educational context in triggering identity exploration is presented.

Identity Processing Style

Brezonsky (1989) proposes a perspective on identity formation that emphasizes the social-cognitive processing styles that people adopt as they confront identity-relevant questions and decisions. Identity processing style refers to the manner in which individuals "make decisions, resolve problems, and process self-relevant information" (Berzonsky & Kuk, 2005, p. 236). Berzonsky proposes three general styles of identity processing: informational, normative, and diffuse-avoidant (Berzonsky & Kuk, 2000). Students who adopt an informational identity style address identity relevant situations by pursuing and evaluating pertinent information before reaching decisions (Berzonsky, Branje, & Meeus, 2007). Conversely, those who adopt a normative identity style respond to identity relevant situations by conforming to social norms and expectations. Those who adopt a diffuse-avoidant style attempt to avoid self-relevant issues and decisions (Berzonsky & Kuk, 2000).

Just as with achievement goal theory, considerable research has been undertaken to explore the relationships between these differing identity processing styles and academic outcomes. Research suggests that employing an informational identity processing style is related to positive academic outcomes, including greater academic autonomy (i.e. "being able to plan, execute, and monitor academic efforts in a self-disciplined fashion") (Berzonsky & Kuk, 2000, p. 86), and better academic performance (Berzonsky & Kuk, 2005). Possessing a normative identity style, on the other hand, is associated with a more varied set of outcomes – as those with a normative style tend to have established academic plans and purposes for engagement, and may do well in more structured academic environments, but lack the degree of academic autonomy possessed by those with informational identity processing styles (Berzonsky & Kuk, 2005). Those students with diffuse-avoidant processing styles exhibit the least adaptive outcomes, including lower levels of self-management skills and academic autonomy, poorer academic performance, and poorer adjustment to the college environment (Berzonsky & Kuk, 2005). In light of these findings it is interesting to note that some studies examining identity processing style in the community college context have revealed that students report most strongly adopting informational identity processing styles (Phillips, 2008).

Identity Exploration in the Educational Context

As mentioned, this dissertation employs the identity processing style perspective as a lens through which to examine identity in the community college classroom. With regard to the classroom, some researchers have, of late, stressed the important role that educational environments play in students' identity exploration and development (Harrell-Levy & Kerpelman, 2010; Lannegrand-Willems & Bosma, 2006). For example, Harrell-Levy & Kerpelman (2010) highlight the potential for instructors to create an educational environment and facilitate engagements that promote student identity exploration and development. However, empirical research about theory-informed interventions aiming to trigger students' identity exploration within the curriculum has been very scarce (Flum & Kaplan, 2012).

The early forays into explicitly triggering identity exploration in the educational context via course material have produced positive results (e.g., Sinai et al., 2012a). For instance, in their 2012 study, Sinai et al. conducted a collaborative intervention with a literature teacher and her 66 9th grade students to promote identity exploration within the literature curriculum and found that utilizing identity triggering assignments resulted in increased student identity exploration and adaptive motivation for the subject—albeit, not for each and every student. This intervention followed Kaplan and Flum's (2006; Kaplan, Sinai & Flum, 2014) principles for promoting identity exploration within the curriculum, which involve facilitating self-relevance, triggering identity exploration, promoting sense of safety, and scaffolding identity exploratory actions.

However, thus far, the early studies focusing on triggering identity development in the classroom have been primarily undertaken with young adolescents, and, as Arnett (2000) notes, adolescence and emergent adulthood (an age when many individuals attend college) are distinct developmental periods. In a similar vein, Berman, Kennerley, and Kennerley (2008) report that much of the research on facilitating identity development has focused on younger individuals, and that there has been exceptionally little research undertaken to develop interventions designed to promote identity development in adults (the authors identify adults in their study as college juniors and seniors). Thus, from this perspective as well, this dissertation seeks to extend the extant research to the community college context.

Cumulatively then, the current dissertation seeks to examine students' motivational and identity processes in the community college context, the potential interrelationships among motivation, identity processes, and student success, and course-based activities that may facilitate student engagement in course-triggered identity exploration. Specifically, the following seven questions guided the three studies comprising this dissertation (with each study examining a sub-set of the questions):

1. What motivational orientations and identity processing styles do community college students adopt?

2. What does course-triggered identity exploration look like for community college students?

3. In what manner and to what extent do community college students' motivational orientations, identity processing styles, and their course-triggered identity exploration relate?

4. How do students' motivational orientations, identity processing styles, and course-triggered identity exploration change over the course of a semester in a class designed to facilitate identity exploration?

5. To what extent do students' motivational orientations, identity-processing styles, and identity exploration relate to their expected course grades?

6. Do community college remedial students' motivational orientations, identity processing styles, and identity exploration appear different from those of non-remedial community college students?

7. Do particular prompts, experiences, content, and/or assignments facilitate student identity exploration in the community college context?

While little research has thus far addressed many of these questions, a few expectations regarding the outcomes were hypothesized - based on the existing body of research. Specifically, it was hypothesized that approach orientations (mastery and performance), informational identity processing style, and course-triggered identity exploration would be positively associated with expected course grades, while avoidance orientations and diffuse-avoidant processing style would be negatively associated. It was also hypothesized that, in line with Phillips (2008), students would report most strongly adopting informational identity processing styles. Additionally, it was hypothesized that findings would support Kaplan and Flum's (2010) assertion that achievement goal orientations and identity processing styles are conceptually related.

In the following chapter, the methodology employed for exploring the questions and hypotheses identified above is outlined.

CHAPTER 3. METHODOLOGY

This dissertation is comprised of three studies, each pertaining to specific research questions outlined in the previous chapter. As such, this chapter outlines the methodologies used in each of the respective studies, in sequential order.

Study 1

Study 1 investigated the nature of and the relations among students' course-triggered identity exploration, identity processing styles, achievement goal orientations, self-efficacy, and expected academic outcomes in the community college classroom. The study involved analysis of community college students' self-report data from a survey administered to students in an introductory psychology course.

Sample and Context

The sample for Study 1 was comprised of 100 students (39 males, 61 females) drawn from three sections of "Introduction to Psychology" held in the spring semester of 2012 at Montgomery County Community College's main campus. Notably, the percentage of male and female participants in the sample approximated the percentage of male and female students attending community colleges nationally (43% males, 57% females) (American Association of Community Colleges, 2013).

With regard to ethnicity, 62% of the sample identified themselves as Caucasian (non-Hispanic), 12% as Asian, 9% as African American, 6% as Hispanic, and 1% as Indian. Seventy-nine percent of the participants identified themselves as attending college in a "full-time" capacity. The mean age of the students was 20.24 years with a range of 18-53 years. All participants attended daytime sections of the courses surveyed.

The sections of students selected were drawn from a convenience sample consisting of those classes to which the researcher had access, via instruction. This method of participant recruitment was primarily utilized due to the restrictions issued by Montgomery County Community College's Institutional Review Board prohibiting the use of class time to present research opportunities to students. It was hoped that, given the aforementioned prohibition, the classes selected might participate at higher rates than would classes with which the researcher was an unfamiliar entity.

"Introduction to Psychology" classes were targeted given their status as a required course for all degree-seeking students. The course's status was of significant importance, as a goal of this study was to shed light on motivational/identity-related factors that might influence academic success, and a common benchmark of success for community college students is degree completion and/or successful transfer to a four-year institution. As such, it was important to attempt to engage participants who were on a degree-seeking track.

The "Introduction to Psychology" classes comprising the sample were run over the course of fifteen weeks during the fall 2012 semester. All classes in the sample utilized the same textbooks, followed the same syllabus, and were almost uniformly presented with the same course materials.

Procedure

Students were presented with the opportunity to participate in an anonymous survey prior to the beginning of a class, approximately three-quarters of the way through the semester. By this point in the course, students had experienced significant exposure to the course content and format and would have possessed sufficient information to assess their experience, both academically and personally. Students were informed of the purpose of the study and the consent form was read to them. Students who chose to participate completed the consent form. Students were informed that they would not suffer any negative repercussions for not participating, nor were there any expectations of negative outcomes due to participation. Because of the restrictions issued by the Montgomery County Community Colleges IRB, students were unable to take the survey immediately following its presentation, and so were given one week to fill out their surveys and bring them back to class. Surveys were collected via sealed, unmarked envelopes to ensure anonymity.

Instruments

The survey instrument provided to participants consisted of scales pertaining to students' achievement goals, academic self-efficacy, and identity processing styles in their studies generally (Berzonsky, Branje, & Meeus, 2007; Midgley et al., 2000), as well as a scale assessing course-triggered identity exploration (Sinai et al., 2012a). Students were asked to respond to the survey items by selecting a number from 1-5 signifying the extent to which the items reflected them (the student). Students also completed questions regarding demographics, educational goals, expected course grade, and an open-ended question. A complete copy of the survey can be viewed in Appendix A.

The scale pertaining to achievement goal orientation was comprised of 23 items spread among four subscales pertaining to mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance orientations. The scale has been shown to have acceptable levels of internal reliability (Smith, M., Duda, J., Allen, J., & Hall, H., 2002) and validity (Midgely et al., 1998) and is commonly used to assess achievement goals (Hulleman, C. S., Schrager, S. M., Bodmann, S. M., & Harackiewicz, J. M., 2010). Example items from the mastery-approach subscale include, “One of my goals in this course is to learn as much as I can” and “It’s important to me that I learn a lot of new concepts in this course,” while those from the mastery-avoidance scale include “One of my goals in this course is not to forget what I’ve learned” and “One of my goals in this course is not to miss opportunities to learn all that I want to learn.” Performance-approach items include “It’s important to me that I look smart compared to others in this course,” while performance-avoidance items include “It’s important to me that I don’t look stupid in this course.”

The academic-efficacy scale used is derived from the same instrument as the achievement goal orientation scale and has also been shown to have acceptable psychometric properties (Midgely et al., 1998). It consists of five items, including “I'm certain I can master the skills taught in this course” and “I'm certain I can figure out how to do the most difficult work in this course.” Exploration of academic-efficacy was not a central goal of this study, but was included as a construct to allow for exploration of the relationship between academic efficacy and motivational and identity-related constructs.

The identity processing style scale was comprised of 34 items from the ISI-4 and contained four style subscales: informational, diffuse-avoidant, normative, and commitment. The internal reliability for each of the four subscales has been found to be above .70 (Soenens, Berzonsky, Dunkel, Papini, & Vansteenkiste, 2011) and the scale has demonstrated convergent validity with other validated measures of identity style (Smits, Soenens, Vansteenkiste, Luyckx, & Goossens, 2010). Informational items in the scale include, “In my education at MCCC (Montgomery County Community College), talking to others helps me explore my personal beliefs" and "When facing a decision at MCCC, I take into account different points of view before making a choice." Diffuse-avoidant items include, "Many times, by not concerning myself with personal problems at MCCC, they work themselves out" and "In my education at MCCC, I am not really thinking about my future now, it is still a long way off." Normative items from the survey include "In my education at MCCC, I automatically adopt and follow the values I was brought up with" and "In my education at MCCC, I strive to achieve the goals that my family and friends hold for me." Commitment items include "In my education at MCCC, I know basically what I believe and don't believe" and "With regard to my education at MCCC, I know what I want to do with my future."

The course-triggered identity exploration scale was comprised of five items: (1) Often, what happens in this course leads me to think about who I am; (2) I feel that, in this course, many times I look at myself in a different way from what I'm used to; (3) There are things in this course that lead me to find out all kinds of things about myself; (4) The assignments in this course lead me to ask questions about my life; (5) I feel that learning in this course raises questions for me about myself. Recent research using this scale has supported the internal consistency of the items as well as their validity – the latter via correlation with other measures of identity exploration (Sinai, Kaplan, & Flum, 2012b)

Analysis

The analysis performed in Study 1 was designed to examine the motivational orientations and identity processing styles students reported adopting and the degree to which students experienced course-triggered identity exploration. The analysis also focused on exploring the relationships among students' reported motivational orientations and identity related processes and grades. In order to investigate the aforesaid areas, descriptive statistics, zero-order correlations, and mutli-dimensional scaling (MDS) were used.

Multi-dimensional scaling was selected as a method for exploring the relationships among students' reported motivational orientations and identity related processes and grades, as it moves beyond correlations between variables, and allows for the survey data collected to be analyzed at the individual item level, while also allowing for insights into the underlying dimensions present in the response data and, if present, the phenomenological overlap among constructs to be gleaned. Multidimensional scaling allows for such exploration as the data output from such analysis is a graphical depiction of the input variables within an n-dimensional Euclidian space - whereby the graphically depicted distances between data points represent their relative degree of relatedness.

The graphical output of MDS is based on a proximity matrix - a compendium of similarity scores derived from comparisons of the possible data pairs, which is then transformed to fit the n-dimensional space (Hout, Papesh, & Goldinger, 2013). The number of dimensions in which the data is output can be stipulated by the individual running the analysis, with two or three-dimensional outputs generally considered desirable – given the visual interpretation required to analyze the resulting output.

Indeed, once the data are transformed (and acceptable levels of "match" between the underlying proximities and the derived graphical distances have been achieved) the position and organization of the data points within the visual field can be analyzed (Kruskal & Wish, 1978). Thus, data points clustered near one another may be viewed as more similar than points graphically depicted as more distant from one another. Moreover, the shape of the mapped data points, as well as their relative locations, can offer insights into the manner and extent to which variables of interest relate to one another and, potentially, the presence and nature of underlying dimensions in the data (Hout, Papesh, & Goldinger, 2013) – again, an important part of the analysis for Study 1.

In addition to being a method of analysis that allows one to explore the nature and strength of relationships among variables, MDS was also selected over other methods of dimension reduction, given its ability to allow for constructs to flow into each other (as opposed to factor analysis, for example, which aims to separate them) and thereby allow for the exploration of the phenomenological meaning of relations among constructs (Kaplan, Lichtinger & Gorodetsky, 2009).

MDS was also selected as it has been employed in a manner similar to that described above in previous studies exploring autonomy (Roth, Assor, Kanat-Maymon & Kaplan, 2006) and self-regulation (Kaplan, Lichtinger & Gorodetsky, 2009). In the current study, all MDS was conducted using the ALSCAL package in SPSS, which calculates the proximity matrix underlying the mapping using raw respondent data. Additionally, the number of dimensions for the output was set at 2– as this allows for optimal clarity when interpreting the graphical output – with the understanding that should the level of fit be unacceptable (as measured by the level of stress) the number of the dimensions would be increased.

Study 2

Study 2 investigated the qualitative manifestations of community college students' experiences of identity exploration in their introductory psychology course to uncover the personal and contextual features involved in identity exploration in the community college classroom and a conceptual definition and the experiential meaning of course-triggered identity exploration. This study involved analysis of the qualitative feedback provided by students to an open-ended item from the survey administered in Study 1.

Sample and Context

The sample for Study 2 was comprised of the qualitative responses provided on the survey administered to the sample in the first study. Of those who participated in the initial survey, 92% (n=92) provided qualitative responses.

Procedure and Instruments

The data for Study 2 were taken from the survey administered for Study 1. Along with items pertaining to the various motivational/identity scales outlined in the section describing Study 1, the questionnaire also included an open-ended question attached to one of the items in the course-triggered identity exploration scale – “I feel that learning in this course raises questions for me about myself.” The open ended-question asked students to elaborate on and explain their response to this item. The instructions asked students to “Please look at the last question (and) explain in words what you meant by circling the number you did” (on the Likert-style scale)”

Analysis

The analysis performed in Study 2 was designed to examine the nature and structure of students’ experiences of course-triggered identity exploration. To accomplish this, students’ open-ended responses were analyzed using content analysis (Zhang & Wildemuth, 2009). Codes were derived through deductive (i.e., theory-based definitions of identity exploration) and inductive (i.e., data-driven) methods in a collaborative process among the research team. Student responses were initially identified as indicating either the existence or absence of course-triggered identity exploration and then along various emerging dimensions characterizing students' exploratory actions in the course. As mentioned, theoretical definitions of identity exploration (Flum & Kaplan, 2006) guided this analysis. A random sample of 10% of the response data were coded by two independent raters to develop and formalize the coding scheme. Following the coding, the two coders discussed and agreed on the coding scheme. Then, an additional 10% of the responses were coded independently in order to establish inter-rater reliability. At this point, inter-rater reliability, calculated using Cohen's Kappa, reached an acceptable level of Cohen's Kappa (i.e. >.60) (Cohen, 1960), specifically *Kappa* = .78. Once that acceptable level was achieved, one rater coded the remaining responses.

The resulting dimensions were then used to construct a multi-dimensional definition of community college students' course-based identity exploration (in an introductory psychology course), written in the form of a mapping sentence (Guttman & Greenbaum, 1998). Mapping sentences are created on the basis of observations, which, when combined in a systematic fashion (into a sentence), provide a defined structure through which to explore and test theory (Guttman & Greenbaum, 1998).

Study 3

Study 3 investigated the relations among students' motivations, identity processing styles, course-triggered identity exploration, and academic outcomes within the context of two remedial English courses at the community college. The study also used a design-study (Brown, 1992) approach to investigate the effects of course activities implemented to promote students' identity exploration and the trajectory of identity exploration over the course of a semester. A design-study approach was used given the alignment between the features of that mode of inquiry (a focus on developing and testing theory within the complexity of learning environments, exploration of learning processes and the factors that impact them, intervention, and producing results that can inform instructional practices) (Cobb, Confrey, diSessa, Lehrer, and Schauble, 2003) and the aims of the current dissertation.

Study 3 involved a semester-long researcher-instructor collaborative intervention, which consisted of a theory-informed collaborative design of course activities that aimed to facilitate students' identity exploration within the curriculum and, additionally, through that exploration facilitate adaptive motivational engagements and improve academic success. Data collected included pre-post intervention surveys assessing students' identity processing styles, achievement goals, and self-efficacy, post-intervention scales assessing students' course-triggered identity exploration, reflective writing assignments that students completed as part of the intervention during the semester, a final identity-related assignment that students completed at the end of the course, and students' expected course grades.

Sample and Context

The sample for Study 3 consisted of 17 students drawn from two sections of developmental English (Basic Writing I and II) at Montgomery County Community College in the fall of 2014. Students were placed into these courses on the basis of their score on a writing placement test. Students who score in the lowest scoring bracket are assigned to Basic Writing I, while those who score in the second lowest bracket are assigned to Basic Writing II. Both courses focus on providing students with the basic writing skills necessary to enter English 101 – the typical introductory college-level English course.

These two courses were selected for the study given the lower success rates generally achieved by these students, as well as the fact that their instructor was willing to participate in the research and imbed identity exploration oriented aspects of the research design (outlined below) within the course structure. That the courses were "writing courses" was important, as it allowed for relatively seamless integration of the study's interventions into the existing course design. Moreover, the courses were also selected due to the fact that their content, which focused on issues of gender, identity, and culture, was considered conducive to triggering identity exploration. There were no exclusion criteria for study participants, save that they had to be at least 18 years old at the beginning of the study.

The design of the study involved several different elements: surveys, weekly memos, and a final identity assignment. Students had the ability to participate in all elements, some, or none. A total of 13 students participated in the surveys that were administered to the classes. Ten students participated in the pre-survey and eight in the post-survey. Five students completed both the pre and post surveys. For the 13 students who completed at least one of the surveys, the average age was 20.46 years, with a range of 18-35 years. With regard to gender, 46% were male and 54% were female. In terms of ethnicity, 62% identified themselves as Caucasian (non-Hispanic), 31% as African American, and 8% as Multi-racial. Of the sample, 54% identified themselves as attending the college in a full-time capacity.

With regard to the memos and final identity assignment, a total of 15 students participated. Eleven of those students participated in at least one of the surveys and 5 completed both the pre-survey and the post-survey. As only 11 of the 15 students completed at least one survey, demographic information is not available for the entire sample – as this data was captured via survey.

Procedures and Instruments

Surveys

During the first quarter of the semester students were invited by the instructor to participate in the same survey that was administered in Study 1. Students were informed of the purpose of the study and that participation was voluntary. They were also told that there would not be any negative consequences for not participating, nor were any adverse effects from participating foreseen. Students were informed that they could choose to discontinue participation at any time without adverse effect.

Students who chose to participate were provided with a survey web address (as the survey was administered online via SurveyMonkey), as well as an individual identification code created by the course instructor (as the researchers were not permitted by Montgomery County Community College's IRB to gather personally identifying data). Students who visited the website were presented with the consent form prior to taking the survey. To take the survey students completed the consent form and entered their individual identification code.

A week before the end of the semester all students in the two classes were again offered the opportunity to complete the same online survey that they initially took. Procedures followed in line with the first administration.

Identity Exploration Writing Assignments

At the beginning of the semester students in the two developmental English classes were presented with the syllabus, which outlined the course. Within the syllabus were descriptions of the two identity related writing assignments, which were designed in collaboration with the course instructor and inserted into the design of the course: weekly identity memos and a final identity assignment. The activities and their incorporation into the course followed Kaplan, Sinai and Flum's (2014) principles of promoting identity exploration within the curriculum: facilitating self-relevance, triggering identity exploration, promoting sense of safety, and scaffolding identity exploratory strategies. It was intended that these assignments would prompt students to engage in identity exploration and that this exploration would not only be adaptive in and of itself, but that via the hypothesized relationships between exploration and adaptive identity processing styles and motivational orientations would facilitate students' adoption of such adaptive engagements and thereby positively impact their academic achievement.

