2012

Demographic Predictors of Self-Directed Learning Readiness and the Cultural Context

Dale Maynard

DEMOGRAPHIC PREDICTORS OF SELF-DIRECTED LEARNING READINESS AND THE CULTURAL CONTEXT

A DISSERTATION

Presented in Partial Fulfillment of the Requirements for

the Degree of Doctor of Philosophy in

Leadership and Education in

the Adrian Dominican School of Education of

Barry University

by

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Barry University

2012

Area of Specialization: Human Resource Development

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ABSTRACT

DEMOGRAPHIC PREDICTORS OF SELF-DIRECTED LEARNING READINESS AND THE CULTURAL CONTEXT

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Barry University, 2012

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The purpose of this study was to test an inference from Jarvis' (1987, 2006) model of experiential learning that the cultural context moderates the influence of demographic variables in the prediction of SDLR. The study pursued this purpose by examining the extent to which age, gender, and level of education predict SDLR scores differently in a sample from an individualistic cultural context and a sample from a collectivistic cultural context.

Analyses of 169 participants from organizations in the U.S. and the Caribbean state of St. Kitts-Nevis revealed that in the aggregated sample, culture predicts SDLRS with a large effect size. Moreover, when analyzed as a moderator of the demographic predictors, culture predicts SDLRS with a medium effect size. Age predicts SDLRS in both cultures. In the collectivistic culture age predicts SDLRS with a large effect size while in the individualistic culture it predicts SDLRS with a medium effect size. Level of education predicts SDLRS only in the collectivistic sample with a medium effect size. Finally, gender does not predict SDLRS in either culture. However, it does predict SDLRS when the cultures were aggregated.

ACKNOWLEDGEMENTS

I am deeply indebted to all those who supported me through my doctoral study. First, I want to thank my entire family. Your love, patience, and unwavering belief in my capacity to succeed sustained me through the doubts, apprehensions and frustrations that challenged my efforts.

Second, I want to thank my committee members, who so graciously accepted the task to advise me and guide my dissertation development and defense. Dr. David Kopp, "thank you" seems so insufficient. You devoted your time and attention to me as if I was your only student, when in reality you had many more. You answered every call, returned emails in the dead of night, and continually clarified my path through the dark tunnel of uncertainty, until I finally saw the light at end. Dr. King, from the moment we first consulted I never felt anything other than wholehearted support from you and I remain appreciative of your astute but always gracious guidance. Dr. Eeltink, as my research methods professor, you mentored me in the art and science of developing and implementing rigorous research, and thus lit the candle that will guide my path as a future researcher and scholar.

Third, I offer my sincere thanks to my personal dissertation mentor, Dr. David Molnar. I will never forget your kindness, support, sense of humor, and above all your commitment to my success. You have been an awesome mentor and friend. My commitment to continue to grow as a learner and scholar will forever be fueled by everything you taught me.

Finally, I wish to thank my copy editor Stefanie Gapinski and my fellow doctoral student Linda Begley. Stefanie your excellent editing skills were invaluable in making

this paper ready for scholarly review. Linda you kept me laughing through this whole experience but most of all, you helped me focus my attention on moving forward. Thank you both ever so kindly.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

"Learning, even self-directed learning, rarely occurs in splendid isolation from the world in which the learner lives; ... it is intimately related to that world and affected by it" (Jarvis, 1987, p. 11).

Revolutionary workplace developments have challenged traditional approaches to human resource development in recent years. Rowden (2007) noted that "the increasingly competitive nature of the economy, combined with demographic, occupational, and workplace changes have had significant impact on the nature of the workplace" (p. 17). Guglielmino and Guglielmino (2006) similarly acknowledged that, "increasing global competition and the growth in international business, juxtaposed with constant and increasing rates of change, place new demands on management to implement effective models of human resource development across cultures" (p, 21). Further, Guglielmino and Guglielmino (2008) asserted that, "unprecedented growth in information and technology has created such rapidly expanding demands for learning and problem-solving that it has become impossible for training design and delivery to keep pace with learning needs" (p. 6).

Self-directed learning (SDL), or "the process in which individuals take the initiative with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (Knowles, 1975, p. 18), has emerged as a means of meeting the complex demands associated with the changing workplace (Cho, 2002; Ellinger, 2004;

Guglielmino, 2008; Guglielmino & Guglielmino, 2006; Mitlacher, 2008; Pink, 2009). Tullar & Beitler (2008) noted that, "SDL is important for the creation and dissemination of new knowledge, since formal training programmes can never be expected to keep up with the rate of increase in the available knowledge" (p. 318). Guglielmino and Guglielmino (2011) observed that several prominent authors have suggested that "self-directed learning is increasingly viewed as a favored educational and training paradigm in postmodern economies" (p.30). Guglielmino and Murdick (1997) asserted that leading U.S. companies have applied SDL as a means of developing the learning organization and achieved savings of 20-50%. Smith (2002) observed that "there is considerable commercial value in encouraging employees" to be self-directed because they can "contribute to competitiveness without the need for all learning to occur when there is direct training by an instructor" (p.111). Ellinger (2004) contended that, "an understanding of SDL can enhance human resource development (HRD) research and practice" (p. 159). Guglielmino and Guglielmino (2006) further stated: "The key element in an effective learning organization is the acceptance of responsibility by each individual for recognizing and addressing his or her own learning needs and then sharing that learning with appropriate others in the organization" (p. 21).

In light of these developments, HRD scholars have called for further research to understand issues related to the application of SDL in HRD (Ellinger, 2004; Guglielmino, 2008; Manz & Manz, 1991), particularly issues related to context and individual differences (Cho, Ellinger, & Hezlett, 2005; Ellinger, 2004; Guglielmino & Guglielmino, 2006; McLean, 2006; Oliveira, Silva, Guglielmino, & Guglielmino, 2009). Accordingly,

this study was a direct response to calls in the HRD literature for further SDL research as a means of enhancing its usefulness as an approach to HRD.

