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THE RELATION OF VOCATIONAL IDENTITY DEVELOPMENT TO COLLEGE FRESHMEN RETENTION: A SHORT-TERM LONGITUDINAL STUDY

Cheryl Ann Bryan

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FRESHMEN RETENTION: A SHORT-TERM LONGITUDINAL STUDY

BY

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B.A., Psychology, University of New Mexico, 2004

M.S., Psychology, University of New Mexico, 2008

DISSERTATION

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Abstract

The overarching goal of this study was to investigate vocational identity formation and how it influences first year college student retention. Specifically, does the vocational identity of Freshmen college students, who have been accepted to college directly from high school, relate to whether or not they drop out of college in their first year of studies? Students were recruited in New Mexico at both the University of New Mexico (a 4-year university) and Central New Mexico Community College (a 2-year community college). This study was unique in that it employed a short-term longitudinal design to help interpret why some students withdraw during their first year of college and why others persist, by examining where students are on the continuum of vocational identity development in relation to their college enrollment status at each wave of participation. At each session students completed the Vocational Identity Status Assessment (Porfeli, 2009; Porfeli, Lee, Vondracek, & Weigold, 2011), to assess their vocational identity status, and gave a self-report of their college enrollment as well as their intent to enroll the following semester. The two main hypotheses related to vocational identity influencing Freshman college retention during this study were as follows: (1) students who score in the high commitment statuses of

Achieved and Foreclosed would stay enrolled in college, and (2) students who scored in the low commitment status of Diffused would drop out of college. Neither of these hypotheses were supported in this research, as virtually all students who remained in the study also reported college enrollment and planned to attend the following semester. Therefore, no students who dropped out of college stayed in the study. This resulted in no determination of vocational identity influencing Freshman college retention. However, the identity status of Searching Moratorium did show developmental change in that these students reduced their Career Flexibility scores, which is a component of Career Reconsideration. Additionally, student variables of (1) parental income and (2) met with a career counselor, did influence where a student had progressed in developing a vocational identity upon entering college. Implications and suggestions for future research are discussed.

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Introduction

The Problem of College Retention

For adolescents who attend college in the United States, nearly half do not complete their degree program, and approximately half of those students drop out in their first year (Ackerman & Schibrowsky, 2007; Bray, Braxton, & Sullivan, 1999; Pascarella & Terenzini, 2005; Tinto, 1975; Willcoxson, 2010; Williams, 2011; Wintre, Bower, Gordner, & Lange, 2006). Over the last 60 years little change has occurred in college retention rates. In a national study, Iffert (1958) found that in the first year of college 27.3% of students dropped out, and another 28.3% left school during the next three years. Although there are a variety of reasons that students drop out of college, Hackman and Dysinger (1970) recognized three distinct groups: forced withdrawals (inadequate academic performance), along with two types of voluntary withdrawals (those who either transfer to another institution or later return to their primary institution; and those who do not return to college to complete their degree at any institution). While some students may return later to complete a degree, it is important to understand why so many students do not succeed during their first college admission.

Concern over retaining capable students in higher educational institutions became a focus of attention for educators around the mid-1900s. This prompted a large-scale study by Iffert (1958) for the United States Department of Health, Education, and Welfare. Iffert collected data nationally from 147 varying institutions (i.e., universities, technological institutions, liberal arts colleges, teachers colleges, and junior colleges), beginning with first-time freshmen enrolled in the Fall of 1950. Iffert (1958) examined student characteristics (e.g., gender, ability, and motivation), student self-identified factors (e.g., subject-career interest), and student ratings of institutional variables (e.g., how satisfied were they with

various services or facilities). He examined how those variables, individually, affected the duration of attendance and/or why the student stopped attending or transferred to another institution. At the time, his report was considered the most comprehensive empirical and theoretical examination of student retention and withdrawal in higher education (Bloom & Webster, 1960). It became “the national yardstick for any subsequent research attempts” (Marsh, 1966, p. 476).

Tinto’s Retention Model

One of the principle models used in today’s research on retention was proposed by Tinto (1975), whose model ushered in a new way of understanding student retention. Tinto advocated that a theoretical model was needed to address (a) the interactions between the individual and the institution, and (b) the importance of distinguishing the features between academic and social domains. Tinto thought that these two domains (academic and social) would have a “reciprocal functional relationship” (p. 92); meaning that, in the best case, these main areas of campus life would complement each other and reduce withdrawal. However, Tinto also stated that if there was more of an emphasis in one area, that area would most likely detract from the other. For example, if a student was spending all of her or his time studying, then s/he would not integrate socially; or, if the student was socializing too much, her or his grades would suffer. Either imbalance would most likely result in the student dropping out, whether voluntarily or forced.

Tinto (1975) suggested that a combination of student factors would determine her or his commitment to degree completion. Tinto explained that students enter college with “specific attributes” (e.g., ability, ethnicity, sex), “precollege experiences” (e.g., high school grades, academic and social achievement), and “family backgrounds” (e.g., socio-economic

status, atmosphere of expectation, and value environment). Students also enter college with expectations and motivational attributes (i.e., educational and career expectations, along with her or his motivational level for academic achievement). Together, these student characteristics and influences become an individual's "educational goal commitment" (Tinto, 1975, p. 93). Tinto believed that student characteristics directly impact academic performance in college, as well as indirectly by influencing expectation and commitment development. He further suggested that when other attributes are equal, educational goal commitment would relate directly to persistence in higher education (Tinto, 1975). If a student's commitment to a degree is high, then s/he would be less likely to drop out. Tinto also went beyond viewing student retention based on individual differences. He considered those characteristics in conjunction with the academic and social environments of the institution (Tinto, 1975, 2006). This became the theory of "institutional commitment," which is the product of a student's educational expectation along with the components of an institution (e.g., services and facilities provided). This predisposes the student toward attendance at one institution versus another. Institutional commitment represents dispositional, financial and time commitments that a student makes regarding her or his attendance at a particular institution. Low institutional commitment could lead to a student dropping out.

Tinto associated institutional commitment with students' social system behaviors. Although the university scene is important to a student's social integration, and therefore, her or his institutional commitment, this has been addressed extensively in the writings on this subject. Two of the most notable trends from this research are: diverse student organizations located on university campuses; and the freshman learning community programs. (For a

review on learning communities, see Andrade, 2007.) Additionally, student health, including stress and coping strategies, and risky behavior (e.g., excessive drinking, unsafe sex), are generally linked to social integration (Bray, Braxton, & Sullivan, 1999; Schwartz et al., 2010).

What Predicts Retention?

Academic performance and expectation. In retention research, the most significant predictor of college attrition or retention is a student's high school grade-point-average (HS-GPA). The research in this area clearly shows that there is a relationship between a student's HS-GPA and persistence at the university level. (For a meta-analysis of HS-GPA's influence on college performance and retention, see Westrick, Le, Robbins, Radunzel, & Schmidt, 2015). This association is not only for students with inadequate college performance who are forced to withdraw, but also for voluntary withdrawals (Johnson, 1994).

What is more interesting than a student's HS-GPA significantly predicting college persistence is why it predicts persistence. The "why" is a representation of how Tinto's combination of student characteristics interact with each other to influence college retention. Using expectancy theory (Vroom, 1964) to deduce first year academic performance and retention, Friedman and Mandel (2009) found that students who had high "academic expectancy motivation" performed well academically in their first year of college and were less likely to drop out. The theory posits a circular effect. The perceived probability that effort will affect performance (resulting in expected outcomes) is, in part, a function of previous experiences in comparable environments. These previous experiences influence perceived probability of future performance in a given arena, and, if those outcomes are valued, then one is motivated to perform well. Positive performance outcomes perpetuate the

cycle. This cycle also has an opposite effect; if a student believes that s/he will perform poor academically, the chances are that s/he will.

Most likely this belief is based on previous academic performance, which may or may not be the result of cognitive/intellectual ability, which Tinto (1975) considered precollege experiences. House (1993, 1994, 1995a, 1995b, 2000) has extensively researched student self-belief variables and found that how a student perceives her or his academic ability positively correlates with performance in the sciences, as well as English (House, 1998). Further, Davidson and Beck (2006) found that students who scored low in precollege ability and academic efficacy (“the belief in one’s capability to master academic tasks and assignments and attain one’s academic goals”), and high in academic apathy (“the lack of interest in academic work and an inclination to do as little as possible”) were more likely to drop out of college (p. 298). “Career direction could be a key factor in motivation to learn . . . [and] motivation is significantly related to both GPA and attrition” in college (Kern, Fagley, & Miller, 1998, pp. 31-32).

Perceived barriers. One’s belief of how well one can perform various academic tasks in college is related to career decision self-efficacy (Bandura, 1986; Lent, Brown, & Hackett, 1994). Additionally, career decision self-efficacy is affected by perceived barriers for racial and ethnic minority students, (Gloria & Herd, 1999). It is well documented that racial/ethnic minority students (other than Asians) have poorer college graduation rates than White students. The Chronicle of Higher Education (2013) reported that six-year graduation rates in New Mexico (NM)—where this study took place—were 41.7%, while the US average was 57.6%. Broken down by ethnicity, NM six-year graduation rates were (with the national averages shown in parentheses): American Indian, 22.4% (39.4%); Asian, 49%

(67.9%); Black, 26.8% (40.3%); Hispanic, 38.6% (50.6%); and White, 47% (60.6%).