The weekly identity memos asked students to respond to the following prompt, "How has what you learned this week in class applied to or affected your own life, including your personal beliefs or values?" The directions also indicated that students could, "think of this in many different ways. For example, you may think about how our lessons affect your personal beliefs in/on yourself, college/school, life, work, society, family, friends, or relationships." The nature of the prompt and instructions followed the principles of facilitating the self-relevance of the course content and experiences, triggering identity exploration, and scaffolding identity exploratory strategies of reflection, questioning, and consideration of the connection among educational experiences and various aspects of the self. Memos were to be submitted directly to the instructor at the end of each week, via email, in an effort to promote sense of safety. It was determined that the memos would be administered weekly, in part, to scaffold students' development by affording students the opportunity and time to learn, practice, and develop orientations toward and skills for engaging in identity exploration around situated educational experiences (Flum & Kaplan, 2006).

The final identity assignment was outlined in the syllabus in the following manner: "At the end of the semester, you will look back through your memos and reflect on the entire semester and essentially answer the question: How has what you learned in this CLASS applied to or affected your own life, including your personal beliefs/values?" This assignment was to be completed by students in class, during the final week of the course, and to be submitted to the instructor. Similar to the weekly memos, the design of this assignment aimed to facilitate self-relevance, trigger identity exploration, promote safety, and scaffold identity exploration strategies. Different from the relatively brief weekly memos, this assignment scaffolded a more comprehensive retroactive exploration strategy.

As can be seen, the prompts in both assignments aligned with the conceptualization of identity exploration as "a deliberate internal or external action of seeking and processing information in relation to the self" (Flum and Kaplan, 2006, p. 100). Similar reflective assignments have been used in previous studies intervening to facilitate self-relevance of the material (Hulleman & Harackiewicz, 2009) and identity exploration in the educational context (Sinai et al, 2012).

Cumulatively, the two assignments comprising the intervention were allotted roughly 8% of the total points students could earn over the course of the semester – a relatively substantial amount. Naturally, though the intervention assignments were part of the course design, students were presented with the opportunity to participate in the study by consenting to have their submissions be anonymously viewed by the research team following the course. Consent procedures aligned with those outlined in the aforementioned studies. Following the end of the semester, the instructor submitted the weekly course reflections and the assignment submissions for the classes to the research team with the individual identifying codes, but without any personal information affixed.

Analysis

The analysis for Study 3 sought to examine how students' motivational orientations, identity processing styles, and course-triggered exploration may change over the course of a semester in a class designed to facilitate identity exploration, to what extent remedial students' motivational orientations, identity-processing styles, and identity exploration relate to one another and the other variables assessed in Study 1 (e.g. self-efficacy), how community college remedial students' motivational orientations, identity processing styles, and identity exploration appear similar and/or different from those of non-remedial community college students, the extent to which students' motivational orientations, identity-processing styles, and identity exploration relate to their expected course grades and whether particular prompts, experiences, content, and/or assignments appeared to prompt student identity exploration.

Both quantitative and qualitative methods were used to analyze the data resulting from this study. The quantitative analysis focused on data derived from the surveys.

Descriptive statistics and non-parametric correlations (Spearman's rho) were used to analyze the relations among motivational orientations, self-efficacy, identity processing styles, expected grades, self-efficacy, etc. and course-triggered identity exploration, as reported by students. Pre and post comparisons of students' motivational orientations, identity processing styles, and identity exploration, as indicated via students' survey responses, were conducted using mean construct scores. Given the small sample size of students participating in both survey administrations, the Paired-Sample Wilcoxon Signed Rank Test was used to analyze differences between pre and post survey scores – with an understanding that the sample and test would limit the power of the test.

The qualitative analysis focused on the data derived from the open-ended survey item, as well as the weekly memos and the final identity-related assignment. As in the prior study, Content Analysis was used to analyze the responses to the open-ended survey question, identifying exploration and exploratory themes and frequency data pertaining to exploration and those themes. In Study 3, this analysis was informed by the mapping sentence for identity exploration created in Study 2, with the understanding that should other themes emerge, they would be captured as well. The coding process for the surveys in Study 3 followed the same conceptual process as that used in Study 2, except that, given the limited sample size, the entire survey data set was coded by both raters.

In reviewing the survey data set, both raters determined that the 5 dimensions identified in the mapping statement derived in Study 2 [(1) Trigger—the prompt in the course for exploration; (2) Cognitive action—the exploratory action prompted by the trigger; (3) Self-target—the self-aspect being explored; (4) Purpose—the reason, goal, or aim of the exploration; and (5) Time—whether the exploration involved reflections on the past, the present or towards the future], captured all of the dimensions present in the open-ended survey responses in Study 3. After independently arriving at this conclusion, both raters then independently coded the survey responses on the absence or presence of identity exploration and, following that coding, the dimensions of exploration evidenced (using the mapping sentence dimensions). Inter-rater reliability (Cohen's Kappa) was then calculated for the determinations regarding the absence or presence of identity exploration in the survey responses and then for each of the mapping sentence dimensions coded.

Kappa's for the presence or absence of identity exploration and each of the dimensions in the mapping sentence coded upon were all greater than .60, considered the minimum acceptable level of inter-rater reliability (Cohen, 1960). Specific Kappa's were as follows: presence or absence of identity exploration = .84, triggers = .90, cognitive action = .80, self-target = .78, purpose = .86, time = .75.

Content Analysis was also used to explore the weekly memos and final identity assignment. As with the qualitative data from the surveys, memos and final identity assignments were coded for the presence or absence of course-triggered identity exploration and the dimensions of exploration evidenced (as informed by the mapping sentence from Study 2). Memos and final identity assignments were also coded on the level of cognitive engagement with the material evidenced in the writing. The coding for cognitive engagement was derived from the model used by Granit-Dgani, Kaplan, and Flum (2016), which is based on Bloom's (1956) taxonomy. With this coding system, memos and final writing assignments could be categorized as evidencing one of three levels of cognitive engagement: little to no engagement (1), moderate engagement (2), or high engagement (3). Responses coded as evidencing little to no engagement addressed content in a manner indicative of surface processing – facts and learning were reported in a straightforward manner, with little or no evidence of elaboration beyond rote recall and response. Responses coded as indicating moderate engagement showed evidence of some synthesis of the content and extension of the derived understanding to different domains and/or contexts. Responses coded as indicating a high level of cognitive engagement evidenced deep processing via interpretation of the content, the construction of meaningful associations, and extension of salient themes.

The overall coding process followed the conceptual model outlined previously, with a subset of the data coded by two independent raters. Inter-rater reliability was computed for the presence or absence of exploration, the dimensions of exploration evidenced, and the level of cognitive engagement with the material. Kappa's for coded elements were all at or above the acceptable level, .60 (Cohen, 1960). Specific Kappa's were as follows: presence or absence of identity exploration = 1, level of cognitive engagement = .84, triggers = .67, cognitive action = 1, self-target = .60, purpose = 1, time = 1.

In addition to the elements mentioned above, memos and final identity assignments were also assessed for the level of the writing (assessed via Flesch-Kincaid Grade Level Scores) and the length of the responses, while memos were also assessed on the trajectory/development of students' writing in the memos over the course of the semester (as evidenced by the presence or absence of identity exploration, the level of the writing, the length of the responses, and the level of cognitive engagement). Flesch-Kincaid Grade Level Scores are considered a reputable and reliable measure of a text's readability, and are widely used in research and the public domain to evaluate text readability (Williamson & Martin, 2010). To create a grade level score, both word and sentence length of a given passage of text are analyzed (Kincaid, Fishburne, Rogers, & Chissom, 1975).

Following coding, the qualitative data for the five students who completed both the pre and post surveys was analyzed in concert with those students' pre and post survey scores to create a contextual picture of the trajectory of motivational and identity related processes for students over the course of the semester.

CHAPTER 4. RESULTS

This chapter presents the results from each of the three studies, which address the research questions identified for this dissertation. Results are presented sequentially by study.

Study 1

Study 1 investigated the nature of and the relations among students' course-triggered identity exploration, identity processing styles, achievement goal orientations, self-efficacy, and expected academic outcomes in the community college classroom. The study involved analysis of community college students' self-report data from a survey administered to students in an introductory psychology course.

Construct Mean Scores

Achievement Goal Orientations

Mean scores from the surveys indicate that the students in the introductory psychology courses reported most strongly adopting a mastery-approach goal orientation in the course (M=4.19). Students reported progressively lower levels of adoption for mastery-avoidance goal orientations (M=3.78), performance-avoidance goal orientations (M=2.30), and performance-approach orientations (M=2.18).

Identity Processing Styles

With regard to identity processing styles, student survey scores indicated that students predominantly adopted an informational-oriented processing style (M=3.83). Students reported lower levels of adoption for both normative-oriented processing style (M=2.80) and diffuse-avoidant-oriented processing style (M=2.52). That students reported most strongly adopting both mastery-approach goal orientations and informational-oriented processing styles is rather notable, as it not only aligns with the limited previous research (Mesa, 2012; Philips, 2008), but also is suggestive of the hypothesized relationship between the two.

Correlations

Achievement Goal Orientations and Identity Processing Style

Table 1 presents the correlations among all variables in Study 1. Zero-order correlations indicated that informational-oriented processing style was positively associated with both mastery-approach ($r = .42$, $p < .01$) and mastery-avoidance ($r = .36$, $p < .01$) goals and negatively associated with a diffuse-avoidant processing style ($r = -.27$, $p < .01$), as was expected. Conversely, a normative processing style was positively correlated with both performance-approach ($r = .41$, $p < .01$) and performance-avoidance ($r = .39$, $p < .01$) goal orientations as well as with a diffuse-avoidant processing style ($r = .21$, $p < .05$). Identity commitment was positively associated with mastery-approach orientation ($r = .26$, $p < .01$). Diffuse-avoidant processing style was not significantly correlated with any of the achievement goal orientations. Here again, evidence for the hypothesized relationship between mastery orientations and an informational-orientated processing style is evident. The overall relationship between achievement goal orientations and identity processing styles is further supported by the correlations between a normative-oriented processing style and performance orientations.

Table 1. *Zero-Order Correlations Among Variables in Study 1*

Variables	Expected Grade	Age	Gender	Informational	Normative	Diffuse Avd.	Commitment	Mastery App.	Mastery Avd.	Perf. App.	Perf. Avd.	Self-efficacy	Course-triggered Exp.
Expected Grade	1.00	-.03	.04	.17	-.20	-.24*	.02	.18	.26**	.02	.01	.31**	.03
Age		1.00	-.13	.06	-.01	-.11	.27**	.09	.01	-.13	-.08	-.16	-.16
Gender			1.00	.17	.03	.15	-.18	-.11	.02	.31**	.23*	.14	.03
Informational				1.00	.07	-.27**	.34**	.42**	.36**	.06	.14	.51**	.21*
Normative					1.00	.21*	.18	-.06	-.09	.41**	.39**	-.12	.07
Diffuse Avd.						1.00	-.51**	-.17	-.12	.07	.17	-.25*	.10
Commitment							1.00	.26*	.17	-.04	-.01	.31**	-.07
Mastery App.								1.00	.66**	-.04	.10	.49**	.29**
Mastery Avd.									1.00	.04	.14	.44**	.17
Perf. App.										1.00	.81**	-.03	.10
Perf. Avd.											1.00	-.02	.11
Self-efficacy												1.00	.08
Course-triggered Exp.													1.00

*Significant at .05 level
**Significant at .01 level

Achievement Goal Orientations and Identity Processing Style and Identity Exploration, Self-efficacy, and Expected Course Grade

Course triggered identity exploration was positively associated with an informational processing style ($r = .21$, $p < .05$) and mastery-approach goal orientation ($r = .29$, $p < .01$) –providing some support to the hypothesized pathway whereby exploration might be a conduit though which to positively impact students' adaptive engagements. Academic self-efficacy positively correlated with informational processing style ($r = .51$, $p < .01$), identity commitment ($r = .31$, $p < .01$), mastery-approach ($r = .49$, $p < .01$) and mastery-avoidance ($r = .44$, $p < .01$) goals. Academic self-efficacy was also negatively associated with diffuse-avoidant processing style ($r = -.25$, $p < .05$). Expected grades in the course were positively correlated with mastery-avoidance goal orientation ($r = .26$, $p < .01$) and self-efficacy ($r = .31$, $p < .01$) and negatively correlated with diffuse-avoidant processing style ($r = -.24$, $p < .05$). These correlations with expected grades are interesting to consider as mastery-avoidance orientations are not usually linked to positive academic outcomes in the literature (whereas mastery approach orientations are), although, as noted above, there was a strong significant correlation (.66) between mastery-approach and mastery-avoidance orientations, which may suggest that students viewed the two orientations as very similar.

Age and Gender

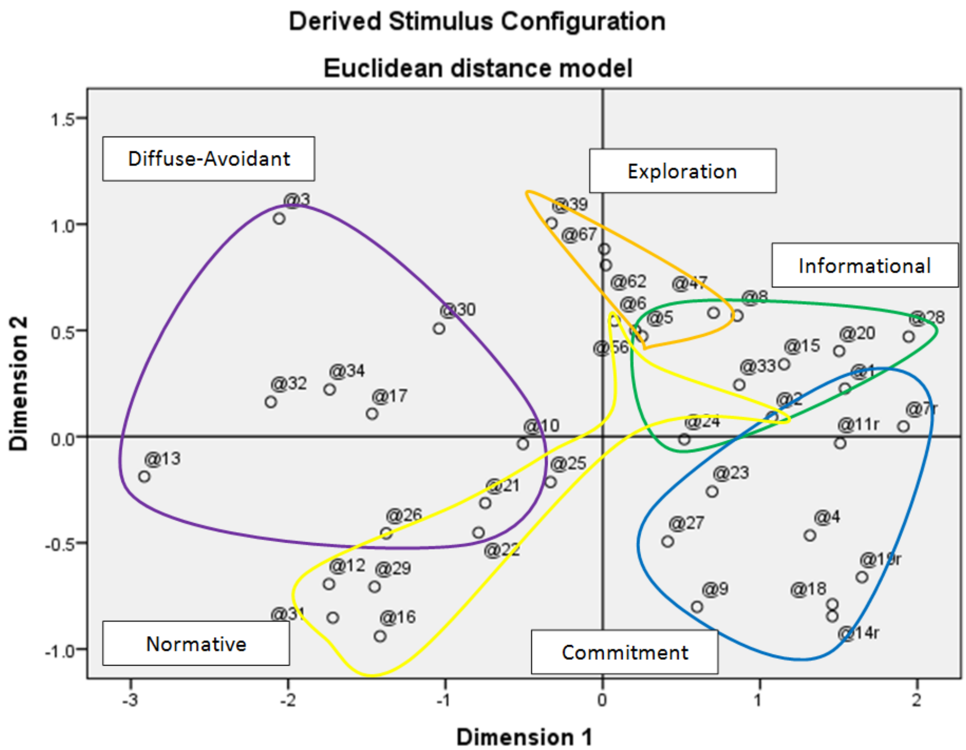
Student age was positively correlated with identity commitment ($r = .27$, $p < .01$), with increased age correlating to higher commitment scores – which intuitively makes sense from a developmental perspective. Gender was positively correlated with both performance-approach ($r = .31$, $p < .01$) and performance-avoidance ($r = .23$, $p < .05$) orientations, with males being more likely to adopt these orientations.

Multidimensional scaling (MDS) analysis

In addition to correlational analysis, multidimensional scaling was used to explore potential relationships among the constructs assessed in the survey. In this study, all MDS was conducted using the ALSCAL package in SPSS. To examine the relationships among items and constructs, three two-dimensional maps were created in alignment with the aims of this study: one examining course-triggered identity exploration and identity-processing styles, one examining course-triggered identity exploration and students' achievement goals and self-efficacy, and one examining course-triggered identity exploration, identity-processing styles, and students' achievement goals and self-efficacy. By creating multiple maps, the motivational and identity processing styles of interest can be examined both in relation to course-triggered identity exploration, without the influence of other variables, and then collectively.

Figures 1 presents the results of the MDS for course-triggered identity exploration and identity-processing style items. Prior to analyzing the map, stress level was considered as an indicator of goodness-of-fit. As the stress level for the responses was below .15 (*stress* = .13) it was concluded that the resulting map demonstrated a good level of fit (Kruskal & Wish, 1978).

Figure 1. *MDS: Identity Processing Style, Identity Commitment, and Course-triggered Exploration*

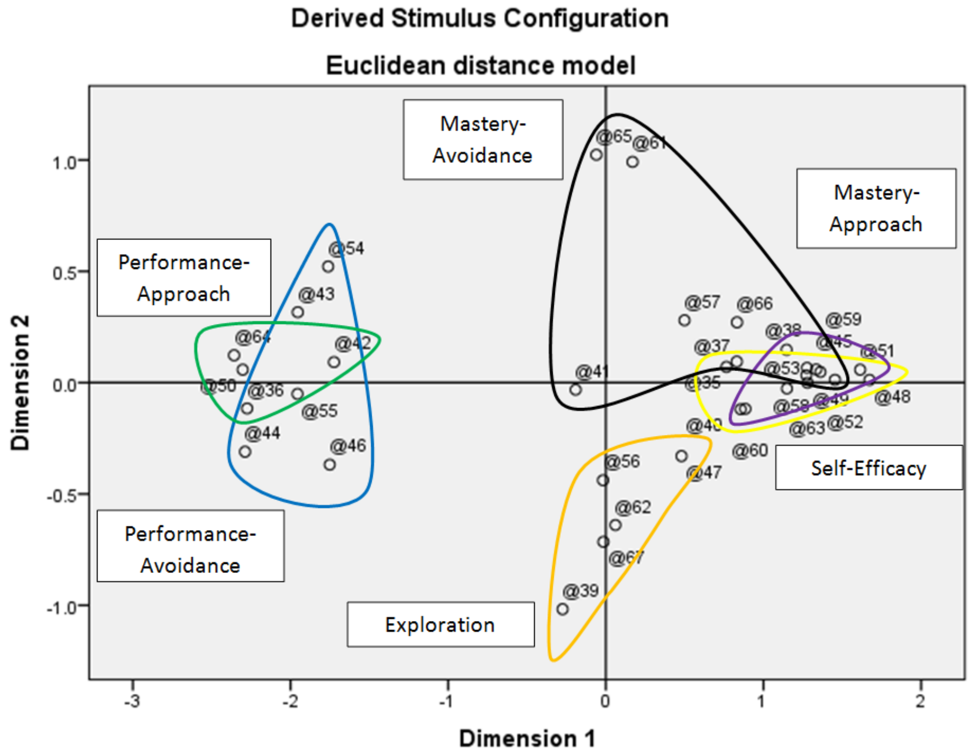


Note: Exploration=Course-triggered Exploration; Informational=Informational Processing Style; Commitment=Identity Commitment; Normative=Normative Processing Style; Diffuse-Avoidant=Diffuse Avoidant Processing Style

The map suggests an identity processing dimension along the x-axis ranging from diffuse-avoidant and normative to informational and commitment, with diffuse-avoidant and normative variables situated predominantly on the left region of the plot (though a few normative items crossed into the informational cluster on the right region of the plot) and exhibiting slight overlap. Informational and commitment variables are located near the opposing pole of the dimension and also exhibit slight overlap. In alignment with theoretical definitions (Berzonsky, Branje, & Meeus, 2007), informational and course-triggered identity exploration items exhibit some overlap, suggesting some phenomenological relationship between the two constructs. As course-triggered exploration is more situational though (while an informational style is theorized to be more stable) the fact that it does not lie as far to the right of the dimension as informational processing style or identity commitment was not unexpected. The relative position of course-triggered identity exploration is also interesting, as it may support the notion that it may be easier to trigger exploration for students who currently adopt an informational-oriented processing style.

Figure 2 presents the results of the MDS that includes course-triggered identity exploration and students' achievement goal and self-efficacy items. Stress levels again indicated a good level of fit (*stress* < .15, *stress* = .07). The map suggests a motivational dimension along the x-axis ranging from mastery goals (both approach and avoidance) to performance goals (again, both approach and avoidance). Performance items are situated within the left region of the plot, and considerable overlap is evident between performance-approach and performance-avoidance items.

Figure 2. *MDS: Achievement Goal Orientation, Self-efficacy, and Course-triggered Exploration*



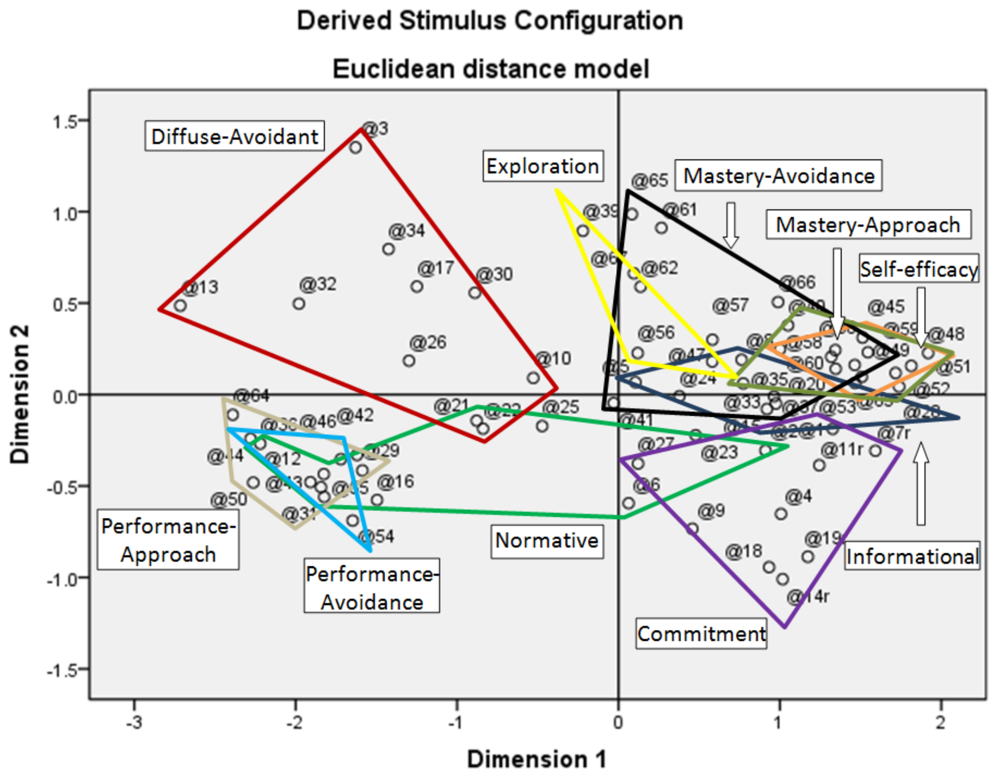
Note: Exploration=Course-triggered Exploration

Conversely, mastery items are predominantly located in the right region of the plot and exhibit considerable overlap as well. Self-efficacy items demonstrate nearly complete overlap with mastery-approach goal items. The extent of the overlap between the two mastery and two performance orientations, respectively, is intriguing, as it suggest the possibility that students may not differentiate between mastery approach and mastery avoidance items and performance approach and performance avoidance items.