Statement of the Problem

Complex workplace changes associated with technological advancement, rapid change, and globalization (Guglielmino, 2008; Guglielmino & Guglielmino, 2006; Mitlacher, 2008; Pink, 2009; Rowden, 2007) together with research findings documenting broad benefits of SDL for organizational success (Chuprina & Durr, 2006; Durr, 1992; Gabrielle, Guglielmino & Guglielmino, 2006; Guglielmino 1996; Guglielmino & Guglielmino, 2006; Guglielmino, Guglielmino, & Klatt, 1994; Guglielmino & Hillard, 2007; Guglielmino & Long, 1987; Oliveira, Silva, Guglielmino & Guglielmino, 2009; Roberts, 1986) have fueled a trend toward SDL as an approach to HRD (Guglielmino & Guglielmino, 2011). However, despite today's increasingly demographically diverse workplace, the extent to which, demographic variables may impact self-directed learning readiness (SDLR) is not well understood (Derrick, Rovai, Ponton, Confessore, & Carr, 2007; Oliveira, Silva, Guglielmino, & Guglielmino, 2009; Oliveira & Simões, 2006; Reio & Davis, 2005). As a consequence, organizations are left to pursue SDL as an approach to HRD, in the face of increasing demographic diversity in the workplace, without clear guidance from the literature regarding the extent to which demographic variables may impact the vital self-directedness of their workforce.

Several studies have investigated demographic variables as predictors of SDLR, with overall inconclusive results. While some studies have concluded a relationship between SDLR and demographic variables such as age, gender, and level of education, others have not. However, despite these inconclusive results and a body of theoretical

and empirical literature suggesting that the influence of demographic variables may be related to the cultural context (Caffarella & Merriam, 2000; Jarvis; 1987, 2006; Knowles 1980; Nugraha, 2005; Oliveira & Simões, 2006), few studies that investigated the relationship between demographic variables and SDLR, have addressed the role of the cultural context in their methodology (Cho, Ellinger, & Hezlett, 2005; Derrick, Rovai, Ponton, Confessore, & Carr, 2007; Reio & Davis, 2005; Yoo, Cheong, & Cheong 2000). Rather most studies have focused on differences in levels of SDLR across cultures. A need therefore exists for research to examine the possible link between the cultural context and demographic variables in the prediction of SDLR (Adenuga, 1991; Oliveira, Silva, Guglielmino, & Guglielmino, 2009; Oliveira & Simões, 2006; Reio & Davis, 2005). This study aimed to address this need by testing an inference from the experiential learning theory of Jarvis (1987, 2006) that the cultural context may moderate the influence of demographic variables in the prediction of SDLR. Results of this study provided insight into role of the cultural context in the development of demographic manifestations of SDLR.

Purpose of the Study

The purpose of this study was to test an inference from Jarvis' (1987, 2006) model of experiential learning that the cultural context may moderate the extent to which age, gender, and level of education predict SDLR. The study pursued this purpose by examining the extent to which age, gender, and level of education as a model predict SDLR scores differently in a sample from an individualistic cultural context and a sample from a collectivistic cultural context. No other facets of the cultural context were examined.

Theoretical Framework

Self-directed learning has been explained in the literature from three different theoretical perspectives, each of which emphasizes a different conceptualization of SDL. These perspectives are the personal attribute, process, and contextual perspective (Song & Hill, 2007). Theories of SDL generally fall within these broad perspectives and accordingly influence approaches to research, based on whether researchers believe SDLR is largely a consequence of personal attributes, a systematic sequence of steps to autonomously achieve a learning goal (process), or a function of the context. The present study views SDLR primarily as a function of experiences in the learner's cultural context; hence the experiential learning theory of Jarvis (1987, 2006) was selected as the guiding framework for this study.

Jarvis' (1987, 2006) model of experiential learning is a comprehensive learning theory that conceptualized learning as an interactive phenomenon, occurring between the learner and his or her context. The theory emphasized two important themes. The first is that all learning stems from experience related to the learner's interaction in time and space. The second is that experience, from which we learn, is culturally interpreted. The theory thus described the role of the cultural context, in establishing the conditions that frame our approaches to learning.

Jarvis (1987, 2006) noted two major ways in which the cultural context frames learners' approaches to learning. The first is through socialization and the second is the manner in which the cultural context structures time and space. Through these two processes, the cultural context exerts differential impacts on our various social

characteristics, and ultimately influences our approaches to learning. Jarvis (2006) conceptualized this idea in the statement, "I am, therefore I act" (p. 129); meaning that people pursue learning behavior in a manner consistent with the way culture treats their social characteristics. To this extent, therefore, it may be inferred from Jarvis (1987, 2006) that age, gender, and level of education are proxies for factors in the cultural context. Nothing inherent in being a particular age or gender, or having a specific level of education makes an individual more or less self-directed in learning. Rather it is the manner in which culture treats these attributes that impacts how they predict learning behavior.

Research Design

This study employed a correlational design. These designs provide quantitative description of the extent to which variables are related, and particularly useful for testing theory dealing with relationships designs (Anderson, 1998). Correlational designs generally investigate a number of predictor or independent variables presumed to be related to a single criterion, or dependent variable. In this way they provide an efficient methodology for prediction based on multiple variables (Anderson, 1998; Ary, Jacobs, Razavieh, & Sorensen, 2010).

In this study, age, gender, and level of education data and Self-directed Learning Readiness Scale (SDLRS; see appendix A) scores were gathered from adults born, raised, and living in an individualistic cultural context and a collectivistic cultural context. The relationship between SDLR scores and the

predictor variables of age, gender, and level of education were investigated individually and in combination.