Swanson and Woitke (1997) define perceived career barriers as “events or conditions, within the person or in his or her environment, that make career progress difficult” (p. 434). It is conceivable that these perceived barriers will help us understand the relationship among career interests, choices, and attainments (Lent et al., 1994, 2000; Swanson & Woitke, 1997; Urbanaviciute, Pociute, Kairys, & Liniauskaite, 2016), and therefore, college retention. The above graduation rates are no surprise when perceived career barriers (both economic and social) are considered to affect racial/ethnic minority students’ career self-efficacy, and therefore, academic self-efficacy (Gloria & Hird, 1999). An example of economic barriers would be finances, but research shows that finances are an issue for most students and not a determining factor for dropping out of college during their freshman year (Bozick, 2007; Iffert, 1958; Johnson, 1994; St. John, 1990). Research has shown that enrollment is influenced by family income and wealth, but not persistence in the first year of college (Bozick, 2007); finances had a greater significance for students after the first year of college than in first year enrollment (Iffert, 1958); the negative impact of tuition increases only impacts the second-to-third year transition (St. John, 1990); students who withdrew reported less financial hardship than students who persisted (Johnson, 1994).

Also important are social barriers, such as discrimination, of which racial salience (a person using race to define work options) plays a role (Helms & Piper, 1994). For example, Luzzo (1993) found that students of color (Americans of African, Asian, Latino, and Filipino descent) were more likely than White American students to feel that their racial status was a barrier to career development, which affected perceived opportunities (Fouad & Byars-Winston, 2005). Fouad and Byars-Winston found little differences in racial/ethnic minority

students' hope of entering certain careers; however, they did find that racial/ethnic minority students "perceived fewer career opportunities and greater career barriers" than their White counterparts (p. 228).

Family influences. The theory proposed by Tinto (1975, 1987, 1993) indicates the importance of family relationships to retain students in higher education institutions. However, he falls short of recognizing how family differences may affect racial/ethnic minority students' academic achievement in diverse ways. The current cultural research suggests that students enroll and persist in college because of their parents' support and encouragement to attend (Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999; Drywater-Whitekiller, 2009; Fuligni and Tseng, 1999; Guiffrida, 2005, 2006; Rosas & Hamrick, 2002; Saggio & Rendon, 2004; Sy & Romero, 2008). However, there are differences of whether or not families sustain reinforcement once the student is in college.

Lack of family encouragement to stay enrolled in college has been connected to first-generation college student attrition (Hahs-Vaughn, 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996), of which many are racial/ethnic minority students (Darling & Smith, 2007). A common theme was noted in a study of Mexican American female students whose parents consistently voiced their expectations for these women to pursue a college degree (Rosas & Hamrick, 2002). Yet, for these first-generation college students, once in college, family members had difficulty engaging in conversations on how to become academically successful. For first-generation college students, who were not first in the family to go to college, family support from siblings and cousins were found to be encouraging and supportive for American Indian and Alaska Natives (Saggio & Rendon, 2004). These variations of support can affect students' academic performance, and therefore,

their college enrollment (Fuligni & Tseng, 1999; Guiffrida, 2005; Hurtado, Carter, & Spuler, 1996; Rosas & Hamrick, 2002; Saggio & Rendon, 2004).

Adolescent development and degree/career commitment. While Tinto (1975, 1993) focused on the social and academic integration of the student with the institution, he “does not link these integrative processes to the developmental needs of students” (Guiffrida, 2009, p. 2420). According to Guiffrida (2009), theories of human development are “judiciously woven into K-12 pedagogical practices,” yet not a major consideration when evaluating the college transition process (p. 2420). In other words, Tinto did not link the integration of the student with college, either socially or academically, to the role that normative developmental periods of organization and transition might play in Freshman retention. More specifically, Guiffrida noted that the developmental theory of adolescent identity formation may be instrumental in understanding this integrative process. At the same time, Tinto’s educational goal commitment is an important aspect to be considered in any model of retention. The psychological orientation students bring with them into higher education reflects expectations and motivational attributes that are instrumental to degree completion (Tinto, 1975).

When a student does not have a clear educational goal commitment in her or his Freshman year of college, it can lead to disengaging from higher education (Harrison, 2006; O’Keefe, Laven, & Burgess, 2011; Willcoxson, 2010; Yorke, 2000). One in three students who dropped out, entered college because it was simply the normal progression after high school, or they were seeking a general experience (Harrison, 2006). Retrospectively, these students realized that they had not considered all of the options available to them. Almost half of the students in Harrison’s study also reported that they withdrew for reasons

associated with their courses—most often a wrong choice in coursework. (In this study, wrong choice of coursework was related to wrong choice of career path, not wrong choice of course within a career major.) However, about half of students who dropped out did eventually complete a degree program, once they committed to a career direction (Christie, Munro, & Fisher, 2004; Harrison, 2006, O’Keefe et al., 2011).

This lack of degree planning may be due to society’s expected trajectory of adolescents’ formation of an autonomous identity; or, more specific to this writing, related to exploration, and then making and identifying with a career commitment. Identity formation is directly related to career commitment (Erikson, 1968; Marcia, 1980), and not having a clear educational goal commitment can lead to disconnecting from higher education (Harrison, 2006; O’Keefe et al., 2011; Willcoxson, 2010; Yorke, 2000), both of which have been shown to affect student attrition in the first year of college. These variables have been studied for over 30 years; yet, surprisingly, for more than a century, dropout rates have been rather consistently around 50% (Polansky, Horan, & Hanish, 1993). Why, with all this data, are we not making strides in retaining students?

In order to increase retention rates, it is important to move the occupational commitment research in a direction that considers Freshman vocational identity formation. It is not only important to add new evidence to the current body of research about attrition/retention of college students, it is also imperative to merge this research with that of vocational identity formation. Consolidation of research fields may provide necessary information to help students choose and follow a career path, thereby reducing student attrition due to a lack of a goal commitment.

Identity Development: An Underexplored Area of Potential Influence on College Retention

In Erikson’s (1968) theory of personality development, his fifth stage is Identity

versus Identity Diffusion, which he considered a time of necessary and normative evaluation of how adolescents identify with their world. This is a time when they seek to synthesize “both a persistent sameness within oneself . . . and a persistent sharing of some kind of essential character with others” (Erikson, 1979, p. 109). Erikson considered the process of coming to terms with this integrated identity an “identity crisis,” which is essential for adolescents to move into adult roles. He believed this crisis period is “a necessary turning point, a crucial moment, when development must move one way or another, marshaling resources of growth, recovery, and further differentiation” (Erikson, 1968, p. 16). The product of this crisis period is seen in each generation when adolescents incorporate some of adults’ social values into their identity and openly discard others. Without this social cycle, it is impossible for youth to form an identity (Erikson, 1968). For Erikson (1968, 1982), identity emerges from how children see themselves (e.g., skills, character, ideals) in relation to how they are seen by the world around them (e.g., significant caregivers). This sense of identity changes and modifies as children develop; they combine how they understand themselves with how others identify them, which leads to a more self-determined set of identifications in adolescence. According to Erikson (1968), the primary developmental task of adolescence is identity achievement, and vocational identity is the first component to develop.

Similar to Erikson’s ideal, Marcia (1994) defined identity as “a coherent sense of one’s meaning to oneself and to others within that social context” (p. 70). In other words, our identity is how we understand ourselves as a product of, and in relation to, our individual goals and values, along with the goals and values of the people in our surrounding environment. These concepts are predominately related to employment, interpersonal

relationships, and ideology. Marcia (1966) took Erikson's theory of identity a step further by providing a way to measure identity empirically. He created a semi-structured interview and rating manual to study two processes that he noted as crucial to characterize an identity status (where a person is at a particular point in time): Exploration and Commitment.

Exploration is determined by the scope of a person's experimentation with alternative directions and beliefs. Commitment is determined by choosing one path from various options that would only be discarded with great reluctance. Dependent upon a person's exploration and commitment of the three main identity domains (occupation, ideology and interpersonal values), one of four identity statuses is revealed: Identity Achievement (high exploration and high commitment in most of the three domains); Moratorium (currently exploring and actively struggling to make commitments); Foreclosure (no exploration, yet highly committed); and Identity Diffusion (tentative exploration and a lack of commitment). According to Marcia (1966), these statuses represent "an individual's specific identity status; that is, which of four concentration points along a continuum of ego-identity achievement best characterized him" (p. 551).

Erikson (1968) acknowledged that brief Identity Confusion is normative to resolve the identity crisis stage. When left unfocused, it becomes what Marcia (1966) considered Identity Diffusion. Persons with this identity status might experience some exploration, but they lack the initiative to commit. This lack of commitment is the hallmark of Identity Diffusion. Persons in the Moratorium stage also lack commitment, but they are extensively exploring their alternatives while actively struggling to make commitments. Moratorium is considered a transitional status, usually leading to Identity Achievement (Marcia 1966, 1994). Persons scoring in the Moratorium status are in the mist of their identity crisis.

