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# Do Multicultural Experiences and Biculturalism Promote Creativity in International Students?

Patricia Ofili

DO MULTICULTURAL EXPERIENCES AND BICULTURALISM PROMOTE

CREATIVITY IN INTERNATIONAL STUDENTS?

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Patricia Ofili

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ABSTRACT

The 2009-2010 academic school year in the United States boasted a record number of enrolled international students. An estimated 690,923 students attended universities and colleges across the country (Open Doors, 2011). World markets and educational systems have become more connected and internationally focused. As a result, academic settings around the globe now encourage students to step beyond what is culturally familiar in order to become creative, knowledgeable, and competitive graduates. An empirical study by Maddux and Galinsky (2009) provides pioneering data that supports the connection of increased creativity through extended multicultural experiences. Individuals who are able to effectively incorporate customs from their home culture with that of the host culture are known as *bicultural*. The present study used an exploratory approach to provide additional information concerning the relationship between creativity and the variables that contribute to biculturalism (i.e., multilingualism, country of origin's cultural orientation, time lived in the U.S). The link between creativity achievements as a result of proper adjustment (i.e., acculturative stress, GPA, social support, multicultural campus involvement) was also investigated. Information was obtained from 122 international student participants. Sample ages ranged from 17 to 40 and represented 39 countries of origin. Information was collected through the completion of survey packets that contained the Creative Achievement Questionnaire (CAQ; Carson, Peterson, & Higgins, 2005), the Duncker Candle insight problem (1945, Karl Duncker), the Vancouver Index of Acculturation (VIA; Ryder, Alden, & Paulhus, 2000), the Acculturative Stress Scale for International Students (ASSIS;

Sandhu & Asrabadi, 1994), and a modified version of Social Support (Koeske & Koeske, 1989,1993). Results from the study did not support the majority of initial assumptions. Key predictor variables such as multilingualism and acculturation strategy were not influential on creativity success. More specifically, the acculturation strategy did not account for variances beyond other factors as predicted. Significant findings concerned the length of time lived abroad and insight problem solving. Participants who lived in the United States for longer periods had greater success solving the Duncker Candle insight problem. Results indicated that students from collectivistic cultural backgrounds (loose and tight) had lower self-reports of creativity on the CAQ and were not successful in solving the Duncker Candle insight problem. In terms of gender, female participants were least associated with correct responses to the Duncker Candle insight problem. Indicators of student success were negatively correlated with acculturative stress. Students who generally indicated higher levels of stress were least successful on the Duncker Candle measure of insight creativity. Overall, the study provided support for the relationship between insight problem solving and time lived abroad. The present study paves the way for future research that compares creativity measures and factors of biculturalism.

DEDICATION


This work is dedicated to the members of my support system. They provided the endearing

words that helped me through this journey:

My parents, Dr. Ben Ofili and Dr. (Mrs.) Theresa Ofili; my loving brothers: Calvin and Phillip.

My dear friends: Diane Ofili, Egbe Asowata, Tola Petgrave, and Chisom Udeze;

and to my best friend, Omon Aburime.

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PREFACE

       All participants in this document were treated according to the ethical standards of the American Psychological Association and the University of Mississippi Institutional Review Board.

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INTRODUCTION

The beginning of a new academic school year in the U.S. signals the start of new class schedules and challenging course work, but more importantly an opportunity to increase personal growth through education. Local students may travel short distances to reach their institutions but for nearly 600,000 plus international students, the journey to their prospective colleges and universities will require thousands of miles and several days of travel. International students receive an educational experience incomparable to their U.S. peers. These individuals continue to learn beyond the classroom. Aside from coursework and the acquirement of new academic skills, there is a unique opportunity to develop creative insight (Schooler & Melcher, 1995; Maddux & Galinsky, 2009).

Studying abroad affords new multicultural experiences. These experiences in turn facilitate the process of learning how to adapt and incorporate change into new life scripts (Maddux & Galinsky, 2009). They also aid in increasing the psychological readiness to acquire and incorporate foreign ideas or practices. According to Leung, Maddux, Galinsky, and Chiu (2008), cultural exposure in conjunction with a period of reflection and transformation will leave an individual with an improved ability to apply novel ideas. In short, extended periods abroad as opposed to short periods provide ample opportunity to engage in experiences that lead to an increase in creativity. Results from the series of studies by Maddux and Galinsky (2009) reveal an element of cognitive and behavioral shifts through changes in the environment. Throughout this period of change, creative ability is enhanced. Ward, Smith, and Finke (1999) also

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emphasize the importance of opportunities to stimulate the creativity process through extended periods of exposure to foreign cultures in their research. Their empirical evidence indicates a positive correlation between foreign experiences and an increase in creativity. Of interest are the populations that endorse biculturalism. Previous studies show that high rates of creativity are associated with first and second-generation children of immigrants and those who partake in the customs of more than one culture (Lambert, Tucker, & d'Anglejan, 1973; Simonton, 1994, 1997).

Modern information is not the only evidence for the benefits of multicultural experiences. Creativity fostered by international exposure is evidenced throughout history. Artists, renowned writers, and poets have created some of their greatest masterpieces while on extended excursions in foreign countries (Csikszentmihalyi, 1996). The common links are long segments of time spent abroad. Maddux and Galinsky (2009) recognize the successes of specific individuals who embarked on international endeavors. For instance, author Vladimir Nabokov wrote his novel *Lolita* and Ernest Hemingway penned *The Sun Also Rises*; both pieces were created while abroad. Irish Nobel Prize winners for literature (Yeats, Shaw, Beckett, and Heaney) reportedly, spent considerable portions of their lives living outside of Ireland. Furthermore, painters and composers of the likes of Picasso and Beethoven reached career heights during extended traveling periods. German composer, George Handel composed his piece, *Messiah*, while in England.

The benefits of becoming worldlier may be seen through the efforts of international students. This reasoning is based on research that claims international exposure primes students for creativity because of the ability to apply a universal skill-set to academic or professional challenges. Universities around the globe presently emphasize creativity as an important attribute

of their students upon graduation. In Australia, the University of Sydney boasts "creative and imaginative" graduates; the University of Melbourne states that students who graduate from their curriculum will be "critical and creative thinkers". The Malaysian education systems believe that creativity is crucial to the betterment of their entire country. Creativeness is an attribute acquired while in the university setting and it will, in time, enable the country to become competitive and resilient. The University of Mississippi currently has an active study abroad program. Former participants of the program report positive improvements ranging from plans to incorporate personal innovation, creativity into future careers and the acknowledgement of personal growth (International Outreach, 2009).

Information recently released by key international corporations provides a basis for the pertinent shift to creativity-inclusive curriculums. In 2010 the IBM Corporation published results from a global CEO study. Over 1,500 face-to-face interviews with chief executive officers from 60 countries and 33 industries took place. The consensus from the interviews indicated that excellent management skills and business direction are not enough to navigate the challenges of global expansion. Creativity was cited as the top indication of leadership potential and competency to sustain competitive economic advantages for enterprises (IBM Corporation, 2010). Likewise, the 14th Annual Global Survey completed by the PricewaterhouseCoopers Firm (PwC) also advocates for creativity development. Their survey included over 1,200 CEOs from 69 countries. A review of the survey responses confirmed that innovation was one of three strategically important points when facing business globalization (PricewaterhouseCoopers, 2011).

There is substance behind the claim that a lack of worldly knowledge does not cultivate an environment for creativity (Cole, 1984). This is an educational and economic incentive for

U.S.-based academic institutions to increase the incorporation of creativity into curriculums (Friedman, 2005). Existing resources currently integrate elements that nurture creativity development. International foreign exchange programs, study abroad programs, international research assignments, and sabbaticals are often utilized but there is room for more creativity cultivation (Leung, Maddux, Galinsky & Chiu, 2008; Maddux & Galinsky, 2009). A 2010 Newsweek article announced that the U.S. is in the midst of a "creativity crisis". Periodic testing spanning over 50 years indicates that creativity IQ (CQ) for children between the ages of 6 to 18 have fallen. CQ scores are the equivalent to the intelligence indicator of IQ. The current level of CQ is an alarming decrease from past years and continues to fall (Bronson & Merryman, 2010).

Creativity and multicultural experiences are relevant in (i.e., business, global policy, and education) because they lead to innovation. The following is a review of academic literature and research studies that addressed key variables that are pertinent to the current study.

*Why Long Periods Abroad Foster Creativity*

New cultural experiences are opportunities to learn. These experiences lead to the mastery of foreign languages, development of adaptability, personal growth, and international awareness (Drews & Meyer, 1996; Davidson & Lehmann, 2001-2005; Jurgens & McAuliffe, 2004; Hadis, 2005; Langley & Breese, 2005; Hunley, 2010). They also increase psychological readiness to acquire, process, and incorporate foreign ideas and practices because the exposure along with a reflection period leads to insightful and creative thinking (Ward & Smith, 1999; Leung, Maddux, Galinsky, & Chiu, 2008). In Maddux and Galinsky's (2009) study, participants who lived outside of their home culture for long periods of time showed the greatest shifts in cognitions and behaviors. The shifts stem from the acquisition of new, culture-based scripts. Social scripts provide a context for what is deemed culturally appropriate and inappropriate.

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Creativity is not only a mental process but also a culturally bound phenomenon that is a result of the interactions between social systems, ideas, and groups. Exposure to such social interactions teaches which behaviors carry a different meaning in the host culture (Csikszentmihalyi, 1999). For example, in western cultures it is considered impolite to burp out loud after a meal, however if eating a meal in a home in India-- a loud belch would be considered a compliment to the host. An individual who wishes to integrate into a new environment must assimilate to these scripts both behaviorally and cognitively (Maddux & Galinsky, 2009).

Cultural experiences that require complete immersion, such as study abroad intensive language courses, can have a physiological impact on the brain. Draganski, Gaser, Kempermann, Kuhn, Winkler, Buchel, and May (2006) used functional and structural correlates between learning and memory to explore this phenomenon within a sample of medical students during an intense exam period. Researchers concluded that an increase of the presence of gray matter in the posterior hippocampus was a physiological result of the pronounced periods of learning. This finding lends additional support to the assumption that extended periods of cultural exposure can influence cognitive and behavioral changes (Draganski, Gaser, Busch, Schuierer, Bogdahn, May, 2004). Those changes pave the way for the formation of novel ideas, conceptual expansion, and eventually creativity.

Cognitions are equally liable to change during periods abroad. An increase in readiness to draw ideas from separate cultures is formed through a process called *cognitive juxtaposition*. This means that there is an ability to incorporate conflicting idea from two or more cultures, generally presented at the same time, in an agreeable way (Wan & Chiu, 2002). Cognitive juxtaposition is significant because it encourages the use of different memory sets which helps facilitate unconventional ideas (Leung & Chiu, 2008). Bicultural experiences also expand

cognitive growth through a similar cognitive process, *creative conceptual expansion*. As new concepts are learned they are added to an existing body of knowledge, which in turn prompts a change in thoughts (Ward, Smith & Vaid, 1997; Wan & Chiu, 2002). At the time of acquirement, the new information may seem extraneous but their addition becomes invaluable when an unfamiliar problem surfaces because it forces the individual to incorporate the new information, thus leading to a creative performance.

Study abroad literature documents some of the most hindering and helping factors that accompany cultural transition. A well-documented hindering factor is stress. When stress arises due to the adjustment process it is referred to as acculturative stress. It is the result of psychological distress induced by intercultural, environmental stressors (Lazarus, 1993). Oberg (1960) first described the strain of adjustment as *culture shock*. Symptoms of acculturative stress typically subside after extended exposure to the environment (Beiser, Barwick, Berry, Dacosta, Fantino, Ganesan, Lee, Milne, Naidoo, Prince, Tousignant, & Vela, 1988). Empirical evidence provides support for the relationship between creativity and stressors (Anderson, DeDreu, & Nijstad, 2004). A number of studies have explored this relationship but, Byron, Khazanchi, and Nazarian (2010) performed a meta-analysis of several significant studies. Their data concluded that stressors were actually positive for creativity but the type of stressor determined whether the influence increased or decreased creativeness. Distraction Arousal theory deems that stressors consume a large portion of mental resources thus reducing the cognitive resources available to strategize and solve a problem in new ways. The researchers define the types of stressors used in the study. Low-level stressors typically involved social facets in relation to the participant (e.g., working with a team, completing a task while video taped). High-level stressors were events beyond the control of the participant (e.g., time constraints, emotional distress, emotional and

behavioral responses). It was discovered that low stress situations produced an increase in creativity and creativity reduced within high stress scenarios. Talbot, Cooper, and Barrow (1992) also detected a negative association with a high stress climate and creativity. Creativity outcomes were evaluated in relation to social relationships within an organization setting. Stress limited flexible thinking and led to psychological withdrawal of workers (Hosking & Morley 1991; Byron, Khazanchi, & Nazarian, 2010). Researchers concluded that some form of strain is good but a high concentration could lead to mental impairments, much like what is seen in the state of acculturative stress.

Reduced motivation and difficulty learning new material are associated with the presence of high levels of anxiety, depression, and somatic symptoms within the international student population (Gardner, Day, & MacIntyre 1992; Allen & Herron, 2003; Hunley, 2010). General functioning and activity levels are also notably low. Researchers conclude that acculturative stress could hinder the study abroad experience for some (Ryan & Twibell, 2000). Spencer-Oatey and Xiong (2006) tracked the correlation between GPA averages with psychological stress reports for Chinese students studying in the U.K. They discovered that stress was the only significant variable connected to GPA performance.

*Acculturation and Biculturalism*

It is common to meet individuals with more than one cultural background due to immigration and foreign exchange programs. A recent U.S. Census projective report estimates a net migration of over 8.9 million immigrants between April 1, 2000 and July 1, 2009 (U.S. Census Bureau, 2011). This is in addition to the 31.1 million foreign-born individuals reported in 2000. Much like these immigrants, international students enter into an environment that requires a balance between their home-based culture and U.S. -mainstream culture (Phinney, 1996). The

term *bicultural* was coined to describe an individual who has effectively incorporated customs from both the home culture and the host, much like what is described in the acculturation strategy of Integration (Gordon, 1964; Cameron & Lalonde, 1994; Berry, 1997). Terminology also refers to the internalization of more than one culture as *multiculturalism* (Benet-Martinez, 2006). Monoculture is classified as internalizing one primary culture (Benet-Martinez, Leu, Lee, Morris, 2002).