Course-triggered identity exploration items align closely with the mastery/efficacy pole of the dimension, with items in close proximity to both mastery-approach and self-efficacy items, which indicates a degree of phenomenological overlap for students among course-triggered identity exploration, mastery goal orientations, and efficacy beliefs – again providing support for the hypothesized relationships and potential pathways between course-triggered identity exploration and students' adaptive engagements.

Figure 3 presents the results of the MDS for course-triggered identity exploration, identity formation processing styles, and students' achievement goals and self-efficacy. Stress levels once again indicated a good fit (*stress* < .15, *stress* = .12). The resulting map suggest a dimension along the x-axis ranging from a pole (in the right region) with mastery-oriented, self-efficacy, informational processing style, and identity commitment items to a pole (in the left region) with performance-oriented and diffuse-avoidant processing style items. Normative-oriented processing style items appear to bridge the respective poles, although they exhibit overlap with more constructs in the left region (the less adaptive pole) than the right. Course-triggered identity exploration appears related to the adaptive pole, overlapping with mastery-avoidance and informational-oriented processing style items. Here again, the data supports the proposed relationships between adaptive identity processing styles, motivational orientations, and course triggered identity exploration.

Figure 3. *MDS: Achievement Goal Orientation, Identity Processing Style, Self-efficacy, Identity Commitment, and Course-triggered Exploration*



Note: Exploration=Course-triggered Exploration; Informational=Informational Processing Style; Commitment=Identity Commitment; Normative=Normative Processing Style; Diffuse-Avoidant=Diffuse Avoidant Processing Style

Study 2

Study 2 investigated the prevalence and qualitative manifestations of community college students' experiences of identity exploration in their introductory psychology course to uncover the frequency of exploration and the personal and contextual features involved in identity exploration in the community college classroom, as well as a conceptual definition and the experiential meaning of course-triggered identity exploration. This study involved analysis of the qualitative feedback provided by students to the item, "Please look again at the last question (#67): 'I feel that learning in this course raises questions for me about myself (and) please explain in words, what you meant by circling the number you did,' from the survey administered in Study 1.

Content Analysis

Identity Exploration

Coding of students' open-ended narrative examples for their responses to the survey item "I feel that learning in this course raises questions for me about myself" suggested that 70% (n = 65) of the responses indeed indicated course-triggered identity exploration; that is, self-oriented reflection, examination, questioning, and reconsideration of self-aspects that were the result of experiences in the course. Two examples of responses coded as indicating course-triggered identity exploration are listed below (please note that the student quotes appearing below were not edited for grammar or spelling). In the first quote, the student identifies how the course prompted him to engage in self-analysis, while in the second, the student describes shifting perspectives from those previously held and achieving new realizations about herself.

> *"Sometimes I try to analyze myself and I wasn't doing it before I started this class."*
>
> *"I used to have a negative outlook on psychology because of how I was raised. This course has broadened my horizons and made me realize things about myself."*

That such a high percentage of students reported engaging in identity exploration was noteworthy – especially in light of the fact that no predetermined prompts designed to facilitate identity exploration were incorporated into the class. However, given the fact that the psychology course in which students were enrolled touched on many topics which were likely directly relevant to students' personal experiences, as well as the fact that different conceptualization of identical phenomena (e.g. human development) were presented in the class, it is perhaps not surprising that exploration occurred at such high rates.

Approximately one-quarter of student responses (24%, *n*=22), however, indicated an absence of course-triggered identity exploration. Two examples of responses coded as not containing indications of course-triggered identity exploration are listed below, with both including an explicit declaration that the course did not make them question themselves.

"This course does not make me question myself at all."

"I circled 'not at all like me' because the information was useful and interesting but it doesn't make me question myself."

The latter quote is particularly interesting, in that it highlights that interest and utility were not sufficient in and of themselves to necessarily promote identity exploration.

Six percent of student responses (*n*=6) could not be coded. Two examples of responses that could not be coded are displayed below. Interestingly, both responses appear to have been attempts at answering the prompt, as opposed to nonsense or deliberately off topic comments.

"Just average nothing too special."

"Like how people behave when they are in different situations. So I believe it because of the lack not because they just misbehave with (illegible word)."

Coding of students' responses for manifestation of identity commitment suggested that only 11% of responses (*n*=10) evidenced identity commitment. Of these, half evidenced identity commitment in addition to identity exploration, while the other half evidenced identity commitment only. Two examples of responses in the former category are listed below. In both comments the students express a relatively developed sense of who they are, but also note that the course prompted some increased level of self-knowledge.

> *"I feel that I know myself fairly well, however, some things covered in class helped me to understand better."*
>
> *"In this course I feel that there are some things that tell me why I do things but I feel that I know who I am."*

Two examples of responses indicating identity commitment, but not identity exploration are displayed below, with both indicating that the writers know themselves. Notably, however, the second response appears to indicate less certainty.

> *"I answered not so much like me because I know what I want and believe."*
>
> *"I don't think that what I'm learning makes me questions myself. I'm pretty sure I have myself figured out already."*

Dimensions of Identity Exploration

The responses indicating course-triggered identity exploration were analyzed by two raters to identify the dimensions of exploratory action reported by students in the context of the course. The analysis suggested that identity exploration for the community college students analyzed was indeed a multi-dimensional process, with five dimensions characterizing students' overall descriptions of engagement in course-triggered identity exploration: (1) Trigger - the prompt in the course for exploration; (2) Cognitive action- the exploratory action prompted by the trigger; (3) Self-target -the self-aspect being explored; (4) Purpose - the reason, goal, or aim of the exploration; and (5) Time - whether the exploration involved reflections on the past, the present or towards the future. Notably, not all dimensions were present in each response indicating identity exploration.

With regard to the first dimension, "trigger," numerous course content based prompts for exploration (including the course overall) were revealed in students' responses. Among the diversity of triggers noted, however, three categories of responses emerged: those indicating the course generally, those indicating specific pieces of course content, and those indicating specific topics covered. Two examples of triggers are highlighted below. The first comment identifies the course as the trigger, while the second example identifies a specific topic covered in the course "child birth and the development of the brain" as a trigger – thus illuminating how triggers for students can not only be different in terms of content, but can be relatively broader or narrower in scope.

"I feel that the course makes you question things you believe."

"In a way it makes me question something about myself. The one that really sticks out is child birth and the develop of brain, and how it can affect children if there cell brain doesn't get everything its needed."

Of the comments where a trigger was identified (*n*=45), students reported broader triggers (i.e. "the course") by a 2-1 ratio compared to more specific triggers (e.g. "the brain" – as a topic covered in the course). Such findings, as those listed above, suggest that identity exploration may be prompted in students through specific pieces of content that many vary from student to student, but also that a course overall may act as a trigger for students' exploration. This fact highlights that it may be reasonable to expect that students will experience exploration along rather varied trajectories during a course – as a specific piece of content may trigger a student to explore, while for another it may take a compilation of content and/or experiences to bring about identity exploration.

Analysis of the second dimension, "cognitive action," suggested five different types of cognitive actions found in students' exploratory responses: questioning, thinking, applying, learning, and changing perspective. Two examples of cognitive actions are displayed in the excerpts below. In the first excerpt, the student identifies "learning," as the cognitive action, while in the second the student identifies "questioning" – specifically her life.

> *"I learned some things about myself, such a(s) I find psychology very interesting."*
>
> *"Certain topics make me question my own life."*

Across the 65 responses indicating identity exploration, 60 (92%) indicated cognitive actions. Notably, some comments indicated more than one cognitive action, while others did not indicate any. The most commonly reported cognitive action was "questioning" (37%, n=22), followed by "thinking" (22%, n=13), "learning" (20%, n=12), "applying" (18%, n=11), and "changing perspective" (3%, n=2). Frequencies and percentages for each of the cognitive actions are displayed in Table 2, below.

Table 2. *Cognitive Actions: Frequencies and Percentages*

Cognitive Action	Frequency	Percentage of Identified Cognitive Actions
Questioning	22	37%
Thinking	13	22%
Learning	12	20%
Applying	11	18%
Changing Perspective	2	3%

The types of cognitive actions uncovered are of significant importance in the attempt to understand the relationships among course-triggered identity exploration, identity processing styles, achievement goal orientations, and academic achievement, as they indicate the manner in which students are cognitively responding to triggering prompts, which may provide insights into the specific mechanisms that translate identity exploration to other adaptive engagements. Indeed, it is easily possible to consider how "changing perspective" might impact other adaptive engagements.

With regard to the third dimension, "self-target," nine aspects of the self were indicated in student responses: beliefs, well-being, knowledge, actions, thought processes, views, emotions, life, and motivation. Two examples of self-targets are highlighted in the student responses below. In the first of the two quotes the self-target is "beliefs" – particularly those about disorders. In the second quote, the target is the students' "life."

"My beliefs about disorders were far from the truth."

"Some things I can relate to so it makes me think about my own life."

Fifty-seven incidences of self-targets were identified across responses indicating identity exploration. In terms of frequency, students most commonly reported targeting "actions" (25%, *n*=14), followed by "life" (18%, *n*=10) and "well-being" (18%, n=10), and then "knowledge" (12%, *n*=7), "beliefs" (9%, *n*=5), "thought processes" (7%, *n*=4) and "views" (7%, *n*=4), "emotions" (4%, *n*=2), and "motivation" (2%, *n*=1). Frequencies and percentages for each of the self-targets are displayed in Table 3, below. Notably, students were just as likely to consider their "entire self" as the "target" being explored, as they were to consider their "actions" (the most commonly reported self-target).

Here again, (as with cognitive actions) the widespread prevalence of a particular dimension, specifically a self-target, within students' qualitative manifestations of identity exploration, allows for insights not only into the nature of students' exploration, but also the pathway through which that exploration might affect achievement, motivation, etc. To that point, motivation was specifically identified as a category of self-target reported by students.

Table 3. *Self-Targets: Frequencies and Percentages*

Self-Target	Frequency	Percentage of Identified Self-Targets
Actions	14	25%
Life	10	18%
Well-being	10	18%
Knowledge	7	12%
Beliefs	5	9%
Thought Processes	4	7%
Views	4	7%
Emotions	2	4%
Motivations	1	2%

Analysis of the fourth dimension, "purpose," revealed three reasons, goals, or aims for/of student exploration: self-understanding, understanding others, and changing one's self. Two examples of purpose are highlighted in the student responses below. The purpose in the first quote is "changing one's self," while in the second the student reports "self-understanding" in relation to her PTSD.

> *"I circled 5 because that is like me because I can chage something about myself in this class because of learning."*
>
> *"I circled 4 because I suffer from PTSD due to years of abuse and the course helped me understand it more."*

Notably, relatively few student responses contained clear purposes for their reported exploration (28%, *n*=18). Of the 18 responses identified as containing a "purpose" for exploration, the most commonly reported goal was "self-understanding"

(78%, *n*=14), and then "changing one's self" (17%, *n*=3), and "understanding others" (6%, *n*=1). The comparative dearth of purposes noted in students' responses, relative to the dimensions discussed prior, may indicate that many students were not clear about the reasons, goals, and/or aims for their exploration. However, the nature of the prompt may also not have provided sufficient scaffolds to elicit such feedback.

The final dimension, "time," was comprised of three timeframes toward which the exploration was directed: past, present, or future. Two examples of time as a dimension of students' exploratory processes are displayed below. While the first quote listed explicitly addresses the future, the second addresses the past in the phrase "had ever applied to me."

> *"By understanding a course I question myself about the future and my actions."*
>
> *"I was able to ask myself if any of the new information learned had ever applied to me."*

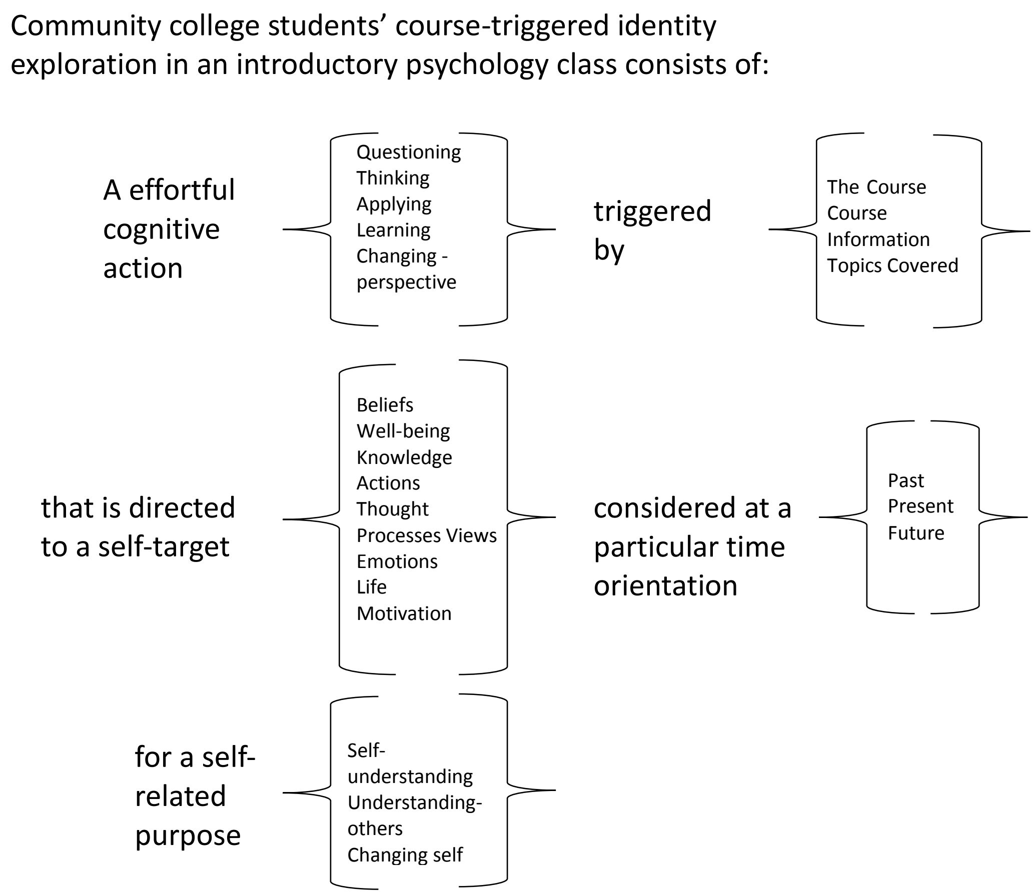
As with the previous dimension (purpose), relatively few exploratory student responses (12%, *n*=8) dealt with this dimension. Of those that did, five had elements pertaining to the past, five to the present, and one to the future (responses could contain elements of more than one timeframe).

Cumulatively, across the dimensions, students were relatively likely to include a trigger, cognitive action, and self-target in their responses and less likely to indicate a timeframe for their exploration or its purpose. Whether the nature of students' manifestations of course-triggered identity exploration, as conceptualized through the particular dimensions characterizing those manifestations and the frequency with which those dimensions appeared in students' responses, represent something particular about the students in the study, the course, or the scaffolds used to elicit students' feedback remains speculative at this juncture. However, the type of dimensions uncovered and the patterns observed in the frequency with which particular dimensions appeared in students' responses may indicate that along the individualized pathways of course-triggered identity exploration for community college students, certain shared elements and patterns for engagement may exist.

Mapping Sentence

Following the framework of Facet Theory (Guttman & Greenbaum, 1998; Shye, 1998), the five identified dimensions derived from students' qualitative responses were used to create a Mapping Sentence - a multi-dimensional conceptual definition of the construct of interest, which in the current study concerns introduction to psychology community college students' course-triggered identity exploration. The mapping sentence created from the aforementioned dimensions is presented in Figure 4.

Figure 4. *Mapping Sentence*



As can be seen, each of the aforementioned dimensions was incorporated into a sentence, indicating that for the students in the sample, as a group, course-triggered identity exploration involved an effortful cognitive action, precipitated by a trigger in the course, that was directed toward a specific self-target considered at a certain time orientation, and for a particular self-related purpose.

Study 3

Study 3 investigated the relations among students' motivations, identity processing styles, course-triggered identity exploration, and academic outcomes within the context of two remedial English courses at the community college. The study also investigated the effects of course activities implemented to promote students' identity exploration and the trajectory of identity exploration over the course of a semester. The study involved a semester-long researcher-instructor collaborative intervention, which consisted of a theory-informed collaborative design of course activities that aimed to facilitate students' identity exploration within the curriculum, with the intent of subsequently affecting students' adaptive engagements in the class and academic achievement. Data collected included pre-post intervention surveys assessing students' identity processing styles, achievement goals, and self-efficacy, post-intervention scales assessing students' course-triggered identity exploration, reflective writing assignments that students completed as part of the intervention during the semester, a final identity-related assignment that students completed at the end of the course, and students' expected course grades.

In analyzing this data in the sections below, I first conduct quantitative group-level analyses so as to compare the patterns of relations among variables found for the small sample of remedial English student to the patterns found for the sample in Study 1 - to see whether patterns of motivation and identity among the two samples are markedly different from one another.

Following this, I undertake qualitative analyses to examine whether the definition and experience of course-triggered identity exploration for the remedial English students is similar or different from those identified for the psychology students in Study 2. I then provide a group-level characterization of remedial English students' engagement in the identity-promoting activities in the course, including characterizing various dimensions that are subsequently employed in the five comprehensive cases of students' identity exploration and motivation in the course that follow.

Surveys

Construct Mean Scores

Achievement Goal Orientations. Mean scores from the pre-survey, administered during the beginning of the semester, indicate that developmental students in the writing course reported most strongly adopting a mastery-approach goal orientation at the outset of the course (M=4.52). Students reported progressively lower levels of adoption for mastery-avoidance goal orientations (M=4.02), performance-approach goal orientations (M=2.62), and performance-avoidance orientations (M=2.33).

Similarly, mean scores from the post-survey, administered at the end of the semester, indicate that, similar to the psychology students from Study 1, developmental students, near the end of the course, reported most strongly adopting a mastery-approach goal orientation (M=4.13) followed by a mastery-avoidance goal orientations (M=3.93). In contrast to the psychology students from Study 1, students reported progressively lower levels of adoption for performance-approach goal orientations (M=2.55), *followed by* performance-avoidance orientations (M=2.53). Interestingly, mean scores for the developmental English students were lower on the post-survey than the pre-survey for all motivational orientations except performance-avoidance.

Identity Processing Styles. With regard to identity processing styles, student survey scores on the pre-survey indicated that students predominantly adopted an informational-oriented processing style (M=3.96) at the beginning of the course. Students reported lower levels of adoption for both normative-oriented processing style (*M*=3.24) and diffuse-avoidant-oriented processing style (*M*=2.54).

Student survey scores on the post-survey indicated that students also predominantly adopted an informational-oriented processing style (*M*=3.75) by the end of the course. Students reported lower levels of adoption for both normative-oriented processing style (*M*=2.86) and diffuse-avoidant-oriented processing style (*M*=2.40). All post-survey construct means for identity processing styles were lower than those on the pre-surveys. Notably, the order of adoption of identity processing styles evidenced by developmental English students mirrors that of the psychology students from Study 1. The similarities in the manner in which students in Study 1 and Study 3 adopted particular identity processing styles and achievement goal orientations provides further support for the purported relationship between identity processing styles and achievement goal orientations.

Correlations

Table 4 presents all pre-survey correlations from Study 3, while Table 5 presents those for the post-survey. Note that results should be interpreted conservatively, given the small sample size.

Achievement Goal Orientations and Identity Processing Style: Pre-Survey. Non-parametric correlations (Spearman's rho) conducted on pre-surveys scores indicated normative processing style was positively associated with mastery-avoidance (r = .71, p < .05). Diffuse-avoidant processing style was positively associated with both performance approach (r =.79, p<.01) and performance avoidance (r = .67, p<.05).

Achievement Goal Orientations/Identity Processing Style and Identity Exploration, Academic Self-efficacy, and Expected Course Grade: Pre-Survey. Course-triggered identity exploration was positively associated with mastery-approach (r = .81, p <.01). (Again, as the course had begun prior to the initial survey, students were able to report on early experiences of course-triggered identity exploration.) Self-efficacy was found to be positively associated with identity commitment (r = .66, p<.05). Expected course grade was not significantly correlated with any variables.