Furthermore, the design was selected for this study because it permits simultaneous evaluation of the effects several independent variables have on the dependent variable. Moreover, the researcher can assess interaction patterns between independent variables or whether the variables operate independently to produce an effect. Additionally, since correlational designs reveal degrees of association rather than the "all or nothing" approach employed by experimental designs, they permit the researcher to evaluate real world data obtained in a naturalistic setting (Anderson, 1998; Ary, Jacobs, Razavieh, & Sorensen, 2010). Finally, this correlational design is consistent with the design used in many studies that have researched personal attributes and SDLR (Derrick, Rovai, Ponton, Confessore, & Carr, 2007).

Research Questions

In the effort to explore whether the cultural context may moderate the extent to which age, gender, and level of education predict SDLR, this correlational study investigated the following research questions:

1. To what extent is age associated with the criterion variable of SDLRS scores in the individualistic sub-sample?
2. To what extent is age associated with the criterion variable of SDLRS scores in the collectivistic sub-sample?
3. To what extent is gender associated with the criterion variable of SDLRS scores in the individualistic sub-sample?

4. To what extent is gender associated with the criterion variable of SDLRS scores in the collectivistic sub-sample?
5. To what extent is level of education associated with the criterion variable of SDLRS scores in the individualistic sub-sample?
6. To what extent is level of education associated with the criterion variable of SDLRS scores in the collectivistic sub-sample?
7. To what extent are there interactions between the predictors of SDLRS scores and an indicator variable identifying the individualistic or collectivistic cultural context when the sub-samples are aggregated?

Hypotheses

The following research and null hypotheses were proposed:

H_1: Age is significantly positively associated with the criterion variable of SDLRS scores in the individualistic sub-sample.

H_2: Age is significantly positively associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

H_3: Gender is significantly associated with the criterion variable of SDLRS scores in the individualistic sub-sample.

H_4: Gender is significantly associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

H_5: Higher level (years) of education is significantly associated with higher SDLRS scores in the individualistic sub-sample.

H_6: Higher level (years) of education is significantly associated with higher SDLRS scores in the collectivistic sub-sample.

H_7: There are significant interactions between the predictors and an indicator variable identifying the two samples when the samples are aggregated.

Null Hypotheses

H_{01}: Age is not significantly associated with the criterion variable of SDLRS scores in the individualistic sub-sample.

H_{02}: Age is not significantly associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

H_{03}: Gender is not significantly associated with the criterion variable of SDLRS scores in the individualistic sub-sample.

H_{04}: Gender is not significantly associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

H_{05}: Higher level (years) of education is not significantly associated with higher SDLRS scores in the individualistic sub-sample.

H_{06}: Higher level (years) of education is not significantly associated with higher SDLRS scores in the collectivistic sub-sample.

H_{07}: There are no significant interactions between the predictors and an indicator variable identifying the two samples when the samples are aggregated.

Significance of the Study

This study aimed to make an original and significant contribution to the HRD literature by testing an inference from Jarvis' (1987, 2006) model of experiential learning that the cultural context may moderate the extent to which age, gender, and level of education predict SDLR. In pursuing this purpose, this study is expected hold both theoretical and practical significance for the field of HRD. It may be theoretically

significant in that it may be helpful in developing research directions to further clarify the precise role of age, gender, and level of education in the prediction of SDLR. Further, it holds theoretical significance in that it tests a foundational assumption in HRD that adult learners are equally self-directed (Ellinger, 2004; Knowles, 1980), regardless of age, gender or level of education or any other demographic characteristic. It may hold practical significance in that the results may help to provide insight into whether there is a need to vary approaches to developing SDLR across cultural and demographic backgrounds.

Definition of Terms

Terms in this research, that are technical in nature, or subject to interpretation, are defined below:

1. Collectivistic cultural context: Society characterized by a social framework with strong and cohesive in-groups, in which people expect their ingroup to look after them and are loyal to it in return (Hofstede, 1980).
2. Individualistic cultural context: Society characterized by loose social frameworks in which people are only expected to look after their own interests and members of their ingroup (Hofstede, 1980).
3. Level of Education: years of formal schooling achieved to date.
4. Self-directed Learning: the process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs; formulating learning goals; identifying human and material resources for learning; choosing and implementing appropriate learning strategies; and evaluating learning outcomes (Knowles, 1975).

5. Self-directed Learning Readiness: an operational measure of self-directed learning, defined as "the degree the individual possesses the attitudes, abilities, and personality characteristics necessary for self-directed learning" (Wiley, 1983, p.182).

Delimitations

This study was limited to testing an inference from Jarvis' (1987, 2006) model of experiential learning that the cultural context may moderate the extent to which demographic variables predict SDLR scores, by examining the extent to which age, gender, and level of education as a model predict SDLR scores differently in a sample from an individualistic cultural context and a sample from a collectivistic cultural context. It did not evaluate any other demographic variables nor did it evaluate other potential predictors such as social class or ethnicity. It did not attempt to determine what factors in the cultural context lead to patterns of SDLR across the specified demographic variables nor did it investigate the process by which individual characteristics and cultural contexts influence SDLR.

Limitations

It is recognized that the following limitations exist in the proposed study:

1. The results of this study are exploratory in nature.
2. The results of this study are limited by the accuracy and the truthfulness of the participants' self-reported data.
3. The results of this study are limited by the psychometric features of the selected measurement instrument (SDLRS).

4. There are inherent weaknesses in correlational research. These include: (a) common cause, when the independent and dependent variables both are influenced by a third variable, and (b) extraneous variables, where some other variable not investigated is actually the cause (Ary, Jacobs, Razavieh, & Sorensen, 2010).