Biculturalism often develops by way of acculturation, the psychological adaptation that takes place during the moves from a familiar culture to an unfamiliar one (Redfield, Linton, & Herskovits, 1936; Berry 1987). According to Berry (1997), acculturation is a variable and dependent on factors present in the home and host cultures. The framework categorizes the relationship between cognitions and behaviors with expectations in the environment (Berry, Poortinga, Segall, & Dase, 1992). There are four acculturation strategies used to navigate the host culture the first of which is *Assimilation;* a strategy in which the customs and practices of the host culture are fully embraced and customs of the home are dismissed. The opposite of assimilation is *Separation*; a strategy that disregards the practices of the host culture in preference to hold firmly to the customs of the home culture. A combination of the Assimilation and Separation strategies is known as *Integration*; the international takes an equal interest in maintaining customs from both the home and host cultures. Use of the Integration strategy indicates the formation of biculturalism. Internationals who no longer participate in the customs of the home or host cultures enter the *Marginalization* strategy. Figure 1 provides a visual of the factors that determine an acculturation strategy.

*Figure 1:* *Berry's Acculturation Strategies (1997)*

| | **Maintenance of cultural identity** | **No maintenance of cultural identity** |
|---|---|---|
| **Seeks interactions with Host culture** | *Integration/Biculturalism* | *Assimilation* |
| **Little interest in interacting with Host culture** | *Separation* | *Marginalization* |

Tadmor and Tetlock (2006) developed the Acculturation Complexity Model (ACM) (Figure 2) to illustrate the cognitive processes that take place when entering a new culture. Much of their concept integrates Berry's stages of acculturation. It is not uncommon for adjusters to experience a feeling of conflict while navigating between multiple beliefs, values, and more. This feeling is referred to as *dissonance*. The more valuable the belief/custom is, the more difficult the dissonance will be (Tetlock, Peterson, & Lerner, 1996). The solution to this conflict is through behavioral and cognitive affiliation to the environment; meaning the individual will choose an acculturation strategy that will help to balance the cultural conflict (Festinger, 1964).

Biculturalism is an advantage in organized settings and idealized in the business sector. Biculturals excel because of their ease to adapt to demands in a wide range of settings (Chen, Benet-Martinez, & Bond, 2008; Friedman & Wu, 2010). This ease means more appeal to a broader audience, which is a valued asset to many organizations. Friedman and Wu (2010) identify the following as key competencies found in this population: conflict resolution, decision-making, and leadership. Biculturals with strong cultural-identities are more resistant to the groupthink social paradigm thus reinforcing the theory that biculturals posses the skills that are ideal for positions of authority (e.g., management roles). They also note that this group has an

advantage over monoculturals because of their insightful perspectives, which has the ability to influence a group/organization to view a problem in a different way. This in turn augments the group's output-- increasing reasoning and equaling a creative result (Tadmor, Tetlock, & Peng, 2009; Mok & Morris, 2010; Schwartz & Unger, 2010).

Figure 2: *Tadmor & Tetlock's Acculturation Complexity Model (ACM)*

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                        ┌─────────────────────────┐
                        │  Exposure to New Culture │
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                        │ Increased Attention Scope│
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      │ Accountability to Host  │      │ Accountability to Home  │
      │        Culture          │      │        Culture          │
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      ┌─────────────────────────┐      ┌─────────────────────────┐
      │   Bicultural Strategy   │      │ Assimilated/Separated   │
      │                         │      │        Strategy         │
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      ┌─────────────────────────┐      ┌─────────────────────────┐
      │     High Dissonance     │      │     Low Dissonance      │
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      ┌─────────────────────────┐      ┌─────────────────────────┐
      │ Integrative/Generalized │      │ Integrative/Generalized │
      │       Complexity        │      │       Simplicity        │
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      │  Bicultural Orientation │      │ Assimilated/Separated   │
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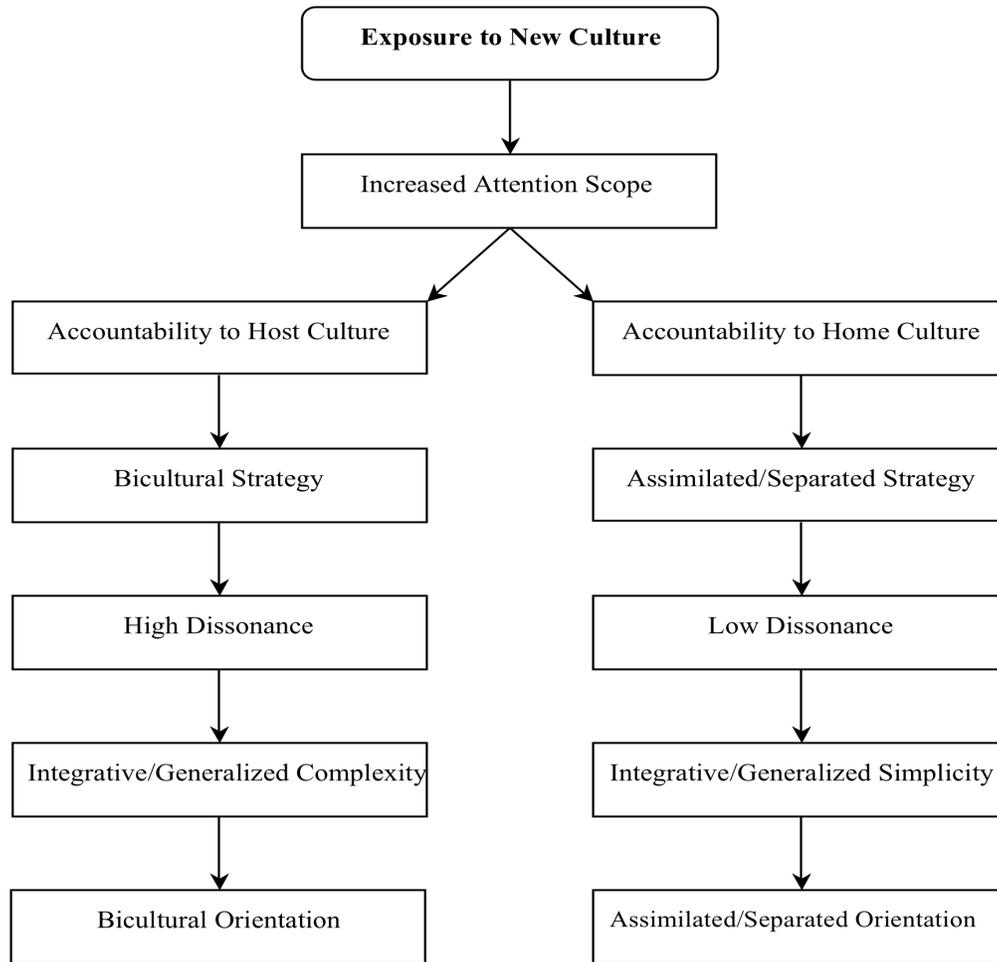
*Multilingualism*

The correlation between foreign experiences and creativity has made researchers take a closer look at the characteristics of creative individuals. Studies show high rates of creativeness within first and second-generation children of immigrants and other biculturals (Lambert, Tucker, & d'Anglejan, 1973; Simonton, 1994, 1997). Communication among dual-cultural

members is of strong interest because language is the main vehicle of how ideas, customs, and values are shared. Many internationals that reside in the U.S. communicate through English and one or more native tongues. This ability is called *multilingualism*. Data suggests that knowledge of multiple languages is correlated with higher rates of creativity in comparison to monolinguals (Lambert, Tucker, & d'Anglejan, 1973; Nemeth & Kwan, 1987; Simonton, 1999; Leung & Chiu, 2008; Maddux & Galinsky, 2009).

Prior to multilingualism studies, the belief behind children learning more than one language was negative. Early theories assumed that a second language would limit memory capacity which meant language associations would compete with other associations thus limiting the ability to recall and retrieve memory (Torrance, Gowan, Wu, & Alliotti, 1970). This argument led to the conclusion that multilingual children would be less flexible in thinking and problem solving. That position is now deemed incorrect, as demonstrated by the positive results associated with successful Nobel laureates and historically famous artists, authors, and musicians. Fluency in a second language provides an opportunity to forge originality and exercise new applications. This exposure also allows for more flexible thinking and problem solving due to the diverse associations (Lubart, 1999).

Several empirical data sets confirm the benefit of bilingualism within the brain (Bialystok, 1999; Bialystok & Viswanathan, 2009).  Speaking more than one language enables children to perform exceptionally well against monolingual children in measures designed to assess for enhanced executive control within the brain. Evidence also shows that bilingual children are able to maintain their advanced executive development into early adulthood. This is beneficial because the executive control center is responsible for inhibitions, working memory, and cognitive flexibility (Miyake, Freidman, Emerson, Witzki, Howerter, & Wager, 2000). Cognitive

flexibility is a crucial component in creative conceptual expansion and problem solving. Such

cognitive advantages were previously mentioned (Bialystok & Majumder, 1998). Figure 3

provides a visual summary of how the main components of the acculturation, biculturalism, and

multilingualism interact.

Figure 3: *Study Overview: The product of creativity as a result of cognitive and behavioral shifts by way of acculturation*
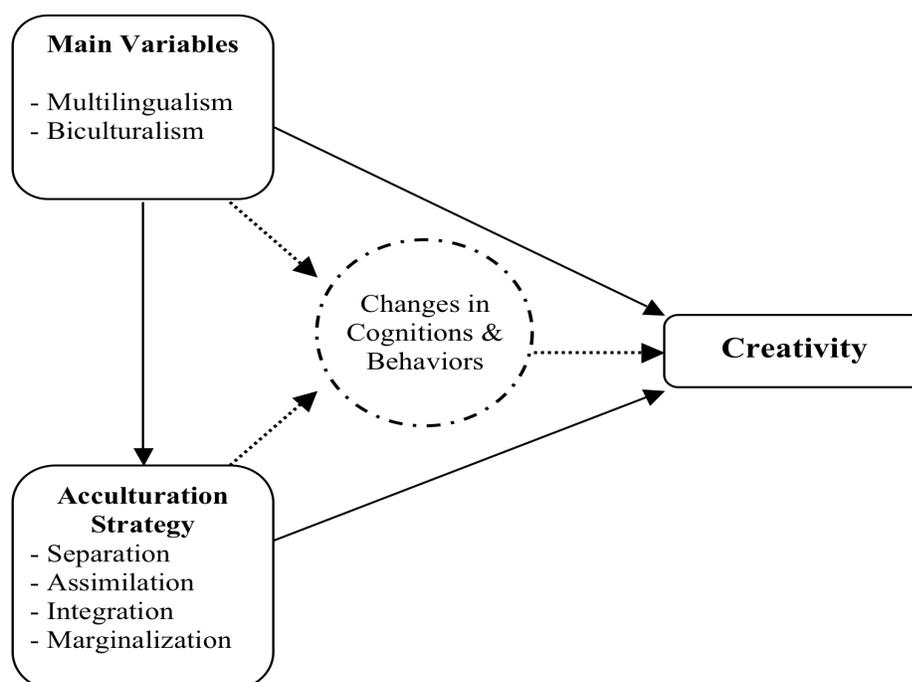


*Culture of Origin and related Socio-demographic Factors*

  *Social support.* The perceived sense of community offers a significant contribution to the

acculturation strategy and an increase in creativity. Inclusive support systems (e.g., family

members, host country acquaintances, expatriates) function as buffers for psychological and

emotional challenges (Pengilly & Dowd, 2000; Caligiuri & Lazarova, 2002; Donato & Patterson,

2004). Those who are not socially connected report little cultural interaction (Westwood &

Leung, 1994). Internationals benefit from interactions with members from the host culture

because it provides an opportunity to obtain helpful information (e.g., instruction about local

norms, acceptable behaviors) (Feldman & Bolino, 1999). Research by Sanchez-Franco and

Roldan (2010) provides empirical evidence for the positive association between reports of

personal creativity and perceived community support.

*Gender.* The relation of creativity to gender is a long debated topic. A meta-analysis of

over 80 major studies indicates that one gender is not more creative than the other (Baer, 2005).

The only differences that were noted were seen in the types of domains tested (e.g., art, music,

writing). Critics believe the variations are due to access to resources and societal constraints.

Gender role theory states that males and females face differing social pressures based on their

expected roles (Eagly, 1987). In many cultures, it is commonplace for females to receive less

educational reinforcement than males. The effects of this disparity are reflected in the types of

domains creativity is tested in. For example, many years ago, females would be less likely to

perform as well as males in science and technology based domains because of their lack of

access to advanced technological equipment to practice and experiment with. This meant that

females excelled in more accessible domains like writing and dance (Simonton, 1994). That

reasoning is the foundation for the theory of performance variation in thinking tasks synonymous

with creativity.

*Country Cultural Orientation.* Creativity potential is contingent upon the socio-cultural

environment (Lubart & Sternberg, 1998). Cultures have specific core societal values that fall

within two constructs: *Individualism* and *Collectivism*. These constructs give way to sub-

cultures, societal rolls, and defined expectations of groups within a geographic location.

Individualistic (IV) cultures are best exemplified in 'Western' countries, including the United

States and Canada. They are noted for endorsing autonomy or a focus on interests for the

individual. Collectivistic (CV) cultures emphasize the individual as part of a larger community in

which personal needs are placed behind the needs of the family or community (Triandis, 1995; Leung, Maddux, Galinsky, & Chiu, 2008). According to Triandis (1995), Latin American countries and a few Asian, Mediterranean, and Arab countries have the highest indexes of CV in a distribution of select countries. Countries included: Costa Rica, Guatemala, Ecuador, Uruguay, Panama, Chile, Pakistan, South Korea, and Japan. The opposite end of the distribution contained several European and North American countries with the highest indexes of IV: Denmark, Great Britain, Sweden, and Ireland.