According to Marcia (1966, 1994), the identity status of Foreclosure is distinguished by expressing commitment without having experienced a crisis. Persons with this identity status assume an identity to which their parents or other significant adults subscribe, without exploring options. The goal of Erikson's identity crisis stage is Identity Achievement (Marcia, 1966, 1994). Persons with this identity status have completed their explorations and settled on self-determined commitments. In effect, they have constructed their identity through an exploratory period and are secure with their commitments.

The formation of identity is not only an individual process, but also greatly influenced by the culture of an era and ideals passed on from elders (Erikson, 1968). When forming an identity, we incorporate what is useful from past generations and discard that which has lost its current significance. As Erikson (1968) predicted, society may have altered the course of identity development from the time of his earlier writings to today. Identity may now develop later due to an extended exploration period, since more adolescents are choosing to attend college. Today, college is not only for the wealthy, and many parents no longer expect their children to take on adult roles shortly after high school. Instead, adolescents are delaying societal markers of adulthood (e.g., career, marriage, parenthood) to attend college. In fact, supporting this influx into college, the 2010 census data showed that bachelor's degrees have increased four-fold since 1960 (U.S. Bureau of the Census, 2010).

Guiffrida (2009) conveyed a team report from the Social Science Research Council (2006), in which they concluded that "theories of identity development . . . appeared to be especially fertile for understanding the college transition process" (p. 2420). Erikson (1968) and Marcia (1999) believed that the primary crisis period for identity was in adolescence with a person's initial identity formed by late adolescence, which they considered around 18

to 20 (or up to 22) years of age. Not coincidentally, this is the same time that adolescents are transitioning from secondary to tertiary education. This is a time when adolescents transform from their childhood of being cared for, to adulthood where they care for others—where people work, marry, and start families (Erikson 1968; Marcia, 1999).

Developmental trends in identity formation. As stated before, the primary goal of adolescence is to develop a cohesive identity, which is thought to be fully developed by late adolescence (Erikson, 1968); a time that coincides with their transition from high school to college. Although researchers have not related this normative developmental process directly to Freshmen retention, they have sought to find progressive developmental trends in adolescent identity formation. Meeus (1996) defined “progressive developmental trends” as decreases in diffusion and foreclosure (thought to be low status identities), and increases in moratorium and achievement (thought to be high status identities) over time.

Meta-analyses (Marcia, 1980; Meeus, 1996) of research on overall identity formation do not show consistent developmental trends from low status identities to high status ones (i.e., foreclosure moving into diffusion, or vice versa, which then moves into moratorium and culminates in achievement). Recently, Kroger, Martinussen and Marcia (2010), found that Foreclosure and Achievement statuses were the most stable over time, and Moratorium slightly less stable than Diffusion. At the same time, researchers do agree that identity achievement becomes more prominent later in adolescence—over the college years (Marcia, 1980; Meeus, 1996). In overview studies using Marcia’s (1966) identity status model, Marcia (1980) and Waterman (1982, 1993) found limited progressive developmental trends in high school ages, yet it was more prominent during the college years. However, Meeus (1996) found that adolescents in their high school years showed as much progressive

developmental shifts in their overall identity as college students. This lack of consistent findings for progressive developmental trends has lead researchers to re-evaluate and expand on Marcia's (1966) identity status model.

Expansion of Marcia's identity formation model. During Meeus' (1996) review, he noticed that studies which used separate measures for commitment and exploration were more likely to reveal progressive developmental trends. To further investigate the developmental progression of identity, Meeus chose to use separate measures of exploration and commitment, while reclassifying Marcia's (1966) identity categories. His statuses of Moratorium and Diffusion were comparable to Marcias's identity statuses of the same designations. Both are high in exploration and not committed. However, Meeus revised the two high commitment statuses of Foreclosure and Achievement to "Closed Commitment" and "Achieving Commitment" respectively—no longer tying them to past exploration. "Closed commitment represents a high current commitment without the existence of current strong exploration. Achieving commitment represents a strong current commitment that is linked with a current active exploration" (Meeus, 1996, p. 588). Using his new classifications, Meeus (1996) discovered progressive developmental trends in identity statuses from early adolescents (12- to 14-year-olds) through the college years (21- to 24-year-olds). He found that the amount of Diffusions and Moratoriums decreased with age. Additionally, Achieving Commitments increased significantly, while Closed Commitments showed little change in overall identity development. In other words, Meeus (1996), using his new classifications, found trends which showed that identity developed progressively from statuses low in commitment to those high in commitment.

Similar developmental trends have been noted by Luyckx and colleagues while

researching overall identity formation in late adolescent college students. They too expanded on Marcia's (1966) identity dimensions of exploration and commitment, investigating the following qualifiers: Exploration in Breadth (accumulating information about alternative identities); Commitment Making (making actual choices); Exploration in Depth (collecting information about current choices); and Identification with Commitment (the degree to which one identifies with choices made). Using their new statuses, Luyckx, Goossens, and Soenens (2006) found that Commitment Making, Exploration in Breadth, and Exploration in Depth increased, while Identification with Commitment decreased, from the Freshman to Sophomore year in college. Additionally, Luyckx, Schwartz, Goossens, and Pollock (2008) found developmental trends from exploration statuses to commitment statuses over the age range of 18 to 30.

Commitment and college student adjustment. Using their new identity statuses in research with college students, both Meeus, along with Luyckx and colleagues, have found that students high in commitment statuses are better adjusted. For example, Meeus (1996) researched how identity statuses related to well-being and depression. He found that students who scored in the Moratorium Status had the lowest levels of well-being and the highest levels of depression, with the commitment statuses showing opposite results. For well-being, students who scored in the Diffusion Status, their levels fell in-between the above statuses, while their depression levels were lowest of all when age was taken into consideration. Additionally, Moratoriums not only showed as lowest in happiness, they were highest in depression for 21- to 24-year-olds. However, as they aged, adolescents in the high-commitment statuses were happiest, and the low-commitment statuses were least happy. This led Meeus (1996) to conclude that adolescents feel the need to develop an identity.

In other research, Luyckx, Soenens, and Goossens (2006), found that college students who lacked commitment scored lowest on their well-being measure. They found that Freshmen college students (mean age 18.8 years of age) who were High on Commitment scales scored low in Neuroticism, while Exploration in Breadth (especially) and Exploration in Depth showed higher levels of Neuroticism. Similar to Meeus' (1996) findings, the commitment categories were negatively related to poor adjustment, and the Exploration in Breadth category (similar to Marcia's Moratorium Status) was positively related to poor adjustment.

Luyckx and colleagues have extensively researched identity formation in relation to commitment and exploration with college students. They found that students with Achieving Commitment status had better well-being (Luyckx, Goossens, Soenens, & Beyers, 2006), higher self-esteem and less depressive symptoms (Luyckx, Schwartz, Goossens, Soenens, & Beyers, 2008), were better academically adjusted (Luyckx, Soenens, Goossens, & Vansteenkiste, 2007), and better psychologically adjusted (Luyckx, Schwartz, Soenens, Vansteenkiste, & Goossens (2010) than those in other identity statuses. At the same time, students who had not yet matured to a commitment status worried and ruminated more (Luyckx, Schwartz, Goossens, & Pollock, 2008), had more depression (Luyckx, Schwartz, Goossens, Soenens, & Beyers, 2008; Luyckx, Soenens, Vansteenkiste, Goossens, & Berzonsky, 2007), and had lower self-esteem (Luyckx, Schwartz, Goossens, Soenens, & Beyers, 2008) than those committed.

Adjusting to college life is a factor for retention in Tinto's (1975) theory of institutional commitment. It has been shown that Freshman college students were the most likely to experience adjustment difficulties (Lee, Olson, Locke, & Michelson, 2009).

Additionally, dropping out of college was often the result of adjustment issues (e.g., Barr, 2007; Ishitani, 2008; Tinto, 1993). For example, anxiety has been consistently linked to students dropping out of college (Pappas & Loring, 1985), and depression (e.g., Margolis, 2000), as well as stress and hazardous alcohol use (Andersson, Johnsson, Berglund, & Ojehagen, 2009). Inner turmoil and personal crisis often result from students questioning their identity (Henton, Lamke, Murphy, & Haynes, 1980), and a sense of identity (as a trait component of personality) is related to intention to withdraw (Lounsbury, Saudargas, & Gibson, 2004).

Identity researchers have clearly made the tie between commitment identity statuses and better psychological adjustment in college students (e.g., Meeus & colleagues; Luyckx & colleagues). Also, retention researchers linked goal commitment to persistence in higher education (e.g., Harrison, 2006; Tinto, 1975; Willcoxson, 2010; Yorke, 2000).

Constantinople (1969) suggested that the process of identity development can enhance college attendance. Furthermore, Erikson (1968) and Marcia (1980) believed that identity formation is directly related to career commitment. Therefore, it is reasonable to suggest that students' vocational identity can directly relate to their commitment to a degree, and, as a consequence, can influence retention of Freshman college students.