Assumptions of the Study

The following assumptions were made in order to complete the study:

1. Participants responded honestly to stipulations for participation.
2. Participants reflected the cultural characteristics of the sampled national culture.
3. Participants responded honestly to the SDL questionnaire.
4. The instrument accurately obtained participants' perceptions on the issues questioned.

Organization of the Dissertation

This study tested an inference from Jarvis' (1987, 2006) model of experiential learning that the cultural context may moderate the extent to which age, gender, and level of education predict SDLR. The study is structured into five chapters. The first chapter introduced the statement of the problem, the need and purpose of the study, the design, the assumptions, the limitations, and the delimitations. Additionally, the key terms were defined and the conceptual basis of the study was established. The research questions also were clarified.

Chapter 2 reviews the literature that has examined the variables in the research question. Methodology for this study is presented in Chapter 3 and includes the research

design, selection of the sample, data collection tasks, and data analysis procedures. Chapter 4 presents the quantitative findings using mean score comparisons, correlational analysis and regression analysis specific to the research question. The results of the hypothesis testing will also be presented. Chapter 5 provides a discussion of the study summary, conclusions and recommendations for future research.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

This chapter will review the literature that provided the foundation for the research questions, methodology, and theoretical framework of this study. The review is presented in seven sections. The first section provides the background of the study. The second section presents the theoretical framework. The third section reviews a sampling of the research that has investigated the association between the variables of age, gender, and level of education and SDL. The fourth section reviews issues of definition and assessment of SDL. The fifth section summarizes and synthesizes the review to reflect the deficiencies in the literature. The sixth section discusses the contributions of the study to the literature. The seventh and final section summarizes the chapter.

Background

The notion that demographic variables such as age, gender and level of education may have implications for learning is well documented in the adult learning and SDL literature. Merriam and Brocket (1997) identified age, gender, and level of education, among a list of context related factors that can either hinder or enhance self-directed learning. Jarvis, Holford, and Griffin (2003) stated, "while the processes of learning are universal, what we learn and ways in which we learn are strongly influenced by social characteristics such as gender and ethnicity" (p. 88). Candy (1991) asserted that adults are powerfully affected by aspects of their backgrounds - including family and prior education - in ways that limit and constrain their ability to be self-directing" (p. 311).

Consistent with these theoretical views, a number of studies have investigated demographic variables as predictors of SDLR. Overall these studies have been inconclusive. While some studies have found a relationship between SDLR and demographic variables such as age, gender, and level of education others have found no such relationship. However, despite these inconclusive results and a body of theoretical and empirical literature suggesting that the influence of demographic variables may be related to the context, few studies that have investigated the relationship between demographic variables and SDLR have addressed the role of the cultural context in their methodology (Cho, Ellinger, & Hezlett, 2005; Derrick, Rovai, Ponton, Confessore, & Carr, 2007; Reio & Davis, 2005; Yoo, Cheong, and Cheong 2000).Rather most studies have focused on differences in levels of SDLR across cultures.A need therefore exists for research to examine the possible link between the cultural context and demographic variables in the prediction of SDLR (Oliveira & Simões, 2006; Reio & Davis, 2005). Primary support for this line of inquiry comes from postulations in the literature that directly link demographic factors and the cultural context. Caffarella and Merriam (2000) conceptualized the link between self-directed learning readiness and the cultural context, into a framework, that describes two dimensions of the learning context: the interactive and the structural. The interactive dimension they proposed, relates to learner interaction within a particular context, and the structural dimension relates to social and cultural factors that affect learning such as race, class, gender, ethnicity, power, and oppression.

Jarvis (1987, 2006) asserted that "in the same way that our ethnic cultures affect the manner in which we learn, learning is also affected by the manner in which each

culture treats gender" (p. 59). Nugraha (2005) argued that "both men and women are products of a societal gender structure; hence, gender structure has to be taken into account in the discussion of learning" (p. 38). Knowles (1980) conceptualized SDL as a function of one's developmental stage. He argued that individuals have different psychological and social needs at different stages of the lifespan, and therefore develop a psychological need to be self-directed as they mature and become increasingly responsible for their own lives. Oliveira and Simões (2006) in a study of socio-demographic and psychological variables in self-directed learning concluded that educational level exerts an important effect on self-directed learning by influencing epistemological beliefs.

Further corroboration comes from theoretical assertions that acknowledge the pervasive influence of culture in all learning behavior. Davis, Bailey, Nypaver, Rees, and Brockett (2010) asserted that, "because culture exists in historical, institutional, political, and social forms, its impact on self-directed learning is inevitable" (p. 14). Baumgartner, Lee, Birden, and Flowers (2003) argued that the learner's context functions to shape learners' views of themselves and their approaches to learning. They proposed that the constraints of the context socialize individuals to define their roles as learners, "to develop particular patterns of communication, to interact with others, and to relate to authority and power, all of which may not be culturally meaningful or understandable when being viewed by those outside these contexts" (p. 14). Song and Hill (2007) observed that, "the level of self-direction needed may change in different contexts" (p. 27). They argued that individuals choose to be more or less self-directed, depending upon requisites of their environment. Swanson and Holton (2009) asserted that "national

or ethnic cultural values and beliefs play a central role in determining how people behave in the workplace and in the classroom" (p. 424). Hudson and Ramamoorthy (2009) posited that cultural orientations might play an important role in SDLR. Gelpi (1979), Griffin (1983, 1987), Candy (1989, 1991), Brockett and Hiemstra (1991), and Hammond and Collins (1991) emphasized the view that self-directed learning is linked to cultural validation of self-directedness.