Social temperament also impacts creativity via values systems at the interpersonal level. Core societal values are also associated with the construct of *Tightness* and *Looseness*. To differentiate between IV/CV and Tight-Loose classifications, the emphasis is placed on behaviors in relevance to cultural expectations at various degrees. IV/CV primarily concerns the behavioral influence of a society in relation to the social environment (i.e., an in-group, family, autonomy). Tightness-Looseness concerns the behavioral influence of strong social norms (Triandis, 2004; Gelfand, Nishii, & Raver, 2006). Put simply, Tight - Loose controls an individual's behavior on a micro-level because it concerns interpersonal social norms and sets the standard for correct behavior. It also goes on to determine how others treat the individual that violates the norms or expected behaviors. Loose cultures are seen as less structured and less likely to enforce the consequences of breaking a norm, whereas violation in a Tight culture is subject to extreme disapproval and ostracism. For example, Japan is a Tight culture due to stringent standards of daily interactions (e.g., bowing to elders, serving tea, avoiding tans/dark skin) and the majority of many Latin American countries, like Venezuela or Brazil, and the U.S. are considered Loose cultures because if a social norm is broken (e.g., consuming too much alcohol in a private party), the consequences are not extreme if pursued at all (Triandis, 2004;

Khan, 2011). Tightness-Looseness paired with IV/CV classification provides a snapshot of a culture on a micro/macro level. For example, a country with an Individualistic - Tight rating means this is a culture that values autonomy but is still traditional and adheres to values (e.g., Germany). A rating of Individualistic - Loose indicates, again, values of autonomy and a relaxed approach to acceptance of unconventional behaviors (e.g., Australia).

*Measuring Creativity*

Creativity is important across a broad range of disciplines even though it is variably interpreted. The most basic definition describes creativity as a culmination of expressive thoughts that are unique and useful to a situation (Eysenck, 1994; Kharkhurin & Motalleebi, 2008; Bronson & Merryman, 2010). Guilford (1950, 1967) categorized thinking as either divergent or convergent. *Divergent thinking* is most pertinent to creativity because it facilitates the conception of novel solutions to problems. The thinker is challenged and compelled to generate solutions. *Convergent thinking* consists of arriving at one solution after integrating a number of alternatives together to arrive at a viable solution (Kharkhurin & Motalleebi, 2008). A culmination of both forms of thinking is optimal to produce creative work that is original (Sternberg, Lubart, Kaufman, & Pretz, 2005; Beghetto & Kaufman, 2007; Bronson & Merryman, 2010).

Creativity may be assessed through various measures. The most commonly used forms of assessment may be grouped into five categorizes based on the means of information collection: self-assessment, assessment by others, creative product, insight, and imaginative/arts. The majority of assessments are designed to access divergent thinking. Nearly, all measures are based on years of additional studies and revisions to improve validity (Kaufman, Plucker, & Baer, 2008).

The form of *self-assessment* is preferable due to low costs and time effectiveness. Many researchers also favor this form because of the excellent face validity. Self-assessments, however, leave questions about responder validity since answers are provided directly by the individual. There is room for biases possibly due to misinterpretations of personal behaviors, accomplishments, and creative tendencies (Kaufman, Plucker, & Baer, 2008).

An *assessment completed by others* is best when facilitated by an individual who is familiar with the creative candidate usually completes this category of assessment. Most protocols gather information and use it to gauge the level of creativity in the responses. Validity of responses, however, may be questionable due to observer bias or bias in the case of recording oral responses verses analyzing responses on the protocol form (Kaufman, Plucker, & Baer, 2008).

The *product creation* assessment is a unique and interactive way to appraise novelty and function. Participants create a product based on a series of prompts. The end result is then judged by experts to determine the level of creativity. Creative product provides an exclusive role to gain specifics about the individual's creativeness but this approach is often time consuming and expensive for researchers. Creative product includes a second or third party to assess and is also linked to the next category, *Insight* (Kaufman, Plucker, & Baer, 2008).

The category of *insight* assessment is popular. It requires participants to shift traditional perspectives and "think outside the box" to solve the problem. There are three classes of insight problems: mathematical, verbal, and spatial. Insight is considered an objective measure because it is applicable to all ages and, more importantly, across cultures. Bowden and Jung-Beeman (2003) demonstrate the nature of insight objectiveness in their experiment that tracked semantic activation in the brain during the process of solving insight problems. Their results track the

physiological paths that are activated during creativity. The right hemisphere of the brain (RH) is responsible for divergent thinking and left hemisphere (LH) is geared toward mathematics and strategy. It is evidenced that more activity takes place in the RH of the brain during engagement in problem solving, semantic activation. The RH is best equipped to manage insight problems because of this divergent factor.

During the process of solving an insight problem, investigators experience a short series of encounters: 1) reach an impasse and then reanalyze information; 2) struggle with identifying a process to solve; and 3) experience an unexpected solution—deemed the "Aha! Moment". Bowden and Jung-Beeman (2003) define the moment as reaching a solution after unconsciously processing and restructuring cognitive elements from the task. Many problem solvers have the moment of enlightenment when the semantic activation relevant to the solution surpasses the threshold of consciousness. During this time, activation has spreads to both brain hemispheres via the RH.

Art remains the most relied upon determinant for creativity. Imaginative and artistic creations are evaluated according to a set of criteria, which is structured to tap into specific aspects that indicate creativity. Note that categories are in some way designed to engage divergent thinking.

Table 1

*Self-Assessment Measures*

| Measure | Description | Creator/s |
|---------|-------------|-----------|
| *Adjective Check List (ACL) | Assesses personality characteristics commonly linked to creativity; Consists of 300 adjectives for respondents to use to describe themselves (or others in the case of observation | Gough & Heilbrun (1952) |
| *Creative Behavior Inventory (CBI) | Identifies behavioral characteristics associated with creativity in literature, music, performing arts, math, and science; Refers to activities and achievements considered creative | Hocevar (1979, 1980) |
| Creative Achievement Questionnaire (CAQ | Assesses achievement in aspects of daily life within ten categories ranging from of the arts, sciences, to architecture | Carson, Peterson, & Higgins (2005) |

*Option to serve as Assessment by others

Table 2

*Assessment of creativity by others*

| Measure | Description | Creator/s |
|---------|-------------|-----------|
| California Psychological Inventory 260 (CPI) | Derived from the CPI; Uses common language to assess personality constructs through behaviors | Gough & Bradley (2005) |
| Creativity Assessment Packet (CAP) | Creativity potential is appraised through cognitive flexibility, fluency, elaboration, originality, vocabulary, and comprehension | Williams (1980) |
| Guilford's Alternate Uses Test | Evaluates responses for prompts to list possible uses for common house hold items | Guilford (1967) |
| Torrance Test of Creative Thinking (TTCT) | Addresses divergent thinking through use of words (verbal) and pictures (figural); Popular use within academic settings | Torrance (1966, 1974, 1984, 1988, 1990, 2008) |
| The Creativity Checklist | Uses performance indicators to categorize student performance and types of thinking | Proctor & Burnett (2004) |

Table 3

*Creativity evaluated through a product*

| Measure | Description | Creator/s |
|---|---|---|
| Consensual Assessment Technique (CAT) | Primarily for comparison levels of creativity within a group for research; Little use within individual assessments; Expert evaluators independently judge a product (invention,/poem/story); Product is evaluated for originality | Amabile (1982, 1996) |

Table 4

*Insight-based measures of creativity*

| Measure | Description | Creator/s |
|---|---|---|
| Duncker Candle | Evaluates insight through the completion of a prompt with the use of given materials: matches, wax candle, and tacks | Duncker (1945) |
| Match Stick Arithmetic | Invokes insight through a prompt to solve roman numeral equations by moving match sticks (e.g., IV =III – I) | Knoblich (1999) |
| Remote Associations Test (RAT) | Employs associative theory to assess the ability to connect separate concepts | Mednick (1968) |

Table 5

*Imaginative and Artistic measures*

| Measure | Description | Creator/s |
|---|---|---|
| Barron-Welsh Art Scale | 'Freudian based' assessment; Evaluate picture drawings based on scales that indicate function and specific attitudes and personality characteristics | Barron & Welsh (1955) |
| Alien drawing | Illustration of an extraterrestrial judged by independents based on a scale of originality and three key indices | Ward (1994) |

*Current Study*

The literature indicates that multicultural experiences, such as studying abroad can lead to cognitive and behavioral shifts and enhanced creativity potential. Specific aspects of cross-cultural adjustment, including acculturative stress, acquisition of multiple languages, and acculturation strategies, such as biculturalism/integration, have implications for the development of creativity. It appears that the literature, until this point, has investigated the benefits of both areas within their separate spheres of interest but has indirectly ignored the processes of achieving creativity *through* multicultural experiences. Until recently, this gap was not investigated (i.e., Maddux and Galinsky, 2009). The review emphasized the contributing factors that are known to support creativity *and* facilitate biculturalism.

The present study sought to explore the potential effects that exposure to multicultural experiences may have on the level of creativity expressed within international student participants. The literature suggests that cultural experiences may foster creativity success. Acculturation strategy is believed to be important in the cultivation of biculturalism, which in turn encourages creativity. Emphasis is placed on this variable for that reason. The current study explores the relationship between creativity and influential factors of biculturalism.

The following hypotheses were proposed:

Hypothesis 1:

The separate measures of creativity will positively correlate. Participants successful in solving the Duncker Candle insight problem will also produce a high score on the CAQ self-report measure.

<u>Hypothesis 2:</u>

A regression model comprised of 1) demographic variables (country cultural orientation, gender), 2) multicultural experience variables (languages, time lived abroad), and 3) acculturation strategy will predict CAQ self report scores. The acculturation strategy will account for variances in creativity success beyond the other variables. The following directional relationships are hypothesized:

> <u>2a.</u> Individualistic country orientations will be positively associated with self-report CAQ scores. Being male will also positively correlate with higher CAQ scores.
>
> <u>2b.</u> The more languages spoken and more months abroad, the higher the CAQ score.
>
> <u>2c.</u> Biculturalism (incited by high scores on the VIA) will correlate positively with CAQ scores.

<u>Hypothesis 3:</u>

A logistic regression model comprised of 1) demographic variables (country cultural orientation, gender), 2) multicultural experience variables (languages, time lived abroad), and 3) acculturation strategy will predict success solving the Duncker Candle insight problem. The acculturation strategy will account for unique variances in creativity success beyond the other variables. The following directional hypotheses are presented:

> <u>2a.</u> Individualistic country orientations will predict with correct responses on the Duncker Candle. Collectivistic orientations will predict incorrect responses. Male participants will predict correct responses while female participants will predict incorrect responses.

2b. The more languages spoken and the more months lived abroad will predict

correct responses to the insight problem.

2c. Biculturalism (incited by high scores on the VIA) will correlate positively

with correct Duncker Candle responses.

Hypothesis 4:

Indicators of student adjustment (acculturative stress, social support [practical/

emotional], GPA, and multicultural campus) will correlate with the CAQ self-report

scores.

Hypothesis 5:

Indicators of student adjustment (acculturative stress, social support [practical/

emotional], GPA, and multicultural campus) will be associated with correct responses to

the Duncker Candle insight problem.

METHOD

*Participants*

The study included 122 undergraduate and graduate international students in attendance at the University of Mississippi. Participants were recruited through use of international support groups, informal talks to international organizations, the University's International Programs Office (IPO), and personal recruitment (i.e., word of mouth, fliers). The ages ranged from 17 to 40 (*M = 23.46, SD = 4.64*). In total, 55 males and 67 females participated in the study. Participants reported 39 different countries of origin. Students indicated an array of multilingual ability: 20.5% spoke one language, 50.8 % spoke two languages, 23.0 % reported speaking three fluent languages, and 5.7 % spoke four languages. Time lived abroad ranged from one month to eighteen years with an average of two years U.S. residency. Academic classification of students indicated that 63% were undergraduate students and 37% reported graduate level status (masters or doctorate). Lastly, GPAs ranged from 2.00 to 4.00 (*M = 3.61, SD =0.44*).

*Measures*

Socio-demographic Questionnaire: Designed for the study to gather information of particular interest to the investigator: GPA, country of origin, time lived abroad, multicultural campus involvement, and number of spoken languages.

Creative Achievement Questionnaire (CAQ) (Carson, Peterson, & Higgins, 2005): A self-report measure designed to assess creative achievement across 10 domains of creativity from (1) visual arts, (2) music, (3) dance, (4) creative writing, (5) architectural design, (6) humor, (7)

theater and film, (8) culinary arts, (9) inventions, and (10) scientific inquiry. The CAQ is a 96

item self-report checklist divided into three sections: talents, concrete achievements, and

perceptions by others. The first section measures talent based on the 10 domains of creativity

plus three additional domains of individual sports, team sports, and entrepreneurial ventures.

Participants placed a checkmark next to the areas that they felt expressed more talent or ability

than most average persons. The second section lists concrete achievements, again, according to

the 10 standard domains. It also accounts for the entire value of the total score for the measure.

Participants, once again, placed checkmarks next to the items that indicated an accomplishment

he/she has achieved. Within each domain, there are eight weighted questions that range in scores

from 0 to 7. Responses consist of no achievement ("I have no training or recognized talent in this

area"; item weight of 0 points) to additional response options that vary in degrees of training ("I

have taken lessons in this area"; item weight of one point), and six additional items of increasing

achievement. The entire section yields a score for each domain, which amounts to a Total

Creative Achievement score. The third section asks the participant three questions to gain an

understanding of how others may perceive him/her with reference to creativity.

The CAQ is a reliable and valid measure. Analyses post development report a test- retest

reliability ($r = .81$, $p < .0001$) and high internal consistency reliability for the total score ($\alpha = .96$)

based on a sample of 117. Within the current study, a coefficient alpha of .71 was recorded for

the internal reliability of the total score. Convergent validity is accurate in comparison with other

measures of creative potential such as divergent thinking tests ($r = .47$, $p < .0001$), the Creative

Personality Scale (Gough, 1979; $r = .33$, $p = .004$), Intellect (Goldberg, 1992; $r = .51$, $p < .0001$),

and Openness to Experience (Costa & McCrae, 1992; $r = .33$, $p = .002$). Examination of the

factor structure of the CAQ revealed a three-factor solution of Expressive, Scientific, and

Performance. Also of interest were the factors of creative achievement and a two-factor solution that adequately assess the Arts factor and Science factor.