Table 4. *Non-Parametric Correlations for Pre-Survey Variables in Study 3*

Variables	Informational	Normative	Diffuse Avd.	Commitment	Mastery App.	Mastery Avd.	Perf. App.	Perf. Avd.	Self-efficacy	Course-triggered Exp.	Expected Grade	Age	Gender
Informational	1.00	0.42	0.47	-0.33	0.56	0.58	0.15	-0.03	0.06	0.42	0.42	-0.04	0.27
Normative		1.00	0.38	0.08	0.20	.71*	0.11	0.04	0.03	0.59	-0.14	-0.40	0.04
Diffuse Avd.			1.00	-0.42	0.24	0.20	.79**	.67*	-0.33	0.31	0.21	-0.31	-0.42
Commitment				1.00	0.28	0.18	-0.15	-0.09	.66*	0.27	-0.18	0.42	-0.11
Mastery App.					1.00	0.50	0.32	0.27	.70*	.81**	0.54	0.28	-0.27
Mastery Avd.						1.00	0.21	0.00	0.49	0.49	-0.07	-0.14	0.27
Perf. App.							1.00	.91**	0.02	0.17	0.00	-0.19	-0.46
Perf. Avd.								1.00	0.05	0.17	-0.04	-0.26	-0.63
Self-efficacy									1.00	0.47	0.18	0.39	-0.12
Course-triggered Exp.										1.00	0.46	0.09	-0.38
Expected Grade											1.00	0.61	-0.22
Age												1.00	0.12
Gender													1.00

*Significant at .05 level
**Significant at .01 level

Achievement Goal Orientations/Identity Processing Style and Identity Exploration, Academic Self-efficacy, and Expected Course Grade: Post-Survey. On the post-surveys, non-parametric correlations (Spearman's rho) indicated informational-oriented processing style was positively associated with mastery-approach (r = .73, p <

.05). Diffuse-avoidant processing style was negatively associated with identity commitment (r = -.76, p<.05). Course-triggered identity exploration was positively associated with commitment (r = .76, p <.05). Expected grade was negatively correlated with gender, with being male associated with lower expected grades, while self-efficacy did not demonstrate any significant correlations in the sample. A complete table of post-survey correlations can be found in Table 5, below.

Table 5. *Non-Parametric Correlations for Post-Survey Variables in Study 3*

Variables	Informational	Normative	Diffuse Avd.	Commitment	Mastery App.	Mastery Avd.	Perf. App.	Perf. Avd.	Self-efficacy	Course-triggered Exp.	Expected Grade	Age	Gender
Informational	1.00	-0.12	-0.10	0.53	.73*	0.70	0.45	0.13	0.59	0.51	0.28	0.60	-.22
Normative		1.00	0.19	-0.16	0.33	0.22	0.34	0.39	-0.10	-0.22	0.06	0.11	-.11
Diffuse Avd.			1.00	-0.76*	0.21	0.15	0.47	0.56	-0.55	-0.29	0.23	-0.17	.17
Commitment				1.00	0.24	0.30	-0.38	-0.65	0.65	.76*	-0.34	0.40	-.06
Mastery App.					1.00	.74*	0.50	0.19	0.24	0.25	0.51	0.30	-.44
Mastery Avd.						1.00	0.22	0.12	0.67	0.21	0.12	0.06	.17
Perf. App.							1.00	.89**	-0.14	-0.20	0.68	0.52	-.44
Perf. Avd.								1.00	-0.17	-0.54	0.51	0.22	-.11
Self-efficacy									1.00	0.23	-0.11	0.10	.22
Course-triggered Exp.										1.00	-0.34	0.62	-.06
Expected Grade											1.00	0.12	-.78*
Age												1.00	-.39
Gender													1.00

*Significant at .05 level
**Significant at .01 level

Overall, though fewer significant correlations appeared in Study 3 than did in Study 1 (likely due to the limited sample size in Study 3), those that did generally supported the relationships among the constructs identified in Study 1.

Wilcoxon Signed Rank Test

Given the lower participation rate for the post-survey, coupled with the fact that some of those who did participate in the post-survey did not participate in the pre-survey, power for the non-parametric related samples analysis was relatively low. Subsequently, no significant differences were found between pre and post scores.

Content Analysis

Identity Exploration. Of the 18 completed surveys, 14 (78%) included responses to the open-ended item, "Please look again at the last question (#67): 'I feel that learning in this course raises questions for me about myself (and) please explain in words, what you meant by circling the number you did." Half of the responses were on pre-surveys and the remaining half were on the post-surveys. Coding revealed that 71% (n=10) of the responses to the surveys indicated course-triggered identity exploration – a nearly identical percentage to that found in the survey responses in Study 1. Thus, the reported frequency of exploration was relatively high for the groups across both studies (Study 1 and Study 3), despite the different contexts.

With regard to the pre-survey responses, 86% (n=6) indicated course-triggered exploration. On the post-surveys 57% (n=4) of the responses indicated course-triggered identity exploration. An examples response from the pre-survey, coded as indicating course-triggered identity exploration, was:

"I'm learning more about myself while I am in class."

An example response from the post-survey, coded as indicating course-triggered identity exploration, is listed below. Interestingly, the writer of this response effectively indicates that a longitudinal process of exploration was prompted, including exploration of who she wants to become, what she will need to do to become that person, and how much will she have to change to be that person.

"I made me question who i want to become? What i have to do to be that person? How much I will change as a person?"

Such a response potentially sheds light on elements of the process for translating the individual's exploration into the adaptive engagements hypothesized to result from such exploration - in that the quote appears to indicate an attempt to determine an outcome or goal (who I want to become) as well as what actions will be necessary to achieve that (what do I have to do).

Two of the 14 responses (14%), one from the pre-surveys and one from the post-surveys, indicated both identity exploration and commitment. In the comment from the pre-survey, below, the writer indicates some uncertainty - noting that she has been prompted to consider things that *may* effect her, but declaring that she already views herself as an "open person.'

"Its so so i think about things but will it change me i dont know i been throw a lot in the past 5 years and i am all ready a open person."

In contrast, the comment from the post-survey, below, appears to indicate that the student may be fluctuating between exploration and commitment.

"What I meant by circling the number I did is that sometimes I raise questions about myself but then i end up answering my own questions."

Approximately 29% (*n*=4) of the responses indicated an absence of course-triggered identity exploration. Three of those responses were from the pre-survey and only one was from the post-survey. The example response, below, from the pre-surveys, was coded as not containing indications of course-triggered identity exploration, as the writer explicitly declares that the course does not cause him to question his identity.

> *"This course does not impact me personally very much at all. I do not question my identity because of this course."*

The response (below) from the post-surveys coded as not containing indications of course-triggered identity, though less absolute than the example from the pre-survey, also includes an assertion that the course does not prompt the writer to question his identity.

> *"Doesn't really raise questions about myself."*

Dimensions of Identity Exploration

As in Study 2, student responses indicated a multi-dimensional process of course-triggered identity exploration and were able to be coded along the five dimensions of exploratory action reported by students in the context of the course: (1) Trigger—the prompt in the course for exploration; (2) Cognitive action—the exploratory action prompted by the trigger; (3) Self-target—the self-aspect being explored; (4) Purpose—the reason, goal, or aim of the exploration; and (5) Time—whether the exploration involved reflections on the past, the present or towards the future.

With regard to the first dimension, "trigger," of the 14 responses indicating identity exploration, six (43%) included a trigger. Four of the comments containing triggers were on the pre-surveys and two were on the post surveys. Of the six triggers reported, three (50%) pertained to course content (one from the pre-survey responses and two from the post-survey responses), two (33%) related to the class generally (both from the pre-surveys), and one was a trigger (from a pre-survey) not classified in Study 2 (as the trigger was not present in the course) - course memos. Thus, in alignment with the findings from Study 2, a diversity of triggers was evident in students' qualitative descriptions of their identity exploration.

Two examples of triggers are displayed in the excerpts below. In the first excerpt, from the post-survey, the writer identifies course content, specifically readings, as the trigger to her questioning traditional male role models. In the second example, from the pre-survey, the writer identifies weekly memos as the trigger to his thinking about personal issues.

> *"Some of the course readings made me question my ideas about traditional male role models."*
>
> *"The weekly identity memos make me think about personal issues."*

Notably, the second response indicates that for the student in question, the memos were viewed as prompts for exploration, even in the very beginning of the semester. Such a quote provides some explicit evidence that activities designed to facilitate exploration were viewed, at least by some students, as triggers for identity exploration.

Analysis of the second dimension, "cognitive action," indicated that 11 of the 14 responses (79%) included a cognitive action. Five responses (45%) including cognitive actions were from the pre-survey and six (55%) were from the post survey. Across the relevant responses, four different types of cognitive actions emerged: questioning, thinking, reflecting (not coded in Study 2), and learning. Two examples of cognitive actions are highlighted in the student comments below. In the first comment, where the cognitive action is "questioning," the student appears to be questioning, to an extent, her identity as a student. Conversely, in the second example, the cognitive action is "thinking" and is directed toward the students' life plans.

> *"The questions this class has me asking myself is if I can do it do I want to do it can I have time and make time to do it I work a lot and I need to make more time for school."*
>
> *"It makes me think about what I want to do with my life."*

Of the cognitive actions, questioning (*n*=5) and thinking (*n*=5) were the most frequently reported, followed by learning (*n*=3). As indicated by the frequency counts, a couple respondents (*n*=2) reported more than one trigger. Interestingly, as opposed to the students in Study 2, those in Study 3 did not indicate cognitive actions as directly related to "application" (e.g. "applied" or "changing perspective") in their qualitative feedback on the surveys. Though this may simply have been a product of the limited sample size, it is also possible that the students in Study 3 may not have experienced or been aware of an applied element in their course-triggered identity exploration.

With regard to the third dimension, "self-target," three aspects of the self were indicated in student responses: actions, views, and life. Notably, all three self-targets were evident in student responses in Study 2 as well, although several additional self-targets were identified from Study 2 students. Again, this might have been due to the limited sample size in Study 3, especially as two of the self-targets present in Study 3 student responses, actions and life, were the two most frequently identified in Study 2.

Two examples of self-targets are highlighted in the student responses below. In the first of the two quotes, which is from a post-survey, the self-target is "life," while in the second, from a pre-survey, the target is the student's views on gender values.

“It makes me think about what I want to do with my life.”

“I chose "so so" because in this course we are learning gender values. I never thought that fairy tales portray women as passive dependents.”

In total, eight (57%) self-targets were reported across the 14 responses indicating identity exploration. In terms of frequency, students most commonly reported targeting “life” (43%, n=3) and “views” (43%, n=3), followed by “actions” (29%, n=2).

Analysis of the fourth dimension, “purpose,” revealed three reasons, goals, or aims for/of student exploration: self-understanding, understanding others, and changing one’s self. Notably, the same three were identified in Study 2.

Two examples of purpose are highlighted in the student responses below. The purpose in the first quote, from a pre-survey, is “self-understanding” while in the second quote, pulled from a post-survey, there are two purposes evident “self-understanding” and “understanding others.”

“I'm learning more about myself while I am in class.”

“I circle the number that I pick because the course make me look at myself and the people around me more.

Overall, eight (57%) of the 14 responses indicating identity exploration included a purpose for exploration. Notably, all of the eight responses included “self-understanding” as a purpose, while two responses (25%) also included “changing one’s self” and one (13%) included “understanding others”

The final dimension, “time,” was comprised of three timeframes toward which the exploration was directed: past, present, or future. Seven (50%) of the 14 responses that included identity exploration indicated a timeframe, four from pre-surveys (57%) and three from post-surveys (43%). Two examples of time as a dimension of students' exploratory processes are highlighted in the student responses below. While the first quote listed, from a pre-survey, indicates a "present" timeframe, the second, from a post-survey, addresses the future.

"I'm learning more about myself while I am in class."

"It makes me think about what I want to do with my life."

Cumulatively, across the dimensions, students were most likely to include a cognitive action in their qualitative responses – mirroring the results for the psychology students in Study 2. However, while psychology students in Study 2 were relatively less likely to indicate a timeframe for their exploration or its purpose in their qualitative responses, developmental English students were relatively less likely to indicate a trigger in their qualitative responses. This may indicate that for the students in Study 3, time and purpose for engagement in exploration were more salient features of their exploration, and that the trigger was less so, or less evident to them. It is also possible that the particular activities placed in the course to facilitate exploration may have prompted different manifestations of exploration among students. Again, it is also rather notable that the developmental students' survey responses fit well within the dimensional framework designed in Study 2 – requiring no expansion nor alteration of the five dimensions.

Memos

Descriptive Statistics

Submissions. Over the course of the semester, fifteen students submitted a total of 133 memos. (Each student could submit a maximum of 13 memos.) The mean number of memos submitted by students was 9 (*range* = 5 – 13). On average, 10 memos were submitted to the instructor each week (*range* = 7 – 15). Notably, the mean number of submissions per week over the first seven weeks was 13, while over the last 6 weeks of the course the mean number of submissions was eight. Week 4 saw the greatest number of submissions (*n*=15), while weeks 8, 10, 12, and 13 (the final week for memos) saw the fewest (*n*=7). This suggests that engagement with the memos was greater during the first half of the semester than the second.

Word count. Over the semester, word count for the memos submitted totaled 8,697. Each student wrote an average of 580 words across their submitted memos (*range* = 165 – 1086). Across the 13 weeks, an average of 669 words were submitted to the instructor per week (*range* = 338 – 1131). For the first 7 weeks of the semester the average number of words submitted per week was 883 (*range* = 508 – 1131), while over the last 6 weeks the average number submitted per week was 420 (*range* = 338 – 548).

With regard to the average number of words per submission, the mean across the memos submitted during the semester was 66 (*range* = 14 – 165). Over the course of the 13 weeks, the mean number of words per submission per week ranged from 48 to 81. For the first 7 weeks, the average number of works per submission per week was 69, while for the last 6 weeks it was 56 words. Here again, in this case using word count as an indicator of engagement, we see evidence that students were more engaged in the memos during the first half of the semester.

Flesch-Kincaid Grade Levels. The average Flesh-Kincaid Grade Level Scores (FKGLS) for memos submitted during the semester was 7.6 (range = 1.3 = 23.7). Across the 13 weeks, the weekly average FKGLS for the submitted memos range from 5.7 - 8.8.

During the first seven weeks of the course the average weekly FKGLS for submitted memos was 7.8 (range 6.9 – 8.8). During the final six weeks of the course the average weekly FKGLS for submitted memos was 7.1 (range 5.7 – 8.2). Thus, during the first seven weeks of the course, student writing within the memos evidenced slightly higher levels of complexity than it did in the last seven weeks.

Levels of cognitive engagement. The average level of cognitive engagement score across the submitted memos was 1.4 (on a scale of 1-3, with 1 indicating little to no engagement and 3 indicating a high level of engagement). Scores ranged from 1 – 3. Over the 13 weeks of the course, weekly average levels of cognitive engagement for the memos submitted that week ranged from 1.2 – 1.6. For the first 7 weeks of the course, the average weekly level of cognitive engagement was 1.4 (range = 1.3 – 1.6), while for the final 6 weeks of the course the average was 1.3 (range = 1.1 – 1.6). Of the 133 total memos submitted, 7 (5%) exemplified a high level of cognitive engagement with the material, 37 (28%) indicating a moderate level of engagement, and 89 (67%) indicating little to no engagement.

Content Analysis

Identity exploration. Coding revealed that 20% (n = 26) of the submitted memos indicated course-triggered identity exploration. Although this was a significantly lower percentage than evidenced on the surveys, it must be remembered that the surveys asked to students to consider their identity exploratory experiences in the course overall, while the memos asked students to respond to each week of the course.

Two examples of responses coded as indicating course-triggered identity exploration are displayed below. In the first response, the student indicates that a class reading prompted her think differently about Disney movies, which she indicates were formative to her development (i.e. “I grew up on these movies”). In the second response, the student indicates how the journey of the characters in the Disney movie she watched in class related to her experience in college, and how she hoped that her adventures in college would allow her to find her “true self.’

> *“I learned how to look at Disney princess movies in a different perspective. I grew up on these movie and to have read what we read in class today really made me think. It absolutely made me think different.”*
>
> *“I have been thinking about the idea of finding your true self. In the movie Frozen, Queen Elsa and Princess Anna both go through a journey to find themselves…She travels through the mountains instead of Oz, but the outcome is the same. Adventure rewarded with self-discovery. College is something of an adventure for me. Hopefully, I’ll find my own true self after my adventures here.”*

Approximately four-fifths of the memos (80%, n=107), however, did not indicate any course-triggered identity exploration. Two examples of responses coded as not containing course-triggered identity exploration are displayed below. In the first response, the student reports an observation of gender roles, but does not relate this to her identity in any way. The student in the second response declares that no learning took place, but indicates application of some advice provided by the instructor.

> *“What we learn this week effected me as I saw a lot of boys acting very "manly" while in school.”*
>
> *“I really didn't learn anything this week, but I did use the advice and help that you gave me for my essay which was very helpful.”*

Dimensions of identity exploration. Responses indicating course-triggered identity exploration were coded along the five dimensions of exploratory action outlined in the framework constructed in Study 2

With respect to the first dimension, “trigger,” of the 26 responses indicating identity exploration, 14 (54%) included a trigger. Two examples from memos containing triggers are listed below. The first comment identifies discussions about fairytales as the trigger, while the second example identifies course content (movies and readings - as the “*Lieberman point of view”* refers to the author of one of the assigned readings in the course).

> *“This weeks classes were very interesting. The reason being is because we were talking about fairytales in class. For me I was thinking why would we talk about this, this doesn't effect my life in any way. But, I was wrong…”*
>
> *“We watched froze this ween and compared that movie to Lieberman point of view…It has really open my eyes how society and Medea have such a big impact on how we see things, and were we get some of out values from…”*

Across the 14 responses containing triggers, 16 incidences of triggers were identified. Of the triggers reported, seven (44%) pertained to course content (readings and movies), three to the class (19%), and three to discussions (19%). Two (13%) related to coursework, and one (6%) to the instructor. Frequencies and percentages can be found in Table 6, below.

Table 6. *Triggers: Frequencies and Percentages*

Triggers	Frequency	Percentage of Identified Triggers
Course Content	7	44%
Class	3	19%
Discussions	3	19%
Coursework	2	13%
Instructor	1	6%

It is interesting that among the limited number of memos evidencing exploration, a greater diversity of triggers (with regard to categories of triggers) was identified than in the surveys from Study 2 and Study 3. It is possible that this diversity was a product of students only needing to reflect upon a given week for the memos, and therefore being better able to identify specific triggers.

Analysis of the second dimension, "cognitive action," indicated that all memos demonstrating identity exploration included a cognitive action. Across the memos demonstrating identity exploration, four different types of cognitive actions emerged: questioning, thinking, changing perspective, and learning (all identified in Study 2 as well). Two examples of cognitive actions are highlighted below. In the first comment, the cognitive action is "thinking," while in the second it is "learning."

> *"I have been thinking about the idea of finding your true self. In the movie Frozen, Queen Elsa and Princess Anna both go through a journey to find themselves…"*
>
> *"I learned not to care what everyone thinks about you, and to be yourself…"*

Of the 30 total cognitive actions coded, “learning” was the most frequently reported (57%, n=17), followed by “thinking” (30%, n=9) and “questioning” (7%, n=3) and “changing perspective” (7%, n=3). Frequencies and percentages can be found in Table 7, below.

Table 7. *Cognitive Actions: Frequencies and Percentages*

Cognitive Actions	Frequency	Percentage of Cognitive Actions
Learning	17	57%
Thinking	9	30%
Questioning	3	7%
Changing Perspective	3	7%

Of particular note is that while “changing perspective” was not reported in the surveys for students in Study 3, it did appear in the memos. Again, this may be an indication that the frequency of the memos, or potentially their structure/language, may have helped students more accurately identify and/or convey particular aspects of their identity exploration in the course. It is also rather interesting to see that, within the memos, students reported a much higher frequency of “learning” than did students from Study 2 and Study 3 on their surveys. This may indicate that the nature and/or language of the memos prompted students to conceptualize their exploration relative to learning, or that learning was especially salient for those students. The former explanation would seem to find support in the fact that the memo prompt did ask students to consider, “How has what you learned this week in class applied to or affected your own life…”

With regard to the third dimension, “self-target,” of the 26 memos evidencing identity exploration, 19 (73%) contained a self-target. Within those responses, six different aspects of the self were indicated: actions, views, knowledge, motivation, thought processes, and life. All of these self-targets were present within Study 2 survey responses as well.

Two examples of self-targets are highlighted in the student responses below. In the first example, the self-target is “actions” – specifically the writer’s “ways.” In the second, the self-target is “thought processes.”

> *“i feel as though that now taking on the college life, that my ways should change…”*
>
> *“It absolutely made me think different.”*

In total 20 incidences of “self-targets” were identified across the responses. In terms of frequency, students most commonly reported targeting “actions” (25%, n=5), followed by “thought processes” (20%, n=4) and “views” (20%, n=4), “knowledge” (15%, n=3), and “motivation” (10%, n=2) and “life” (10%, n=2). Thus, on this dimension, student memos indicated a greater diversity of self-targets than did Study 3 student qualitative survey feedback. Again, it is possible that such diversity was a product of students only needing to reflect upon a given week for the memos, as opposed to a much larger portion of the semester (as in the surveys). Frequencies and percentages can be found in Table 8, below.

Table 8. *Self-targets: Frequencies and Percentages*

Self-targets	Frequency	Percentage of Self-targets
Actions	5	25%
Thought Processes	4	20%
Views	4	20%
Knowledge	3	15%
Motivation	2	10%
Life	2	10%

Fourteen (54%) of the 26 identity exploration memos contained a "purpose" toward which the exploration was directed, the fourth dimension considered. The relatively high frequency with which a purpose appeared in students' responses aligns with the rate found in Study 3 student surveys, but stands in contrast to that found in the qualitative feedback from students in Study 2.