Empirical findings in the adult learning and SDL literature that have affirmed a link between the cultural context and SDLR provide further suggestive evidence. Guglielmino and Roberts (1992) researched SDLR in samples from the United States and Hong Kong in order to investigate similarities between learning style and job performance. They concluded that the experience of different cultures could influence the extent to which SDLR develops. Guglielmino, Guglielmino, and Zhao (1996) explored the relationship between culture and SDLR in two samples of managers and non-managers from China and the United States. They found the mean SDLR score of the Chinese sample was lower than the mean score of the U.S. sample. Braman (1998) found a significant positive relationship between readiness for SDL and individualism. Guglielmino & Guglielmino (2006), in a study of culture, SDLR, and per capita income in five countries, found a high Pearson correlation of SDLRS scores and individualism. They remarked that they expected "individualism to correlate positively" since in "countries with strong Individualism scores (as opposed to collectivism), individuals recognize and focus on their responsibility for taking care of themselves and their immediate families to a greater extent, with a lower expectation of support and protection from a larger group" (p. 26).

Further, in a study comparing the SDLR of business students from Germany and the United States, Beitler and Mitlacher (2007) found that students from Germany, which has a lower individualism score, had lower SDLRS scores than their U.S. counterparts. Adenuga (1991), in a study of demographic and personal predictors of SDL in a sample of American and foreign graduate students from less developed countries at Iowa State University, concluded that American students in the study sample demonstrated significantly more SDLR than their counterparts from less developed nations, which generally reflect a collectivistic cultural orientation (Hofstede, 1980).

Therefore in light of inconclusive results from studies that have investigated demographic variables as predictors of SDLR, and the foregoing theoretical and empirical supports linking the influence of demographic variables to the cultural context, this study aimed to clarify whether the cultural context may moderate the extent to which demographic variables predict SDLR.

Theoretical Framework

Three theoretical perspectives underlie influential SDL models in the literature. These perspectives are the personal attribute, process, and contextual perspectives (Song & Hill, 2007). Each of these perspectives and their associated models, depicted in table 1, are reviewed before discussing the theoretical framework selected to guide this study.

Table 1

Theoretical Perspectives

Perspectives	Description	Models
Personal Attribute	Characteristics individuals possess to varying degrees, which predispose them to involvement in self-directed learning activities (Oliveira, Silva, Guglielmino, & Guglielmino, 2009)	Brockett and Hiemstra (1991) – a combination of learning preferences, ownership, and responsibility Candy (1991); Chene (1983) – a combination of planning, making choices, exercising good judgment, reflecting, and exercising willpower and self-discipline Knowles (1980) – developmental stage
Process	How learners take the initiative in planning, implementing, and evaluating their own learning needs and outcomes, with or without the help of others (Knowles, 1975).	Tough (1971); Knowles (1975) – a series of steps to reach learning goals Brockett and Hiemstra (1991); Garrison (1997); Spear (1988) – fluid and often serendipitous process comprised of internal factors such as motivation and personal responsibility, and external factors such as environmental opportunities, the need to solve a problem, and the social situation Grow (1991); Hammond and Collins (1991) – Methods to integrate self-directed learning into formal instruction
Contextual	Environment where learning takes place (Song & Hill, 2007)	Jarvis (1987, 2006); Schooler (1990) – the macro social context, including culture, and national societies Massey (1979) – historical era

The Personal Attribute Perspective

Theories that have described SDL from the personal attribute perspective present SDL as the result of traits or attributes, which individuals possess to varying degrees and which predispose them to self-directed learning activities (Oliveira, Silva, Guglielmino,

& Guglielmino, 2009). These theories account for individual differences in SDL based on specific personal attributes of the learner. The extent to which the learner possesses the attributes specified by the model defines the extent to which he or she is self-directed (Stockdale & Brockett, 2011).

Major proponents of personal attribute models include Knowles (1980), Chene (1983), Brockett and Hiemstra (1991), and Candy (1991). Knowles conceptualized SDL as a function of one's developmental stage. Knowles argued that individuals have different psychological and social needs at different stages of the lifespan, and therefore develop a psychological need to be self-directed as they mature and become increasingly responsible for their own lives.

Brockett and Hiemstra (1991) conceptualized self-direction in learning as both a process and a combination of personal attributes of the learner. They developed a four-part model they called the Personal Responsibility Orientation Model (PRO) of SDL. The first part of the theory emphasized the importance of individuals assuming ownership for their own thoughts and actions as a critical factor in developing SDLR. The second part described the activities involved in the process of SDL. These included planning, implementing, and evaluating learning. The third part of the model described characteristics that predispose individuals to SDL such as being creative, ethical, and flexible. The fourth and final part acknowledged the relationship between learner self-direction and positive self-concept, and the influence of the social context in which the learning takes place.

Chene (1983) conceptualized SDL as a function of learner autonomy. He characterized the autonomous learner in terms of three attributes: independence, the

ability to make choices, and the capacity to articulate the norms and the limits of a learning activity. Depending on the level of learner autonomy, a learning experience can range from no learner control over the learning process to the learner taking charge of the entire learning process. Candy (1991) concurred with this view. He proposed that adults exhibit autonomy in managing their own learning efforts. He further contributed the view that values and beliefs afford learners the psychological resources to pursue SDL. In other words, he viewed values and beliefs as the foundation for personal attributes such as motivation, goal conception, and self-discipline.

Previous research has linked many attributes to self-directedness. These attributes include a disposition to be self-disciplined, goal-oriented, proactive, and resilient (Candy, 1991; Guglielmino, 1977; Oliveira, 2005). However, while personal attribute models emphasize personal characteristics of the learner, they do not attribute self-directedness solely to these characteristics. They also acknowledge the relevance of the learner's context. Knowles (1980) recognized that individuals have different social and psychological needs at different stages of the lifespan. These varying social and psychological needs are not entirely independent of the cultural context; the cultural context plays a major role in the psychological and social needs of the individual (Swanson & Holton, 2009). Brockett and Hiemstra (1991) similarly recognized the influence of the social context in which the learning takes place. Finally, Candy (1991) and Chene (1983) also recognized the learner's context, in that culture largely influences autonomy, values, and beliefs. As such, while personal attribute theorists emphasize personal traits in the prediction of SDLR, they clearly recognize the validity and critical nature of the cultural context in shaping expression of these traits.