Duncker Candle (Duncker, 1945): Creative insight was assessed by the Duncker Candle problem. Participants were presented with a picture of a book of matches, a small cardboard box full of tacks, and a candle placed on a table adjacent to a wall. Participants were then asked to develop a way to attach the candle to the wall so that the candle can burn properly and not drip wax onto the table. The solution could be written or drawn. Answers were scored dichotomously (correct or incorrect). The solution is a measure of creative insight and display of cognitive flexibility because it evokes the ability to utilize items in a manner completely different from the intended function (Duncker, 1945; Glucksberg & Weisberg, 1966; Maddux & Galinsky, 2009). This measure of creativity is ideal due to little verbal loading.

Vancouver Index of Acculturation (VIA) (Ryder, Alden, & Paulhus, 2000): This is a measure of successful acculturation to a new culture. The VIA consists of 20 items rated on a 9-point Likert-type scale ranging from 1 = "strongly disagree" to 9 = "strongly agree", with a midpoint of 5 = "neutral/depends". Participants used the scale to indicate their level of agreement with statements in reference to items that either identifies with their culture of origin or the new culture. Items include statements like "I believe in the values of my heritage culture" and "I believe in mainstream North American values". The responses yield two subscale totals, one for Heritage and one for Mainstream. Each subscale ranged from 10 to 90 and higher values in either subscale indicate a stronger association with that particular culture.

The VIA is a reliable psychometric measure. Cronbach alpha coefficients of .91, .92, and .91 were obtained for studies that included Chinese, East Asian, and miscellaneous samples, respectively, for the Heritage dimension. Inter-item correlations for these samples were also

high (.52, .53, and .51).  These values suggest high internal consistency for the heritage culture subscale.  The Mainstream dimension also yielded high Cronbach alpha coefficients and mean inter-item correlations for the three samples (.89, .85, and .87; .45, .38, .44, respectively) (Ryder, Alden, & Paulhus, 2000). The current study resulted in similar internal consistency reliability scores (Heritage, $\alpha$ = .78; Mainstream, $\alpha$ = .83).

Acculturative Stress Scale for International Students (ASSIS): Developed, by Sandhu and Asrabadi (1994), it is a way to assess the acculturative stress levels in international students. This measure was also used as an indicator of student success and adjustment. The measure consists of 36 items using a 5-point Likert-type response format (1 = Strongly disagree to 5 = Strongly agree).

Total scores range from 36 to 180 points. Higher scores indicate higher levels of acculturative stress. Scores above 109 most likely indicate significant acculturative stress (Sandhu & Asrabadi, 1998). The ASSIS consists of seven subscales: Perceived discrimination ("I am treated differently in social situations"), Homesickness ("I miss the people and country of my origin"), Perceived hate ("People show hatred toward me nonverbally"), Fear ("I fear for my personal safety because of my different cultural background"), Stress due to change ("I feel uncomfortable to adjust to new cultural values"), Guilt ("I feel guilty to leave my family and friends behind"), and Miscellaneous (made up of 10 items).

Sandhu and Asrabadi (1998) reported that the ASSIS is psychometrically sound based on strong internal consistency and split-half reliability results from follow up studies. A number of studies that examined the psychometric properties of the ASSIS reported an internal consistency of .92 or above (Constantine, Okazaki, & Utsey, 2004; Duru & Poyrazli, 2007; Poyrazli et al.,

2004; Yeh & Inose 2003). The current study, again, produced an internal consistency reliability score similar to previous studies ($\alpha$ = .93).

Social Support: The current study used a modified version of a social support measure created by Koeske and Koeske (1989, 1993). It also served as one of the indicators of student success and adjustment. Participants were asked to indicate how much "practical" and "emotional" support they receive from various groups of people in their lives (Koeske & Koeske, 1989). This measure has been used in previous studies using international student samples (e.g., Lee et al., 2004). For the current study, participants were asked to rate the amount of support they receive from (1) international student friends from countries other than their own, (2) co-national international student friends, (3) non-student international university and community members not from their home country, (4) non-student international co-nationals affiliated with the university or community, (5) American university students, (6) American non-student members of the university or local community, and (7) family members. A total score in each category of practical and emotional support was used for the analyses to indicate the magnitude of social support available in both categories. A seminal article reports the alpha coefficient for the measure at .86; the current study obtained an alpha of .83.

*Procedures*

Recruitment: Participants were recruited as part of a larger study designed to gather information from the local international student population. Many approaches were used including a combination of emails, posted fliers, in-person solicitation through international organizations on campus (e.g., Cultural Connections Group, International Ladies' Club, African & Caribbean Association, etc.), as well as weekly international student coffee hours. Access to international student information was obtained from the University's International Programs

Office (IPO) database. Student names and corresponding email addresses were secured and a descriptive letter of the study was sent via (personal) email and advertisements were placed in the weekly international student newsletter.

Data Collection: Information was obtained through the administration of a survey packet that contained quantitative and qualitative measures (Appendix E). Participant packets were assigned ID numbers prior to the administration in an effort to secure confidentiality and ensure anonymity of responses. Surveys were distributed during scheduled collection sessions, organized events, or individual administration appointments. Each session began with a review of the informed consent, listing general details of the study and the right to withdrawal at any time. Sessions concluded with a debriefing and the distribution of informative literature and campus resource pamphlets that addressed issues associated with the study abroad experience.

Data Analysis: Descriptive statistics were analyzed for the appropriate measures after preliminary analyses checked for outliers (see Table 8). A Point-Biserial correlation was completed to determine the relationship between the continuous and dichotomous outcomes of the creativity measures. Bivariate correlations were used to determine associations with indicators of success within Hypotheses 4 and 5 (see Tables 12 and 13). A Hierarchical multiple regression analysis was conducted for Hypothesis 2 to determine the relative contribution of each variable to the CAQ total score (see Table 10). Similarly, a hierarchical Logistic regression was completed for Hypothesis 3 to determine contributions to the dichotomous measure of creativity, the Duncker Candle (see Table 11).

*Coding Country Cultural Orientation.* The cultural orientation for countries represented in the study was important for H2 and H3. A small amount of Tightness-Looseness literature exists in reference to some of the countries involved in the study. For this reason, independent

raters were enlisted to deter rater-bias when assigning classification scores. Scoring for this variable was based on the responses of three independent raters. Raters consisted of the primary investigator, a graduate student/associate research investigator, and a former multicultural research lab assistant. Raters were considered qualified to participate in the scoring process based on their cultural research knowledge and experiences. Raters were provided with three articles that explained the Tightness-Looseness concept as well as a link to a supplemental, online article. They also received a blank form that listed the 39 countries represented in the study. See Appendix A to view the blank form investigators completed as well as the key used for scoring (1 = IV- Loose, 2 = IV – Tight, 3 = CV – Loose, 4 = CV- Tight). Appendix B contains the list of references the raters were given. Completed forms were returned to the primary investigator upon completion. In an effort to maintain accuracy and limit rater bias, independent raters were given access to all resources and materials that the primary investigator used to determine country orientation scores. Table 6 shows the scoring outcomes. Two to one majorities were used to determine final scores in cases of discrepancy.

Scores were analyzed to determine interrater reliability. Analyses of the Kappa statistics were performed between (1) the investigator and Independent rater 1; (2) the investigator and Independent rater 2; and (3) Independent rater1 and Independent rater 2. Consistency among raters ranged from substantial to strong agreement (Landis & Koch, 1977). Interrater reliability indicated (1) Kappa = .60 ($p < 0.001$), (2) Kappa = .80 ($p < 0.001$), and (3) Kappa = .82 ($p < 0.001$).

Table 6

*Country Cultural Orientation Rating Scale*

| Country | Investigator | Independent Rater 1 | Independent Rater 2 | Final Rating |
|---|---|---|---|---|
| Armenia | 3 | 3 | 3 | 3 |
| Bolivia | 3 | 4 | 3 | 3 |
| Cameroon | 3 | 3 | 3 | 3 |
| China | 4 | 4 | 4 | 4 |
| Costa Rica | 3 | 3 | 3 | 3 |
| Cuba | 3 | 4 | 4 | 4 |
| Dominican Republic | 3 | 3 | 3 | 3 |
| Ecuador | 3 | 3 | 3 | 3 |
| Germany | 2 | 2 | 1 | 2 |
| Greece | 3 | 3 | 3 | 3 |
| Guyana | 3 | 3 | 3 | 3 |
| Haiti | 3 | 3 | 3 | 3 |
| India | 4 | 4 | 4 | 4 |
| Indonesia | 4 | 4 | 4 | 4 |
| Japan | 4 | 4 | 4 | 4 |
| Jordan | 4 | 4 | 4 | 4 |
| Kazakhstan | 3 | 4 | 4 | 4 |
| Kenya | 3 | 3 | 3 | 3 |
| Kyrgyzstan | 3 | 4 | 4 | 4 |
| Malaysia | 4 | 4 | 4 | 4 |
| Mali | 3 | 3 | 3 | 3 |
| Moldova | 3 | 4 | 3 | 3 |
| Nepal | 4 | 4 | 3 | 4 |
| Netherlands | 1 | 1 | 1 | 1 |
| Nigeria | 3 | 1 | 3 | 3 |
| Pakistan | 4 | 4 | 4 | 4 |
| Poland | 2 | 1 | 2 | 2 |
| United Kingdom | 1 | 1 | 1 | 1 |
| Ukraine | 2 | 1 | 1 | 2 |
| Uruguay | 3 | 3 | 3 | 3 |
| Russia | 4 | 3 | 3 | 3 |
| Serbia | 3 | 4 | 4 | 4 |
| South Korea | 4 | 4 | 4 | 4 |
| Sri Lanka | 4 | 4 | 4 | 4 |
| Sweden | 1 | 1 | 1 | 1 |
| Taiwan | 4 | 4 | 4 | 4 |
| Venezuela | 3 | 3 | 3 | 3 |
| Vietnam | 4 | 4 | 4 | 4 |
| Zambia | 3 | 3 | 3 | 3 |

*Acculturation Strategy.* An interaction score labeled Acculturation Strategy was initially created to account for one complete variable for the varying strategies within the Berry's Acculturation strategy model; however, based on the categorical nature of the acculturation model participants were placed into groups based on their VIA scores. According to Berry, use of adjustment strategies falls into four categories (i.e., Marginalization, Separation, Assimilation, Integration). A quartile split of the sample was used to assign participants to appropriate strategy groups. VIA Heritage (Home) and VIA Host subscales produce ranges from 10 to 90; therefore, participants with scores higher than the median were considered to have highly proficient use of the skill associated with the subscale. More specifically, scores that corresponded to the 4th quartile in both subscales indicated use of the Integration strategy. According to the literature, integration embodies biculturalism. Table 7 presents information about the groups. Also refer to Appendix C to view the theoretical classification of quartile scores.

*CAQ Total Score.* The self-report measure of creativity was scored based on guidelines designed by the creator of the measure. The total score for the CAQ uses information exclusively from one of the three sections in the questionnaire. Responses in Part II are of main interest because they are self-reports of the frequency of creative achievements in the ten domains the measure deems significant in creativity. See Appendix F for instructions that detail how to score the CAQ. Parts I and III were designed to provide supplemental information and do not contribute to the total score.

*Assumptions Check.* Routine checks for accuracy of results were completed. The H2 multiple regression did not indicate a violation of multicolinearity according the data output (i.e.,

correlations, coefficient tolerance, variance inflation factors (VIF) scores). The Normal p-plot

and residual plots were also examined and showed a relatively straight line, which did not

indicate a deviation from normality. The number of predictor variables for H3 was appropriate

for the sample size and so there was no concern for a failure to converge during the analysis. All

cases were appropriately accounted for in each category. Given the nature of the logistic

regression, multicollinearity does not apply to assumptions concerning distribution of scores;

however, a check for collineraity between the variables did not indicate concern. Checks for

assumptions within the correlations of H4 and H5 indicated no concern of potential violations

concerning linearity and homoscedasticity. Outliers were noted throughout diagnostics but were

not of concern when further investigated on an individual case-by-case basis. The investigation

showed that high scores were indicators of high CAQ scores and not a concern for the integrity

of the data. Moreover, outlier concerns were also ruled out due to an evaluation of the

Mahalanobis distance (Pallant, 2010). See Appendix D to view verification of logistic regression

goodness-of-fit tests.

Table 7

*Acculturation Strategy Group Assignment*

| Strategy | Frequency | Percentage |
|---|---|---|
| Bicultural/Integration | 17 | 13.9 |
| Assimilation | 24 | 19.7 |
| Separation | 66 | 54.1 |
| Marginalization | 15 | 12.3 |
| Total | 122 | 100.0 |

RESULTS

*Descriptive Analyses*

The average score for the Creative Achievement Questionnaire total was 11.30 (SD =

12.63). The continuous nature of this measure means that the higher the score, the more

creativity-fostering activities the participant was/is involved in.  An evaluation of the Vancouver

Index of Acculturation shows two scores for the VIA- Heritage (Home) country subscale (M =

71.63, SD = 10.02) and the VIA- Host country subscale (M = 63.44, SD = 11.21). Quartile

percentages of both subscale scores helped to determine the use of the Integration strategy

(development of biculturalism). The measure used to assess acculturative stress, the ASSIS,

averaged 78.50 (SD = 22.12). High scores on this measure indicate high levels of stress. The

Social Support measure assessed support within two categories; the practical support score (M =

3.61; SD = 0.77) and the emotional support score (M = 3.66; SD = 0.75). Again, see Table 8 to

view descriptives of the measures.

Responses to the dichotomous measure, the Duncker Candle, were coded into two groups

of 'correct' or 'incorrect'. A number of participants solved the problem in an alternative,

innovative way but did not keep in line with the standard answer for the prompt. In order to

maintain the integrity of the study and to attempt replication of the original experiment, those

responses were scored as incorrect. Table 9 contains the frequency of correct and incorrect

response as well as additional details.

Table 8

*Descriptive Statistics for Predictor Variables*

| Variables | M | SD | Range of Scores |
|---|---|---|---|
| GPA | 3.60 | .44 | 2.00 – 4.00 |
| Time in US (in months) | 24 | 31.86 | 1 – 216 |
| Languages | 2.14 | .81 | 1 – 4 |
| Multicultural Organizations | .80 | .98 | 0 – 5 |
| Acculturative Stress Scale for International Students (ASSIS) | | | |
|     Total Score | 78.50 | 22.12 | 40 – 134 |
| Creative Achievement Questionnaire (CAQ) | | | |
|     Total Score | 11.30 | 12.63 | 0 – 71 |
| Vancouver Index of Acculturation (VIA) | | | |
|     Heritage Subscale (Home) | 71.90 | 10.05 | 46 – 90 |
|     Host Subscale | 63.20 | 11.22 | 33 – 86 |
| Social Support | | | |
|     Emotional Support | 3.66 | .75 | 1.50 – 5.00 |
|     Practical Support | 3.61 | .77 | 1.43 – 5.00 |

Note. Gender is not included (55 – males, 67 – females); High ASSIS scores indicate high levels of stress; High CAQ scores indicate more self-reported creativity; High Social Support subscales scores indicate a high perception of support.

