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Acculturation and career development of international and domestic college students

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Abstract

Relationships among personal and career characteristics were evaluated via 53 international and 54 domestic students at a large southeastern university. One-way MANOVA results showed an overall significant difference between groups for mainstream acculturation, but not on vocational identity, dysfunctional career thoughts (DCT), goal instability, and heritage domain of acculturation. Multiple regression results indicated about 71% of variation in vocational identity of domestic college students was explained by DCT and acculturation, while DCT was the only significant predictor of vocational identity for international students. Thus, a key implication from this study is for career practitioners to address and challenge dysfunctional thinking of all students to improve vocational identity. Future research should further explore how other potential moderator variables (such as gender, ethnicity, and parental education) may influence vocational identity, and might also include more qualitative approaches to better understand an individual's world view including personal and cultural characteristics.

Keywords: career development, cognitive information processing theory, vocational identity, international students, goal instability

Predicting the Vocational Identity of International and Domestic College Students

Limited research exists on the career-development concerns of international college students (Leong & Sedlacek, 1989; Reynolds & Constantine, 2007). We do know that international college students tend to experience more stress and career development challenges than domestic peers because of the transition to new educational and social environments (Mori, 2000). To better serve an individual's career development needs in a culturally heterogeneous country such as the U.S., researchers (Crockett & Hays, 2011; Mahadevan, 2010; Miller & Kerlow-Myers, 2009; Rivera, Chen, Flores Bluberg, & Ponterotto, 2007) have advocated understanding the individual's worldview including personal and cultural characteristics. For example, Crockett and Hays (2011) suggested research was needed to examine how an individual's acculturation level and career goals impact international college students' use of career counseling and related services. The purpose of this current study is to contribute to understanding acculturation's potential relationship with career thoughts, goal instability, and vocational identity of international college students as compared to domestic students.

Acculturation and College Student Career Development

Acculturation refers to a dynamic process of psychological and behavioral changes that occur when individuals integrate elements of their heritage and mainstream cultures into their sense of identity (Ryder, Alden, & Paulhus, 2000). In contrast to the unidimensional approach which assumes that both acculturation and assimilation are linear processes, several researchers (Berry, 1980; Mahadevan, 2010; Miller, 2007; Ryder, Alden, & Paulhus, 2000) have argued that individuals' heritage and mainstream cultural identities change independently and advocated that acculturation should be viewed and measured as separate dimensions. Additionally, Ryder, Alden, and Paulhau (2000) expanded the use of acculturation assessment from focusing only on

ethnic minorities to including Caucasian individuals, as all individuals are influenced not only by their specific heritage culture but also by their family in previous generations. Exploring acculturation helps researchers and practitioners to better understand clients' worldviews, to focus on psychological well-being among immigrants and ethnic minorities (Chae & Foley, 2010; Engstrom & Okamura, 2007), and to choose culturally-relevant interventions (Flores, Ramos, & Kanagui, 2010; Leong, 1993).

Evidence suggests that acculturation influences one's career aspirations and career outcome expectations (Reynolds & Constantine, 2007) and vocational identity (Shih & Brown, 2000), but not career beliefs (Mahadevan, 2010). For example, Reynolds and Constantine (2007) conducted a study in a sample of 261 international college students and found that acculturative distress (i.e., interpersonal conflicts with mainstream culture and heritage culture) was negatively correlated with these students' levels of career outcome expectations. In addition, intercultural competence concerns (i.e., concerns about social, academic, cultural, and career competence) were negatively correlated with career aspirations and career outcome expectations.

Purpose of the Study

To extend our understanding of the career development of diverse populations, the present study explores both international and domestic college students' acculturation, career thoughts, goal instability and vocational identity. Career thoughts are defined as "outcomes of one's thinking about assumptions, attitudes, behaviors, beliefs, feelings, plans, and/or strategies related to career problem solving and decision making" (Sampson, Reardon, Peterson, & Lenz, 2004, p. 91). Career thoughts are an essential component of effective career decision making (Sampson et al., 2004) which have been associated with vocational identity and calling (Galles & Lenz, 2013), career indecision and depression symptoms (Walker & Peterson, 2012), career and

life stress, satisfaction with career choice, and career indecision (Bullock-Yowell, Peterson, Reardon, Leierer, & Reed, 2011) among college students. Goal instability is defined as “a lack of goal directedness and inhibition in work” (Robbins & Patton, 1985, p. 226), and refers to difficulty in having a cohesive sense of self to set goals, formulate plans, keep persistence, and carry out action. Vocational identity is defined as “the possession of a clear and stable picture of one’s goals, interests, personality and talents” (Holland, Daiger, & Power, 1980; p.1). Individuals with clear and stable vocational identity tend to display more confidence in their competence to make career decisions, especially while encountering some inevitable environmental ambiguities (Holland, Johnston, & Asama, 1993).