The Process Perspective

Theories that describe SDL as a process emphasize the individual's initiative in diagnosing his or her learning needs, formulating learning goals, identifying resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes (Stockdale & Brockett, 2011). Three types of process models have emerged in the literature: linear, interactive, and instructional (Merriam, Caffarella, & Baumgartner, 2007). Early models of SDL proposed by Knowles (1975) and Tough (1971) were linear models. Such models described a sequence of phases through which, learners progress in the SDL process (Brockett & Hiemstra, 1991).

Interactive models, such as proposed by Brockett and Hiemstra (1991), Cavaliere (1992), Danis (1992), Garrison (1997), and Spear and Mocker (1984), conceptualized SDL as a fluid process involving internal psychological factors as well as external sociological factors such as opportunity, challenges, and social circumstances. These models view self-directedness as a serendipitous confluence of psychological and sociological factors. Spear and Mocker's model epitomized this view. They conceptualized SDL as a consequence or outcome of a response to the environment, based on experience. They proposed that the "organizing circumstance" of the learner's environment facilitates SDL. Instructional models that include those proposed by Grow (1991) and Hammond and Collins (1991) sought to identify instructional techniques and suggestions for developing SDL in differential social, political, and environmental contexts (Merriam et al., 2007).

Process models have not been extensively investigated (Merriam et al., 2007). However, findings from the limited research that has been done do not support the notion

that the SDL process is a deliberate, well-planned, linear sequence of steps as proposed by Knowles (1975) and Tough (1971). However, specific activities and phases of the SDL process have been identified in some populations. Valente (2005) studied the self-directed learning process of older adults who managed their own health care. Her study showed the SDL process begins with the diagnosis of a health event. Health care professionals are further consulted, stimulating the older adults to seek and evaluate additional information. A treatment option is then selected and monitored, and lifestyle or treatment changes are made. As more information is acquired and evaluated, the learner repeats the process. Roberson and Merriam (2005) also discovered a process of SDL used by rural adults. The process begins with an incentive to learn and the individual considers or rejects the incentive depending on whether he or she is interested. If the learner is interested, then resources and systematic attention is devoted to the learning project. The learner makes adjustments as the project progresses. These findings indicate the existence of a process dimension of self-directed learning, though they do not confirm a deliberate, well-planned, linear sequence of steps as proposed by Knowles (1975). Yet, it is also clear from these findings that process models unfold in interaction with contextual factors such as guidance from the healthcare system, available information or an incentive from the environment.

Therefore, as with personal attribute models, it is clear that process models of SDL also recognize the foundational role of the context in SDL. Brockett and Hiemstra (1991), Cavaliere (1992), Danis (1992), Garrison (1997), and Spear and Mocker (1984) conceptualized SDL as a fluid process involving internal psychological factors as well as external sociological factors such as opportunity, challenges and social circumstances,

clearly recognizing the influence of the learner's context in the development of SDL. Similarly, Grow's (1991) and Hammond and Collins' (1991) instructional techniques and suggestions for developing SDL in differential social, political, and environmental contexts, gave clear recognition to the fact that the cultural context is a critical consideration in the development of SDLR.

The Contextual Perspective

The contextual perspective emphasizes environmental factors and how those factors impact the learner's level of SDLR (Song & Hill, 2007). Models founded in this perspective acknowledge the influence of three levels of the social context: the micro social context, which includes immediate social influences such as family structure, parenting style, and sibling relationships (Long, 1990; Redding, 1997); the meso-social context, which includes intermediate social forces such as the workplace (Spear, 1988), school (Long & Stubblefield, 1994), and extra-family interactions (Long & Redding, 1994); and the macro social context, which includes culture, historical era, and national societies (Guglielmino, Klatt, & Guglielmino, 1995; Long, 1990; Redding, 1997; Schooler, 1990). The extent to which these three levels of the social context restrict or support SDL reflects individual levels of SDLR (Redding, 1997).

Scholars who proposed contextual models include Massey (1979), Long (1989, 1990), Schooler (1990), Redding (1991, 1997), and Jarvis (1987, 2006). Massey's (1979) theory of value formation proposed that the major formative events that occur within a macro-society during an individual's critical formative period directly influence the learning choices made when they are adults. Schooler conceptualized SDL as an

adaptive behavior. He argued that the cultural context engenders self-directedness in individuals as through the value it places on individualism.

Empirical support for the contextual perspective comes from several studies that have examined the relationship between learning behavior and the learner's context. They further asserted that although an individual may possess the attributes to be self-directed, expression of this potential to be self-directed might be constrained by the environment. Poulton, Derrick, and Carr (2005) found that although adults might intend to pursue learning activities, they may choose not to as a consequence of more urgent demands arising from their interaction in their specific context.

In a study of the meaning-making process of Taiwanese Chinese immigrants, Lee (1999) demonstrated the relevance of the cultural context in shaping learning. Research participants identified major cultural values that influenced their meaning-making process. These values, which included respecting authority, maintaining harmony, valuing study and degrees, and placing men above women, influenced every aspect of their meaning-making process. Such values prevailed even after the participants had relocated from their original context. Their original cultural contexts continued to influence the learning process even after they had relocated (Lee, 1999).