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Table 9

*Frequency Statistics for Duncker Candle responses*

| Responses | Frequency | Percentage (1) | Percentage (2) |
|---|---|---|---|
| Incorrect | 79 | 64.80 | 54.92 |
|    Creative (Incorrect) | 12 | … | 9.84 |
| Correct | 43 | 35.20 | 34.43 |
|    Prior Exposure | 1 | … | .81 |
| Total | 122 | 100.0 | 100.0 |

Note. Creative (Incorrect) responses indicate participants who completed the task with innovative responses but did not meet the study's scoring requirements to qualify as correct.

*Relationship Between Measures of Creativity*

Hypothesis 1 correlated the Duncker Candle (a dichotomous variable) with the CAQ (a continuous variable). A Point-Biserial was required due to the differing nature of the two variables. According to sources, the interpretation of the point-biserial is the same as a Pearson correlation (DeCoster, 2004). The correlation did not produce significant findings ($r = .086$, $p = .35$). It is concluded that the measures of creativity have no relationship.

*Predictors of Self-Report Creativity*

Hypothesis 2 used a Hierarchical multiple regression to assess the ability of cultural factors and multicultural experiences to predict the CAQ total score. Demographics (cultural orientation of the country, gender), multilingual (languages spoken), and bicultural factors (years lived abroad, acculturation strategy) were entered into blocks according to theoretical importance. Acculturation strategy was believed to account for the most significance toward creativity success because of its theoretical link to biculturalism. Predictor variables were entered into the model as follows:

Block 1: Cultural orientation (Individualistic - Tight, Individualistic - Loose,

Collectivistic - Tight, Collectivistic - Loose), Gender

Block 2: Languages spoken, Time lived abroad

Block 3: Acculturation Strategy (Integration, Assimilation, Separation, Marginalization)

 The overall model failed to support the claims in this hypothesis based on non-significant findings and small correlation relationships. The initial belief that acculturation strategy would account for total variance was also not supported. Significance values did not indicate an overall significance for the model. The $R^2$ value for country cultural orientation and gender accounted

for 3.0% of variance, F (2, 119) = 1.954, $p$ = 0.15. Scores for the remaining blocks

(multilingualism and time lived abroad, acculturation strategy) contributed to 6.0% each: [F (4,

117) = 1.722, $p$ = .15, $R^2$= .06], [F (5, 116) = 1.381, $p$ = .24 $R^2$ = .06]. Again, findings were not

significant. The $R^2$ Change value indicated that when all variables are controlled for, variance for

the model is still not significant, particularly for the acculturation variable ($R^2$ change = .001, F

change (1, 116) = .070, $p$ = .792). Acculturation strategy was not significant as initially

theorized.

Results did not indicate significant associations based on observations of beta weights. A

negative association with the country orientation variable was found at each stage of the

regression model (see Table 10).

*Predictors of Insight Creativity*

Hypothesis 3 required the use of a logistic regression to assess the relationship between

the predictor variables and the dichotomous response of the Duncker Candle problem. Predictor

variables were entered into the model based on assumed theoretical importance to insight

creativity:

Block 1: Country cultural orientation (Individualistic - Tight, Individualistic - Loose,

Collectivistic - Tight, Collectivistic - Loose), Gender

Block 2:  Languages spoken, Time lived abroad

Block 3:  Acculturation Strategy (Integration, Assimilation, Separation, Marginalization)

The predictor model provided significant support for one variable within the hypothesis.

Findings were accepted based on the model's reliability according to the Hosmer and Lemeshow

Test. The goodness of (poor) fit test indicated that our model was supportive based on

significance ($p$ = 0.320, $p$ > .05). The model summary indicates small usefulness based on Cox

and Snell R Square along with Nagelkere R Square scores (Appendix D). According to the Wald

test, the time lived abroad variable was the only significant contribution to the overall model

(*Wald* = 4.17, *p* =.04). This means that the number of months lived abroad proved to be an

influential factor in Duncker Creativity success. Table 11 also shows the odds ratio relationship

of each contributing variable. The information helps to interpret the directional relationship of

responses.

Directional predictors were confirmed among Block 1 variables country cultural

orientation (-.208) and gender (-.163). As shown, the negative B values indicate that participant

responses decreased the likelihood of a correct response to the insight problem. More

specifically, origin from Collectivistic-based countries and female gender decreased the

likelihood of producing a correct response (Pallant, 2010).

Odds ratio (OR) numbers (Exp B) show that the odds of someone who has lived in the

U.S. for longer periods were more likely to answer correctly. The OR also indicates that

participants who speak more than one language are 1.2 times more likely to also answer

correctly. With the exception of time lived abroad, the model did not indicate significant

relationships between the other predictor variables and the Duncker Candle responses.

*Success Indicators and Creativity*

Hypothesis 4 correlated the indicators of success with CAQ total scores. A correlation

matrix showed non-significant associations between the variables. Directions of correlations

were noted, specifically with the variable of acculturative stress (*r* = -.129, *p* > .01). A closer

evaluation showed that within the CAQ, participants with higher acculturative stress scores

indicated low creative achievement in the domains of the measure. A similar pattern was found

in the following correlation. A correlation matrix for Hypothesis 5 produced a significantly

negative relationship with acculturative stress ($r = -.277$, $p < .01$). Tables 12 and 13 summarize the correlational findings for each measure of creativity. H5 shows the relationship between acculturative stress and the divergent thinking process. Results confirm that in a distribution of responses to the problem-solving task, students who reported higher levels of acculturative stress were more likely to have answered incorrectly. An opposite pattern was seen in the case of students who answered correctly. This finding is supported by the theory that high stress levels can be detrimental to the creativity process.

Table 10

*Regression Analysis of Predictor Variables & CAQ Self-Report*

| Predictor Variables | *B* | Standard Error Estimates | *β* | Sig | *F* | *R²* |
|---|---|---|---|---|---|---|
| Step 1 | | | | .001 | 1.95 | .032 |
| Cultural Orientation | -2.83 | 1.44 | -.180 | .051 | | |
| Gender | 1.01 | 2.31 | .040 | .661 | | |
| Step 2 | | | | .037 | 1.72 | .056 |
| Cultural Orientation | -3.37 | 1.47 | -.214 | .023 | | |
| Gender | 2.15 | 2.39 | .085 | .370 | | |
| Years Abroad | .034 | .036 | .141 | .137 | | |
| Number of Languages | 2.21 | 1.48 | .087 | .342 | | |
| Step 3 | | | | .066 | 1.38 | .056 |
| Cultural Orientation | -3.40 | 1.48 | -.216 | .023 | | |
| Gender | 2.12 | 2.41 | .084 | .380 | | |
| Years Abroad | .036 | .037 | .090 | .330 | | |
| Number of Languages | 2.12 | 1.48 | .141 | .138 | | |
| Acculturation Strategy | .290 | 1.94 | .024 | .792 | | |

*p < .05. **p < .01

Table 11

*Logistic Regression Analysis of Predicting Variables & Duncker Candle Insight Creativity*

| Predictor Variables | *B* | *S.E.* | *Wald* | df | *p* | Odds Ratio | 95.0% C.I. for Odds Ratio | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper |
| Cultural Orientation | -.208 | .251 | .685 | 1 | .41 | .812 | .496 | 1.329 |
| Gender | -.163 | .412 | .157 | 1 | .70 | .849 | .379 | 1.906 |
| Years Abroad | .014 | .007 | 4.172 | 1 | .04 | 1.014 | 1.001 | 1.027 |
| Number of Languages | .152 | .255 | .356 | 1 | .55 | 1.165 | .706 | 1.921 |
| Acculturation Strategy | -.116 | .189 | .380 | 1 | .54 | .890 | .615 | 1.288 |
| Constant | -.016 | 1.935 | .000 | 1 | .99 | .984 | | |

Table 12

*Correlations Among CAQ Self-Report & Indicators of Success*

| Variables | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. CAQ | __ | | | | | |
| 2. Acculturative Stress | -.129 | __ | | | | |
| 3. Practical Support | .053 | -.125 | __ | | | |
| 4. Emotional Support | .041 | -.101 | .727** | __ | | |
| 5. GPA | .160 | .053 | .014 | -.008 | __ | |
| 6. Multicultural Orgs. | .086 | .027 | -.077 | .016 | -.126 | __ |

$* p < .05, ** p < .01$

Table 13

*Correlations Among Duncker Candle Insight & Indicators of Success*

| Variables | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. Duncker Candle | __ | | | | | |
| 2. Acculturative Stress | -.277** | __ | | | | |
| 3. Practical Support | -.025 | -.125 | __ | | | |
| 4. Emotional Support | .020 | -.101 | .727** | __ | | |
| 5. GPA | .108 | .053 | .014 | -.008 | __ | |
| 6. Multicultural Orgs. | -.063 | .027 | -.077 | .016 | -.126 | __ |

* *p* < .05, ** *p* < .01

DISCUSSION

*Summary of Findings*

Results of the study provided little support for the hypotheses developed at the onset of this investigation. Some aspects, however, were significantly supported. Overall, the expected findings were not found most likely due to low power. A larger number of participants may have provided enough data to complete group-specific analyses. The present study was designed to expand on gaps in existing theories concerning creativity and multicultural experiences. The variables of country of origin cultural orientation, gender, time lived abroad, number of languages spoken, and acculturation strategy were of key interest. The investigation also included an exploration of other key variables that also affect successful student adjustment, which is an important component when considering bicultural identity formation. Variables for that portion of the study investigated the extent to which acculturative stress, social support, GPA, and multicultural campus involvement predicted creativity success.

The data showed that the CAQ self-report measure of creativity and the Duncker insight problem measure different aspects and are not an indication of the other. Acculturation strategy, a variable first believed to have a large role in creativity, did not provide significant contributions to either forms of creativity. Time lived abroad produced a significant connection to correct responses to the insight problem. This provided partial support to a portion of H3. Participants who indicated the longest periods of residence abroad associated with the correct-response group. Country of origin orientation was negatively associated with both forms of creativity.

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This indicated that students who produced the lowest self-report scores were also more likely to be associated with either Collectivistic - Tight or Collectivistic – Loose countries of origin. Gender was also directionally negative in regards to the Duncker. It appears that females often produced more incorrect responses than male participants. The student indicators of success provided a significant correlation between acculturative stress and the Duncker Candle. A negative directional association with the CAQ self-report indicated that students with the highest stress levels were most associated with incorrect responses and linked to low CAQ total scores.

The literature review emphasized the importance of why studying abroad fosters creativity. Though assumptions about the variance of acculturation strategy were not supported, the time-lived-abroad variable provided some validation of the theory. As established earlier, experiences abroad lead to the mastery of foreign languages, development of adaptability, personal growth, and international awareness (Drews & Meyer, 1996; Davidson & Lehmann, 2001-2005; Jurgens & McAuliffe, 2004; Hadis, 2005; Langley & Breese, 2005; Hunley, 2010). It is understood that longer periods abroad allow for more of those activities thus bicultural formation can take shape.

It appears that country of origin has a notable role in creativity. Research from the Gelfand, Nishii, and Raver (2006) study (as cited in Khan, R., 2011) provides a basis for the patterns seen in the distribution of scores within the IV- Tight/Loose and CV- Tight/Loose country orientations. Data from the current study showed that participants from predominantly Western societies associated with higher self-report scores and correct responses in comparison to participants from Eastern, African, South American societies. This may be explained by the theory that societal norms and scripts impact the perceptions of creativity as well as affect the development and expression of creative acts.

The literature review also included the potential impact of acculturative stress. The perception of stress can limit flexible thinking. Some level of strain has the ability to foster 'outside-the-box' thinking but too much, like that of acculturative stress, can prove to be debilitating  (Hosking & Morley 1991; Byron, Khazanchi, & Nazarian, 2010). As seen in the study's data, participants who endorsed moderate to severe levels of acculturative stress did not display creativity in both measures. Given the insightful nature of the Duncker Candle problem, it is not surprising that participants with high stress levels were not successful.

*Implications of Results*

There are major benefits to gain from multicultural experiences and bicultural formation. Creativity is a universal skill that appears to transcend areas from academics to vocations. Recent studies have just begun to scratch the surface (e.g., Maddux and Galinsky, 2009).  As a whole, the current study contributed to the confirmation of existing theories that claim creativity can result from cultural exposure. It also provided continued support for the variables that tend to hinder the development of innovation and contributed data to the area of student academic success.

International student participants in the study functioned as in vivo examples of individuals currently undergoing the acculturation process. Moreover, our sample indicated notably high acculturative stress levels that may account for the lack of expected results. Implications from the data can go on to aide interventions for other international students and, potentially, American students when they embark on international stints outside of the U.S.

In summary, the study contributed to the exploration of creativity in relation to multicultural experiences and bicultural formations. It also shed light on potential areas to address within current international students. The significant relationships with the indicators of

success show that acculturative stress is of concern to a number of our students. This draws a focus to the adjustment process, which is the foundation of bicultural formation. Stress management with an emphasis on where students originate may be a key step in addressing this issue. The university currently offers a variety of interventions to ease the shock of entering a new culture. Organizations like the International Ladies Club, Cultural Connections Club, and Cook-Eat-Share (cooking club) are some examples of university-sponsored adjustment-groups that allow international students to comfortably adapt through socially supportive clubs and activities. There is room to improve and create interventions that will provide additional ease into the university setting (e.g., extended international student orientations, modified entry-workshops). Addressing this implication will allow students to stay abroad longer which, as discovered in the study, does provide some significant benefit for creativity expression.