Currently, no research has examined relationships among all four variables identified in this study. However, several studies have addressed correlations among two or three variables. Specifically, studies have been conducted on decision-making confusion and vocational identity (Galles & Lenz, 2013), decision making-confusion and goal instability (Bertoch et al., 2014), and acculturation and vocational identity (Shih & Brown, 2012). Galles and Lenz (2013) examined relationships among dysfunctional career thoughts, vocational identity and callings in a sample of 329 college students enrolled in several sections of a career development course. Inverse correlations were found between dysfunctional career thinking and vocational identity. Dysfunctional career thoughts have also been significantly related to goal instability (Bertoch et al., 2014) among 257 college students, who found that individuals with high levels of goal instability have difficulty in initiating action and moving forward with the career decision-making and problem-solving process. Specifically, each subscale of dysfunctional career thoughts as measured by the Career Thoughts Inventory (CTI; Sampson, Peterson, Lenz, Reardon, & Saunders, 1996), including Decision Making Confusion ($r = -.64$; $p < .01$),

Commitment Anxiety ($r = -.51$; $p < .01$), and External Conflict ($r = -.44$; $p < .01$), were significantly related to goal instability, accounting for 41.6% of variance. Finally, in a study of acculturation level and vocational identity of 122 graduate and undergraduate Taiwanese international students attending Midwestern universities, Shih and Brown (2012) found that older Taiwanese international students reported less acculturation (i.e., maintaining Asian identity) and had higher vocational identity.

The bi-dimensional acculturation model was used to more completely conceptualize individuals' world views in terms of heritage culture identities and mainstream cultural identities. Based upon a review of relevant literature, the following research questions were examined: (1) Are there significant differences between international and domestic college students with respect to dysfunctional career thoughts, heritage domain of acculturation, mainstream domain of acculturation, and vocational identity? (2) How does the relationship between acculturation and vocational identity differ between domestic and international college students? and (3) What is the contribution of dysfunctional career thoughts, goal instability, heritage domain of acculturation, and mainstream domain of acculturation to the vocational identity of domestic and international college students?

Method

Participants

Following approval from the University Institutional Review Board, data collection occurred during a one-month period by paper-based surveys from two different voluntary groups: domestic students and international students attending a large Southeastern university. The total number of initial respondents was 120; however, five cases were not included in the final data analysis due to incomplete surveys, and eight cases were also removed from the final data

analysis because the participants indicated they are U.S. citizens born outside of the United States. Therefore, final data analysis procedures included 107 participants, including 54 domestic students and 53 international students.

Domestic student participants ranged in age from 18 to 42 ($M = 21.1$, $SD = 3.8$), including 77 % undergraduate students (20.5% Freshman, 24% Sophomore, 12% Junior, and 20.5% Senior) and 23% graduate student (4% master's students 19% doctoral students) with diverse fields of study. The composition of 54 domestic students was reported as 54% Caucasian, 15% Asian American/Pacific Islander, 13% Hispanic American, 9% African American, 7% more than one ethnicity, and 2% American Indian. Domestic students identified their heritage cultures as Bahaman, British, Caribbean, Chinese, Colombian, Cuban, Dominican, English, French, German, Guatemalan, Haliau, Honduran, Indian, Italian, Irish, Iranian, Jamaican, Japanese, Native American, Nicaragüense, Nigerian, Mexican, Peruvian, Puerto Rican, Russian, Scandinavian, Scottish, Swedish, Taiwanese, Thai, and/or Venezuelan.

International student participants ranged in age from 18 to 44 ($M = 26.3$, $SD = 4.1$). The majority of international student sample were graduate students (41.5% master's students and 52.8% doctoral students). The composition of 53 international students was reported as 26% from Taiwan, 25% from China, 9% from Iran, 8 % from India, 6% from South Korea, 4% from Nepal, 4% from Trinidad and Tobago, 4% from Turkey, and the rest from Canada, Columbia, England, Germany, Kazakhstan, Malaysia, New Zealand, or Peru.