As with the survey feedback in Study 2 and Study 3, however, three purposes were identified in student memos: self-understanding, understanding others, and changing one's self. Two examples of "purpose" are highlighted in the student responses below. The purpose in the first excerpt is "changing one's self," as the writer notes that she is learning to ask for help when she needs it, while in the second quote, the purpose is "understanding others" – as the writer notes that he has gained insights about how fairytales can affect and mold others.

> *"I am learning to step back, take a deep breath, and ask for help if I need it."*
>
> *"So in all it gave me some insight on how different fairytales can affect people and how it can mold them into someone who thinks their a princess."*

Among the 15 incidences of purpose identified, the most commonly noted purpose was “changing one’s self” (60%, *n*=9), followed by “understanding others” (27%, *n*=4), and “self-understanding” (13%, *n*=2).

Within the identity exploration memos, the fifth dimension, “time,” was comprised of two timeframes toward which the exploration was directed: past or future. Only four (15%) of the 26 memos that included identity exploration indicated a timeframe. The relatively lower frequency with which time appeared in students’ exploration in the memos is intriguing, in that it contrasts with the relatively higher prevalence of time as an aspect of exploration in students’ (Study 3) survey responses. However, it is possible that the weekly nature of the memos affected students’ consideration of time as a relevant dimension.

Examples of time as a dimension of students’ exploration are highlighted in the quotes below. While the first quote listed indicates a “past” timeframe, with the student considering the impact of the books we read as children, the second addresses the future, with the student stating his hopes.

“Do the books we read as children determine our identity?”

“Hopefully I can incorporate this into my life so I can be successful in many other things.”

Final Identity Assignments

Descriptive Statistics

Submissions and word count. At the end of the semester, nine students submitted a final identity assignment. Total word count for the submitted memos was 2296. Each student who submitted a final identity assignment wrote an average of 255 words (*range* = 97 – 374). Seven of the nine responses (78%) were 200 words or longer.

Flesch-Kincaid grade levels. The average Flesh-Kincaid Grade Level Scores (FKGLS) for the final identity assignments was 8.7 (*range* = 7.2 – 9.7). Five of the submission (56%) had a FKGLS of 9 or greater.

Levels of cognitive engagement. The average level of cognitive engagement score across the final identity assignments was 1.7. Scores ranged from 1 – 3. Of the nine identity assignments submitted, 1 (11%) exemplified a high level of cognitive engagement with the material, 4 (44%) indicating a moderate level of engagement, and 4 (44%) indicating little to no engagement.

Thus, over the indicators considered, the final identity assignment, with its particular structure, elicited, on average, greater levels of engagement than did the weekly memos (when considered as a whole).

Content Analysis

Identity exploration. Coding revealed that 67% (*n* = 6) of students' final identity assignments indicated course-triggered identity exploration. One excerpt from a response coded as indicating course-triggered identity exploration is displayed below. In the response, the student identifies how Disney's portrayal of girls and the course readings prompted her to consider her own experiences growing up and her ideas about self-image, and how she now holds different beliefs regarding her image.

> *"The theme of gender, identity and pop culture has affect my personal life after watching the movies and reading the articles…Disney movies portray that a girl must be pretty, have long hair and blue eyes. In reality, every girl is not going to*

have big blue eyes and long hair. The theme of gender, identity and pop culture had affect my views on myself and others…At times when i was growing up i felt as though having to look like this girl and that girl willl get you someone that you love you. Today, i now relized that being yourself makes out the best of you."

Conversely, one-third of student responses (33%, n=3) did not indicate any course-triggered identity exploration. An excerpt from a response coded as not containing course-triggered identity exploration is displayed below. In the response, the student reports what he notices, with regard to gender roles, when he watches movies, but does not evidence consideration of these roles in relation to his identity.

"As I watch shows and or movies I see how men show emotion, mostly anger, sadness, and stress. Most of the time they get violent and destructive when it's expressed. Usually it's from someone dying. Basically if anything bad happens to someone important to them they get very emotional and don't know how to control it. In more modern films and TV shows it shows women doing the jobs that men should be doing. As in doing crazy stunts and saving people from near death experiences."

Dimensions of identity exploration. Final identity assignments indicating course-triggered identity exploration were coded along the five dimensions of exploratory action outlined in the framework constructed in Study 2.

With regard to the first dimension, "trigger," all 6 of the responses indicating identity exploration included at least one trigger. Two examples of triggers from assignments are listed below. In the first, the student identifies movies and readings as triggers, while in the second the students indicates class discussions acted as a "trigger."

Importantly, the first response highlights that multiple aspects of a course can act as triggers for a given student.

> *"The theme of gender, identity and pop culture has affect my personal life after watching the movies and reading the articles."*
>
> *"After we had class discussions, I would always think about myself and the people who I am closed to."*

Across the assignments, ten incidences of triggers were identified. The most commonly reported triggers were course content (movies and readings (60%, *n*=6), followed by discussions (20%, *n*=2), and class (10%, *n*=1) and school (10%, *n*=1). Hence, even in the limited sample of final identity assignments available for analysis, a significant diversity of triggers was present.

As with the first dimension, for the second dimension, "cognitive action," all six assignments indicating identity exploration included a cognitive action. From the assignments, four different types of cognitive actions emerged: questioning, thinking, reflecting, and learning. Two examples of "cognitive actions" are highlighted in the student responses below. In the first response "thinking" and "learning" are explicitly stated, while in the second the student demonstrates "questioning."

> *"The theme of gender, identity and pop culture has encouraged me to learn something new about myself by just making me think more about things."*
>
> *"However, I do find myself wondering about the gender lessons I was taught as a young female child. Was I ever given the chance to formulate my own ideas about how boys and girls are supposed to act? Was the female identity forced upon me because I was born a female?"*

Across the six assignments, 11 incidences of "cognitive actions" were identified. Of the cognitive actions, learning (36%, n=4) and thinking (36%, n=4) were the most frequently reported, followed by questioning (18%, n=2), and reflecting (9%, n=1). That learning appeared most frequently aligns with the pattern observed in students' memos.

All assignments also included the third dimension, "self-target." Within the responses, ten incidences of "self-targets" were identified, pertaining to four aspects of the self: actions, views, life, and beliefs. Two examples of self-targets from student responses are displayed below. In the first of the two quotes the self-target is "views", while in the second the target it is "actions."

"Another thing that I have learned while I was in this class was how I view not only myself but how I will be viewing other people in the future."

"This unit encourage me to not be self centered about myself."

Students most commonly reported targeting views (40%, n=4) and actions (40%, n=4), followed by life (10%, n=1) and beliefs (10%, n=1). It is possible that for students completing the final identity assignment, views and beliefs were particularly salient as both words were included within the assignment prompt.

Analysis of the fourth dimension, "purpose," present in all six responses, revealed three reasons, goals, or aims for/of student exploration: self-understanding, understanding others, and changing one's self – consistent with results from Study 2. Two excerpts from assignments containing "purpose" are displayed below. The "purposes" in the first quote, are "self-understanding" and "understanding others," while in the second quote, the purpose is "changing one's self."

"The theme of gender, identity and pop culture had affect my views on myself and others, is that it makes much complete sense."

"The way gender themes , pop culture , and identity in movies , class readings, and writing changed the way I view myself or others is, now I look to see if society made me the way I am today or I look to see if it's because it was the way we are raise.

Of the nine incidences of "purpose" in students' responses, five (56%, n=5) indicated "self-understanding" as a purpose, while two responses (22%, n=2) included "changing one's self" and two (22%, n=2) included "understanding others"

In contrast to the other dimensions, only four of the six (67%) relevant assignments included the final dimension, "time." Two timeframes toward which exploration was directed were indicated in students' responses: past and present. Examples of time as a dimension of students' exploratory processes are highlighted in the excerpts below. While the first quote listed indicates a "present" timeframe (i.e. "Today"), the second addresses the "past."

"Today i now relized that being yourself makes out the best of you."

"However, I do find myself wondering about the gender lessons I was taught as a young female child."

Three responses indicated the "present" as a timeframe, while the fourth indicated the "past."

Exploration Cases

The following section provides exploration cases for five students based on their pre and post surveys, submitted memos, and final identity exploration writing assignments in order to investigate the trajectory of motivational orientations, identity processing styles, and course-triggered exploration over the course of a semester in a class designed to facilitate identity exploration. The case explorations also examine how particular prompts, experiences, content, and/or assignments prompted student identity exploration in the course, and to what extent students' motivational orientations, identity-processing styles, and identity exploration relate to their expected course grades. A table providing an overview of key findings from the semester for the five students analyzed in the case explorations can be found in Appendix B.

For the purposes of the exploration cases, the five students have been given pseudonyms. Additionally, when "sample" is referred to in the following section, it pertains to the entire sample for Study 3, not merely the five individuals selected for the exploration cases.

Jane

Jane was a female student attending Montgomery County Community College in a part-time capacity. She reported that her educational goal was to obtain an Associate degree. On her pre-survey, her responses indicated that she most strongly adopted a mastery-approach orientation, followed by a mastery avoidance orientation. Scores for both performance orientations were over a full point lower. With regard to identity-processing style, Jane's scores were highest for commitment, followed by an informational processing style. She also reported high levels of self-efficacy (4.6) and relatively high-levels of course-triggered identity exploration (3.6) compared to the rest of the sample. Of interest, she did not provide any open-ended response to describe her experience of identity exploration in the class.

Jane had the second highest word count total for memos submitted (n=888) and the second highest number of memos evidencing identity exploration (n=4) across the sample. She was also one of only two students who submitted all thirteen memos. Of the thirteen memos Jane submitted, ten had a cognitive engagement level of "1" and three had a cognitive engagement level of "2" – indicating slightly lower than average cognitive engagement than her peers. This is rather interesting, in light of her high levels of engagement with the assignments and in identity exploration. Notably, Jane's first memo indicated a high level of exploration, as evidenced in the excerpt below, where she describes being forced to confront both her cognitive skills and her fear of failure. Interestingly, it appears that a simple class activity prompted her to reflect on her memory skills, which in turn she connected to her fear of failure. It is also noteworthy that Jane describes a fear of failure and details how she has stopped and started school several times, as this contrasts starkly with her high self-efficacy score on the pre-survey.

> *"I was affected personally by the first day of class. It forced me to come to terms that my memory isn't where I would like it to be. I was only able to remember 5 names of my classmates. Thinking to myself; I should have been really paying attention to the names with the face activity. I need to come up with a plan to absorb and retain information quickly. Also, I have the fear of failing at this whole school concept once again. I have started and stopped so many times. All I can do is trying once again, hopefully to keep it going."*

Jane followed up her first memo, with a second in week two, which also demonstrated course-triggered identity exploration. In the memo below, Jane begins to consider discussion relating to course content as a prompt for exploration and reflects that the discussion has prompted her to increase her vigilance in maintaining an open mind.

> *"During the discussion about the way men and women are perceived, I was able to hear a different perspectives on the way my other classmates view the opposite sex. It has affected my life by reinforcing the idea that I need to keep an opened mind when subjecting oneself to the opinions of others and the way the same idea or thought can be viewed."*

Following this memo though, Jane's memos throughout the remainder of the semester generally focus more on the work and dynamics of the course. For example, in a week 6 memo she noted:

> *"I like the approach that is being taken on writing out first essay. Enabling us to ease our way into essay writing with groups is a fantastic way for us to learn the ideas of others…"*

However, Jane also discloses a telling piece of feedback part of her week 6 memo, displayed below. In the excerpt, she expresses that the process of writing the memos grows more difficult with each passing week.

> *"I am starting to realize that writing this identity memo every week is getting more and more difficult to apply what I learned during the week to real life scenarios."*

Thus, it is possible that the transition evidenced in the Jane's memos (and the general pattern for the class), from greater exploration and cognitive engagement to lower levels there of, may at least partially have been driven by insufficient scaffolding. This seems especially possible as three out of the four memos Jane submitted evidencing identity exploration occurred within the first four weeks of the course. Another possible explanation is that the course content in subsequent weeks was not self-relevant and hence not identity exploration triggering for her.

In terms of Jane's final identity assignment, it evidenced both identity exploration and a moderate level of cognitive engagement (2). Strikingly, Jane explicitly stated that the course did not affect her "beliefs and values." She wrote:

> *"My personal beliefs and values have not been affected by the theme of gender, identity, pop culture and the movies in class. Thirteen weeks of one class could not alter the values and or beliefs that have been instilled in me since birth."*

However, within the same assignment she wrote about how the class prompted her to consider her own identity in relation to gender norms, as noted in the excerpt below.

> *"However, I do find myself wondering about the gender lessons I was taught as a young female child. Was I ever given the chance to formulate my own ideas about how boys and girls are supposed to act? Was the female identity forced upon me because I was born a female?"*

Thus, even though Jane had several memos indicating exploration over the course of the semester, and even though her writing within the final identity memo evidences exploration, she did not believe that the course affected her beliefs and values. Essentially then, Jane did not equate her exploration with any noticeable shifts in her identity, nor did she equate the exploration itself as a change. Notably, her commitment score on the post-survey was higher than on her pre-survey (post-survey commitment = 4.6, pre-survey commitment = 3.8) as were her scores for all other constructs of interest, save self-efficacy, course-triggered identity exploration, and expected grade (an "A"), which were identical.

Given that the lion's share of Jane's exploration was evidenced over the first few weeks of the semester, it is also interesting to consider whether she "lost sight" of changes that may have occurred early in the course. It is also entirely possible, however, that Jane's exploration did not yield any changes in identity, or any changes that the student was consciously aware of, or, perhaps, any changes that persisted through the entirety of the course.

Kelli

Kelli was a female student attending Montgomery County Community College in a full-time capacity. She reported that her educational goal was to transfer to a four-year institution. On her pre-survey, Kelli's responses indicated that she most strongly adopted a mastery-approach orientation. Despite this, her mastery-approach score (4.0) was tied for the lowest for any pre-survey across the sample (n=10). Her scores for mastery-avoidance and both performance orientations were over a full point lower. With regard to identity, Kelli's scores were highest for commitment, followed by an informational processing style – though her informational score was tied for lowest in the sample as well (3.3). Kelli reported relatively average levels of self-efficacy (4.0) compared to her peers, but tied for the lowest levels of course-triggered identity exploration (2.0) in the sample. This latter score is borne out in her response to the qualitative survey item:

> *"what i meant by my circling is that in this course I dont have any question about myself from what i experienced in this course."*

With respect to her memos, Kelli only submitted five memos – one during each of the first four weeks, and then none until the final week. Two of her five submitted memos (both submitted during the first four weeks of the course) evidenced identity exploration. Of her five submitted memos, all were coded as having a cognitive engagement level of "1" – thus indicating a low level of cognitive engagement. Kelli's word count total for memos submitted was also relatively low (n=293).

Notably, although Kelli's first memo did not indicate course-triggered identity exploration, it did focus heavily on motivation, as indicated below. In the excerpt below, her writing focuses heavily on avoiding failure, indicative of a mastery-avoidance orientation. Such prose stand in contrast to her pre-survey scores, where she indicated most strongly adopting a master-approach orientation. This may indicate some confusion or miscalibration on the part of the student regarding the motivational items.

> *"…it's going to a lot of strength and perserverience to pass this class. Giving up is not an option for me and do fear that I won't do well in this class and other classes too, but going to push myself and I'm not going to give up. I'm going to have grit to complete these two years to earn my degree."*

It is important to consider that just as with Jane, Kelli reported fear regarding her ability to be successful. Interestingly though, in the excerpt above Kelli appeared to be attempting to harness her motivational resources to complete the course and her degree successfully.

In contrast to her first memo, Kelli's week 3 memo, evidenced some course-triggered identity exploration, as displayed in the excerpt below. In the selection, Kelli notes that the gender lessons have changed her thinking and views.

"…I learned many different gender lessons about these classic fairy tales and I can say it really has made me think different and look at things differently"

However, despite the fact that Kelli indicated some changes, the description of that processes within the memo is rather limited.

As noted, following week 4, Kelli did not submit any memos until the final week. Though the final memo submitted did not indicate any course-triggered identity exploration, it did highlight Kelli's learning skills and planning to apply them in the future, an important processes in its own right.

"this week I have learned to pay more close attention when I'm writing essays and how to revise much better then before . I will apply these skills to my next ENG class."

With regard to Kelli's final identity assignment, though it evidenced identity exploration, it also exemplified a low level of cognitive engagement. Fascinatingly, as with Jane, Kelli also explicitly stated that the course did not affect her - specifically her "views" noting:

"…The theme of gender, identity and pop culture hasn't affected the way I view myself nor others."

However, within the assignment she went on to write how the themes in the course had caused her to learn new things about her identity, as noted in the excerpt below.

"The theme of gender, identity and pop culture has encouraged me to learn something new about myself by just making me think more about things."

Thus, as with Jane, despite their marked differences in engagement with the assignments over the course of the semester, Kelli also wrote how she did not equate her exploratory action with changes in aspects of her identity. Kelli apparently did not equate learning new things about herself with changes in her identity either. Kelli's response to the qualitative item on the post-survey, displayed below, somewhat captures the tension between the two different sentiments she expressed in her final identity assignment, where she notes that the course raised questions for her, but that she ended up answering those questions herself. As noted before, such a sentiment may indicate movement between exploration and commitment.

> *"What I meant by circling the number I did is that sometimes I raise questions about myself but then i den up answering my own questions."*

In light of this fact, it is interesting to consider that Kelli's informational processing style score and commitment score on the post-survey were higher than on her pre-survey (post-survey informational processing style = 3.6, pre-survey informational processing style = 3.3; post-survey commitment = 4.4, pre-survey commitment = 3.6). Also noteworthy was that it was Kelli's post-survey avoidance scores (for both mastery and performance) that increased marginally, as well as her efficacy and course-triggered identity exploration scores - the latter of which evidenced the largest construct score increase (+0.8). Kelli's expected grade also increased from a "B" to an "A" on her post survey.

Thus, it is indeed interesting to consider the similar sentiments expressed by both Jane and Kelli in their final identity assignments, especially in light of the fact that their memos exhibited such different trajectories. It is also worth considering that both students experienced increases from pre to post surveys in at least some adaptive constructs, despite the fact that the predominant pattern for the sample from pre to post was a decline in scores – with the only exceptions for the sample being exploration, commitment, and performance-avoidance scores.

Tyesha

Tyesha was a female student attending Montgomery County Community College in a part-time capacity. She reported that her educational goal was to transfer to a four-year institution. In line with Jane, Tyesha's pre-survey responses indicated that she most strongly adopted a mastery-approach orientation, followed by a mastery avoidance orientation. Scores for both performance orientations were over a full point lower. With respect to identity-processing style, Tyesha's scores were highest for informational processing style. She reported relatively lower levels of self-efficacy (4.0), but the highest level of course-triggered identity exploration (4.4) in the sample (for the pre-survey). Speaking to that high course-triggered identity exploration score, Tyesha wrote on her pre-survey:

"I'm learning more about myself while I am in class."

With regard to her memos, Tyesha was the only student besides Jane in the entire sample who submitted all 13 memos. In contrast to Jane, however, none of Tyesha's memos evidenced identity exploration, and all 13 had the lowest level of cognitive engagement conferred – a "1." Tyesha also had the lowest average word count for memos submitted (m=21.2).

The memo below, from week 6, indicates Tyesha's general approach to the memos over the course of the semester. The memo provides little detail or evidence of engagement and speaks to general learning and overarching goals.

> *"What we learn this week affected me as I want to be better writer in the future."*

It is possible that Tyesha's goal for engaging in the assignment may have simply been to complete it, or it may have been that insufficient scaffolds were provided to help her engage in the exploratory process.

In contrast, Tyesha's final identity assignment evidenced both identity exploration and a moderate level of cognitive engagement (2). As opposed to Jane and Kelli, Tyesha explicitly reported that her beliefs were changed through the course. She wrote:

> *"One thing that I have learned while in class was how my personal beliefs on gender were changed after being in this class."*

She went on to report that the course changed her views of herself and others, as noted in the excerpt below.

> *"Another thing that I have learned while I was in this class was how I view not only myself but how I will be viewing other people in the future. After reading all of the articles, it causes me to look at myself and the people who are around me the most. After we had class discussions, I would always think about myself and the people who I am closed to."*

The sentiments expressed in Tyesha's final assignment stand in stark contrast to the lack of exploration evidenced in her memos over the course of the semester - again suggesting that the student may have approached the memo assignment with the goal of simply completing the task, or that insufficient scaffolds may have been in place to facilitate her engaging in exploration via the memos. That being said, it is also possible that while the memos may have been insufficient to trigger identity exploration in isolation, cumulatively, and in the context of the course overall, they may have provided fodder for the exploration manifest in the final assignment.

With respect to Tyesha's post-survey scores, her commitment and exploration scores were both higher than on her pre-survey (post-survey commitment = 4.4, pre-survey commitment = 4.1, post-survey exploration = 4.8, pre-survey exploration = 4.4). Interestingly, her scores for informational, normative, and diffuse-avoidant processing styles were all lower on the post-survey, though of the three she still reported most strongly adopting an informational processing style. With regard to achievement goals, Tyesha's post-survey scores were higher in performance-approach, marginally higher in mastery-avoidance, and stable for the other two orientations (compared to her pre-survey scores). Her post-survey self-efficacy score was marginally lower, even though her expected grade, an "A", remained the same from the pre-survey.