Further, Alfred (2003) interviewed 15 adult immigrant women in a qualitative inquiry. The findings revealed that culture, contexts, and early schooling socialization in their country of origin significantly influenced the participants' learning experiences in the United States. Educated in a British education system, the women preferred learning through lectures and written exercises to class discussions. They were reluctant to

challenge their instructors, voice their opinions in group-discussions, or engage in similar behaviors that were contradictory to the teacher-directed methods they learned.

Additionally, Kopp (2001) in a case study investigating differences in self-directed learning and dyadic conflict among members of the popular Rock band, The Beatles, affirmed Massey's view that experiences during an individual's critical formative period directly influence the learning choices made when they are adults. Linking the adult levels of SDL of band members John Lennon and Paul McCartney to their childhood experiences, Kopp (2001) observed, "both Lennon and McCartney were self-directed learners of varied degrees and each of their respective SDL propensities were formed during his childhood" (p. 63).

Consequently, according to contextual theorists, learning is not an isolated process internal to the learner. It is an interactive process that is mediated by experiences in the learner's context. For this reason, the experiential learning theory of Jarvis (1987, 2006) was selected to guide this study and is discussed in the next section.

Jarvis' (1987, 2006) Model Of Experiential Learning

The theoretical basis for the present study draws from Jarvis' (1987, 2006) model of experiential learning. The theory reflects the contextual perspective on SDL, and as such situated learning in a framework that conceptualizes learning as interactive process involving the learner and the context. As a consequence, he posited that experiences in the cultural context are a critical factor in framing learner approaches to the learning process. He noted two major ways in which the cultural context frames learners' approaches to learning. The first is through socialization and the second is the manner in which culture structures time and space.

In describing the influence of socialization, Jarvis (1987, 2006) proposed two types of socialization. Primary socialization involves the process of interacting directly in the learner's culture from childhood through engagement with parents, school, church, and other agents close to the developing child (Jarvis 1987, 2006). In this way, he argued, "we are socialised into our socio-economic class, or position in society, acquiring the language, sense of self, and identity, and sub-culture relevant to our position in our social milieu" (2006, p. 59).

Jarvis (1987, 2006) described secondary socialization as the process of acquiring membership in a subgroup and the perceptions and values of the particular sub-group. Values, attitudes, and beliefs acquired through primary socialization are modified as the learner acquires new roles, statuses, and social identities and with them, new values, attitudes, and beliefs (Jarvis 2006). Therefore, Jarvis (1987, 2006) argued that the process of secondary socialization shapes learning processes as individuals change roles, statuses, and social identities across the lifespan.

With respect to space Jarvis (1987, 2006) identified two dimensions: physical and social. He represented physical space as the physical distance that separates the individual from experiences beyond his or her current biography. In other words, the physical environment plays a role in developing the experiences that impose a need to learn. An individual faced with the aftermath of a Tsunami is challenged to learn as his or her lifeworld is disrupted and new skills for coping with the new physical environment are required. A person with the benefit of modern media, which reduces physical distance, may experience a need to learn

as a consequence of new experiences that reveal deficits in his or her own learning (Jarvis, 1987, 2006).

Social space refers to the social interpretation of space and distance, or class and difference among people. Put differently, social space involves social structures, power, and authority that individuals can exercise, and the role and position individuals play. Therefore learning may be supported or limited by the way culture structures social space.

Finally, time, or awareness of time, structures experiences in a manner similar to space and time in that it hinders or supports learning. Two dimensions of time are proposed: external history and internal history. External history is conceptualized as a linear separation of a goal and the individual's present learning status. Hence, if one wants to learn a new skill, he or she must come to terms with the time necessary to develop the proficiency to move from his or her current learning status to the goal of acquiring the skill. Internal history reflects the learner's experience with a given learning situation or the learner's opportunity to become proficient in what is being learned (Jarvis, 2006).

Therefore as reflected in figure 1 below, Jarvis' (1987, 2006) theory suggests that the cultural context may moderate the extent to which age, gender, and level of education predict SDLR.

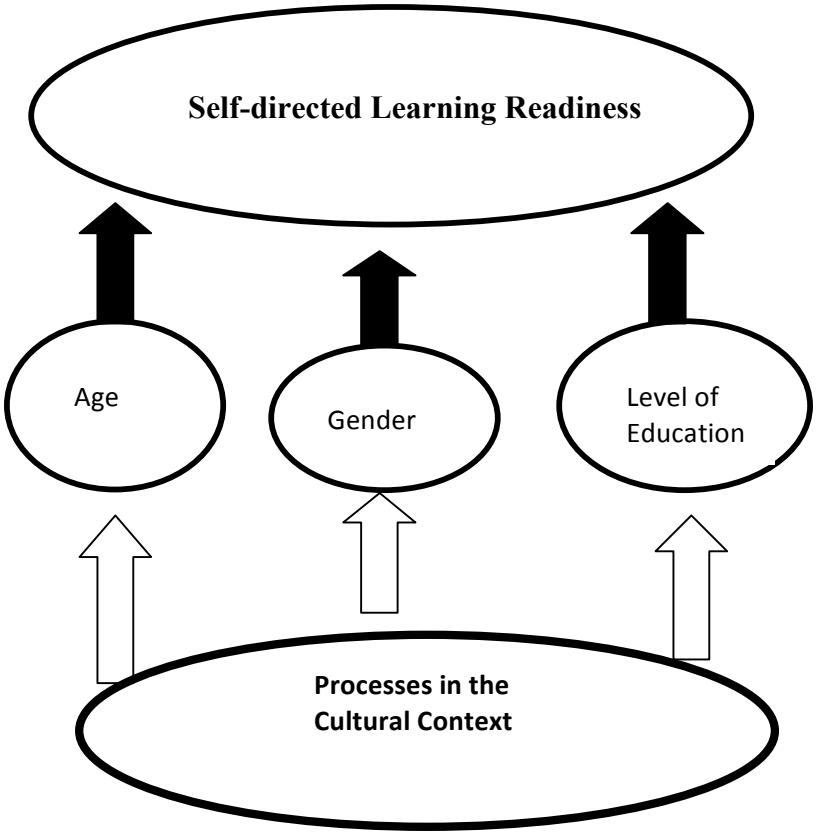

Figure 1. Diagram depicting how the cultural context may moderate the influence of age, gender and level of education in the prediction of SDLR.