Vocational Identity Development: A Promising Source of Potential Influence on College Retention

While overall identity formation research is important, the main purpose for attending college after high school is to earn a degree before moving into the workforce. Vocational identity, which is defined as the “possession of a clear and stable picture of one’s goals, interests, and talents” (Holland, Johnston, & Asama, 1993, p. 1), may be the link to ascertain

whether or not students entering college will remain throughout their first year. Vocational identity is important because it is thought of as the first component of overall identity to develop (Erikson, 1968; Skorikov & Vondracek, 1998). Researchers have noted the significance of vocational identity “as the most important factor in [overall] identity development” (Kroger & Haslett, 1991; Skorikov & Vondracek, 1998, p. 17; Vondracek, 1992). As such, studying vocational identity specifically, rather than identity formation generally, may prove valuable to understanding why some students persist and others drop out in their freshman year.

Foundations of vocational identity research. Super’s (1942) original writing on vocational adjustment (applying psychology research to personnel practices) is considered foundational in the area of career guidance (Savickas, 1994, 2001), and was the precursor to later vocational identity. It was based on providing vocational guidance for the worker, taking into consideration the worker’s intelligence, aptitudes, personal interests and attitudes, as well as social and economic influences (Super, 1942). Super’s body of work, which spanned 60 years, has been instrumental for many vocational guidance counselors in their quest to help people transition into the workforce or make career choices/changes at later stages of employment (Savickas, 1994). To understand vocational behavior, Super (1957) suggested that adding a developmental perspective was needed. He believed that it was important to broaden an adolescent’s options to explore possible careers. As in the identity research, he believed that the two central processes of exploration and commitment are key to making a career choice (Super, 1942; see Savickas, 2001, for a succinct review of Super’s theory).

Another innovator in vocational counseling was Holland (1959), whose theory of

vocational personalities—Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (RIASEC)—was considered a break-through in the field (Nauta, 2010). Holland’s definition of Vocational Identity (Holland et al., 1993) noted above, and subsequent assessment tools (*My Vocational Situation* [MVS] and *The Vocational Identity Scale* [VI]; Holland, Daiger, & Power, 1980) have been widely used by numerous researchers, as well as educators and counselors (Holland et al., 1993).

Assessing vocational identity. Researchers have used the measurement created by Holland et al., (1980) to investigate a wide variety of variables in relation to vocational identity and late adolescence. For example, in relation to vocational identity in secondary school, researchers have explored gender differences, finding no differences between males and females in their progression toward identity achievement (Grotevant & Thorbecke, 1982; Gushue, Clarke, Pantzer, & Scanlan, 2006; Skorikov & Vondracek, 1998). In relation to the transition to college, Mauer and Gysbers (1990) found that entering Freshmen had a variety of concerns about career choice. Additionally, with college students, researchers found a positive relationship between vocational identity and career decision-making (Khasawneh, Khasawneh, Hailat, & Jawarneh, 2007); crystallizing career preferences—representative of what a person likes to do—and vocational identity related to progress toward achieving an overall identity (Savickas, 1985); and that stability of vocational identity increases steadily from the Freshman to Senior years (Poe, 1991). In relation to family functioning, Johnson, Buboltz, & Nichols (1999) found that higher levels of students’ vocational identity were predicted by higher levels of family expressiveness—expressiveness was defined as “family members are encouraged to act openly and to express their feelings directly: (p. 139).

Using a variety of assessments (other than Holland et al., 1980), researchers

discovered variables that influence vocational identity in secondary education, and in college students. For example, where high school students were in their development of ideological identity related directly to the extent of career indecision—career choices were measured within ideological identity (Vondracek, Schulenberg, Skorikov, Gillespie, & Wahlheim, 1995). Also, research has shown a consistent increase in adolescents achieving a vocational identity as grade levels progressed (Skorikov & Vondracek, 1998). In college students, a positive association was found between career decision self-efficacy and the strengthening of one's vocational identity commitments, as well as an association with the achieved identity status (Stringer & Kerpelman, 2010).

Expansion of vocational identity research. In vocational research, the MVS instrument has been the most extensively one used. It primarily measures career commitment, but almost entirely omits career exploration (Porfeli et al., 2011). In response, Porfeli and colleagues (Porfeli, 2009; Porfeli et al., 2011) created the Vocational Identity Status Assessment (VISA), which is based on overall identity findings by three prominent researchers. First, they utilized Marcia's (1966, 1993) research, which set the foundation that identity develops from exploration and commitment. Then they applied more recent research by Meeus, Crocetti and colleagues who used designations of Commitment, Exploration, and Reconsideration of Commitment (Crocetti, Klimstra, Keijsers, Hale, & Meeus, 2009; Crocetti, Rubini, Luyckx, & Meeus, 2008; Crocetti, Rubini, & Meeus, 2008; Crocetti, Schwartz, Fermani, & Meeus, 2010; Meeus, 1996). Lastly, Parfeli et al. (2011) incorporated Luyckx and colleagues' research, which used designations of Exploration in Breadth and Exploration in Depth, Commitment Making, and Identification with Commitment (Luyckx, Goossens, Beyers, & Soenens, 2006; Luyckx, Goossens, Soenens, & Beyers, 2006; Luyckx,

Goosens, Soenens, Beyers, & Vansteenkiste, 2005).

Using the new VISA instrument, Porfeli et al. (2011) identified six vocational identity statuses. The original four identity statuses of Marcia's (Achieved, Foreclosed, Moratorium & Diffused), and two additional statuses: Searching Moratorium, which is a term that was previously used by Meeus and colleagues (scores fall between Achieved and Moratorium, with lower levels of commitment and exploration, and higher levels of self-doubt and flexibility than the Achieved status), and Undifferentiated (falling around the z-score mean for exploration, commitment, and reconsideration). These vocational identity statuses were discovered using the constructs of "Career Exploration" (which encompassed the two items of in-breadth & in-depth career exploration), "Career Commitment" (which encompassed the two items of career commitment making and identification with career commitment), and "Career Reconsideration" (which encompassed the two items of career self-doubt and career flexibility).

When testing the VISA with high school students as well as university students, Porfeli and colleagues found developmental trends in that "university students disproportionately occupied the statuses exhibiting higher levels of commitment and lower levels of reconsideration relative to the high school students" (2011, p. 865). Additionally, Porfeli et al. (2011) evaluated identity statuses in relation to work valence and well-being. Regarding work valence, both high school and college students in the Achieved and Foreclosed statuses had a favorable view regarding their future work lives, while students in the Diffused status had an unfavorable view. The students in the Moratorium, Searching Moratorium, and Undifferentiated statuses exhibited similar patterns, expecting at levels moderate to high, both favorable and unfavorable aspects of their future work lives. Relating

their identity statuses to well-being, Porfeli and colleagues found that individuals in the Achieved status displayed the most favorable well-being, and those in the Foreclosed status showed similar results. Individuals in the Diffused status displayed the least favorable well-being. Individuals in the statuses of Moratorium, Searching Moratorium, and

Undifferentiated showed similar work valence patterns. However, they differed in their well-being; individuals in the status of Searching Moratorium had poor levels of well-being, similar to that of the Diffused individuals, and the Moratorium and Undifferentiated statuses displayed well-being at normative levels. Porfeli et al. (2011) suggested that “relationships among identity processes, work valences, and well-being can be categorized into four variable patterns” (p. 867) of progress: Advanced vocational identity (Achieved and Foreclosed), Moderate vocational identity (Moratorium and Undifferentiated), Delayed vocational identity (Diffused), and Mixed vocational identity (Searching Moratorium).

What is lacking in both the identity formation and the vocational psychology research is the examination of vocational identity in relation to how it may influence Freshman retention, as adolescents transition from secondary to tertiary education. The current vocational identity research has looked at many variables, but far fewer have researched the relationship between vocational identity status and the transition to college. I have found no research linking developmental variance in students’ vocational identity status to college retention in the Freshman year. This study means to address this void in the research.

Current Study

The current study’s focus was to investigate the influence of adolescents’ vocational identity status at each of three testing sessions on Freshman retention. I indexed vocational identity status through the VISA instrument created by Porfeli et al. (2011) and tracked both

vocational identity and Freshmen enrollment (including withdrawal) at three time-points in a longitudinal sampling of students over approximately nine months: first, when students entered college directly from high school (August 2013); second, late in their first semester (November 2013) as Freshmen; and third, late in their second semester (April 2014) as Freshmen.

Porfeli et al.'s (2011) vocational identity model incorporates Marcia's (1966) original four identity statuses (Achieved, Moratorium, Foreclosed, and Diffused) and expands that model by adding the two statuses of Searching Moratorium and Undifferentiated. Together, these six identity statuses represent exploration and commitment with the added dimension of reconsideration and are subsumable under four overarching patterns: Advanced vocational progress (Achieved and Foreclosed), moderate vocational progress (Moratorium and Undifferentiated), delayed vocational progress (Diffused), and mixed vocational progress (Searching Moratorium).

In the work of Porfeli et al. (2011), high school students (10th and 11th grades) scored higher on reconsideration than university students (mean age of 21.7-years-old). Additionally, whether in high school or college, individuals who had not attained a committed vocational identity (i.e., Achieved or Foreclosed) showed no clear patterns on any of the six sub-scales (i.e., Commitment Making, Commitment Identification, In-depth Exploration, In-Breadth Exploration, Career Self-doubt and Commitment Flexibility). Participants in the current study were incoming Freshmen (18- and 19-year-olds), who fell in between the ages of Porfeli et al.'s participants, so it was expected that reconsideration would serve as an important dimension for evaluating Freshmen retention.