*Limitations*

The international component of the study provided a unique set of challenges. Recruitment was a particular concern due to lack of traditional approaches to reach participants (e.g., university's Psychology Student Participant Measurement (PSPM) system). Solicitation of participants largely relied on listserv emails and announcements through channels of communication with social groups, social gatherings, and classrooms. This leads to the concern of sampling bias. Acculturation and country orientation factors may account for the proportion of representation of certain cultures at social functions where recruitment took place. More specifically, in the current study, there was a large representation of African and Asian participants (nearly 50% of the sample). Recruitment may have favored participants from those cultures due to frequency of their presence at social events and targeted survey locations. The ideal collection process would include an evenly represented sample.

Methodology was also of concern. The measures of creativity were collected through a self-report packet. The Creative Achievement Questionnaire records activities/accomplishments in ten domains. There is little ability to verify what participants reported and in some cases students indicated that they excelled in other domains not listed on the measure (e.g., teaching). Lastly, the comprehension level of the instructions for students with low English proficiency (e.g., English as a second language (ESL) students) could not be fully accounted for. Researchers were available to answer questions during administration sessions; however, not all students took advantage of the help. More importantly it is unclear to what extent low-English proficient participants understood instructions for the Duncker Candle insight problem.

*Future Directions*

Future studies will benefit from the inclusion of a wider base of participants who have encountered multicultural experiences. This means the addition of international University faculty/staff and community members. Their inclusion will provide more information for variables of multicultural exposure that impact creativity. The inclusion of control groups will also provide more empirical support for theoretical claims. Studies could include American students who indicate no multicultural experience and/or also include students who have participated in study abroad programs or major in international studies, or foreign languages.

An improvement to methodology would increase the accuracy of outcomes. As mentioned prior, the CAQ was self-report and the brainstorming for the insight problem was not systematically observed. The inclusion of more comprehensive measures and controlled/structured administrations would ensure more accuracy. For example: interview questions, structured observations during tasks, and orally administered instructions to ensure comprehension of the prompt(s).

*Conclusion*

The study contributes to discussions relevant to the real world setting. Areas that span job markets to academia thrive on innovation. Creativity is an important outcome that can be nurtured through bicultural formation via multicultural experiences. To date, the most well documented forms of obtaining those experiences concern education. Thus, the focus of improving creativity achievement is largely built around students.

Schools at all levels (i.e., elementary, secondary) currently integrate innovation into curriculums but universities stand to gain more from this addition. Institutions of higher learning are magnets for the brightest minds across the globe. These institutions would ensure more successful and marketable graduates with curriculums that stimulate creativity by way of more study abroad experiences and international exposure.

The study focused on variables that contribute to biculturalism and successful student adjustment. Acculturative stress appeared to be of concern. University programs would do well to ease international student adjustment through the integration of country-specific objectives in student orientations and beyond. For example, students from CV-tight countries would benefit from introductory orientation workshops that cover little known facts. Actions that are taboo in their culture (e.g., asking questions to professors in class) could be talked about and explained in detail. Students would feel less anxiety when attending classes because they would know what is acceptable and not offensive. Students would also benefit from conflict-resolution training to have the skills to deal with uncomfortable situations without hesitations (i.e., roommates, inconsiderate classmates).

It was discovered that time lived abroad was also impactful to the creativity process. It should be noted that in order for students to maintain the desire to stay abroad and gain the

benefits of extended periods, the adjustment process must be bearable. Again, the best way to

ensure extended stays is to ease the process of adjustment and encourage bicultural formation.

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APPENDIX

Appendix: A

*Country Cultural Orientation Independent Rater form:*

| Country | Orientation Rating | Scoring Key |
|---|---|---|
| Armenia | | 1 = Individualistic – Loose |
| Bolivia | | 2 = Individualistic – Tight |
| Cameroon | | 3 = Collectivistic – Loose |
| China | | 4 = Collectivistic – Tight |
| Costa Rica | | |
| Cuba | | |
| Dominican Republic | | |
| Ecuador | | |
| Germany | | |
| Greece | | |
| Guyana | | |
| Haiti | | |
| India | | |
| Indonesia | | |
| Japan | | |
| Jordan | | |
| Kazakhstan | | |
| Kenya | | |
| Kyrgyzstan | | |
| Malaysia | | |
| Mali | | |
| Moldova | | |
| Nepal | | |
| Netherlands | | |
| Nigeria | | |
| Pakistan | | |
| Poland | | |
| United Kingdom | | |
| Ukraine | | |
| Uruguay | | |
| Russia | | |
| Serbia | | |
| South Korea | | |
| Sri Lanka | | |
| Sweden | | |
| Taiwan | | |
| Venezuela | | |
| Vietnam | | |
| Zambia | | |

Appendix: B

*Independent Rater Reference material:*

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Appendix: C

*Acculturation Strategy Quartile Group Assignment scores*

| Integration | | Assimilation | | Separation | | Marginalization | |
|---|---|---|---|---|---|---|---|
| Her. | Ho. | Her. | Ho | Her. | Ho | Her. | Ho |
| Q4 – Q4 | | Q4 – Q3 | | Q4 – Q2 | | Q1 – Q1 | |
| | | Q3 – Q4 | | Q4 – Q1 | | | |
| | | Q3 – Q3 | | Q3 – Q2 | | | |
| | | | | Q3 – Q1 | | | |
| | | | | Q2 – Q4 | | | |
| | | | | Q2 – Q3 | | | |
| | | | | Q2 – Q2 | | | |
| | | | | Q2 – Q1 | | | |
| | | | | Q1 – Q4 | | | |
| | | | | Q1 – Q3 | | | |
| | | | | Q1 – Q2 | | | |

Note. Her. = Heritage subscale, Ho. = Home subscale

Appendix: D

*Logistic Regression:  Model Analysis – Goodness of Fit Tests*

*Omnibus Tests of Model Coefficients*

|  |  | $\chi^2$ | df | Sig. |
|---|---|---|---|---|
| Step 1 | Step | .380 | 1 | .538 |
|  | Block | .380 | 1 | .538 |
|  | Model | 7.176 | 5 | .208 |

*Model Summary*

| Step | -2 Log Likelihood | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|---|
| 1 | 151.169* | .057 | .079 |

 * Estimation terminated at iteration number 3 because parameter estimates changed by less than .001

*Hosmer and Lemeshow Test*

| Step | $\chi^2$ | df | Sig. |
|---|---|---|---|
| 1 | 15.159 | 8 | .056 |

Appendix: E

*Demographic Information*

1. What is your age?           _____

2. What is your gender?          ____ Male ____ Female

3. Marital status          ___ Single ___ Married ___ Divorced ___ Widowed

4. Which best describes you?      ___ Undergraduate Student ___ Graduate Student
                                        ___ Faculty/Staff           ___ Neither

        *If not a student please skip to question 12*

5. If a student, what area of study?     _____

6. Degree being pursued:          ___ Bachelor ___ Masters ___ PhD ___ Post Doc

7. GPA _____

8. Select any services you have used while at this university:
                  _____ Writing Center
                  _____ Professor office hours
                  _____ TA (teaching assistant) office hours
                  _____ Student study groups
                  _____ Help from friend
                  _____ From classmate

9. Name any student organizations or International Student Organization
        programs you have participated in:

10. Are you enrolled in IEP (Intensive English Program)/ ESL (English as a Second Language):
      ____ Yes _____ No

11. Source of Income:
                  _____ Work
                  _____ Scholarship
                  _____ Assistantship
                  _____ Parents
                  _____ Other

12. If not a student, what do you do?             _____

13. What country & city/town are you from?       _____

14. How long have you been in the USA?     _____

15. How much longer do you anticipate
    being in the USA?

                                                   _____

16. If you have lived somewhere other than the
    country you are from before coming to the USA,
    please describe where else you have lived and
    for how long.                                    _____

17. Are you a member of a minority group in your
    home country?                                      \_\_\_\_Yes \_\_\_\_No

18. What is your religion?                       _____

19. How frequently do you engage in religious activities?

| Not at all | | Sometimes | | Very Often |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

20. How much of an accent do you think you have when speaking English?

| Not at all | | Sometimes | | Very Often |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

21. What is your present level of English fluency?

| Not at all fluent | | Somewhat fluent | | Very fluent |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

22. How comfortable are you communicating in English?

| Not at all | | Somewhat comfortable | | Very comfortable |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

23. How often do you communicate in English?'

| Not at all | | Sometimes | | Very often |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

24. Number of years speaking English: _____

25. How easily do you believe people can tell you are an international student based on your physical appearance (e.g., skin color, hair style, clothing, etc.)

|        Very       |   |   |   |   |   |    Not Very     |
|       Easily      |   |   |   |   |   |     Easily      |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

26. For the purpose of this study *language proficiency* is considered the functional demonstration of accuracy and fluency. This includes the ability to communicate verbally fluently whether verbal and/or written. Please list the number of languages that you feel proficient in.

*Student Adaptation to College Questionnaire*

**Directions:** The statements on this form describe college experiences. Read each one and decide how well it applies to you at the present time (within the past few days). For each statement, circle the number that best represents how closely the statement applies to you. Circle only one number for each statement. To change an answer, draw an X through the incorrect response and circle the desired response.

Use the following key to help guide your answers:

**Applies very**                                                   **Doesn't apply**
**Closely to me**                                                   **to me at all**
   **1**    **2**    **3**    **4**    **5**    **6**    **7**    **8**    **9**

1. I feel that I fit in well as part of the college environment.

   1     2     3     4     5     6     7     8     9

2. I have been feeling tense or nervous lately.

   1     2     3     4     5     6     7     8     9

3. I have been keeping up to date on my academic work.

   1     2     3     4     5     6     7     8     9

4. I am meeting as many people, and making gas many friends as I would like at college.

   1     2     3     4     5     6     7     8     9

5. I know why I'm in college and what I want out of it.

   1     2     3     4     5     6     7     8     9

6. I am finding academic work at college difficult.

   1     2     3     4     5     6     7     8     9

7. Lately I have been feeling blue and moody a lot.

   1     2     3     4     5     6     7     8     9

8. I am very involved with social activities in college.

   1     2     3     4     5     6     7     8     9

9. I am adjusting well to college.

    1        2        3        4        5        6        7        8        9

10. I have not been functioning well during examinations.

    1        2        3        4        5        6        7        8        9

11. I have felt tired much of the time lately.

    1        2        3        4        5        6        7        8        9

12. Being on my own, taking responsibility for myself, has not been easy.

    1        2        3        4        5        6        7        8        9

13. I am satisfied with the level at which I am performing academically.

    1        2        3        4        5        6        7        8        9

14. I have had informal, personal contacts with college professors.

    1        2        3        4        5        6        7        8        9

15. I am pleased now about my decision to go to college.

    1        2        3        4        5        6        7        8        9

16. I am pleased now about my decision to attend this college in particular.

    1        2        3        4        5        6        7        8        9

17. I'm not working as hard as I should at my course work.

    1        2        3        4        5        6        7        8        9

18. I have several close social ties at college.

    1        2        3        4        5        6        7        8        9

19. My academic goals and purposes are well defined.

    1        2        3        4        5        6        7        8        9

20. I haven't been able to control my emotions very well lately.

    1       2       3       4       5       6       7       8       9

21. I'm not really smart enough for the academic work I am expected to be doing now.

    1       2       3       4       5       6       7       8       9

22. Lonesomeness for home is a source of difficulty for me now.

    1       2       3       4       5       6       7       8       9

23. Getting a college degree is very important to me.

    1       2       3       4       5       6       7       8       9

24. My appetite has been good lately.

    1       2       3       4       5       6       7       8       9

25. I haven't been very efficient in the use of study time lately.

    1       2       3       4       5       6       7       8       9

26. I enjoy living in a college dormitory. (Please omit if you do not live in a dormitory; any university housing should be regarded as a dormitory).

    1       2       3       4       5       6       7       8       9

27. I enjoy writing papers for courses.

    1       2       3       4       5       6       7       8       9

28. I have been having a lot of headaches lately.

    1       2       3       4       5       6       7       8       9

29. I really haven't had much motivation for studying lately.

    1       2       3       4       5       6       7       8       9

30. I am satisfied with the extracurricular activities available at college.

    1       2       3       4       5       6       7       8       9

31. I've given a lot of thought lately to whether I should ask for help from the Psychological/Counseling Services Center or from a psychotherapist outside of college.

       1       2       3       4       5       6       7       8       9

32. Lately I have been having doubts regarding the value of a college education.

       1       2       3       4       5       6       7       8       9

33. I am getting along very well with my roommate(s) at college. (Please omit if you do not have a roommate).

       1       2       3       4       5       6       7       8       9

34. I wish I were at another college or university.

       1       2       3       4       5       6       7       8       9

35. I've put on (or lost) too much weight recently.

       1       2       3       4       5       6       7       8       9

36. I am satisfied with the number and variety of courses available at college.

       1       2       3       4       5       6       7       8       9

37. I feel that I have enough social skills to get along well in the college setting.

       1       2       3       4       5       6       7       8       9

38. I have been getting angry too easily lately.

       1       2       3       4       5       6       7       8       9

39. Recently I have had trouble concentrating when I try to study.

       1       2       3       4       5       6       7       8       9

40. I haven't been sleeping very well.

       1       2       3       4       5       6       7       8       9

41. I'm not doing well enough academically for the amount of work I put in.

       1       2       3       4       5       6       7       8       9

42. I am having difficulty feeling at ease with other people at college.

    1       2       3       4       5       6       7       8       9

43. I am satisfied with the quality or the caliber of courses available at college.

    1       2       3       4       5       6       7       8       9

44. I am attending classes regularly.

    1       2       3       4       5       6       7       8       9

45. Sometimes my thinking gets muddled up too easily.

    1       2       3       4       5       6       7       8       9

46. I am satisfied with the extent to which I am participating in social activities at college.

    1       2       3       4       5       6       7       8       9

47. I expect to stay at this college for a bachelor's degree.

    1       2       3       4       5       6       7       8       9

48. I haven't been mixing too well with the opposite sex lately.

    1       2       3       4       5       6       7       8       9

49. I worry a lot about my college expenses.

    1       2       3       4       5       6       7       8       9

50. I am enjoying my academic work at college.

    1       2       3       4       5       6       7       8       9

51. I have been feeling lonely a lot at college lately.

    1       2       3       4       5       6       7       8       9

52. I am having a lot of trouble getting started on homework assignments.

    1       2       3       4       5       6       7       8       9

53. I feel I have good control over my life situation at college.

    1    2    3    4    5    6    7    8    9

54. I am satisfied with my program of courses for this semester/quarter.

    1    2    3    4    5    6    7    8    9

55. I have been feeling in good health lately.

    1    2    3    4    5    6    7    8    9

56. I feel I am very different from other students at college in ways that I don't like.

    1    2    3    4    5    6    7    8    9

57. On balance, I would rather be home than here.

    1    2    3    4    5    6    7    8    9

58. Most of the things I am interested in are not related to any of my course work at college.

    1    2    3    4    5    6    7    8    9

59. Lately I have been giving a lot of thought to transferring to another college.

    1    2    3    4    5    6    7    8    9

60. Lately I have been giving a lot of thought to dropping out of college altogether and for good.

    1    2    3    4    5    6    7    8    9

61. I find myself giving considerable thought to taking time off from school and finishing later.

    1    2    3    4    5    6    7    8    9

62. I am very satisfied with the professors I have now in my courses.

    1    2    3    4    5    6    7    8    9

63. I have some good friends or acquaintances at college with whom I can talk about any problems I may have.

    1    2    3    4    5    6    7    8    9

64. I am experiencing a lot of difficulty coping with the stresses imposed upon me in college.

    1      2      3      4      5      6      7      8      9

65. I am quite satisfied with my social life at college.

    1      2      3      4      5      6      7      8      9

66. I'm quite satisfied with my academic situation at college.

    1      2      3      4      5      6      7      8      9

67. I feel confident that I will be able to deal in a satisfactory manner with future challenges here at college.

    1      2      3      4      5      6      7      8      9

# Vancouver Index of Acculturation

Please answer each question as carefully as possible by circling one of the numbers to the right of each question to indicate your degree of agreement or disagreement.