Tyesha's trajectory over the course of the semester provides an interesting and important contrast to the trajectories of Jane and Kelli. While both Jane and Kelli evidenced exploration through the course memos, especially early in the semester, both explicitly expressed in their final identity assignments that they felt aspects of their identity had not changed because of the course. Conversely, Tyesha did not evidence any exploration within the memos, but stated explicitly in her final assignment that she felt aspects of herself changed over the course of the semester.

Andrea

Andrea was a female student attending Montgomery County Community College in a full-time capacity. She reported that her educational goal was to transfer to a four-year institution. On her pre-survey, her responses indicated that she most strongly adopted a mastery-approach orientation, followed by a mastery-avoidance orientation. For Andrea, scores for both performance orientations were over a full point lower than those for mastery orientations.

With respect to identity, Andrea’s scores were highest for commitment, followed by an informational processing style. Interestingly, she also reported the lowest levels of self-efficacy in the sample (3.2) and average levels of course-triggered identity exploration (3.8). She did not provide any feedback to the open-ended item on the pre-survey.

Andrea submitted 12 of the 13 memos. Just as with Tyesha, however, none of her memos indicated identity exploration and all of them had a low cognitive engagement level of “1.”

Several of Andrea’s memos focused on writing skills learned in the class, as exemplified in the memo excerpt below.

> *“what I learned this week was to focus more on the main idea of each paragraph and to make my evidence stronger when I'm writing on my essay*.

The other variety of memo for Andrea focused on “ingesting” lessons from the course around the topics of gender, as highlighted in the excerpt below.

"what i learned this week in class was that society makes us the way we are not just our physical appearance . an also that women believe and want the fairy tale life more than men do."

Although she reported learning, her memo does not indicate any exploration pertaining to the information.

In terms of Andrea's final identity assignment, although it evidenced identity exploration, it only indicated a low level of cognitive engagement. Of note, Andrea started her assignment by explicitly stating that the course affected her "views." She wrote:

"The way gender themes , pop culture , and identity in movies , class readings, and writing changed the way I view myself or others is, now I look to see if society made me the way I am today or I look to see if it's because it was the way we are raise . Also, it made me look at myself and others a different way. It opened my eyes when we was talking about and watching the female gender lessons..."

In her closing statement, however, she noted:

"So far the gender themes has not change my personal beliefs, not even religion wise."

Thus, in her assignment Andrea addressed two aspects of identity distinctly, noting that while her "views" may have changed due to the course, her "beliefs" had not. This distinction again highlights the multi-dimensional nature of the exploratory process for students, even within particular dimension of exploration. As indicated above though, the manner in which Andrea addressed the content was rather general/vague, with little meaningful synthesis or extrapolation indicated.

With respect to Andrea's post-survey scores, her commitment score on the post-survey was marginally higher than on her pre-survey (post-survey commitment = 3.7, pre-survey commitment = 3.6). Her scores were also higher for both performance orientations and self-efficacy. Her scores on both mastery orientations and the three identity processing styles were all stable or lower though. Interestingly, Andrea was the only student of the five students completing both pre and post surveys who reported a lower exploration score on the post-survey (post-survey exploration = 3.2, pre-survey exploration = 3.8). While surprising relative to the scores in the rest of the sample, and in light of her final identity assignment, her exploration score does align with the lack of exploration indicated across her memos. Despite this, Andrea's expected grade increased from a "B" on the pre-survey, to an "A" on the post.

Cumulatively, Andrea's lack of identity exploration in the memos and her low level of cognitive engagement on the final identity assignment, coupled with the stability and/or declines observed in key constructs on her survey scores, appear to indicate that the exploratory structures and processes included in the course may not have been optimally constructed for her.

Alistair

Alistair was a male student attending Montgomery County Community College in a part-time capacity. He reported that his educational goal was to transfer to a four-year institution. On his pre-survey, his responses indicated that he most strongly adopted a mastery-avoidance orientation, followed by a mastery-approach orientation. Alistair was one of only two individuals across the sample to most strongly adopt a mastery-avoidance orientation on the pre-survey. Alistair's scores for both performance orientations were over a full point lower than his scores for mastery orientations. With regard to identity-processing style, Alistair's scores were highest for an informational processing style, followed by commitment. He also reported relatively low levels of self-efficacy (3.8) and tied for the lowest scores across the sample for course-triggered identity exploration (2.0). Alistair's course-triggered identity exploration score was supported by his comments on the pre-survey, where he noted:

> *"This course does not impact me personally very much at all. I do not question my identity because of this course."*

With regard to his memos, Alistair submitted twelve of the thirteen memos. Despite the high number of submissions, Alistair was one of only four students across the sample who did not evidence any exploration across his memos and his final identity assignment. Fascinatingly, of the twelve memos Alistair submitted, five had a cognitive engagement level of "2" – tying him for the most memos with a rating of "2" across the sample. A memo exemplifying Alistair's submission is displayed below. In the memo, Alistair focuses specifically on the writing process.

> *"This week in class we did peer reviews on our classmates' essays. Seeing other people's work gave me good ideas of how to my make own paper better. It's also helpful to correct other people's work because seeing errors in one person's paper helps me find errors in my own paper. I'm getting better at the revising process, which gives me more confidence as a writer."*

As exemplified above, Alistair's memos also seemed to be focused on his self-efficacy, rather than on exploration. It is possible that he interpreted the prompts to refer more to efficacy than exploration, or that efficacy was a more salient self-aspect for him in the context of the course.

With regard to Alistair's final identity assignment, it evidenced little cognitive engagement, as shown in the selection from the assignment below - where he writes about what went on during the class, and a general reaction to an aspect of the course.

> *"We watched a few movies and talked about how those movies affect the youth of the nation. The movies we watched were Iron Man and Frozen. I never would have thought that these movies would be teaching children such strong messages."*

With respect to Alistair's post-survey scores, his informational, normative, and commitment scores were all lower, while his diffuse-avoidant score was higher. In terms of motivational orientations, Alistair's mastery scores were stable from pre to post, while both performance scores increased. Notably, Alistair's self-efficacy and exploration scores both increased on the post-survey by 0.6. Alistair's expected grade did as well – from a "B" to an "A."

Overall, it is rather interesting that despite failing to evidence any exploration in his memos or final identity assignment, Alistair's exploration score increased from the pre to post survey. It may be that the course-triggered exploration he experienced was simply not translated to the assignments. It is also possible that it was the cumulative effect of the course that may have acted as the trigger, which would help explain Alistair's comment in his post-survey:

“It makes me think about what I want to do with my life.”

It is also important to note that Alistair’s self-efficacy score on the post-survey was markedly higher than on his pre-survey, in light of the fact that many of his memos appeared to focus on self-efficacy.

In sum, the case explorations highlight the highly individualized nature of students’ exploration in relation to the course, as well as some generally emerging themes, questions, and potentially prototypical trajectories for the students. The explorations also provide insights into the manner in which students engaged with the identity prompting activities, and the ways in which those activities may have affected (or not affected) students. Full consideration of the implications of these findings, as well as those from the previous sections of Chapter 4, are provided in the following section.

CHAPTER 5. DISCUSSION

In this dissertation, I sought to extend motivational and identity research conducted in other educational contexts to the community college setting to provide insights into the relatively lower rates of academic success experienced by community college students. To this end this dissertation explored the nature and prevalence of motivational orientations, identity processing styles, and course-triggered identity exploration among community college students, the relation of these to one another and to students' academic outcomes, and the activities that might promote adaptive identity exploration around an academic curriculum for college students in remedial English.

The theoretical frameworks that guided this dissertation research were Achievement Goal theory (Ames, 1992), Brezonsky's (1989) identity processing style, and Flum and Kaplan's (2006) perspective on identity exploration and its promotion in educational settings (Kaplan, Sinai & Flum, 2014). The dissertation comprised three studies that utilized data collected over the course of two semesters at Montgomery County Community College in Pennsylvania.

The findings from the three studies provide important insights into motivation and identity processes in the community college setting, and highlight how identity exploration might be used to impact student engagement and success. The studies also illustrate what course features might help promote identity exploration and provide a useful foundation for further research within these domains of motivation, identity, and academic achievement.

Results from the three studies generally indicated that students most strongly adopted mastery-approach orientations and informational-oriented processing styles in their courses. Results also suggested that achievement goal orientations and identity processing styles are conceptually related, and that course-triggered identity exploration, adaptive engagements (achievement goals orientations and identity processing styles), and expected course grades were also linked – supporting the proposed pathway whereby course-triggered identity exploration may positively impact academic achievement via students' adaptive engagements resulting from their exploration. Additionally, mastery-avoidance orientation and self-efficacy were found to be significantly positively correlated with students' expected course grades for the sample in Study 1.

Results also indicated that the course-triggered identity exploration may be common for community college students in introductory psychology courses and that five dimensions characterized students' descriptions of course-triggered identity exploration (across the samples): trigger, cognitive action, self-target, purpose, and time.

Additional results indicated variation, with regard to the frequencies with which dimensions of exploration were evidenced in students' manifestations of exploration across Study 2 and Study 3. Moreover, findings suggested that while students' experiences/trajectories of identity exploration over the course of the semester were individualized, certain commonalities existed and that certain course features appeared to be more conducive to facilitating identity exploration, and particular manifestations of identity exploration, than others - for particular students.

In the following discussion, I interpret the findings from the three studies and their contribution to overall theory about identity exploration and motivation, as well as for the community college context, and the potential implications of these findings for educational practice. I then consider the limitations of the research and the implications for future research

General Theoretical Contributions

Several important theoretical findings emerged from the analyses conducted in the three studies. Results suggested, via the MDS and correlation conducted in Study 1, that mastery orientations (both approach and avoidance) and informational-oriented processing styles are conceptually related. Results also indicated that performance orientations (both approach and avoidance) and normative and diffuse-avoidant processing styles are conceptually related – although the nature of the relationship among performance orientations and normative and diffuse-avoidant processing styles appears less clear, given the more diffuse pattern evidenced in the MDS map and the lack of significant correlations between performance orientations and diffuse-avoidant processing style in Study 1. However, a positive correlation between performance orientations and a diffuse-avoidant processing style was one of the correlations uncovered in the pre-surveys for Study 3 – strengthening the case for the hypothesized relationships.

Cumulatively, the results of the MDS and correlational analyses align with the proposition forwarded by Kaplan and Flum (2010), regarding the relationship between achievement goal orientations and identity processing styles. Moreover, the evidenced associations (from Study 1) among course-triggered identity exploration, mastery orientations, self-efficacy, and informational processing styles also aligns with work indicating the connection between identity exploration and the adoption of adaptive engagements (e.g. Sinai, Kaplan, & Flum, 2012a). That such associations appeared in the studies suggests that course-triggered identity exploration may indeed provide an avenue through which to affect students' engagement in the academic environment and, potentially, a host of important academic outcomes.

In light of the aforementioned results, it is also interesting to consider that the mastery-avoidance orientation was the only variable (other than self-efficacy) that significantly positively correlated with expected course grade for the sample in Study 1. Generally, performance and mastery approach orientations are considered to most strongly positively correlate with grades (Elliot, McGregor, & Gable, 1999), although the strength of the relationships appear to depend on numerous variables (e.g. task difficulty) (Linnenbrink-Garcia, Tyson, & Patall, 2008). In studies of four-year college students though, it is common for performance-approach goals to be associated with positive academic outcomes (Senko, Hulleman, & Harackiewic, 2011). Conversely, avoidance orientations are consistently associated with less adaptive behaviors and outcomes (Elliot & McGregor, 2001; Elliot & Murayama, 2008; Howell & Buro, 2009; Kaplan & Maehr, 2007). Thus, at face value, the connection between mastery-avoidance and grades is somewhat unexpected, if not counterintuitive. However, given the degree of relatedness between both mastery-orientations suggested by the MDS and correlational analysis, the fact that mastery-avoidance has been the least studied component in the achievement goal framework, and the paucity of research on achievement goals within the community college context, perhaps *this* result should not be overly startling. Indeed, as noted, student responses indicated that students viewed mastery-approach and avoidance orientations as *highly* related and, potentially, indistinct.

The lack of distinction between mastery-approach and mastery-avoidance orientations, while important to consider in the context of the findings regarding the observed association between mastery-avoidance orientations and grades, is also an important finding to consider in its own right – and even more so as the results from Study 1 also indicated a relative lack of distinction by student between performance-approach and avoidance orientations as well. Such findings suggest that for the sample in Study 1, achievement goal orientations may not have been viewed along the approach-avoidance valence, but rather as simply performance or mastery orientations. That is, students, as a group, may not have distinguished between engaging to avoid something and engaging so as to achieve/seek/obtain something. Given the multitude of research supporting the positive associations between academic achievement and approach orientations (but not avoidance orientations), that students' may have lacked the ability to differentiate between approach and avoidance orientations suggests that scaffolding to further enhance students' conceptualizations of motivation may be beneficial and, in fact, potentially critical to the translation of identity exploration into adaptive achievement goal orientations. Undoubtedly, further research in this area is warranted.

Contextual Theoretical Contributions

In addition the general theoretical contributions resulting from the three studies, numerous contextual theoretical contributions resulted as well. First, with regard to Study 1, results indicated that, overall, community college student participants most strongly adopted mastery-approach orientations and informational-oriented processing styles, consistent with the limited extant research in the community college domain (Mesa, 2012; Philips, 2008). These findings were also supported by the results in Study 3. Thus, the findings suggest that although Study 1 and Study 3 were comprised of different types of students in different academic contexts, both groups of students still generally reported approaching their education with the same types of motivational orientations and identity processing styles. Interestingly, such orientations have generally been positively associated with academic achievement, although some research has shown performance-approach orientations to be more strongly correlated with achievement than mastery-approach orientations in the collegiate setting (Linnenbrink-Garcia, Tyson, & Patall, 2008). Thus, this finding raises several questions. Were the orientations and processing styles reported by the student in Study 1 and Study 3 a product of their experiences in the courses? If not, are the students in Study 1 and Study 3 indicative of community college students generally? If they are, what does it mean that students generally report adopting the desired adaptive engagements and still experience relatively low success rates? Is it possible that the self-report measures are not accurately gauging students' achievement goal orientations and identity processing styles or that students' knowledge is not well calibrated with regard to their patterns of engagement? While such a line of questioning is decidedly speculative, the nature of the findings warrant consideration of further inquiry.

With regard to Study 2, analysis of the qualitative findings indicated that, within the courses sampled, course-triggered identity exploration was quite common, with 70% of student responses evidencing exploration. Indeed, in the Study 3 surveys as well, a nearly identical percentage of responses to the open-ended survey item (71%) indicated course-triggered identity exploration – thought the sample was small. That students engaged in exploration at such high rates is not entirely unexpected, as prior research has indicated that college-aged individuals are typically some of the most active identity explorers (Archer, 1982). It is intriguing to consider though, that, as context is believed to be critical to the exploratory process (Grotevant, 1987), students in both studies, who were subject to highly different contexts, reported similar levels of exploration. That being said, though the contexts were different in terms of course content, structure, instructor, and the students enrolled in them, they were still held at the same college and both included content that could be considered conducive to facilitating identity exploration. Moreover, though the remedial English courses might be considered to contain less directly relevant information than the introductory psychology courses, this was, perhaps, balanced by the fact that the English courses contained activities that were specifically designed to promote identity exploration.

Another important finding from Study 2 and Study 3 was that course-triggered identity exploration appeared to be a multidimensional process for community college students, and one that varied considerably across students, with regard to the nature and prevalence of the exploratory dimensions indicated. Results from Study 2 indicated that five dimensions characterized students' identity exploration within the course: trigger, cognitive action, self-target, purpose, and time. Further results from Study 3 added support to this dimensional framework, as the framework adequately captured not only the dimensions present in students' survey responses (in Study 3), but also the dimensions exhibited in students' memos and final identity assignments. That the framework held across such different contexts and varied text-based media for expression was interesting, and suggests that the framework (and the resulting mapping sentence from Study 2) may go beyond summarizing students' experiences of exploration within a singular context, but rather, may contain elements that hold across an array of contexts. To be sure, such a proposition is forwarded cautiously, as the contexts and media employed, though varied, also shared important similarities (e.g. the contexts were within the same institution and the media were all text-based). However, such a proposition regarding the potential generalizability of the framework is also not without merit as, in addition to holding across the contexts, students, and media studied, the process through which the framework was constructed (via both inductive and theory-informed deductive methods employed in the co-construction and testing of the framework across different raters and time-frames) lends support the notion that elements within the framework may be fundamental to students' exploration. It is important to stress here as well, that the framework was not considered or applied in a manner to indicate that every element comprising the framework was present in each student's experience of exploration at any point in time, but rather that the framework, as a whole, captured the elements of students' experiences of exploration that were evident. Undoubtedly though, future research will be required to evaluate if the multi-dimensional framework holds in other community college settings and with other types of students and media.

Further important results from Study 2 and Study 3 were also found in relation to the specific dimensions of exploration. For example, student responses from Study 2 most frequently contained indications of a trigger, self-target, and/or a cognitive action. Purpose and time, however, were less frequently indicated. Conversely, in the Study 3 surveys, students were much less likely to indicate a trigger, and much more likely to indicate a purpose and/or time. As the prompts in both studies were the same on the surveys, such findings may indicate that particular dimensions of exploration were more or less salient than others to students in the two studies. As mentioned before, it is also possible that the different structures and/or content of the courses affected the manner in which students manifest identity exploration in their writing.

Evidence supporting the idea of different course structures affecting manifestations of identity exploration was found in Study 3, as students evidenced different patterns of exploration in their survey responses, student memos and final identity assignments. For example, with regard to the memos, those indicating identity exploration had relatively high frequencies (>50%) of all the identified (5) dimensions of identity exploration, except for time. In contrast, frequencies were high for all dimensions of exploration in final identity assignments that indicated exploration. This difference may have been due to the fact that the final identity assignments were placed at the end of the semester, included more detailed instructions, and generally indicated that students should write longer responses than on their memos. These particular features of the assignment may have helped facilitate students engaging in and/or conveying more detailed exploration.

The effects of particular prompts can also been seen in the fact that numerous final assignments included the self-targets "beliefs" and "views" - both words that were included in the prompts. Memos, meanwhile, most commonly contained the cognitive action "learning" – a word that was used in the memo prompt.

Beyond the language of particular prompts, the structure and frequency with which they occurred also appeared to have an effect. For example, the memos contained more limited instructions than the final identity assignments and occurred every week, which may have resulted in the observed decline in student engagement with the memos in the latter half of the semester. It is possible that in order to facilitate more consistent engagement, further scaffolding may have been necessary. Alternatively, it is also possible that the students became bored with the assignment, or found the material in the latter part of the course less prompting than the content in the earlier part of the semester. With regard to this latter point, it is certainly possible that as the course moved from the first few “orienting” classes into those more focused on skill acquisition, that students did not find the material conducive to facilitating their identity exploration and/or that their attention and efforts may have shifted to different priorities.

This final point is of note, for it highlights that, in the midst of the features, content, and structures of a course, each student possesses their own set of motivations, identities, etc. This fact should not be lost in the results, as these individual differences undoubtedly play a role in if, when, how, and under what circumstances an individual may engage in identity exploration. To that point, it is worth considering that the results of the MDS suggested links between mastery orientations, informational processing styles, and course-triggered identity exploration. Thus, it would not be unfounded to suspect that students entering courses with those patterns of engagement (mastery orientations and informational processing styles) might be more easily prompted than others, by for example, a memo. Conversely, for students with different patterns of engagement, it might take a more detailed prompt at the end of a course (like the final identity assignment) to prompt identity exploration.

Such individual variation may have also played a role in the differences observed across students’ particular manifestations of exploration within their writing. For example, across responses indicating a “trigger” in Study 2, a variety of triggers were indicated, with some categorized as broad (e.g. "the course') and others as more specific (e.g. "psychological disorders") – with broad triggers reported twice as frequently. Within the more specific triggers, there was considerable variation as well. For instance, among those in Study 2 who reported that coursework around "psychological disorders" acted as a trigger, different disorders were identified by different students as the *precise* trigger.

Indeed, for many students in Study 2, it appeared that content related to disorders may have acted as a trigger, due to its *direct* relation to a condition they were experiencing. As one respondent wrote, *"I circled 4 because I suffer from PTSD due to years of abuse and the course helped me understand it more.*" Feedback of this nature clearly illustrates how characteristics unique to given students affected their experiences of identity exploration in the courses.

Developmental student memos also highlighted individual variation and the potential for directly relevant content to influence the triggering of identity exploration. As one developmental student conveyed, "*The movie reminded me about boys that have been or could of been mean to me and how I thought they were being nice*." In addition to illustrating the aforementioned points, that this type of content acted as a trigger also aligns with previous thinking about the role of relevancy in facilitating exploration (Kaplan & Flum, 2006) and as mentioned earlier, may offer support to the literature surrounding the importance of content relevancy for students' educational experiences.

Notably, however, triggers with (apparent) direct personal relevancy were not the only triggers reported by students. For instance, several developmental students reported that the fairytales they reviewed acted as triggers for exploration. It may be though, as discussed before, that the less direct applicability of the content in the developmental English class played a role in the relative dearth of exploration evidenced across the memos. Indeed, the trajectories of exploration across the memos indicated that instances of exploration were strongly skewed toward the beginning of the semester (as was engagement), with 69% of the memos evidencing exploration written in the first four weeks of the course. What is more, many of those memos evidencing exploration did not contain course-content-specific triggers – suggesting that aspects of the course other than the content played a more central role in students' identity exploration via the memos.