Hypotheses. I predicted that students who scored in the Achieved and Foreclosed

vocational identity statuses (advanced identity progress), at any of the three testing sessions, would still be enrolled in college during the third testing session. This is consistent with previous research by Porfeli et al. (2011) and with overall identity research that found the high commitment statuses of Achieved and Foreclosed as most stable over time (Kroger et al., 2010), with closed commitment showing little change (Meeus, 1996). Once a student scores in the Achieved or Foreclosed status, they generally do not revert back to another status, so there was a greater than chance likelihood that they would remain in college at the third testing session and plan to return the following semester.

I predicted that students in the vocational identity status of Diffused (delayed progress) would withdraw from college at or before the third testing session. Students in the Diffused status show little-to-no commitment or exploration, and higher than medium levels of reconsideration (Porfeli et al., 2011). Once a student scores in the Diffused status, they generally do not progress to a higher status in a timely manner, as they lack the initiative to commit (Marcia, 1966). Therefore, these students' withdrawal would be either voluntary or forced, due to their lack of a clear educational goal commitment.

Developmental trends were predicted for students who scored in the Searching Moratorium vocational identity status (mixed progress). Specifically, I predicted that these students would show successive increases in commitment, and decreases in reconsideration, from the first to the last testing sessions. This was regardless of levels of exploration, as they were expected to remain at medium to high levels, similar to those in the Achieved statuses. This is consistent with the general trend seen in overall identity research (which generally has not taken into account reconsideration), of a high exploration status moving toward more commitment (Luyckx, Schwartz, Goossens, & Pollock, 2008; Meeus, 1996).

At the same time, it is important to note that students in the Searching Moratorium status have higher levels of reconsideration than any other vocational identity status and well-being scores similar to students in the Diffused status, demonstrating the least favorable well-being (Porfeli et al., 2011). Although not hypothesized, students' in the Searching Moratorium status, whose reconsideration scores do not significantly decrease over the course of this study, may choose to withdraw from college due to their low levels of well-being, and therefore, signaling possible adjustment issues as shown in several studies (Barr, 2007; Ishitani, 2008; Tinto, 1993).

I made no retention predictions for students who scored in the Moratorium, and Undifferentiated vocational identity statuses (moderate progress), at any testing sessions. Their continued exploration would lead to unclear patterns of retention in the Freshman year of college. At the same time, if these students progressed to the high commitment status of Achieved, at any subsequent testing session, I predicted that these students would remain in the college at the third testing session and plan to return the following semester. If these students regressed to Diffused, at any testing session, I predicted that these students would drop out, either voluntarily or forced, by, or during, the third testing session, or not plan to return the following semester. However, it is important to note that these students scored at normative levels on well-being (Porfeli et al., 2011); therefore, these students may have stayed in college, but changed majors.

Methods

Participants

Originally, 2,232 Freshmen students were contacted to participate in this study: 1,616 from CNM, and 616 from UNM. Of these, 213 Freshmen students consented to participate in this research: 83 from the University of New Mexico (UNM), recruited from Psychology 105 classes; and 130 from Central New Mexico Community College (CNM), recruited from all students registered for at least one course. Some students who responded to the survey were older than expected at the time of the study. Only students who were 18-years-old ($n = 162$) or 19-years-old ($n = 18$) during the first assessment were retained in the sample for analyses ($M = 18.1$; $SD = 0.71$). Furthermore, some students responded to the survey twice within a few days (once from their UNM/CNM email account, and then once from their personal email account), for either the first, second, or third assessment; in those cases, only the earliest survey was retained for that assessment. This resulted in a total of 180 participants in the first assessment. Sample attrition at subsequent testing sessions resulted in 89 participants for the second assessment, and 58 participants for the third assessment. See Table 1 for overall response rate. Participant demographics of sex, ethnicity, mother's education level, father's education level, and parental income are presented below in Table 2.

Table 1

Number of participants at each time-point

Originally Emailed	Initially Responded	Participated Time 1	Participated Time 2	No Participation Time 2	Participated Time 3	No Participation Time 3
2232	213	180	89	<91>	58	<122>

Note: After initial contact, only students who participated at Time 1 were contacted at Times 2 and 3. Students who participated at Time 3 may have participated at only Time 1 or at both Times 1 and 2.

Table 2*Survey sample demographic profile*

	Time 1	Time 2	Time 3
Sample (<i>n</i>)	180	89	58
Gender:			
Female	73%	78%	81%
Male	27%	22%	19%
Ethnicity:			
Hispanic	45%	39%	42%
Caucasian	37%	42%	44%
American Indian	6%	4%	3%
African American	4%	5%	3%
Asian	2%	2%	3%
Other	5%	8%	3%
Parental Income:			
Under \$25,000	26%	23%	29%
\$25-50,000	34%	33%	25%
\$50-100,000	28%	34%	29%
Over \$100,000	10%	10%	15%
Mother's Education Level:			
Some high school	15%	14%	12%
Graduated high school	23%	21%	19%
Some college	26%	26%	29%
Undergraduate degree	13%	18%	14%
Graduate degree	21%	19%	25%
Father's Education Level:			
Some high school	19%	19%	12%
Graduated high school	26%	20%	27%
Some college	22%	21%	17%
Undergraduate degree	8%	10%	9%
Graduate degree	22%	26%	31%

Materials

Questionnaire. A questionnaire pertaining to participants' demographic information, degree major status, registration status, and experience with career counseling was used for each testing session. In the first testing session, participants were asked to provide information on the following demographic variables: age, sex, ethnicity, parental education and income level. Additionally, at the first, second, and third testing sessions, participants were asked the following questions: 1) Have you chosen a degree major; if so, what degree major have you chosen? 2) Have you met with a career counselor to help you choose a college degree major; if yes, high school career counselor, or college career counselor? 3) Are you still registered in at least one college course? 4) Are you planning to register in classes next semester; if yes, where are you planning to enroll: CNM, UNM, Other NM

college, or an out-of-state college? (See Appendix A for a copy of this questionnaire.)

The Vocational Identity Status Assessment. The Vocational Identity Status Assessment (VISA) was used for each testing session (Porfeli et al., 2011). The VISA has 30 statements and is an assessment tool designed to index an individual's vocational identity status. Each statement is answered on a 5-point Likert scale: 1 (strongly disagree), 2 (disagree), 3 (agree and disagree), 4 (agree), and 5 (strongly agree). Test statements explore the dimensions of a vocational identity status (i.e., Exploration, Commitment and Reconsideration) and were broken down into six sub-scales: In-Breadth Career Exploration (e.g., I am learning about various jobs that I might like.); In-Depth Career Exploration (e.g., I am identifying my strongest talents as I think about careers.); Career Commitment Making (e.g., I know what kind of work is best for me.); Identification with Career Commitment (e.g., My career will help me satisfy deeply personal goals.); Career Self-Doubt (e.g., Thinking about a career makes me feel uneasy.); and Career Flexibility (e.g., My work interests are likely to change in the future.).

Regarding the six sub-scales, Porfeli et al. (2011) reported effect sizes (α) shown separately (high school/college students) as follows: In-Breadth Career Exploration (.83/.82), In-Depth Career Exploration (.77/.79), Career Commitment Making (.84/.82), Identification with Career Commitment (.76/.79), Career Self-Doubt (.79/.81), and Career Flexibility (.83/.81). These six sub-scales allow for identification of six vocational identity statuses: Achieved, Searching Moratorium, Moratorium, Foreclosed, Diffused, and Undifferentiated. Statements within a sub-scale, as well as the overall sub-scales, were presented in a random order (see Appendix B for assessment).

The VISA has been validated in research using both high school and college students

as participants and has been examined at the item level using confirmatory factor analysis (CFA), which suggested that the measurement model adequately fit the data (Porfeli et al., 2011). Tests of measurement invariance, employing a Comparative Fit Index and relying on the change in the Root Mean Square Error of Approximation, have shown that the VISA demonstrates metric invariance, but not scalar invariance, across age.

Procedure

This was a short-term longitudinal study, fully administered online, based on data collected at three time-points during students' Freshman year at CNM (a community college) and UNM (a four-year university). Initially, an email was sent to students' institution account requesting their participation in this research and indicating that they were selected because they had graduated high school in the previous academic year (including those who received their GED). Additionally, the email provided a link to access this study through Survey Monkey, a data collection site, where students were asked to complete a questionnaire and a short survey. The questionnaire was to collect basic demographic information, as well as information to assess their career exploration, enrollment in at least one college course, and their plan to enroll in classes the next semester. Students were also asked to provide a non-institutional email address, which provided a way to contact them if they stopped using their institution account due to dropping out of college. Immediately following the questionnaire, there was a survey to assess their vocational identity status. Students were told that the survey would take approximately 10 minutes to complete, and that their email addresses would be kept confidential and only used for this study. Also, they were informed that once the data were collected, their email addresses would be kept separately from their survey responses. Information was given that they could choose to

withdraw from the study at any time, without penalty.