Measures

Acculturation. Acculturation was assessed using the Vancouver Index of Acculturation (VIA; Ryder, Alden, & Paulhus, 2000), a 20-item self-report instrument consisting of the Heritage scale (10 items) and Mainstream scale (10 items). The VIA conceptualizes

acculturation as a bi-dimensional construct which reflects co-existing dimensions of cultural identification with one's heritage culture (Heritage scale) and American mainstream culture (Mainstream scale). Items addressing several aspects relevant to acculturation, including values, friendships, social activities, and cultural traditions are endorsed using a 9-point Likert scale ranging from 1 (Strongly Disagree) to 9 (Strongly Agree). A sample item from the Heritage scale is "I often participate in my heritage cultural traditions," and a sample item from the Mainstream scale is "I enjoy white American jokes and humor." Higher scores on each domain represents greater identification with each culture. The scores for Heritage and Mainstream scales were calculated by taking the mean of the corresponding 10 items. Mean scores in the present study for the VIA – Heritage scale were 6.96 (SD = 1.16) for domestic students and 6.88 (SD = 1.39) for international students, while mean scores on the VIA – Mainstream scale were 7.05 (SD = 1.22) for domestic students and 5.76 (SD = 1.29) for international students.

Ryder, Alden, and Paulhus (2000) reported strong internal consistency coefficients for both the Heritage scale ($\alpha = .91 - .92$) and the Mainstream scale ($\alpha = .85 - .89$) from multicultural samples, including Chinese, non-Chinese Eastern Asian, and non-English-speaking descent. In the present study, the internal consistency obtained for the Heritage domain was .83 (Cronbach's $\alpha = .80$ in domestic student group; .87 in international student group) and for the Mainstream domain was .85 for the domestic student group and .82 in international student group. Ryder, Alden, and Paulhus (2000) also reported that concurrent validity and factorial validity had been demonstrated for the VIA.

Career thoughts. The Career Thoughts Inventory (CTI; Sampson et al., 1996) is a 48-item instrument that measures an individual's level of dysfunctional thinking in career decision making and career problem solving. The CTI is appropriate to be self-administered to high

school students, college students, and adults and takes approximately 10 to 15 minutes to complete. Items are rated on a 4-point Likert-type scale, with verbal anchors of 0 (Strongly Disagree), 1 (Disagree), 2 (Agree), and 3 (Strongly Agree). All items are negatively worded to simplify both scoring and reframing of dysfunctional thoughts as a treatment intervention.

In addition to providing information about an individual's overall level of dysfunctional career thoughts (the CTI total score), the CTI also consists of three construct scales: Decision-Making Confusion (DMC; 14 items), Commitment Anxiety (CA; 10 items), and External Conflict (EC; 5 items). The DMC scale assesses an individual's difficulties with initialing or sustaining making a career choice due to negative feelings or lack of information. An example of DMC is, "I will never understand myself well enough to make a good career choice." The CA scale assesses an individual's difficulties with making a commitment to a specific career choice, such as, "The hardest thing is settling on just one field of study or occupation." The EC scale assesses an individual's difficulties with balancing one's ideas with ideas from significant others, such as "I need to choose a field of study or occupations that will please the important people in my life" (Sampson et al., 2004).

In terms of reliability, internal consistency coefficients for the CTI Total score ($\alpha = .93 - .97$) and DMC ($\alpha = .90 - .94$) were reported as high; whereas the internal consistency coefficients for CA ($\alpha = .79 - .91$) and EC ($\alpha = .74 - .81$) were respectable, but lower. Specifically, the lower reliability for the EC scale may be attributed to the small number of items ($n = 5$). In the present study, the internal consistency obtained for the CTI Total score was .96 in both domestic and international student groups, with domestic students having a mean CTI score of 40.47 (SD = 24.94) and international students having a mean of 45.62 (SD = 21.07). Sound evidence for the

CTI's content, construct, and criterion-related validity have been previously reported (Peila-Shuster & Feller, 2013; Sampson et al., 1996).