It was also interesting that, with respect to the variation within the dimensions of exploration, students were much more likely within the dimension "cognitive action" to report questioning or thinking in response to a trigger, than to report applying or changing perspective. While this highlights the exploratory nature of the action generally taken by students, it also prompts questions as to the trajectories resulting from such exploration. For example, what might the transition look like from questioning to changing perspective and/or engagement for such students?

Notably, the exploration cases and pre and post surveys in Study 3 provide some insight into this process, in highlighting the trajectories for students, with regard to course-triggered identity exploration, as well as trends, with regard to motivational orientations and identity processing styles. With respect to motivation and identity processing, it was somewhat surprising to see that post-survey mean scores were lower for all motivational orientations except performance-avoidance. Additionally, all post-survey construct means for identity processing styles were lower than the pre-survey scores. However, when students who did not complete both sets of surveys are removed from the sample, mean scores increase from pre-post for all constructs except normative and diffuse-avoidant processing style. Such a finding would be more in-line with expectations, and may suggest that the extent to which students engaged in the multiple identity related activities in the course (e.g. surveys, memos, and final assignments) may have had implications for their adaptive engagement and exploration. Indeed, a certain "dosage" of scaffolds, activities, and prompts may have been necessary to elicit the desired increases in adaptive engagements, and decreased adoptions of less adaptive ones. It may also have been that completing both surveys, in particular, was especially impactful, with regard to students' motivations and exploration.

With regard to trajectories at the individual level, several intriguing patterns emerged. Some students who evidenced exploration at multiple points in the semester, via the course memos, ultimately reported that their experiences in the course had not affected their identities. Conversely, other students did not report exploration in any memos, but did so in the final identity assignment. Another student did not report any exploration in the memos or the assignment, but evidenced an increase in his exploration score from pre to post survey.

These results raise interesting questions about students' awareness of changes they may have experienced, the extent to which exploration may or may not have ultimately yielded change, as well as the ability of surveys to adequately/accurately capture students' exploratory experiences. With regard to the first question raised, it is certainly possible that some students were not aware that they had experienced changes from via their identity exploration. It is also possible that they were aware of the changes at the time they occurred, but looking back (and having already experienced the change(s)) were unable to identify a time when they had thought/engaged differently than they currently did.

It is also entirely possible, with regard to the second question raised, that students' exploration may not have resulted in outcomes that students characterized as change, or possibly that changes they experienced were not lasting. As identity exploration is a dynamic process, this is certainly a possibility.

With regard to the third question, pertaining to the third pattern observed (no evidenced exploration except on post-survey scores) it is entirely possible that for at least some students, the surveys did not provide an accurate means to capture their experiences of identity exploration.

The aforementioned student patterns from the case exploration in Study 3 are also interesting, especially the first two, in that they appear to indicate two types of students: one who engages in exploration via the specific weekly prompts (memos), but does not necessarily connect that to changes in the self when considering them retrospectively, and one who reflectively identifies exploration and change over the semester, but does not really engage in exploration through the memos. Ultimately, though, both of those types of students did report exploration via at least one of the prompts – which also raises the question as to whether the specific prompts or the timing of those prompts were better aligned with particular students' scaffolding needs. It is also interesting to note that no student in the exploration cases exhibited a pattern whereby they expressed exploration in both the memos and their final assignment.

Ultimately, despite the prototypical trajectories emerging from the exploration cases, many of the findings from the three studies, discussed above, highlight the individualized features of students' exploration. In light of such results, considering how to promote exploration for all students may seem daunting. Fortunately, several of the results from this dissertation do provide some guidance for community college educators who are interested in promoting identity exploration in their classrooms, so as to positively impact student engagement and success. These findings are highlighted in the section below.

Implications for Community College Educators

Although the current dissertation represents an early foray into the exploration of motivation, identity processes, and academic achievement in the community college context, several of these early findings may prove useful to community college educators who are interested in working to understand the motivations and identity processes of their students and the connection of those engagements to students' academic achievement. The findings may also hold value for those educators looking to facilitate adaptive engagements in their own classrooms. In this section, I focus on expounding upon the latter issue (as the preceding sections address many of the theoretical issues that might aid educators in conceptualizing the motivational and identity related processes of their students).

One key takeaway from the three studies addressed in this dissertation, for those interested in facilitating students' adaptive engagements in the classroom, is that students exhibit different trajectories of identity exploration across a given course. Student identity exploration may take place in fits – occurring for a few weeks, then stopping, only to start again at a later point in time. It may occur relatively late in a semester or relatively early. Awareness of this fact is critical for community college educators, so as to dispel any notions that students who are not exhibiting identity exploration during a given period are unable or unwilling to do so, or that students who are exhibiting exploration will continue to do so. As students enter courses with different styles of engagement, experiences, and goals, they cannot be expected to engage in exploration in a uniform manner or on a uniform schedule. Rather, students' identity exploration appears to be a dynamic process and one that may require instructors' continued attention and maintenance, if students' active exploration is a desired goal of the instructor.

Beyond the individualized trajectories, it will also be important for community college educators to note that identity exploration prompting triggers appear highly individualized as well. As identified in this dissertation, students may be triggered by class discussions, a course overall, particular topics, specific pieces of information, class activities, or deliberate identity prompting assignments – among other things. Though this may appear overwhelming to educators looking to provide appropriate triggers for their students, such a findings also illustrates that a wide variety of content and experiences *can* trigger exploration. For example, one student in Study 3 noted that it was the opening day activity of learning classmates' names that triggered her exploration. Thus, particular courses do not necessarily have the market cornered on triggering exploration. In fact, the findings regarding triggers suggest that any course may be an environment for identity exploration.

Such variation as described above, however, does not mean that educators cannot potentially influence the frequency or manifestations of identity exploration in their courses. Indeed, the results from Study 3 suggest that identity prompts that contain more scaffolding (directions) and expectation for greater engagement in the assignment (in this case longer written passages) may help students take part in identity exploration and exploration of greater depth and cognitive engagement.

Additionally, results from Study 3 also indicate that educators should be aware of the words they use in their prompts for identity exploration, as student responses indicated that many students latched on to the words used in the prompts, and bound their responses within those parameters. Thus, educators may wish to tailor their language to the exploratory engagements they are attempting to promote, as well as their students' lexicon.

Furthermore, Study 3 results also suggested that educators who wish to facilitate identity exploration may benefit from actively monitoring levels of exploration over the course of the semester, so as to be able to identity changes in student engagement and potentially make adjustments to the course - so as to continue to facilitate student exploration. To that point, an educator monitoring exploration could have observed the drop-off in student engagement with the memos in the second half of the semester, witnessed in Study 3, and taken corrective action.

The studies also highlight that students may benefit from having different mediums through which to express their exploration. As noted in the previous sections, students may have been limited in engaging in or communicating their exploration due to the fact that only written outlets were provided. It would therefore appear to be of value for educators to potentially provide other possible media (e.g. video posts) through which students could engage.

Finally, and rather importantly, the studies highlight that course-triggered exploration may be relatively common for community college students. That students may generally be predisposed to course-triggered exploration (as supported by the frequency with which students in Study 2 and Study 3 reported exploration, as well as the adaptive mastery orientations and informational processing styles that students most strongly reported adopting) means that many students may be ready for such prompting, and that we only need to provide the necessary supports to facilitate sustained and meaningful exploration for students that can positively affect their academic achievement and personal growth.

Limitations

Necessarily, the three studies comprising this dissertation were not without limitations. Critically, due to IRB restrictions, student data (i.e. grades) were not allowed to be collected, and thus self-reported “expected grades” were relied upon. Thus, the observed relationships between grades and other variables, including achievement goals, may have been impacted by a constellation of beliefs, including self-efficacy, which might have influenced students’ perceptions of their course grade. Although such a consideration is speculative, in the future it will be imperative, where possible, to gather students’ actual grades, in addition to expected grades, as well as identifying information that will allow researchers to track other important outcomes, such as persistence and transfer.

A second limitation of the current work was the small sample of students who completed both surveys in Study 3. Student participation in the surveys was unexpectedly smaller than anticipated, especially given the high rates of participation evidenced in Study 1, thereby limiting the power to detect differences between pre and post survey scores. Thus, a goal of future research should be to either better incentivize participation in surveys of remedial students or to gather a larger cohort of remedial students – potentially across semesters.

A third limitation of the study was that in studying developmental English students via written assessments, there exists the possibility that the students' English skills may have limited their ability to adequately convey their experiences of course-triggered identity exploration, or inhibited their engagement in the exploratory process. Additionally, it is possible that the grammatical and spelling issues, such as those shown in the presented excerpts, may have impacted the researchers' abilities to detect exploration that students were attempting to convey. As such, future studies may seek to provide alternative means of expressing exploration with the course.

Implications for Future Research

In light of the findings detailed in this dissertation, several implications for future research are apparent. First, it is interesting to consider, that, despite the generally accepted importance of context to the exploratory process (Grotevant, 1987), both introductory psychology students and remedial English students (working in highly different contexts) reported similar levels of exploration. Subsequently, it will be important for future research to continue to explore how the nature and prevalence of course-triggered identity exploration may vary across courses, subjects, and other environments within the community college context – especially those with content which may be less "naturally conducive to exploration."

Second, given the variety of triggers identified by students across the studies, going forward it will be important to explore commonalities among typical triggers within the community college context, as well as the implications of broader and narrower triggers for students. For it may be that certain “types” of triggers are more or less effective and/or that certain types of triggers may elicit, or tend to elicit, certain trajectories of exploration. Expanding the knowledge base in this area will undoubtedly be critical to the development of future interventions aimed at promoting adaptive exploration.

Third, given that students were much more likely within the dimension “cognitive action” to report questioning or thinking in response to a trigger, than to report applying or changing perspective, it will be important to examine what the transition from questioning/thinking about identity relevant material to changing perspective and/or applying new understandings, beliefs, etc. looks like for community college students. Such an examination might yield important findings regarding mechanisms that might be implemented in course structures to further help students connect exploration to adaptive changes.

Fourth, given the variety of trajectories observed in the exploration cases, as well as the dimensionality of the course-triggered identity exploration evidenced in Studies 2 and 3, it may be important for future research to further consider how the presence and manifestations of particular dimensions of students’ exploration may change over the course of the semester and how that may relate to the motivational and identity related orientations adopted by students at different points in time over the semester.

Additionally, given the unexpected relationship between mastery-avoidance orientations and course grades found in Study 1, it will be critical for future research to continue to examine the relationships between motivational orientations and actual *and* expected course grades in the community college context, to see if this relationship holds.

Worthy of further consideration as well is the continued examination of the identity exploration prompts used in Study 3. As students evidenced different types of engagement with the three activities, it may be important to consider their effects in isolation from one another as well as the characteristics of each that may drive exploration.

Finally, it will be important for future research to go beyond the bounds of isolated courses, and to attempt to examine the motivational orientations and identity exploration of students over multiple courses within the same semester, and across students' collegiate careers. Such research will be critical to furthering our understanding of the role of identity and motivation in students' academic success.

Conclusion

Using the theoretical frameworks of Achievement Goal theory (Ames, 1992), Identity Processing Style (Brezonsky, 1989), and Flum and Kaplan's (2006) perspective on identity exploration and its promotion in educational settings (Kaplan, Sinai & Flum, 2014), this dissertation extended motivational and identity research conducted in other educational contexts to the community college setting – casting light on a scarcely researched domain within that context. The findings from the three studies conducted as part of this dissertation provided important insights into motivation and identity processes in the community college setting, and highlighted how identity exploration might be used to positively affect the relatively lower rates of success that community college students experience. The studies also identified specific course features that could be used to help promote course-triggered identity exploration and, vis a vis, adaptive student engagements and academic achievement.

More specifically, the results of the current dissertation suggest that within the contexts studied: 1) course-triggered identity exploration and motivational and identity processing orientations are phenomenologically related, 2) mastery-avoidance goals appear related to expected course grades, 3) course-triggered identity exploration appears to be a common and multidimensional process for students, 4) in many respects, course-triggered identity exploration appeared similar for introductory psychology students and developmental English students, 5) trajectories for course-triggered identity exploration across the semester appeared variable and individualized (but evidenced certain patterns as well), and 6) as groups, students from both samples reported most strongly adopting mastery-approach goal orientations and informational-identity processing styles.

Notwithstanding the limitations of the studies, these findings collectively provide support for the contention that instigating identity exploration within the academic context may help community college students adopt adaptive engagements with the curriculum and ultimately impact student success. Given such findings, the undertaking of further research within this domain, as outlined above, is imperative.

REFERENCES

American Association of Community Colleges. (2013). *Community college fact sheet*. Washington, DC.

American Institutes for Research. (2011). *The hidden costs of community college*. Wahington, DC: Schnelder, M. & Yin, Lu.

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*, 261-271. DOI: 10.1037/0022-0663.84.3.261

Arnett, J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. American Psychologist, 55(5), 469-480. doi:10.1037/0003-066X.55.5.469

Attewell, P., Lavin, D., Domina, T., & Levey, T. (2006). New evidence on college remediation. *The Journal of Higher Education, 77*(5), 886-924. doi:10.1353/jhe.2006.0037

Bahr, P. R. (2008). Does mathematics remediation work?: A comparative analysis of academic attainment among community college students. *Research in Higher Education, 49,* 420–450

Bahr, P. R. (2010c). Making sense of disparities in mathematics remediation: What is the role of student retention? *Journal of College Student Retention, 12*, 25–49.

Bahr, P. R. (2012). Deconstructing remediation in community colleges: Exploring associations between course-taking patterns, course outcomes, and attrition from the remedial math and remedial writing sequences. *Research in Higher Education*, *53*(6), 661-693. doi:10.1007/s11162-011-9243-2

Bailey, T. (2009). Challenge and Opportunity: Rethinking the Role and Function of Developmental Education in Community College. *New Directions For Community Colleges*, *145*, 11-30.

Bailey T. R., Leinbach T., Jenkins D. (2006). *Is student success labeled institutional failure? Student goals and graduation rates in the accountability debate at community colleges.* New York, NY: Columbia University, Teachers College, Community College Research Center.

Bailey, T., Calcagno, J. C., Jenkins, D., Kienzl, G., Leinbach, T., & Columbia Univ., New York, NY. Teachers College. (2005). *The effects of institutional factors on the success of community college students*. Community College Research Center, Teachers College, Columbia University.

Bandura, A. (1977). Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.

Barnes, R. A., & Piland, W. E. (2011). Impact of learning communities in developmental English on community college student retention and persistence. *Journal of College Student Retention: Research, Theory & Practice*, *12*(1), 7-24.

Barnett, E. A. (2011). Validation experiences and persistence among community college students. *The Review of Higher Education, 34*, 193-230.

Berman, S. L., Kennerley, R. J., & Kennerley, M. A. (2008). Promoting adult identity development: A feasibility study of a university-based identity intervention program. *Identity: An International Journal of Theory and Research*, *8*(2), 139-150. doi:10.1080/15283480801940024

Berzonsky, M. D. (1989). Identity style: Conceptualization and measurement. Journal of *Adolescent Research*, *4*(3), 268-282. doi:10.1177/074355488943002

Berzonsky M. D. & L. S. Kuk. (2000). Identity status, identity processing style, and the transition to university. *Journal of Adolescent Research, 15,* 81-98. DOI: 10.1177/0743558400151005

Berzonsky M. D. & L. S. Kuk. (2005). Identity style, psychosocial maturity, and academic performance. *Personality and Individual Differences*, *39*, 235–247.

Berzonsky, M. D., Branje, S. J. T., & Meeus, W. (2007). Identity-processing style, psychosocial resources, and adolescents' perceptions of parent-adolescent relations. *The Journal of Early Adolescence*, *27*, 324-345. DOI: 10.1177/0272431607302006

Bloom, B. (1956). *Taxonomy of educational objectives: Handbook-1. Cognitive domain*. New York: David McKay.

Brown, A. L. (1992). Design experiments: Theoretical and methodological challenges in creating complex interventions in classroom settings. The Journal of the Learning Sciences, 2(2), 141-178. doi:10.1207/s15327809jls0202_2

Burns, K. (2010). At issue: community college student success variables: a review of the literature. *Community College Enterprise*, *16*(2), 33+. Retrieved from http://go.galegroup.com.libproxy.temple.edu/ps/i.do?id=GALE%7CA251086968&v=2.1&u=temple_main&it=r&p=AONE&sw=w&asid=620c08d8e26e723fa321771a921063f5

Calcagno, J. C., Bailey, T., Jenkins, D., Kienzl, G., & Leinbach, T. (2008). Community college student success: What institutional characteristics make a difference? *Economics of Education Review, 27*(6), 632-645.

Cho, S., & Karp, M. M. (2013). Student success courses in the community college: Early enrollment and educational outcomes. *Community College Review, 41*(1), 86-103. Retrieved from http://search.proquest.com/docview/1319492756?accountid=14270

Clotfelter, C. T., Ladd, H. F., Muschkin, C. G., & Vigdor, J. L. (2013). Success in community college: Do institutions differ? *Research in Higher Education, 54*(7), 805-824. doi:10.1007/s11162-013-9295-6

Cobb, P., Confrey, J., diSessa, A., Lehrer, R., & Schauble, L. (2003). Design experiments in educational research. Educational Researcher, 32(1), 9-13. doi:10.3102/0013189X032001009

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, *20*(1), 37-46.

Cohen, Arthur M.; Brawer, Florence B.; Kisker, Carrie B. (2013). American Community College, The. Jossey-Bass. Retrieved from http://www.myilibrary.com.libproxy.temple.edu?ID=514362

Dayton, E. (2005). Factors that influence adult success at community college. *The Community College Enterprise*, *11*(1), 45-60. Retrieved from http://search.proquest.com/docview/218820288?accountid=14270

Deci, E., Vallerand, R., Pelletier, L., & Ryan, R. (1991). Motivation and Education - The Self-Determination Perspective. Educational Psychologist, 26(3-4), 325-346. doi:10.1207/s15326985ep2603&4_6

Granit-Dgani, D., Kaplan, A., and Flum, H. (2016).Theory-based assessment in environmental education: a tool for formative evaluation. *Environmental Education Research*, 1-31. http://dx.doi.org/10.1080/13504622.2016.1144172

Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental contexts during adolescence. *Journal of Research on Adolescence, 21*(1), 225-241. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ929086&site=ehost-live&scope=site; http://dx.doi.org/10.1111/j.1532-7795.2010.00725.x

Elliot, A. J., McGregor, H. A., & Gable, S. (1999). Achievement goals, study strategies, and exam performance: A mediational analysis. *Journal of Educational Psychology, 91*(3), 549-563. doi:10.1037/0022-0663.91.3.549

Elliot, A. J., & McGregor, H. A. (2001). A 2 × 2 achievement goal framework. *Journal of Personality and Social Psychology, 80*, 501– 519.

Elliot, A. J., Shell, M. M., Henry, K. B., & Maier, M. A. (2005). Achievement goals, performance contingencies, and performance attainment: an experimental test. *Journal of Educational Psychology*, *97*, 630-640. DOI: 10.1037/0022-0663.97.4.630

Elliot, A. J., & Murayama, K. (2008). On the measurement of achievement goals: Critique, illustration, and application. *Journal of Educational Psychology, 100*(3), 613-628. doi:10.1037/0022-0663.100.3.613

Elliot, A., Murayama, K., & Pekrun, R. (2011). A 3 x 2 achievement goal model. *Journal of Educational Psychology*, *103*(3), 632-648. doi:10.1037/a0023952

Flum, H., & Kaplan, A. (2006). Exploratory orientation as an educational goal. *Educational Psychologist, 41*(2), 99-110. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ736297&site=ehost-live&scope=site; http://dx.doi.org/10.1207/s15326985ep4102_3

Freeman, J. P. (2007). Community colleges in higher education: the role of community colleges in serving the underserved student. *Planning for Higher Education*, *35*, 56-62.

Friedlander, J. & Macdougall, P. (1992). Achieving student success through student involvement. *Community College Review*, *20*(1), 20-28. doi:10.1177/009155219202000104

Friedman, B. A., & Mandel, R. G. (2012). Motivation predictors of college student academic performance and retention. *Journal of College Student Retention: Research, Theory & Practice*, *13*(1), 1-15.

Gilroy, M. (2010). Studies show remedial courses in community colleges yield mixed results. The Hispanic Outlook in Higher Education, 20, 30-31. Retrieved from http://search.proquest.com/docview/219196246?accountid=14270

Goldrick-Rab, S. (2007). *Promoting academic momentum at community colleges: Challenges and opportunities* (CCRC Working Paper No. 5). New York, NY: Community College Research Center, Teachers College, Columbia University.

Goldrick-Rab, S. (2010). Challenges and opportunities for improving community college student success. *Review of Educational Research*, *80*(3), 437-469. doi:10.3102/0034654310370163

Grimes, S. K. (1997). Underprepared community college students: Characteristics, persistence, and academic success. *Community College Journal of Research and Practice*, *21*(1), 47-56. doi:10.1080/1066892970210105

Guttman, R., & Greenbaum, C. W. (1998). Facet theory: Its development and current status. *European psychologist*, *3*(1), 13.

Harrell-Levy, M. K., & Kerpelman, J. L. (2010). Identity process and transformative pedagogy: Teachers as agents of identity formation. *Identity, 10*(2), 76-91. doi:10.1080/15283481003711684

Hartley, M. (2008). Community college missions in the 21st century. Review of Higher Education, 31(2), 245-246. Retrieved from http://search.proquest.com/docview/220821659?accountid=14270

Horn, C., McCoy, Z., Campbell, L., & Brock, C. (2009). Remedial testing and placement in community colleges. *Community College Journal of Research and Practice, 33*(6), 510-526. doi:10.1080/10668920802662412

Horton, D. (2009). Class and Cleats: Community College Student Athletes and Academic Success. *New Directions For Community Colleges*, *147*, 15-27.