The first page displayed on Survey Monkey was the Consent to Participate form, where students were given the choice to participate or not. If the student chose not to participate, s/he checked a box at the end of the consent form stating, “No, I do not consent to participate in this study at this time.” The student then submitted the page and a note appeared stating, “We thank you for your consideration to participate in this research study. Your response has been recorded.” If the student chose to participate, s/he checked a box at the end of the consent form stating, “Yes, I agree to participate, and confirm that I am at least 18 years of age.”

Once the student gave consent, s/he was first asked to complete the online questionnaire, and then the online vocational identity assessment (i.e., VISA), both in accordance with the consent form. At the first session the questionnaire collected basic demographic information; and then at the first, second and third testing sessions, the questionnaire collected only data regarding degree commitment, career resources used, and enrollment status. In each of the three testing sessions, participants were asked to complete the same vocational identity assessment, as shown in Materials.

There was no individual reward for participation. Instead, each participant’s email address was entered into a drawing for a specific number of gift cards, which were for specific amounts. Each group of participants at CNM and UNM was awarded separately, with the same number and same amount of gift cards awarded. First session: Three \$50 cash gift cards; Second session: Three \$50 cash gift cards plus one \$100 cash gift cards; and Third session: Three \$50 cash gift cards plus one \$150 cash gift cards.

Data Reduction

For each subscale of the Vocational Identity Status Assessment (VISA)—Commitment Making, Commitment Identification, In-depth Exploration, In-breadth Exploration, Career Self-doubt and Commitment Flexibility—the mean score was calculated for each student at each assessment. Each subscale comprises five (5) items. A mean score was calculated if students had responded to three (3) or more items for the subscale. Using these mean scores on each subscale, z scores were computed for each subscale at the first assessment. Then, for the second and third assessments, pseudo z scores were computed by subtracting each subscale's mean score at Time 1 from the subscale mean score at Times 2 and 3, and dividing by the standard deviation of each subscale's mean score at Time 1. This strategy was used so that scores for the second and third assessments were on the same scale as the scores for the first assessment, which allowed for an investigation of the change over time in subscale scores.

Vocational-identity status is based on students' z -scores on the six subscales of the VISA. In order to classify students into one of the six vocational-identity statuses at each assessment, I used cluster analysis to assign each student to the most similar vocational-identity status, based on the clusters found in the VISA's validation study (Porfeli, personal communication). In total, at the first assessment, 27 students were Achieved, 16 were Searching Moratorium, 54 were Moratorium, 24 were Foreclosed, 24 were Diffused, and 35 were Undifferentiated (See Figure 1; see Figure 2 for Vocational Identity Status at each assessment).

Results

The email requesting participation was sent to 616 UNM students, and 1616 CNM students. This resulted in 83 responses from UNM students (13.5%) and 130 from CNM students (8%). Overall, the 213 responses to the survey resulted in a 9.5% response rate. This is lower than expected, as compared, for example, to the 12.4 % response rate of requests to participate in a Web-based study by Joinson and Reips (2007). However, the number of bounced-back emails was zero, which did not allow for adjustment of the response rate. Once students are accepted into college and create an email account at either UNM or CNM, their e-mail account is active for one year, even if they never register for classes or drop out; therefore, there is no way to determine how many students actually received/read the email. Of the original 213 responses, the data set was reduced to 180 due to age requirements and dual responses. At Time 2, 89 of the original 180 participants responded to the survey, resulting in a 50% drop from the Time 1 sample. This change in response rate, however, is similar to the 47% drop from first to second wave encountered in Meeus' (1996) identity formation study. At Time 3, 58 participants responded to the survey. This is a 35% drop in response rate when considering students who responded at Time 1 only or both Times 1 and 2, and then participated at Time 3, but is similar to drops in response rate reported by Smith (2008).

At Time 1, all but three of the 180 students reported that they were enrolled in college and planned to enroll the following semester. Of these three, two were not enrolled but planned to enroll the next semester, and the other one was enrolled but not planning to enroll the following semester. All three responded at Time 2 as enrolled. At Time 2, all but one of the 89 students who remained enrolled in the study also remained enrolled in college. At

Time 3, of the 58 students who remained enrolled in the study, all but four were either not enrolled in college or did not plan to enroll in college the following semester—two were not enrolled in college but planned to enroll the following semester, and the other two were enrolled in college but did not plan to enroll the following semester. Given that 1) no real variability in college enrollment status existed in my sample at any time point, and 2) for those students who dropped out of the study, it is impossible to discern whether they also, in fact, dropped out of college or not, any viable testing of my central hypotheses concerning the relation between vocational identity status and retention is precluded. Of note, vocational identity status at the beginning of the study was not related to whether or not a student dropped out of the study, $\chi^2(5) = 4.10, p = .535$.

My third hypothesis concerned students who entered the study in the Searching Moratorium status ($n = 16$). While I did not predict that these students would change vocational identity status, I did expect to see development trends in the sub-scales from Time 1 to Time 3—specifically, an increase in scores on Career Commitment Making and Identification with Career Commitment (commitment) coupled with a decrease in scores on Career Self-Doubt and Career Flexibility (reconsideration). A multilevel model for repeated measures examining those students in the Searching Moratorium status who remained in the study from Time 1 to Time 3 ($n = 4$) revealed a significant decrease in Commitment Flexibility scores from the first to the third assessment, $B = -0.18, z = -2.41, p = .016$. No other sub-scale scores were significant in either direction.

Next, I investigated the hypothesis that students who began the study in the Moratorium or the Undifferentiated statuses and who progressed to Achieved at any point would remain in college at the third testing session and plan to return the following semester

($n = 38$). Of these, 19/38 (50%) were still enrolled at the last assessment and were planning to return to college the following semester, meaning there is no evidence that the proportion is larger than 50%. The remaining 19 students dropped out of the study.

I also investigated the hypothesis that students who began the study in the Moratorium or the Undifferentiated statuses and who regressed to Diffused at any point were likely to drop out of college or not plan to return the following semester ($n = 36$). Of these, 20/36 (56%) dropped out of the study, and this proportion does not significantly differ from 50% (one-tailed $p = .309$). The remaining 16 students (44%) were still enrolled at the last assessment and were planning to return to college the following semester.

Given the inability to test my major hypotheses, I instead turned to exploratory analyses concerning relationships between vocational identity status, demographic variables, educational institution, and dropping out of the study. I first investigated whether age, gender, ethnicity, parents' education level and annual income, or meeting with a career counselor were related to vocational identity status at the onset of the study. Parents' annual income was related to vocational identity status at the first assessment, $\chi^2(15) = 25.67, p = .042$. Inspection of the standardized residuals revealed that students whose parents' income was between \$25,000 and 50,000 per year were more likely to be in the Searching Moratorium status than expected (std. res. = 2.12). Students whose parents' income was between \$50,000 and \$100,000 per year were less likely to be in the Searching Moratorium status than expected (std. res. = -1.94) and more likely to be in the Undifferentiated status than expected (std. res. = 2.14). Finally, students whose parents' income was over \$100,000 per year were overrepresented among Foreclosed students (std. res. = 2.59).

Meeting with a career counselor, whether high school or college, was also related to

vocational identity status at the first assessment, $\chi^2(5) = 16.26, p = .006$. Inspection through logistic regression revealed that students in the Achieved status were more likely ($p = .001$)—while those in the Foreclosed status were less likely ($p = .034$)—to have met with a career counselor. Crosstabulation, considering all statuses together, revealed that only the Foreclosed status finding was significant ($p = .029$). No other demographic variables, however, were related to vocational identity status at the onset of the study (all remaining $ps > .144$).

Next, I investigated whether distributions in participants' vocational identity status varied as a function of educational institution attended. Educational institution was related to vocational identity status at the first assessment, $\chi^2(5) = 13.97, p = .016$. In particular, there were more CNM students and fewer UNM students in the Achieved status than expected (std. res. = 2.22); conversely, there were fewer CNM students and more UNM students in the Moratorium status than expected (std. res. = 3.07).

Finally, I assessed the potential relationship between demographic variables and dropping out of the study. Only institution was significantly related to dropping out: UNM students were twice as likely as CNM students to drop out of the study (OR = 1.96, $p = .039$). Gender was marginally related to dropping out, with male students being twice as likely as female students to drop out of the study (OR = 2.11, $p = .070$). No other demographic variables were related to dropping out of the study (all other $ps > .185$). As reported previously, there was no significant relationship between vocational identity status and dropping out of the study.

Discussion

This study was designed to evaluate the nature and extent of relation between vocational identity formation and Freshman college retention. Vocational identity status in entry-level college students was assessed at three different time points over the course of their first year of college, as well as their stipulation of college enrollment. Additionally, student demographic variables were collected along with information about whether or not they met with a career counselor. Students scoring in a high commitment status (Achieved or Foreclosed) were expected to stay enrolled in college in light of findings by Kroger et al., (2010) that these statuses were relatively stable—once scoring in the Achieved or Foreclosed status, they were committed to a career direction. Students scoring in the Diffused status, in contrast, were expected to drop out in light of Marcia (1966) having noted that such adolescents lack the initiative to commit and show a slower progression to a committed status. Unfortunately, nearly every student who remained enrolled in this study across the 3 time points of investigation also remained enrolled in college. Therefore, it proved impossible to discern whether students who entered college in the Achieved or Foreclosed statuses were more likely—and those in the Diffused status less likely—to drop out of college. Due to no real variability in self-reported college enrollment, I was unable to viably test any of my central hypotheses concerning the relation between vocational identity status and college retention.