Many of these questions will refer to your home culture, meaning the culture that has influenced you most (other than U.S. American culture). It may be the culture of your birth, the culture in which you have been raised, or another culture that forms part of your background. If there are several such

cultures, pick the one that has influenced you most (e.g., Irish, Chinese. Mexican, Black). If you do not feel that you have been influenced by any other culture, please try to identify a culture that may have had an impact on previous generations of your family.

Please write your home culture in the space provided:

_____

Use the following key to help guide your answers:

| Strongly Disagree | | Disagree | | Neutral/ Depends | | Agree | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

1. I often participate in my home cultural traditions.   1 2 3 4 5 6 7 8 9

2. I often participate in mainstream U.S. American cultural traditions. 1 2 3 4 5 6 7 8 9

3. I would be willing to marry a person from my home culture.   1 2 3 4 5 6 7 8 9

4. I would be willing to marry a U.S. American person.   1 2 3 4 5 6 7 8 9

5. I enjoy social activities with people from the same home culture
   as myself.   1 2 3 4 5 6 7 8 9

6. I enjoy social activities with typical U.S. American people.   1 2 3 4 5 6 7 8 9

7. I am comfortable working with people of the same home culture
   as myself.   1 2 3 4 5 6 7 8 9

8. I am comfortable working with typical U.S. American people.   1 2 3 4 5 6 7 8 9

9. I enjoy entertainment (e.g., movies, music) from my home culture. 1 2 3 4 5 6 7 8 9

10. I enjoy U.S. American entertainment (e.g., movies, music).   1 2 3 4 5 6 7 8 9

11. I often behave in ways that are typical of my home culture.   1 2 3 4 5 6 7 8 9

12. I often behave in ways that are 'typically U.S. American.'   1  2  3  4  5  6  7  8  9

13. It is important for me to maintain or develop the practices of my
home culture.   1  2  3  4  5  6  7  8  9

14. It is important for me to maintain or develop U.S. American
cultural practices.   1  2  3  4  5  6  7  8  9

15. I believe in the values of my home culture.   1  2  3  4  5  6  7  8  9

16. I believe in mainstream U.S. American values.   1  2  3  4  5  6  7  8  9

17. I enjoy the jokes and humor of my home culture.   1  2  3  4  5  6  7  8  9

18. I enjoy typical U.S. American jokes and humor.   1  2  3  4  5  6  7  8  9

19. I am interested in having friends from my home culture.   1  2  3  4  5  6  7  8  9

20. I am interested in having U.S. American friends.   1  2  3  4  5  6  7  8  9

**Support From Others**

Instructions: For each of the categories of people listed below, *rate the amount of support* that is provided to you from 1 (None At All) to 5 (A Great Deal). Please rate the amount of support in both columns. Under the first column, rate the amount of EMOTIONAL SUPPORT, and under the second column, rate the amount of PRACTICAL SUPPORT (such as help with finances, transportation, and babysitting) provided. In other words, *make two ratings* for each category of people. Circle a number from 1 to 5, or NA if the rating is not applicable to you.

Refer to this scale.

| None at All 1 | 2 | 3 | 4 | A Great Amount 5 |
|---|---|---|---|---|

|  | EMOTIONAL SUPPORT | PRACTICAL SUPPORT |
|---|---|---|
| International Students From Your Home Country | 1  2  3  4  5  NA | 1  2  3  4  5  NA |
| International Students NOT From Your Home Country | 1  2  3  4  5  NA | 1  2  3  4  5  NA |
| Non-Student International University and Community Members From Your Home Country | 1  2  3  4  5  NA | 1  2  3  4  5  NA |
| Non-Student International University and Community Members NOT From Your Home Country | 1  2  3  4  5  NA | 1  2  3  4  5  NA |
| Students From the USA | 1  2  3  4  5  NA | 1  2  3  4  5  NA |
| Non-Student University and Community Members From the USA | 1  2  3  4  5  NA | 1  2  3  4  5  NA |
| Your Family Members | 1  2  3  4  5  NA | 1  2  3  4  5  NA |

**An Acculturative Stress Scale for International Students ***

Directions:

As foreign students have to make a number of personal, social, and environmental changes upon arrival in a strange land, this ***cultural-shock*** experience might cause them acculturative stress. This scale is designed to assess such acculturative stress you personally might have experienced. There are no right or wrong answers. However, for the data to be meaningful, you must answer each statement given below as honestly as possible.

For each of the following statements, please circle the number that BEST describes your response.

1 = Strongly disagree,   2 = disagree,   3 = not sure,   4 = agree,   5 = strongly agree

Because of my different cultural background as a ***foreign*** student, I feel that:

1.  Homesickness for my country bothers me.                          1 2 3 4 5

2.  I feel uncomfortable to adjust to new foods                      1 2 3 4 5
     and/or to new eating habits

3.  I am treated differently in social situations.                   1 2 3 4 5

4.  I feel rejected when people are sarcastic toward my              1 2 3 4 5
     cultural values.

5.  I feel nervous to communicate in English.                       1 2 3 4 5

6.  I feel sad living in unfamiliar surroundings here.               1 2 3 4 5

7.  I fear for my personal safety because of my different            1 2 3 4 5
     cultural background.

8.  I feel intimidated to participate in social activities.          1 2 3 4 5

9.  Others are biased toward me.                                     1 2 3 4 5

10. I feel guilty to leave my family and friends behind.            1 2 3 4 5

11. Many opportunities are denied to me.                            1 2 3 4 5

12. I feel angry that my people are considered inferior here.        1 2 3 4 5

13. I feel overwhelmed that multiple pressures are placed upon me after my migration to this society.   1 2 3 4 5

14. I feel that I receive unequal treatment.   1 2 3 4 5

15. People from some ethnic groups show hatred toward me nonverbally.   1 2 3 4 5

16. It hurts when people don't understand my cultural values.   1 2 3 4 5

17. I am denied what I deserve.   1 2 3 4 5

18. I have to frequently relocate for fear of others.   1 2 3 4 5

19. I feel low because of my cultural background.   1 2 3 4 5

20. I feel rejected when others don't appreciate my cultural values.   1 2 3 4 5

21. I miss the country and people of my national origin.   1 2 3 4 5

22. I feel uncomfortable to adjust to new cultural values.   1 2 3 4 5

23. I feel that my people are discriminated against.   1 2 3 4 5

24. People from some other ethnic groups show hatred toward me through their actions.   1 2 3 4 5

25. I feel that my status in this society is low due to my cultural background.   1 2 3 4 5

26. I am treated differently because of my race.   1 2 3 4 5

27. I feel insecure here.   1 2 3 4 5

28. I don't feel a sense of belonging (community) here.   1 2 3 4 5

29. I am treated differently because of my color.   1 2 3 4 5

30. I feel sad to consider my people's problems.   1 2 3 4 5

31. I generally keep a low profile due to fear from other ethnic groups.   1 2 3 4 5

32. I feel some people don't associate with me because of my ethnicity.   1 2 3 4 5

33. People from some other ethnic groups show hatred      1 2 3 4 5
    toward me verbally.

34. I feel guilty that I am living a different lifestyle here.      1 2 3 4 5

35. I feel sad leaving my relatives behind.      1 2 3 4 5

36. I worry about my future for not being able to decide      1 2 3 4 5
    whether to stay here or to go back.

**Inclination to Attribute Discrimination**

Please read each description and then estimate by circling the percentage you feel prejudice was involved from 0% (due to factors other than prejudice) to 100% (completely due to prejudice).

1. Suppose you go into a "fancy" restaurant. Your server seems to be taking care of all the other customers except you. You are the last person whose order is taken.

Estimate how much prejudice is involved in this situation:
0%  5%  10%  15%  20%  25%  30%  35%  40%  45%  50%  55%  60%  65%  70%  75%  80%  85%  90%  95%  100%

2. Suppose you apply for a job that you believe you are qualified for. After the interview you learn that you didn't get the job.

Estimate how much prejudice is involved in this situation:
0%  5%  10%  15%  20%  25%  30%  35%  40%  45%  50%  55%  60%  65%  70%  75%  80%  85%  90%  95%  100%

3. Suppose you wish to buy a house. You go to a real estate company and the agent there takes you to look at homes that you know are in exclusively Black minority areas.

Estimate how much prejudice is involved in this situation:
0%  5%  10%  15%  20%  25%  30%  35%  40%  45%  50%  55%  60%  65%  70%  75%  80%  85%  90%  95%  100%

4. Suppose you parked your car at a parking meter and it has just expired. You arrive back at the car just as an officer is writing up a ticket. You try to persuade the officer not to give you the ticket, after all you are there now and the meter just expired. The officer gives you the ticket anyway.

Estimate how much prejudice is involved in this situation:
0%  5%  10%  15%  20%  25%  30%  35%  40%  45%  50%  55%  60%  65%  70%  75%  80%  85%  90%  95%  100%

5. Suppose you go to look at an apartment for rent. The manager of the building refuses to show it to you, saying that it has already been rented.

Estimate how much prejudice is involved in this situation:
0%  5%  10%  15%  20%  25%  30%  35%  40%  45%  50%  55%  60%  65%  70%  75%  80%  85%  90%  95%  100%

6. Suppose you are attracted to a particular White U.S. American man/woman and ask that person out for a date and are turned down.

Estimate how much prejudice is involved in this situation:
0%  5%  10%  15%  20%  25%  30%  35%  40%  45%  50%  55%  60%  65%  70%  75%  80%  85%  90%  95%  100%

7. Suppose you have to fill out some government forms in order to apply for a loan that is important to you. You go to one office and they send you to another, then you go there and are sent somewhere else. No one seems to be really willing to help you out.

Estimate how much prejudice is involved in this situation:
0%  5%  10%  15%  20%  25%  30%  35%  40%  45%  50%  55%  60%  65%  70%  75%  80%  85%  90%  95%  100%


8. Suppose you are driving a few miles over the speed limit and the police pull you over. You receive a ticket for the maximum amount allowable.

Estimate how much prejudice is involved in this situation:
0%  5%  10%  15%  20%  25%  30%  35%  40%  45%  50%  55%  60%  65%  70%  75%  80%  85%  90%  95%  100%


9. Suppose you want to join a social organization. You are told that they are not taking any new members at this time.

Estimate how much prejudice is involved in this situation:
0%  5%  10%  15%  20%  25%  30%  35%  40%  45%  50%  55%  60%  65%  70%  75%  80%  85%  90%  95%  100%


10. Suppose your boss tells you that you are not performing your job as well as others doing that job.

Estimate how much prejudice is involved in this situation:
0%  5%  10%  15%  20%  25%  30%  35%  40%  45%  50%  55%  60%  65%  70%  75%  80%  85%  90%  95%  100%

**Perceived Discrimination Effects**

Please circler the number which best represents how much you agree with each statement.


1. I feel like I am personally a victim of society because of my status as an international student.

|  | Strongly<br>Disagree |  |  |  |  |  | Strongly<br>Agree |
|---|---|---|---|---|---|---|---|
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |


2. I consider myself a person who has been deprived of the opportunities that are available to others because of my status as an international student.

|  | Strongly<br>Disagree |  |  |  |  |  | Strongly<br>Agree |
|---|---|---|---|---|---|---|---|
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**General Ethnic Discrimination Scale**

We are interested in your experiences with discrimination. As you answer the questions below, please think about your time in the United States as an international student. For each question, please circle the number that best captures the things that have happened to you. Answer each question 2 times.