Goal instability. The Goal Instability Scale (GIS; Robbins & Patton, 1985) is a 10-item self-report instrument which assesses an individual's ability to formulate and pursue career plans. Items are endorsed using a 6-point Likert-type scale ranging, with verbal anchors of 1 (Strongly Agree), 2 (Moderately Agree), 3 (Slightly Agree), 4 (Slightly Disagree), 5 (Moderately Disagree), and 6 (Strongly Disagree). Higher GIS scores depict greater goal-directedness. Item examples include, "It's hard to find a reason for working" and "I don't seem to make decisions by myself."

The GIS has a test-retest reliability for the GIS over a 2-week period of $r = .76$ and internal consistency of $\alpha = .81$ (Robbins & Patton, 1985). Robbins, Payne, and Chartrand (1990) conducted confirmatory factor analysis and found items on the GIS to measure a single construct of goal instability. Evidence of concurrent validity (Robbins & Patton, 1985) indicated significant correlations with career undecidedness ($r = -.22$). The GIS was also found to be significantly associated with measures of career-planning confidence (McAuliffe et al., 2006), including readiness to engage in career planning ($r = .42$), self-assessment confidence ($r = .37$), deciding confidence ($r = .49$), and confidence in implementing one's decision ($r = .43$). In the present study, the internal consistency obtained for the GIS was .84 (Cronbach's alpha = .86 in domestic student group, .83 in international student group). In the present study, domestic students had a mean of 44.52 (SD = 11.63) and international students had a mean of 46.30 (SD = 7.77).

Vocational identity. The My Vocational Situation (MVS; Holland et al., 1980) is a 20-item instrument that measures an individual's difficulty in career decision-making. In the current study, the Vocational Identity (VI) subscale from the MVS was used to assess the degree to

which individuals had a clear and stable picture of their goals, interests, and talents, and confidence in decision making. The VI scale is composed of 18 true-false items, and each false response is scored as 1. Possible total scores range from 0 to 18, with higher VI scores indicating a greater degree of vocational identity. An example item is “If I had to make an occupational choice right now, I am afraid I would make a bad choice.” In 1993, Holland, Johnston, and Asama reviewed several earlier factor analyses with the VI scale and concluded that the VI scale is composed of three or four factors; some of the factors included anxiety, indecision, and confused identity. However, Johnston and Asama (1992) used a larger sample size ($n = 1075$) and the VI scale was determined to measure a singular vocational identity construct. Recent studies (Dipeolu, Sniatecki, Storlie, & Hargrave, 2013; Galles & Lenz, 2013; Hartung, Lewis, May, & Niles, 2002), including this present one, used the MVS as a singular measure of vocational identity.

In terms of reliability, Holland et al. (1980) reported that high internal consistency ($KR-20 = .88 - .89$) was found for the VI subscale for samples of college students and workers ($n = 592$). Hartung et al. (2002) reported similar internal consistency of the VI subscale (Internal consistency = .86). In the present study, the internal consistency obtained for the VI subscale was .86 (.90 in domestic student group, .79 in international student group). In the present study, domestic students had a mean of 11.09 ($SD = 5.19$) while international students had a mean of 11.27 ($SD = 11.27$). Holland et al. (1993) provided evidence for the convergent validity of the VI scale, which indicated that the VI scale was correlated with several measures, such as the Career Decision Scale (CDS; Osipow et al., 1987), Medical Career Development Inventory (MCIDI; Savickas, 1985) and Problem Solving Inventory (PSI; Heppner & Petersen, 1982).

Procedures

Participants were recruited from international and domestic students attending the International Coffee Hour (a social event hold by the Center for Global Engagement for meeting new people from various parts of the world). Research assistants approached students attending the coffee hour and asked if they would be willing to complete some surveys as a part of a dissertation project. Those who agreed were presented with a copy of informed consent, which briefly explained the nature of this study, confidentiality of responses, and forms to be completed. All forms and surveys were assigned a number, randomized, with only the informed consent document including the subject's name.

Data Analysis

The present study used a quasi-experimental design. Data analyses were conducted with SPSS (Statistical Package for the Social Science) Version 20 (IBM Corp., 2011). Two a-priori power analyses were conducted to determine minimum sample sizes. For MANOVA, a medium effect size of $f^2 = .15$ was used, α -level was set to .05, number of groups was 2, and response variables were set to 5. The program G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) indicated that a power level of .8 could be achieved with a total sample of $n = 92$. For the multiple regression analysis, a medium to high effect size of $f^2 = .25$ was used, α -level was set to .05, and number of predictors was set to 3. A power level of .8 could be achieved with a sample size of 48 for each group. The present study met the required sample size by having 107 participants, including 54 domestic students and 53 international students.