Given the absence of work examining the relation of vocational identity status to Freshman college retention (singularly or longitudinally), I looked to longitudinal studies of vocational identity, Freshman college retention, and Web-based studies to help potentially elucidate the dearth of college enrollment variability evident in this study at Times 2 and 3.

The one major difference between these other studies and my own is that they had access to institutional enrollment information, which I did not (e.g., Ishitani, 2008; Luyckx, et al., 2007; Wei, Russell, & Zakalik, 2005). Unfortunately, when this study began, Enrollment Management at UNM was juggling many requests for data with diminished staff and could not provide ongoing enrollment records. Furthermore, there were too many surveys going out to Freshmen students, which limited the ability to send participation requests to all incoming Freshmen (personal conversations with Babbitt, 2013; Handwerk, 2013). Having the ability to receive ongoing enrollment data on students in this study would have allowed information that could distinguish between students dropping out of this study and those who dropped out of college.

This significant study limitation notwithstanding, findings from my study concerning developmental trends in vocational identity development and concerning interrelations among vocational identity status and student demographic variables yield useful additions to the current literature on vocational identity and its development—additions that, in turn, offer potentially useful guides to understanding the relation between vocational identity status and Freshman college retention. In what follows, I speculate about ways in which this study's results may advance future research on vocational identity development and college retention.

Developmental Trends in Vocational Identity

For students who started the study in the Searching Moratorium status and who remained in the study at Time 3, there was a significant decrease in Commitment Flexibility scores across time. Additionally, though not reported in my results due to its lack of statistical significance, a potentially meaningful sign of decrease in students' Self-doubt

scores emerged across time, $B = -0.23$, $z = -1.37$, $p = .170$. Both of these findings concern components of reconsideration and highlight the importance of including reconsideration in identity research (Meeus, 1996; Porfeli et al., 2011). The expansion of Marcia's (1966) initial identity components of commitment and exploration, by including reconsideration, may, in fact, be an important link in determining if there is a connection between vocational identity formation and Freshman college retention. By adding reconsideration into the formula, Meeus (1996) and Porfeli et al. (2011) identified a new identity status they titled Searching Moratorium, which scores between Marcia's statuses of Moratorium and Achieved. According to Porfeli et al. (2011), "doubt is an important indicator of experiencing an identity crisis" (p. 860). If this is so, then students who reduce their Self-doubt score may move away from crisis toward more commitment. When they also decrease their Commitment Flexibility score, this could be an important indication of movement toward identity achievement (Porfeli et al., 2011). Further research that includes this new dimension of reconsideration could be the link that researchers are searching for between college retention and identity formation, and, more specifically, vocational identity formation.

Of the 89 students who were in the Moratorium and Undifferentiated statuses at the beginning of the study, 38 progressed to Achieved at either Time 2 or Time 3. At the same time, of those initial 89 students, 36 regressed to Diffused. While I was unable to tie these status changes to Freshman retention, it is important to note that some students in this study moved toward achievement of a vocational identity in their Freshman year of college, while other students moved away from it. To date, results are inconsistent regarding progressive developmental trends in identity formation (e.g., Kroger et al., 2010; Marcia, 1980; Meeus,

1996; Waterman, 1982, 1993). At the same time, Meeus (1996) found that the identity status of Moratorium decreases as adolescents mature (from 12 to 24 years of age), which my current research with 18- and 19-year-olds partially supports.

Student movement from Moratorium to Diffused in this study may signal a decline in Freshman students' mental health during their first year. Previous research has reported that incoming Freshman, compared to transfer students, were the most likely to experience adjustment difficulties (Lee et al., 2009). Additionally, dropping out of college was often the result of adjustment issues (e.g., Barr, 2007; Ishitani, 2008; Tinto, 1993), such as anxiety (Pappas & Loring, 1985), depression (e.g., Margolis, 2000), as well as stress (Andersson et al., 2009). Inner turmoil often results from students' questioning their identity (Henton, Lamke, Murphy, & Haynes, 1980), and identity is related to intention to withdraw (Lounsbury et al., 2004).

It is important to note that students, in overall identity research, who score in the status of Moratorium had the lowest levels of well-being (Meeus, 1996), and others have found this status positively related to poor adjustment (Luyckx, Soenens, & Goossens, 2006). However, with respect to research on vocational identity specifically, students displayed normative levels of well-being in Moratorium and Undifferentiated statuses when taking into consideration the added status of Searching Moratorium (Porfeli et al., 2011). Previous overall identity research has shown that students in the statuses of Moratorium and Diffused have high levels of depression (Meeus, 1996). With respect to vocational identity specifically, research has found that individuals in the Diffused status displayed the least favorable well-being (Porfeli et al., 2011). It could be valuable to investigate how some students in this study were able to cope and move forward to form a vocational identity by

considering other contextual variables of commitment. For example, what role does vocational identity development play in relation to institutional commitment (Tinto, 1975)—dispositional, financial and time commitments—and therefore, college retention? Further exploration of students' psychosocial health in conjunction with their development of a vocational identity in college could prove fruitful for retention researchers, as well as for college administrators who provide services to students on campus.

Student Background Differences in Relation to Vocational Identity

Experience with career counseling. Previous research has found relationships between career related variables, the use of career counseling, and psychological distress (Fouad et al., 2006), though such relationships were not investigated in terms of college retention. While the current study was unable to tie the variable of meeting with a career counselor to Freshman retention, a relationship was found with vocational identity status. More specifically, students in the Achieved status were more likely to have met with a career counselor before starting this study, while those in the Foreclosed status were less likely to have met with one. The findings in this study were less clear for the perceived vulnerable statuses of Searching Moratorium, Moratorium, Diffused and Undifferentiated.

Surprisingly, given the extensive research showing that the lack of a goal commitment has an effect on student retention, there is scant research on how (or if) career advisement in higher education affects dropout rates, without consideration of vocational identity development. What empirical research that is available has mixed findings. For example, Polansky, Horan, and Hanish (1993) found that career counseling alone had no significant effect on retention when it was administered without study skills training. Williams (2011), in contrast, found that students improved their career decision-making

skills and career knowledge as well as their determination to go to school after a career workshop; however, the workshop was imbedded in a class that included study skills training, so there is no clear separation between the two variables. Additional research needs to consider the relationship between career counseling (as a singular variable) and vocational identity formation, and therefore, college retention.

Parental income. Another relationship found in this study was between vocational identity status and Parental Income. Students whose parents' income was in the \$25,000 – \$50,000 range were more likely to be in the Searching Moratorium status; the \$50,000 – \$100,000 range were less likely to be in the Searching Moratorium status and more likely to be in the Undifferentiated status. Students whose parents' income was over \$100,000 were over-represented in the Foreclosed status. Parental Income in relation to the status of Foreclosed is no surprise. Foreclosed was once considered to be a low status identity because of its low level of exploration. However, more recent overall identity and college retention research has reevaluated the staying power of students in the Foreclosed status, because of its high level of commitment. Commitment appears to be a robust signal of positive identity development (Crocetti, Rubini, & Meeus, 2008, p. 220) and is tied to retention (e.g., Willcoxson, 2010).

It is interesting that parental income significantly related to the two new statuses of Searching Moratorium and Undifferentiated. These results run counter to previous assertions that family income is less related to students dropping out than other forms of family social status, specifically parental occupation or education (Jaffe & Adams, 1970). Tinto (1975) went so far as to state that “family income may no longer be an adequate measure of differences in social status between families” (p. 113). While finances may not be a

determining factor for students dropping out in the first year of college, lower income families do not have the same access to education as higher income families (Bozick, 2007). Although the findings in this study only showed Parental Income relating to half of the vocational identity statuses, further studies of this relationship are warranted and may shed new light on a connection between vocational identity development and parental income influencing Freshman college retention.

Institution. Additionally, differences were found in students' vocational identity statuses related to attendance at CNM or UNM. Students at CNM were more likely to start college in the Achieved status, while UNM students were more likely to start college in the Moratorium status. This is an interesting finding, and although there were no differences in parental income and attendance at either CNM (a 2-year college) or UNM (a 4-year college), there was a difference in vocational identity status. Further studies of vocational identity affecting college retention should compare 2- and 4-year college students and take into consideration a family's social status. Does a family's social status as a whole (i.e., education and occupation, as well as income) influence the choices of students to pursue particular degree options, such as specific trade degrees routinely offered at 2-year colleges (e.g., Electrician) as opposed to advanced degrees at a 4-year college (Bachelor of Electrical Engineering)?