Hout, M. C., Papesh, M. H., & Goldinger, S. D. (2013). Multidimensional scaling. *Wiley Interdisciplinary Reviews: Cognitive Science*, *4*(1), 93-103. doi:10.1002/wcs.1203

Howell, A. J., & Buro, K. (2009). Implicit beliefs, achievement goals, and procrastination: A mediational analysis. Learning and Individual Differences, 19(1), 151-154. doi:10.1016/j.lindif.2008.08.006

Hoyert, M. S., & O'Dell, C.,D. (2009). Goal orientation and academic failure in traditional and nontraditional aged college students. *College Student Journal, 43*(4), 1052-1061. Retrieved from http://search.proquest.com/docview/236523299?accountid=14270

Hoyt, J. E. (1999). Remedial education and student attrition. *Community College Review, 27*(2), 51. Retrieved from http://search.proquest.com/docview/213200494?accountid=14270

Hulleman, C. S., & Harackiewicz, J. M. (2009). Promoting interest and performance in high school science classes. *Science, 326*(5958), 1410-1412. doi:10.1126/science.1177067

Hulleman, C. S., Schrager, S. M., Bodmann, S. M., & Harackiewicz, J. M. (2010). A meta-analytic review of achievement goal measures: Different labels for the same constructs or different constructs with similar labels? *Psychological Bulletin, 136*(3), 422-449. doi:10.1037/a0018947

Hynes, P., Perez, A., & McShannon, J. (2012). Community college faculty development program and student achievement. *Community College Journal of Research and Practice, 36*(5), 379. doi:10.1080/10668920902813469

Jacoby, D. (2006). Effects of part-time faculty employment on community college graduation rates. *The Journal of Higher Education, 77*(6), 1081-1103. doi:10.1353/jhe.2006.0050

Kaplan, A. (2008). Achievement motivation. In E. Anderman & L. H. Anderman (Eds.), *Psychology of Classroom Learning: An Encyclopedia* (Vol. 1, pp. 13-17). Detroit, MI: Macmillan Reference.

Kaplan, A., & Flum, H. (2009). Motivation and identity: The relations of action and development in educational contexts–An introduction to special issue. *Educational Psychologist, 44*(2), 73 – 77.

Kaplan, A., & Flum, H. (2010). Achievement goal orientations and identity formation styles. *Educational Research Review, 5*, 50–67.

Kaplan, A., & Flum, H. (2012). Identity formation in educational settings: A critical focus for education in the 21st century. *Contemporary Educational Psychology, 37*(3), 171-175. doi:10.1016/j.cedpsych.2012.01.005

Kaplan, A. & Maehr, M. L. (2007). The contributions and prospects of goal orientation theory. *Educational Psychology Review, 19*(2), 141-184.

Kincaid, J. P., Fishburne, R. P., Rogers, R. L. & Chissom, B. S. (1975). *Derivation of new readability formulas (Automated Readability Index, Fog Count and Flesch Reading Ease Formula) for Navy enlisted personnel*, Research Branch Report 8–75, Millington, TN: Naval Technical Training, U. S. Naval Air Station, Memphis, TN.

Kostecki, J., & Bers, T. (2008). The effect of tutoring on student success. Journal of Applied Research in the Community College, 16(1), 6-12. Retrieved from http://search.proquest.com/docview/214835842?accountid=14270

Lamkin, M. D. (2004). To achieve the dream, first look at the facts. *Change, 36*(6), 12-15.

Lannegrand-Willems, L., & Bosma, H. A. (2006). Identity development-in-context: The school as an important context for identity development. *Identity, 6*(1), 85-113. doi:10.1207/s1532706xid0601_6

Liao, H., Ferdenzi, A. C., & Edlin, M. (2012). Motivation, self-regulated learning efficacy, and academic achievement among international and domestic students at an urban community college: A comparison. *The Community College Enterprise, 18*(2), 9-38. Retrieved from http://search.proquest.com/docview/1287963109?accountid=14270

Linnenbrink-Garcia, L., Tyson, D. F., & Patall, E. A. (2008). When are achievement goal orientations beneficial for academic achievement? A closer look at main effects and moderating factors. *Revue internationale de psychologie sociale, 21*(1), 19-70.

Lundberg, C. A. (2014). Peers and faculty as predictors of learning for community college students. Community College Review, 42(2), 79-98. doi:10.1177/0091552113517931

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 3*(5), 551-558. doi:10.1037/h0023281

Mesa, V. (2012). Students and the misalignment of instructor perceptions achievement goal orientations of community college mathematics. *Community College Review, 40,* 46-74. doi: 10.1177/009155211143566

Midgley, C., Kaplan, A., Middleton, M., Maehr, M. L., Urdan, T., Anderman, L. H., ... & Roeser, R. (1998). The development and validation of scales assessing students' achievement goal orientations. *Contemporary educational psychology*, *23*(2), 113-131.

Midgley, C., Maehr, M. L., Hruda, L. Z., Anderman, E., Anderman, L., Freeman, K. E., et al. (2000). *Manual for the patterns of adaptive learning scales (PALS)*. Ann Arbor, MI: University of Michigan.

Minkler, J. E. (2002). ERIC review: Learning communities at the community college. *Community College Review*, *30*(3), 46-62. Retrieved from http://search.proquest.com/docview/213201620?accountid=14270

Miller, M. T., & Deggs, D. (2012). The role of rural community colleges in the development of personal identity. *Community College Journal of Research and Practice, 36*(5), 330-339.

Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology*, *38*, 30-38.

Nakajima, M. A., Dembo, M. H., & Mossler, R. (2012). Student persistence in community colleges. *Community College Journal of Research and Practice, 36*(8), 591-613.

Nitecki, E. M. (2011). The power of the program: How the academic program can improve community college student success. Community College Review, 39(2), 98-120. Retrieved from http://search.proquest.com/docview/869529682?accountid=14270

O'Gara, L., Karp, M. M., & Hughes, K. L. (2009). Student success courses in the community college: An exploratory study of student perspectives. *Community College Review, 36*(3), 195-218. Retrieved from http://search.proquest.com/docview/213288345?accountid=14270

Padilla-Walker, L. M., Barry, C. M., Carroll, J. S., Madsen, S. D., & Nelson, L. J. (2008). Looking on the bright side: The role of identity status and gender on positive orientations during emerging adulthood. Journal of Adolescence, 31(4), 451-467. doi:10.1016/j.adolescence.2007.09.001

Peggy (Pei-Hsuan) Hsieh, Sullivan, J. R., & Guerra, N. S. (2007). A closer look at college students: Self-efficacy and goal orientation. *Journal of Advanced Academics*, *18*(3), 454-476,488-489,491. Retrieved from http://search.proquest.com/docview/222734940?accountid=14270

Phillips, T. M. (2008). Age-related differences in identity style: A cross-sectional analysis. *Current Psychology*, *27*(3), 205-215. doi:10.1007/s12144-008-9035-9

Pintrich, P. R. (2000). Multiple goals, multiple pathways: The role of goal orientation in learning and achievement. *Journal of Educational Psychology, 92*(3), 544-555. doi:10.1037/0022-0663.92.3.544

Raftery, S. (2005). Developmental learning communities at metropolitan community college. *New Directions for Community Colleges*, *2005*(129), 63-72. doi:10.1002/cc.186

Rutschow, E. Z., Cullinan, D., Welbeck, R., & MDRC. (2012). *Keeping students on course: An impact study of a student success course at guilford technical community college*. Executive summary. MDRC.

Sideridis, G. (2008). The regulation of affect, anxiety, and stressful arousal from adopting mastery-avoidance goal orientations. *Stress and Health*, *24*(1), 55-69. doi:10.1002/smi.1160

Sinai, M., Kaplan, A., & Flum, H. (2012). Promoting identity exploration within the school curriculum: A design-based study in a Junior High literature lesson in Israel. *Contemporary Educational Psychology, 37*(3), 195-205.

Sinai, M., Kaplan, A., & Flum, H. (2012, April). *Students' Achievement Goals and Identity Exploration in the Classroom Context*. Paper presented at the annual meeting of the American Educational Research Association, Vancouver BC, Canada.

Smits, I., Soenens, B., Vansteenkiste, M., Luyckx, K., & Goossens, L. (2010). Why do adolescents gather information or stick to parental norms? Examining autonomous and controlled motives behind adolescents' identity style. *Journal of Youth and Adolescence, 39*(11), 1343-1356. doi:10.1007/s10964-009-9469-x

Soenens, B., Berzonsky, M. D., Dunkel, C. S., Papini, D. R., & Vansteenkiste, M. (2011). Are all identity commitments created equally? the importance of motives for commitment for late adolescents' personal adjustment. *International Journal of Behavioral Development, 35*(4), 358-369. doi:10.1177/0165025411405954

Taing, M. U., Smith, T., Singla, N., Johnson, R. E., & Chang, C. (2013). The relationship between learning goal orientation, goal setting, and performance: A longitudinal study. *Journal of Applied Social Psychology, 43*(8), 1668-1675. doi:10.1111/jasp.12119

Treat, T., & Barnard, T. C. (2012). Seeking legitimacy: The community college mission and the honors college. *Community College Journal of Research and Practice, 36*(9), 695-712.

United States Department of Education. National Center for Education Statistics. (2011). *Enrollment in postsecondary institutions, fall 2009; graduation rates, 2003 & 2006 cohorts; and financial statistics, fiscal year 2009; first look*. Washington, DC: Author.

VanOra, J. (2012). The experience of community college for developmental students: challenges and motivations. *Community College Enterprise, 18*(1), 22+. Retrieved from http://go.galegroup.com.libproxy.temple.edu/ps/i.do?id=GALE%7CA290733897&v=2.1&u=temple_main&it=r&p=AONE&sw=w&asid=ad05dcc5815be11a8c3ba9f7ffabd8bd

Waterman, A. S. (2007). Doing well: The relationship of identity status to three conceptions of well-being. *Identity: An International Journal of Theory and Research, 7*(4), 289– 307.

Waycaster, P. (2001). Factors impacting success in community college developmental mathematics courses and subsequent courses. *Community College Journal of Research and Practice, 25*, 403-416.

Weiss, M. J., Mayer, A., Cullinan, D., Ratledge, A., Sommo, C., & Diamond, J. (2014). A random assignment evaluation of learning communities at kingsborough community college – seven years later. *Journal of Research on Educational Effectiveness*, doi:10.1080/19345747.2014.946634

Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology, 25*(1), 68-68. doi:10.1006/ceps.1999.1015

Williamson, J. M. L. & Martin, A.G. (2010). Analysis of patient information leaflets provided by a district general hospital by the Flesch and Flesch–Kincaid method. *International Journal of Clinical Practice*, *64*(13), 1824-1831.

Windham, M. H., Rehfuss, M. C., Williams, C. R., Pugh, J. V., & Tincher-Ladner, L. (2014). Retention of first-year community college students. *Community College Journal of Research and Practice*, *38*(5), 466-477. doi:10.1080/10668926.2012.743867

Zeidenberg, M. (2008). Community colleges under stress. *Issues in Science and Technology*, *24*(4), 53-58. Retrieved from http://search.proquest.com/docview/195927426?accountid=14270

APPENDIX A.

STUDENT SURVEY

Dear student,

In the following pages you will find a number of statements about beliefs, attitudes, and/or ways of dealing with issues in your education at the community college. Read each carefully and use it to describe yourself. On the answer sheet, circle the number that indicates the extent to which you think the statement represents you. There are no right or wrong answers. For instance, if the statement is very much like you, mark a 5; if it is not like you at all, mark a 1; if it is somewhat like you but not very much, mark a 4. Use the 1 to 5 point scale to indicate the degree to which you think each statement is uncharacteristic (1) or characteristic (5) of yourself.

When you think about the decisions you have made in the community college, how much are the following statements representative of you?

	1 Not at all like me	2 Not so much like me	3 So so	4 Pretty much like me	5 Very much like me
1. In my education at MCCC, I know basically what I believe and don't believe.	1	2	3	4	5
2. In my education at MCCC, I automatically adopt and follow the values I was brought up with.	1	2	3	4	5
3. With regard to my education at MCCC, I'm not sure where I'm heading in my life; I guess things will work themselves out.	1	2	3	4	5
4. With regard to my education at MCCC, I know what I want to do with my future.	1	2	3	4	5

	1 Not at all like me	2 Not so much like me	3 So so	4 Pretty much like me	5 Very much like me
5. In my education at MCCC, talking to others helps me explore my personal beliefs.	1	2	3	4	5
6. In my education at MCCC, I strive to achieve the goals that my family and friends hold for me.	1	2	3	4	5
7. With regard to my education at MCCC, I am not really sure what I believe.	1	2	3	4	5
8. When facing a decision at MCCC, I take into account different points of view before making a choice.	1	2	3	4	5
9. With regard to my education at MCCC, I have always known what I believe and don't believe; I never really have doubts about my beliefs.	1	2	3	4	5
10. Many times, by not concerning myself with personal problems at MCCC, they work themselves out.	1	2	3	4	5
11. In my education at MCCC, I am not sure which values I really hold.	1	2	3	4	5
12. In my education at MCCC, I never question what I want to do because I tend to follow what important people expect me to do.	1	2	3	4	5
13. In my education at MCCC, I am not really thinking about my future now, it is still a long way off.	1	2	3	4	5
14. With regard to my education at MCCC, I am not sure what I want to do in the future.	1	2	3	4	5
15. When facing a decision at MCCC, I try to analyse the situation in order to understand it.	1	2	3	4	5

	1 Not at all like me	2 Not so much like me	3 So so	4 Pretty much like me	5 Very much like me
16. With regard to my education at MCCC, I think it is better to adopt a firm set of beliefs than to be open-minded.	1	2	3	4	5
17. When I have to make an important decision at MCCC, I try to wait as long as possible in order to see what will happen.	1	2	3	4	5
18. In my education at MCCC, I have clear and definite life goals.	1	2	3	4	5
19. With regard to my education at MCCC, I am not sure what I want out of life.	1	2	3	4	5
20. When making important decisions at MCCC, I like to think about my options.	1	2	3	4	5
21. With regard to my education at MCCC, I think it's better to hold on to fixed values rather than to consider alternative value systems.	1	2	3	4	5
22. At MCCC, I try not to think about or deal with personal problems as long as I can.	1	2	3	4	5
23. In my education at MCCC, I have a definite set of values that I use to make personal decisions.	1	2	3	4	5
24. At MCCC, I handle problems by actively reflecting on them.	1	2	3	4	5
25. At MCCC, I prefer to deal with situations in which I can rely on social norms and standards.	1	2	3	4	5
26. At MCCC, I try to avoid personal situations that require me to think a lot and deal with them on my own.	1	2	3	4	5

	1 Not at all like me	2 Not so much like me	3 So so	4 Pretty much like me	5 Very much like me
27. In my education at MCCC, I am emotionally involved and committed to specific values and ideals.	1	2	3	4	5
28. When making important decisions at MCCC, I like to have as much information as possible.	1	2	3	4	5
29. When I make a decision about my future at MCCC, I automatically follow what close friends or relatives expect from me.	1	2	3	4	5
30. In my education at MCCC, sometimes I refuse to believe a problem will occur, and subsequently things manage to work themselves out.	1	2	3	4	5
31. In my education at MCCC, when others say something that challenges my personal values or beliefs, I automatically disregard what they have to say.	1	2	3	4	5
32. At MCCC, who I am changes from situation to situation.	1	2	3	4	5
33. It is important for me to obtain and evaluate information from a variety of sources before I make important decisions at MCCC.	1	2	3	4	5
34. At MCCC, when personal problems arise, I try to delay acting as long as possible.	1	2	3	4	5

The following items ask you about your experiences **in this specific course**. Please indicate, how much like you are the following statements. Use the 1 to 5 point scale to indicate the degree to which you think each statement is uncharacteristic (1) or characteristic (5) of yourself.

	1 Not at all like me	2 Not so much like me	3 So so	4 Pretty much like me	5 Very much like me
35. I'm certain I can master the skills taught in this course.	1	2	3	4	5
36. One of my goals in this course is to look smart in comparison to the other students.	1	2	3	4	5
37. It is important to me that I'm not behind in learning the material compared to how I was able to learn before.	1	2	3	4	5
38. It's important to me that I improve the skills that I'm learning in this course.	1	2	3	4	5
39. I feel that, in this course, many times I look at myself in a different way from what I'm used to.	1	2	3	4	5
40. I'm certain I can figure out how to do the most difficult work in this course.	1	2	3	4	5
41. One of my goals in this course is that the pace of my learning is not slower than it has been in the past.	1	2	3	4	5
42. One of my goals in this course is to show others that I'm good at my class work.	1	2	3	4	5
43. One of my goals in this course is to avoid looking like I have trouble doing the work.	1	2	3	4	5
44. One of my goals in this course is to keep others from thinking I'm not smart in class.	1	2	3	4	5
45. One of my goals in this course is not to forget what I've learned.	1	2	3	4	5

	1 Not at all like me	2 Not so much like me	3 So so	4 Pretty much like me	5 Very much like me
46. It's important to me that the instructor in this course doesn't think that I know less than the other students.	1	2	3	4	5
47. There are things in this course that lead me to find out all kinds of things about myself.	1	2	3	4	5
48. I can do almost all the work in this course if I don't give up.	1	2	3	4	5
49. One of my goals in this course is not to miss opportunities to learn all that I want to learn.	1	2	3	4	5
50. It's important to me that I look smart compared to others in this course.	1	2	3	4	5
51. One of my goals in this course is to learn as much as I can.	1	2	3	4	5
52. I can do even the hardest work in this course if I try.	1	2	3	4	5
53. It is very important to me not to forget the material I've learned in this course so far.	1	2	3	4	5
54. It's important to me that I don't look stupid in this course.	1	2	3	4	5
55. It's important to me that other students in this course think I am good at my class work.	1	2	3	4	5
56. Often, what happens in this course leads me to think about who I am.	1	2	3	4	5
57. I want to avoid a situation in which I won't be able to use the time that I'm given in this course to learn the material.	1	2	3	4	5
58. It's important to me that I learn a lot of new concepts in this course.	1	2	3	4	5
59. Even if the work in this course is hard, I can learn it.	1	2	3	4	5

	1 Not at all like me	2 Not so much like me	3 So so	4 Pretty much like me	5 Very much like me
60. One of my goals in this course is to master a lot of new skills.	1	2	3	4	5
61. I want to avoid a situation in which I don't understand the course material deeply.	1	2	3	4	5
62. The assignments in this course lead me to ask questions about my life.	1	2	3	4	5
63. It's important to me that I thoroughly understand my class work in this course.	1	2	3	4	5
64. One of my goals in this course is to show others that class work is easy for me.	1	2	3	4	5
65. I want to avoid situations where I don't understand all that I want to learn in this course.	1	2	3	4	5
66. It is a priority for me to avoid losing what I've already learned in this course.	1	2	3	4	5
67. I feel that learning in this course raises questions for me about myself.	1	2	3	4	5

Please look again at the last question (#67): "I feel that learning in this course raises questions for me about myself." Please explain in words, what you meant by circling the number you did:

What grade do you expect to get in this course? (A, B, C, D, F) _____________

I am:

Male ______ Female______

Age_____

Country of birth: ____________ City of birth: _______________

Ethnicity: ___________________

What is your main goal for studying at MCCC? (Mark only one)

___ I want to transfer to a 4-year university

___ I want to learn a profession (which? ________________)

___ I want to expand my horizons

___ I'm not sure

I am a(n):

___ Full time student at MCCC

___Part-time student at MCCC

___Student at a four-year institution taking summer courses

___Other [please identify____ ___________]

APPENDIX B.

CASE EXPLORATION CHART[1]

Student	Pre-Survey Achievement Goal Orientation[2]	Pre-Survey Identity Processing Style/State[2]	Pre-Survey Identity Exploration	Memos Completed	Memos with Exploration	Avg. Cognitive Engagement on Memos	Identity Exploration in Final Identity Assign.	Final Identity Assign. Cognitive Engagement	Post-Survey Achievement Goal Orientation[2,3]	Post-Survey Identity Processing Style/State[2,3]	Post-Survey Identity Exploration[3]
Jane	Mastery-Approach (4.4)	Commitment (3.8)	3.6	13	4	1.2 (Low)	Yes	2 (Moderate)	Mastery-Approach (5.0)	Commitment (4.6)	3.6
Kelli	Mastery-Approach (4.0)	Commitment (3.6)	2.0	5	2	1 (Low)	Yes	1 (Low)	Mastery-Approach (4.0)	Commitment (4.4)	2.8
Tyesha	Mastery-Approach (4.8)	Informational (4.3)	4.4	13	0	1 (Low)	Yes	2 (Moderate)	Mastery-Approach (4.8)	Commitment (4.4)	4.8
Andrea	Mastery-Approach (4.0)	Commitment (3.6)	3.8	12	0	1 (Low)	Yes	1 (Low)	Mastery-Approach (4.0)	Commitment (3.6)	3.2
Alistair	Mastery-Avoidance (4.4)	Informational (4.6)	2	12	0	1.4 (Low)	No	1 (Low)	Mastery-Avoidance (4.4)	Informational (3.9)	2.6

[1]Scores displayed are on a 5 point Likert-style scale

[2]The achievement goal orientation or identity processing style/state that students' most strongly reported adopting is displayed

[3]Cells colored in green represent increased scores from pre to post surveys. Cells colored red represent decreases. Cells colored in blue represent changes in the achievement goal orientation or identity processing style/state most strongly adopted by students.