Results

Means, standard deviations, and zero-order correlations of variables are presented in Table 1. To examine normality for each of the measures, the general rule of Fisher's skewness

and kurtosis coefficients were applied resulting in a standard error of skewness in both groups of .33, while .64 was the standard error of kurtosis for both groups, suggesting severe negative skewness and leptokurtic distributions on the GIS, Heritage scale, and Mainstream scales.

According to suggestions by Tabachnick and Fidell (2007), the severity of skewness and kurtosis is identified by dividing skewness and kurtosis by its standard error. When the value falls outside of the acceptable range of ± 1.96 , severe skewness or severe kurtosis is suggested. The new reflected variables were created for the GIS, Heritage scale, and Mainstream scale by adding 1 to the original variable's maximum value, and then transforming by square root of each reflected variables.

To determine whether significant differences between international and domestic college students with respect to dysfunctional career thoughts, heritage domain of acculturation, mainstream domain of acculturation, and vocational identity existed, a one-way MANOVA was conducted, using group (i.e., international and domestic college students) as a categorical independent variable and CTI Total, GIS, VIA-H, and VIA-M as continuous dependent variables. The results (see Table 2) showed an overall significant difference between international and domestic college students on their overall personal and career characteristics (Wilks' lambda = .71, $F_{(5,101)} = 8.11$, $p < .05$). In this present study, group difference (i.e., international and domestic college students) accounted for 28.6 percent of variance in overall personal and career characteristics, and between-subjects effects indicated that international and domestic college students were significantly different on mainstream acculturation ($F_{(1,105)} = 32.15$, $p < .05$, $\eta^2 = .23$), but not on levels of vocational identity, dysfunctional career thoughts, goal stability, and heritage acculturation.

Research Question 2 examined relationships between acculturation and vocational identity in domestic and international college students. Bivariate correlations for both international and domestic college student groups indicated no significant correlations between acculturation and vocational identity for either groups.

Research Question 3 aimed to investigate the contribution of dysfunctional career thoughts, heritage domain of acculturation, and mainstream domain of acculturation to vocational identity in domestic and international college students. Given the strong correlation between the CTI Total and the GIS score in both groups ($r = .58$ in domestic college student group, $r = .71$ in international college student group), the decision was made to keep the CTI Total as a predictor and exclude goal instability in the regression analysis to solve the problem of multicollinearity. Multiple regression analyses were performed after checking assumptions in linear regression (i.e., linearity, independence, normality of residuals, homogeneity of variance). For domestic college students, the results (see Table 3) indicated that about 71% of variation in vocational identity of domestic college students ($F = 39.91$, $p < .001$) can be explained by these three predictors: CTI Total ($\beta = -.80$, $p < .001$), VIA-Heritage ($\beta = .28$, $p < .01$), and VIA-Mainstream ($\beta = -.28$, $p < .01$). For international college students, results of the multiple regression analysis indicated that there was about 51.8% of variation in vocational identity of international college students explained by these three predictors of CTI, VIA-Heritage, and VIA-Mainstream. CTI Total ($\beta = -.69$, $p < .001$) was the only significant predictor of vocational identity of international college students ($F = 16.85$, $p < .001$).

Discussion

The present study examined the similarities and differences on career and cultural characteristics of international and domestic college students in terms of acculturation, career

thoughts, goal instability, and vocational identity. Both domestic and international students endorsed heritages representative of many cultures, with dysfunctional career thoughts, goal instability, and vocational identity scores relatively the same. However, the domestic college students group ($M = 7.05$, $SD = 1.22$) had a significantly stronger identity on American mainstream culture than the international college students group ($M = 5.76$, $SD = 1.29$). The majority of previous research (Bertoch et al., 2014; Bullock-Yowell et al., 2011; Galles & Lenz, 2013; Hansen & Lee, 2007; Johnson et al., 2014; Leong, Kao, & Lee, 2004; Walker & Peterson, 2012) focused on understanding the general domestic college student population and examining differences within specific ethnic or cultural groups as opposed to comparing the groups. This current study expanded the scope of existing literature, finding no significant group differences in vocational identity between international and domestic college students.