1. How often have you been treated unfairly by **teachers and professors** because of your international student status?

|  | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

|  | Not at all stressful |  |  |  |  | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

2. How often have you been treated unfairly by **employers, bosses and supervisors** because of your international student status?

|  | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

|  | Not at all stressful |  |  |  |  | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

3. How often have you been treated unfairly by **your co-workers, fellow students and colleagues** because of your international student status?

|  | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

|  | Not at all stressful |  |  |  |  | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

4. How often have you been treated unfairly by **people in service jobs** (by **store clerks, waiters, bartenders, bank tellers and others**) because of your international student status?

| | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

| | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

5. How often have you been treated unfairly by **strangers** because of your international student status?

| | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

| | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

6. How often have you been treated unfairly by **people in helping jobs** (by **doctors, nurses, psychiatrists, case workers, dentists, school counselors, therapists, social workers and others**) because of your international student status?

| | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

| | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

7. How often have you been treated unfairly by **neighbors** because of your international student status?

| | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

|  | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

8. How often have you been treated unfairly by **institutions (schools, universities law firms, the police, the courts, the Department of Social Services, the Unemployment Office and others**) because of your international student status?

|  | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

|  | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

9. How often have you been treated unfairly by **people that you thought were your friends** because of your international student status?

|  | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

|  | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

10. How often have you been **accused or suspected of doing something wrong** (such as **stealing, cheating, not doing your share of the work, or breaking the law**) because of your international student status?

|  | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

|  | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

11. How often have people **misunderstood your intentions and motives** because of your international student status?

| | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

| | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

12. How often did you **want to tell someone off for being discriminatory towards you but didn't say anything**?

| | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

| | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

13. How often have you been **really angry about something discriminatory that was done to you**?

| | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

| | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

14. How often have you been **forced to take drastic steps** (such as **filing a grievance, filing a lawsuit, quitting your job, moving away, and other actions**) to deal with some discriminatory thing that was done to you?

| | Never | Once in a while | Some-times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

| | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

15. How often have you **been called a prejudice name**?

| | Never | Once in a while | Some- times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

| | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

16. How often have you **gotten into an argument or a fight about something discriminatory that was done to you or done to another international student**?

| | Never | Once in a while | Some- times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

| | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

17. How often have you been **made fun of, picked on, pushed, shoved, hit, or threatened with harm** because of your international student status?

| | Never | Once in a while | Some- times | A lot | Most of the time | Almost all the time |
|---|---|---|---|---|---|---|
| How often as an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

| | Not at all stressful | | | | | Extremely stressful |
|---|---|---|---|---|---|---|
| How stressful was this for you? | 1 | 2 | 3 | 4 | 5 | 6 |

18. How **different** would your life be now if you **HAD NOT BEEN** treated in a discriminatory and unfair way?

| | The Same as it is now | A little different | Different in a few ways | Different in a lot of ways | Different in most ways | Totally different |
|---|---|---|---|---|---|---|
| As an international student? | 1 | 2 | 3 | 4 | 5 | 6 |

**Discrimination Experiences Free Response**

Consider your experiences as an international student in the United States:

1. Have there been times where you have felt discriminated against because of your status as an international student?

<div align="center">Yes / No</div>

2. If you have felt discriminated against because of your status as an international student, please describe the time you felt the most discriminated against.

3. Please rate how uncomfortable you felt during this experience:

| | Not at all<br>Uncomfortable | | | | | Extremely<br>Uncomfortable | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

4. About how many times have you been discriminated against due to your status as an international student?  _____

# SOS-10 ™

**Instructions:** Below are 10 statements about you and your life that help us understand how you feel you are doing. Please respond to each statement by circling the response number that best fits how you have generally been over the last seven days (1 week). There are no right or wrong responses, but it is important that your response reflect how you feel you are doing. Often the first answer that comes to mind is best. Please be sure to respond to each statement.

**1) Given my current physical condition, I am satisfied with what I can do.**
    0    1    2    3    4    5    6
    Never                          All or nearly all of the time

**2) I have confidence in my ability to sustain important relationships.**
    0    1    2    3    4    5    6
    Never                          All or nearly all of the time

**3) I feel hopeful about my future.**
    0    1    2    3    4    5    6
    Never                          All or nearly all of the time

**4) I am often interested and excited about things in my life.**
    0    1    2    3    4    5    6
    Never                          All or nearly all of the time

**5) I am able to have fun.**
    0    1    2    3    4    5    6
    Never                          All or nearly all of the time

**6) I am generally satisfied with my psychological health.**
    0    1    2    3    4    5    6
    Never                          All or nearly all of the time

**7) I am able to forgive myself for my failures.**
    0    1    2    3    4    5    6
    Never                          All or nearly all of the time

**8) My life is progressing according to my expectations.**
    0    1    2    3    4    5    6
    Never                          All or nearly all of the time

**9) I am able to handle conflicts with others.**
    0    1    2    3    4    5    6
    Never                          All or nearly all of the time

**10) I have peace of mind.**

    **0   1   2   3   4   5   6**

**Never                                 All or nearly all of the time**

**Creative Achievement Questionnaire**
**Shelley Carson**
**Harvard University**

I. *Place a check mark beside the areas in which you feel you have more talent, ability, or training than the average person.*
__ visual arts (painting, sculpture)
__ music
__ dance
__ individual sports (tennis, golf)
__ team sports
__ architectural design
__ entrepreneurial ventures
__ creative writing
__ humor
__ inventions
__ scientific inquiry
__ theater and film
__ culinary arts

II. *Place a check mark beside sentences that apply to you. Next to sentences with an asterisk (\*), write the number of times this sentence applies to you.*

A. Visual Arts (painting, sculpture)
__ 0. I have no training or recognized talent in this area. (Skip to Music).
__1. I have taken lessons in this area.
__2. People have commented on my talent in this area.
__3. I have won a prize or prizes at a juried art show.
__4. I have had a showing of my work in a gallery.
__5. I have sold a piece of my work.
__6. My work has been critiqued in local publications.
*__7. My work has been critiqued in national publications.

B. Music
__0. I have no training or recognized talent in this area (Skip to Dance).
__1. I play one or more musical instruments proficiently.
__2. I have played with a recognized orchestra or band.
__3. I have composed an original piece of music.
__4. My musical talent has been critiqued in a local publication.
__5. My composition has been recorded.
__6. Recordings of my composition have been sold publicly.
*__7. My compositions have been critiqued in a national publication.

C. Dance
__0. I have no training or recognized talent in this area (Skip to Architecture)
__1. I have danced with a recognized dance company.

__2. I have choreographed an original dance number.
__3. My choreography has been performed publicly.
__4. My dance abilities have been critiqued in a local publication.
__5. I have choreographed dance professionally.
__6. My choreography has been recognized by a local publication.
*__7. My choreography has been recognized by a national publication.

D. Architectural Design
__0. I do not have training or recognized talent in this area (Skip to Writing).
__1. I have designed an original structure.
__2. A structure designed by me has been constructed.
__3. I have sold an original architectural design.
__4. A structure that I have designed and sold has been built professionally.
__5. My architectural design has won an award or awards.
__ 6. My architectural design has been recognized in a local publication.
*__7. My architectural design has been recognized in a national publication.

E. Creative Writing
__0. I do not have training or recognized talent in this area (Skip to Humor).
__1. I have written an original short work (poem or short story).
__2. My work has won an award or prize.
__3. I have written an original long work (epic, novel, or play).
__4. I have sold my work to a publisher.
__5. My work has been printed and sold publicly.
__6. My work has been reviewed in local publications.
*__7. My work has been reviewed in national publications.

F. Humor
__0. I do not have recognized talent in this area (Skip to Inventions).
__1. People have often commented on my original sense of humor.
__2. I have created jokes that are now regularly repeated by others.
__3. I have written jokes for other people.
__ 4. I have written a joke or cartoon that has been published.
__5. I have worked as a professional comedian.
__6. I have worked as a professional comedy writer.
__7. My humor has been recognized in a national publication.

G. Inventions
__0. I do not have recognized talent in this area.
__1. I regularly find novel uses for household objects.
__2. I have sketched out an invention and worked on its design flaws.
__3. I have created original software for a computer.
__4. I have built a prototype of one of my designed inventions.
__5. I have sold one of my inventions to people I know.
*__6. I have received a patent for one of my inventions.
*__7. I have sold one of my inventions to a manufacturing firm.

H. Scientific Discovery
__0. I do not have training or recognized ability in this field (Skip to Theater
__1. I often think about ways that scientific problems could be solved.
__2. I have won a prize at a science fair or other local competition.
__3. I have received a scholarship based on my work in science or medicine.
__4. I have been author or coauthor of a study published in a scientific journal.
*__5. I have won a national prize in the field of science or medicine.
*__6. I have received a grant to pursue my work in science or medicine.
__7. My work has been cited by other scientists in national publications.

I. Theater and Film
__0. I do not have training or recognized ability in this field.
__1. I have performed in theater or film.
__2. My acting abilities have been recognized in a local publication.
__3. I have directed or produced a theater or film production.
__4. I have won an award or prize for acting in theater or film.
__5. I have been paid to act in theater or film.
__6. I have been paid to direct a theater or film production.
*__7. My theatrical work has been recognized in a national publication.

J. Culinary Arts
__0. I do not have training or experience in this field.
__1. I often experiment with recipes.
__2. My recipes have been published in a local cookbook.
__3. My recipes have been used in restaurants or other public venues.
__4. I have been asked to prepare food for celebrities or dignitaries.
__5. My recipes have won a prize or award.
__6. I have received a degree in culinary arts.
*__7. My recipes have been published nationally.

K. Please list other creative achievements not mentioned above.

III. *Place a check mark beside sentences that apply to you.*
__ One of the first things people mention about me when introducing me to others is my
     creative ability in the above areas.
__ People regularly accuse me of having an "artistic" temperament.
__ People regularly accuse me of being an "absent-minded professor" type.

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**Problem Solving Scenario:**
In the picture below, you are given a book of matches, a small cardboard box full of tacks, and a candle placed on a table. How can you attach the candle to the wall so that the candle can burn properly and not drip wax onto the table? Please use the space below to describe your solution. You may write or draw a picture to express your solution.
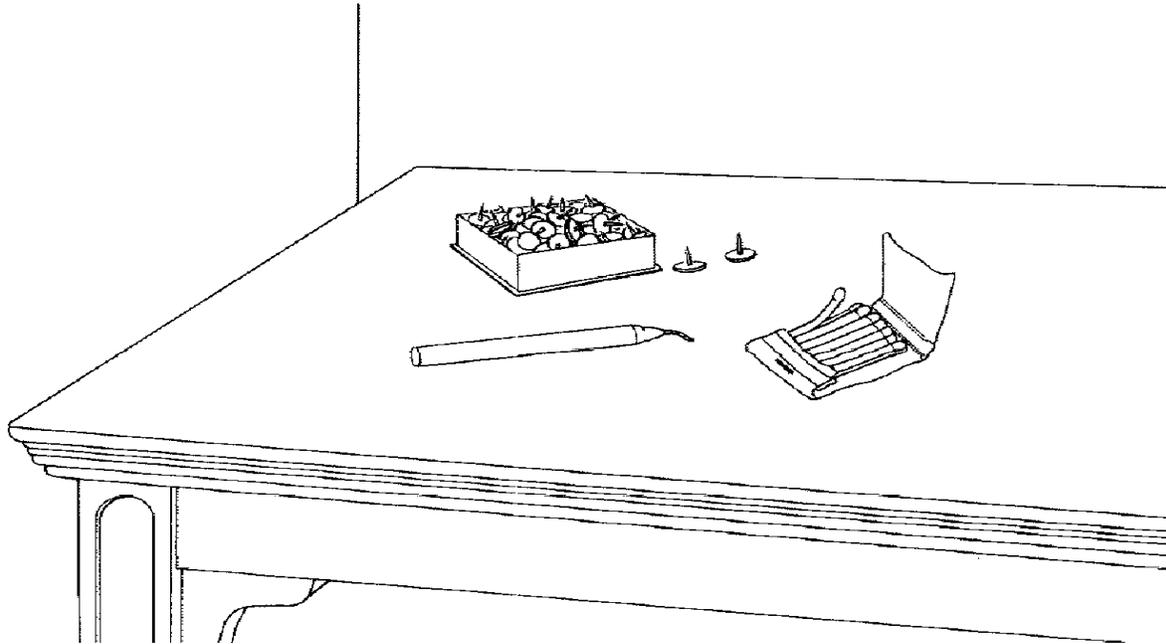
Appendix: F

# SCORING OF THE CREATIVE ACHIEVEMENT QUESTIONNAIRE

Part I is an indicator of areas in which the participant feels he or she has talent or natural ability. Part II is an indicator of actual achievements. (Note that section K is included so that participants who have achievements in domains outside of the arts and sciences can be acknowledged. Answers in section K are not scored.) Part III includes questions that may be useful to the investigator's specific line of inquiry (you may add your own questions to this section of the questionnaire).

Standard Scoring:

      Score only checkmarks in Part II of the questionnaire.
- Each check marked item in Part II receives the number of points represented by the question number adjacent to the checkmark.
- Sum the total number of points within each domain to determine the domain score.
- Sum all ten domain scores to determine the total CAQ score.

      Example of Scoring:

        Creative Writing
            ___ 0. I do not have training or recognized talent in this area (Skip to Humor).
            _X_ 1. I have written an original short work (poem or short story).
            _X_ 2. My work has won an award or prize.
            ___ 3. I have written an original long work (epic, novel, or play).
            _X_ 4. I have sold my work to a publisher.
            _X_ 5. My work has been printed and sold publicly.
            ___ 6. My work has been reviewed in local publications.
         * _3_ 7. My work has been reviewed in national publications.

      Under the standard scoring rubric, the participant would receive a score of 19 points for the Creative Writing domain (1+2+4+5+7).

Specialized Scoring:

      In certain cases, you may be comparing scores of specialized participants within a domain (e.g., comparing a sample of published creative writers with high perfectionism scores to a sample of writers with low perfectionism scores) who might demonstrate a ceiling effect using the standard scoring rubric. In these cases, you may obtain an addition creative productivity score by looking at the items marked with an asterisk, and multiplying the number of times the item has been achieved by the number associated with that item to determine total points for that item.

      Example of Scoring:
      In the above example, if you were comparing one group of creative writers to another wanted to be able to differentiate among them more clearly (by using the asterisk option), you would give the above participant a score of 33 [1+2+4+5+ (3x7)].

Norms are based on the standard scoring rubric for 1378 participants from community samples in

the U.S. and Canada. (Note that SD is larger than mean, highlighting the extreme variation in scores across the population)

Population Mean = 11.8          Standard Deviation = 14.4

VITA


       Patricia O. Ofili is a Nigerian-American and Texas native. She received her Bachelor of Science degree in Psychology and Sociology minor from Texas A&M University, College Station. Her work experiences span several behavioral and mental health settings. This includes experiences working with children as a behavioral specialist for the DeSoto County School District and later a school therapist for the Timberhills Region IV Community Mental Health Agency. Patricia's clinical experiences also include behavioral and therapeutic work at the North Mississippi Regional Center (NMRC) and the Baddour Center. The facilities provided opportunities to work with adults with mental disabilities and concurrent psychiatric disorders. Her graduate research experiences pertain to cross-cultural and multicultural psychology; more specifically, the acculturation process and cultural identity formation. Her most recent research interests include international student adjustment and creativity potential.