Ethnicity. This study did not find ethnic differences in vocational identity status. This does not mean, however, that no link exists between ethnicity and vocational identity development. While college enrollment for ethnic minority youth (i.e., African American, Latino, and American Indian) is on the rise, it is consistently shown that they have higher attrition rates than White students (Zea, Reisen, Beil, & Caplan, 1997), and something is

driving this phenomenon. Researchers have considered the role of ethnic identity in this regard (e.g., Schwartz, Zamboanga, Weisskirch, & Rodriguez, 2009). However, no differences across ethnic backgrounds routinely emerge in the association between academic motivation and the strength of ethnic identification. With ethnic minority adolescents (ages 13-17), for example, career planning tends to influence school engagement more than racial identity (Helms, 1995); with 9th graders, self-concept of academic ability and achievement bear no relation to ethnic identification (Fuligni, Witkow, & Garcia, 2005). Furthermore, in a study of college students in a minority/majority area of Florida, researchers found that, across ethnicities (Black, Hispanic, and White), personal identity exploration was more of a determinate for distress than was ethnic identity exploration (Schwartz et al., 2009). Perron, Vondracek, Skorikov, Tremblay, and Corbière (1998) did find a positive association between vocational maturity—assessing career exploration and planning—and ethnic identity. However, the above researchers did not consider how students' perceived career barriers may play a role in career exploration, and therefore, vocational identity development.

Helms and Piper (1994) theorize that it is not the development of vocational identity that may hinder minority career development, but “the (racial) environment in which that process occurs” and the extent that race/ethnicity significantly defines an individual's perception of her/his career options (Helms & Piper, 1994, p. 128). A meta-analysis of research from 1991 – 2004 has supported Helms and Piper's (1994) theory in that race/ethnicity differences were not found to greatly affect career aspirations or interests; however, these differences did influence perceived career-related opportunities and barriers (Fouad and Byars-Winston, 2005). Therefore, there may be a link between ethnic identity and the formation of a vocational identity via individuals' perception of career barriers.

Adolescence may be a time when perceived job opportunities and barriers become more influential in career exploration and commitment, after racial identity has developed, but while vocational identity is developing. Research by Perron et al. (1998) supports this assertion. They found that younger ethnic minority cohorts showed higher levels of vocational maturity than their ethnic majority counterpart (e.g., committing to a dream), yet fell behind the majority group by the 11th grade (e.g., when recognizing racial inequality kicks in). In pursuing a career, limiting the choice of a college major to that which is perceived to be a career option and not following a personal dream may be one drawback that keeps ethnic minority and/or lower social status adolescents from completing their first year of college. The danger of ignoring college graduation rates for ethnic minority adolescents will continue to be seen in the workforce. This could maintain the cycle of ethnic minority youth career choices that may be determined by perceived job opportunities and barriers, not necessarily by the normative development of vocational identity. Further research into the relationship between vocational identity, ethnicity and social status could add valuable information to help tertiary educators recognize an individual Freshman student's needs and direct them to appropriate support services, thereby assisting and encouraging students' vocational identity development which, in turn, could affect their academic path as well as their future career goals.

Limitations

Despite its short-term longitudinal design, the current study was limited to 18- and 19-year-olds in their first year of college. To do justice to the developmental process of vocational identity, which may mature either in high school or college, future longitudinal studies would benefit from starting in high school and following students through college.

While there was movement between vocational identity statuses in this study, a longer period of development is necessary to explore vocational identity's connection with college retention.

Another limitation of the current study concerned its demographically confined participant recruitment. Recruitment for this study only took place in the major metropolitan area of Albuquerque, New Mexico, at the two major higher educational institutions of CNM and UNM. With respect to UNM recruitment, the sample largely derived from students enrolled in an introductory psychology course. Extending this research to the State of New Mexico and other state populations, as well as to a wider diversity of college majors, would likely increase the possibility of finding ethnic and social status differences that may affect the developmental process of vocational identity, and, therefore, its relationship to college retention. While this study represents an attempt to extend our understanding of varying vocational identity statuses and how they might affect college retention, the diversity that adolescents bring to college campuses is essential in this process and needs to be considered in future studies.

Finally, and most importantly, this study was conducted in an online format, with self-report measures (which, with respect to college retention, significantly compromised my ability to discern who dropped out of the study and who actually dropped out of college). Future research would benefit from in-person interviews to address this study's attrition rates. Studies starting with in-person interviews had much higher retention rates than those found in the current study (e.g., Meeus, 1996). In-person interviews would also provide qualitative data to enhance our understanding of how adolescents are processing information about career choices.

Conclusion

Despite these limitations, the current study extends previous research by elaborating upon the construct of vocational identity formation and its potential developmental progression. By employing (1) a short-term longitudinal design with three testing sessions conducted over the course of approximately nine months; (2) the new VISA measurement (Porfeli et. al. 2011) that included Career Reconsideration in addition to Career Exploration and Career Commitment; and (3) student background information, the research design enabled me to investigate developmental trends in vocational identity formation—and specifically to evaluate the components of exploration, commitment, and reconsideration—for students entering college at 18- or 19-years-old. My results demonstrate a reduction over the first year of college in Career Reconsideration for students in the Searching Moratorium status—specifically in the sub-scale of Career Flexibility, and to a lesser degree, Career Self-doubt. At the same time, no increase in Career Commitment or Career Exploration emerged. This suggests that adolescents, when forming a vocational identity, first become more flexible in regard to their career choice(s) before they explore career options or commit to a career path.

My results further suggest relations between a student's background and vocational identity formation. Parental income significantly related to Searching Moratorium and Undifferentiated statuses. Furthermore, the results underscore the significance of adolescents meeting with a career counselor before, or upon entering, college. Students in the Achieved status were more likely to have seen a career counselor, setting them on the road toward committing to a profession, and therefore a degree. If future research reinforces these findings, they suggest that institutions of higher education need to consider the role that

normative vocational identity formation plays in students' choosing a degree major. Given that many of our incoming Freshman are still developing a vocational identity, meeting with a career counselor could be the catalyst for those who are undecided about their career path to move toward a more committed one, especially for those who fall into the statuses of Searching Moratorium, Moratorium, Diffused, or Undifferentiated.

Appendix A: Questionnaire

Table 3

Questionnaire Summary

Time	Question	Response Options	
1	Alternate email address	Open-ended	
	Current age	Open-ended	
	Sex	Male/Female	
	Ethnicity	Hispanic	
		Caucasian	
		American Indian	
		African American	
		Asian	
		Other	
	Mother's Education Level/ Father's Education Level	Some high school	
Graduated high school Some college Undergraduate degree Graduate degree			
Parent's annual income:	Under \$25,000		
	\$25,000 - \$50,000		
	\$50,000 - \$100,000		
	Over \$100,000		
1, 2 & 3	Have you chosen a degree major?	Yes/No	
	If "yes," what degree major have you chosen?	Open-ended	
	Have you met with a career counselor to help you choose a college degree major?	Yes/No	
	If "yes"	High school career counselor	
		College career counselor	
	Are you still registered in at least one college course?	Yes/No	
	Are you planning to register in classes next semester (Spring 2014*)?	Yes/No	
	If "yes," where are you planning to enroll?	CNM	
		UNM	
		Other NM college	
An out-of-state college			

* For the first and second sessions this stated (Spring 2014), for the third session this stated (Summer 2014 or Fall 2014).

Appendix B: VISA Assessment

Table

VISA Assessment

Identity Dimensions	Sub-scales	Statements
Career Exploration	In-breadth	<p>I am casually learning about careers that are unfamiliar to me in order to find a few to explore further.</p> <p>I am trying to have many different experiences so that I can find several jobs that might suit me.</p> <p>I am thinking about how I could fit into many different careers.</p> <p>I am learning about various jobs that I might like.</p> <p>I am keeping my options open as I learn about many different careers.</p>
	In-depth	<p>I am identifying my strongest talents as I think about careers.</p> <p>I am learning as much as I can about the particular educational requirements of the career that interests me the most.</p> <p>I am learning what I can do to improve my chances of getting into my chosen career.</p> <p>I am trying to find people that share my career interests.</p> <p>I am thinking about all the aspects of working that are important to me.</p>
Career Commitment	Commitment Making	<p>I know what kind of work is best for me.</p> <p>No other career is as appealing to me as the one I expect to enter.</p> <p>I have known for a long time what career is best for me.</p> <p>No one will change my mind about the career I have chosen.</p> <p>I have invested a lot of energy into preparing for my chosen career.</p>
	Identification with Commitment	<p>My career will help me satisfy deeply personal goals.</p> <p>My family feels confident that I will enter my chosen career.</p> <p>Becoming a worker in my chosen career will allow me to become the person I dream to be.</p> <p>I chose a career that will allow me to remain true to my values.</p> <p>My career choice will permit me to have the kind of family life I wish to have.</p>
Career Reconsideration	Career Self-doubt	<p>Thinking about choosing a career makes me feel uneasy.</p> <p>When I tell other people about my career plans, I feel like I am being a little dishonest.</p> <p>People who really know me seem doubtful when I share my career plans with them.</p> <p>I doubt I will find a career that suits me.</p> <p>I may not be able to get the job I really want.</p>
	Career Flexibility	<p>My work interests are likely to change in the future.</p> <p>What I look for in a job will change in the future.</p> <p>I will probably change my career goals.</p> <p>My career choice might turn out to be different than I expect.</p> <p>I need to learn a lot more before I can make a career choice.</p>

Note: Each statement is answered on a 5-point Likert scale: 1 (strongly disagree), 2 (disagree), 3 (agree and disagree), 4 (agree), and 5 (strongly agree).

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