In further support of the homogeneity of groups, no significant correlation between acculturation and vocational identity were found for domestic and international college students. These findings are somewhat consistent with those of Caldera et al. (2003), who reported that acculturation levels were not associated to the commitment to career choice in Mexican American and non-Hispanic White female college students. However, the results of the present study contradict Shih and Brown's (2000) finding of a low but significant correlation ($r = -.27$, $p < .01$) between acculturation and vocational identity among 112 undergraduate and graduate Taiwanese international students. Perhaps no relationship exists between acculturation and vocational identity. Another potential explanation is the particularity of each cultural group among college students. Researchers (Shih & Brown, 2000; Suinn, Ahuna, & Khoo, 1992) have emphasized that complicated factors (such as age of the person, educational level, length of United States residence, and gender) are involved in the process of acculturation. Mahadevan

(2010) also suggested that the acculturation process may differ among different international college student populations. If the present study had a larger sample size to examine the nuances of acculturation level, potential linear relationships between acculturation and vocational identity might have emerged. Additional research is needed to analyze moderator variables (such as gender, ethnicity, and parental education) influencing individual's vocational identity.

The final research question examined the contribution of dysfunctional career thoughts and acculturation to the vocational identity of domestic and international college students. The present study found 71% of variation in vocational identity of domestic college students explained by CTI Total, heritage domain of acculturation, and mainstream domain of acculturation. In other words, dysfunctional career thoughts and acculturation were predictors for vocational identity of domestic college students. This finding heightens the need of reducing confusion and anxiety associated with dysfunctional career thoughts while working with domestic college students in exploring and developing career goals. Like Galles and Lenz (2013)'s study, the present study found domestic college students with fewer dysfunctional career thoughts were more likely to have higher vocational identity. In addition to the salient role of career thoughts, domestic college students' vocational identity is partially explained by their acculturation level. The majority of the domestic college students in this study were able to identify at least one of their heritage cultures as different from American mainstream culture. This phenomenon may reveal the nature of the multiculturalism in the United States as the common metaphor of a melting pot. If this is the case, then future research should consider level of acculturation and cultural identity for domestic students, instead of assuming that all domestic students' world view are closer to the mainstream culture. Even though in previous studies, mixed results (Hansen & Lee, 2007; Leong et al., 2004; Park & Harrison, 1995) were found

between acculturation and particular vocational interests for Asian American college students, other research findings (Leong et al., 2004; Park & Harrison, 1995) have revealed effects of acculturation on vocational interests. Similar to the viewpoint from Park and Harrison (1995), individuals' views of self are likely shaped by the acculturation process. Individuals may learn more about themselves and identify their career options by considering whether they are a part of mainstream culture. Overall, our finding heightens not only the need to reduce emotional distress associated with dysfunctional career thoughts, but also the need to consider cultural identity associated with acculturation levels, while working with domestic college students in exploring and developing career goals. With respect to international college students, the present study found that only dysfunctional career thoughts were a significant predictor for vocational identity of international college students. Acculturation levels in the heritage domain and the mainstream domain were not salient predictors of international college students' vocational identity.

For both international and domestic college students, dysfunctional career thoughts were the strongest predictor for vocational identity, which extend the findings of previous studies that showed a correlation between negative career thoughts and vocational identity (Galles & Lenz, 2013; Heller, 2008; Saunders, 1997). Acculturation appeared to be a significant factor influencing vocational identity for the domestic college student group rather than the international college student group. This is not to say that acculturation process is not an important factor to consider while working with international college students, but when it comes to vocational identity, negative career thoughts were likely to capture most of their thinking, feelings, and beliefs related to career goals and self-perceptions.

Implications for Practice and Research

Several implications for practice are suggested based on this study's results. Reducing students' anxiety and confusion resulting from dysfunctional career thoughts is likely to increase vocational identity. To address dysfunctional career thoughts, researchers (Bertoch et al., 2014; Galles & Lenz, 2013; Sampson et al., 1996) suggest cognitive reframing interventions to help individuals identify, challenge, and alter their dysfunctional career thoughts. In addition, acculturation could be a complicated process for both international college students and domestic college students living in a culturally heterogeneous environment. The National Career Development Association (NCDA; 2009) and researchers (Crockett & Hays, 2011; Mahadevan, 2010; Miller & Kerlow-Myers, 2009; Rivera et al., 2007) advocate for counselors to demonstrate multicultural competencies and understand the individual's world view including personal and cultural characteristics. Counselors are encouraged to help clients to explore how their cultures influence their self-concepts by using flexible and alternative approaches to match individuals' needs. For example, Crockett and Hays (2011) suggested college counseling professionals provide services such as support groups, forming small outreach teams, and implementing a peer-based model of helping to accommodate international students' needs.

Limitations

Several limitations were associated with this study. First, to minimize Type II error by setting an alpha of .05 (two tailed), the relatively small sample size in this study may have resulted in missing small group differences. Even though the total participants exceeded the minimum number needed for achieving a power level of .8, a larger sample size was favored for further exploration. Second, the international student population in this Southeastern university included more graduate international students than undergraduate international students, and thus,

the average age in the international college student group ($M = 26.3$, $SD = 4.1$) was larger than the domestic college student group ($M = 21.1$, $SD = 3.8$). Researchers (Shih & Brown, 2000; Suinn, Ahuna, & Khoo, 1992) indicated that the process of acculturation could be influenced by age of the person, educational level, length of United States residence, and gender. These differences between international and domestic college student groups may have influenced the research results. Last, recruitment of participants at an international coffee hour may have potentially influenced results. Students who self-selected to attend a social or cultural event may have more interests or awareness of cultural influences.

Future Research Directions

Recommendations for future research are several. First, researchers can further explore the differences within specific groups, such as groups with different acculturation levels. For example, based on individual's attitudes toward learning a new culture and keeping the heritage culture (Berry, 2003), groups could be divided into integration, assimilation, superstition, and marginalization. Also, the impact of how potential moderator variables (such as gender, age, ethnicity, and parental education) influence an individual's vocational identity could be explored. Moreover, as Mahadevan (2010, p. 653) said, "acculturation needs may be organized on a hierarchy." Therefore, further exploration of primary acculturation needs related to career development outcomes in specific race/ethnicity groups is recommended. For specific cultural populations, including both international and domestic college students, researchers could include qualitative methods to better understand individuals' worldviews including personal and cultural characteristics.

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Table 1

Means, Standard Deviations, and Zero-Order Correlations of Variables

Variable	M	SD	1	2	3	4
<i>Domestic Students</i>						
1. VI	11.09	5.19	—			
2. CTI Total	40.47	24.94	-.80**	—		
3. GIS	44.52	9.72	.52**	-.58**	—	
4. VAI-Heritage	69.61	11.63	-.22	.10	-.36**	—
5. VAI-Mainstream	70.51	12.16	-.10	.18	.15	.52**
<i>International Students</i>						
1. VI	11.27	3.83	—			
2. CTI Total	45.62	21.07	-.70**	—		
3. GIS	46.30	7.77	.61	-.71**	—	
4. VAI-Heritage	68.75	13.87	-.07	-.03	-.04	—
5. VAI-Mainstream	57.63	12.90	-.23	.20	-.12	.46**

Note: VI = Vocational Identity; CTI = Career Thoughts Inventory; GIS = Goal Instability Scale; VAI-Heritage = Vancouver Index of Acculturation, Heritage Scale; VAI – Mainstream = Vancouver Index of Acculturation, Mainstream Scale; * p <.05; **p <.01

Table 2

MANOVA Summary Table

Source	Dependent Variable	SS	<i>df</i>	MS	<i>F</i>	<i>p</i>
Group ^a	VI	.86	1	.86	.04	.84
	CTI	708.53	1	708.53	1.33	.25
	GIS	1.15	1	1.15	.85	.36
	VIA-Heritage	.17	1	.17	.08	.78
	VIA-Mainstream	51.16	1	51.16	32.15	.00

^aWilks' lambda = .71, $F_{(5,101)} = 8.11$, $p < .05$, $\eta^2 = .286$

Table 3

Multiple Regression Analyses Predicting Vocational Identity of Domestic College Students

Factor	Beta	<i>SE</i>	t	<i>p</i>
CTI	-.80	.01	-10.3	.000
VAI-Heritage	.28	.04	3.05	.004
VAI-Mainstream	-.28	.04	-2.98	.004

$R=.84$, $R^2=.71$, Adjusted $R^2=.70$, $F=39.91$, $p < .001$