The result of this interaction is that, depending on how culture treats their various attributes people may be differentially facilitated in the pursuit of learning approaches. In this way, cultural settings may create unique demographic patterns of SDLR.

Research on Age, Gender, and Level of Education and SDLR

A number of studies have investigated the demographic variables of age, gender and level of education as individual predictors of SDLR. The majority has been conducted in North America, with only a few conducted in the international context. A

review of the findings from a sampling of these studies is presented in the next three sections.

Age and Self-directed Learning

A majority of research studies support a positive relationship between age and SDLR (Guglielmino, Mazmanian, Guglielmino, Hoban, & Pololi, 2002; Hoban & Sersland, 2000; Jones, 1992; Long & Stubblefield, 1994; McCune, Guglielmino, & Garcia, 1990; Morris, 1997; Reio & Davis, 2005). In a convenience sample consisting of 121 seniors in human development courses Reio (2004) investigated prior knowledge, self-directed learning readiness, curiosity, and learning performance. He found that "age was statistically and positively related to self-directed learning readiness" (p. 21). Hoban and Sersland (2000) found that older students from two university samples had higher SDLR scores as measured by the SDLRS.

Reio and Davis (2005) conducted research to investigate age and gender differences in SDLR with high school students, university dental students, and adult educational center students ($N = 530$). SDLR varied significantly with age: $F(1, 517) = 6.95$, $p <. 001$, partial $\eta^2 = .063$. The magnitude of effect size for each variable was in the small to low-medium range. Reio and Davis (2005) found that participants in their 30s, 40s, and 50s had higher SDLR scores than adolescents and young adult participants as measured by the SDLRS. They further observed that SDLR scores increased significantly from adolescence until the 50s for both males and females. A study by Oliveira & Simões (2006) showed age was moderately associated with SDLR (r [Age, SDLRS] = .293). McCarthy (1985) examined the relationships between SDLRS scores and attitude toward mathematics among 183 undergraduate students aged 25 and

younger, and students aged 26 and older. He found no significant relationship between learner self-directedness and attitude toward mathematics. However, he found the older group to be significantly more self-directed than the younger group.

Pritchard, Patterson, and Carpenter (1990) employed the SDLRS in a study of 400 graduate students at the University of Oregon and reported findings of a significant correlation between age and participants' levels of SDLR ($r = 0.256$; $p<0.01$). Tsay (1999) found significant correlations between age and SDLR as measured by the SDLRS. Frisby (1991) conducted a study of medical students that showed an association between SDLRS scores and age. Using the SDLRS, Derrick, Rovai, Ponton, Confessore, and Carr (2007) similarly found age was positively related to SDL. Alspach (1991), in study of 357 senior nursing students and 86 nursing faculty members, also indicated a positive relationship between the students' and faculty members' SDLRS scores and age.

Durr (1992) did not find a relationship between SDLRS scores and age. Similarly, Hanfold's (1991) study of 53 registered nurses shows no significant relationship between SDLRS scores and age. Hassan (1981) used the SDLRS with a sample of 102 individuals that included 39 people at least 60 years of age. She did not find a significant relationship between age and self-directed learning readiness. Sabbaghian (1980) reported that age by itself was not significantly related to self-directed readiness. In one of the few studies outside North America Yoo, Cheong, and Cheong (2000) found a negative correlation between age and SDLR. Younger participants in their study of continuing education adults demonstrated the highest self-directed learning readiness. This contradicts the majority of findings in North America. However, not only was the culture different, the instrument used, the Self Directed Learning Readiness

Questionnaire (SDLRQ) though based on the SDLRS was also different. Another study outside North America by McCauley and McClelland (2004), with undergraduate and postgraduate students at the University of Limerick Ireland, found that there is no significant correlation between the age of the undergraduate and postgraduate population and their SDLRS score. Similarly, Oliveira, Silva, Guglielmino, and Guglielmino (2009) in their study of 145 managers and non-managers of top Portuguese companies found that age was not significantly associated with SDLR scores.

Gender and Self-directed Learning

A majority of existing studies do not support a relationship between gender and SDLR (Bryan & Schultz, 1995; Cheong, Lee, & Long, 1995; Guglielmino et al., 2002; Hoban & Sersland, 1999, 2000; Long & Stubblefield, 1994; Oliveira, 2005; Reio & Davis, 2005) although some studies have concluded a relationship. Morris (1995) employed the SDLRS to conduct research with 157 past and current students of business from a nontraditional graduate institution, and found lower levels of SDLR in male participants. Using the Oddi Continuing Learning Inventory (OCLI), Shulman (1994) conducted research involving 216 medical students and also found a significant association between learner self-directedness and gender, with lower levels of SDLR in male participants.

In their study of age and gender differences in SDLR, Reio and Davis (2005) reported a significant age and gender interaction, indicating that 14 to 20 year-old females had significantly higher SDLR scores than the males. Ponton and Hall (2003) found females displayed higher levels of autonomous learning than their male counterparts. Durr (1992) studied 607 employees at a single company and found the

SDLRS scores of the males in his sample to be significantly higher than the scores of the females. Dixon (1992) studied 228 adult inmates and also found results supporting the notion that gender is related to SDLR. In another study, Curry (1983) investigated the self-directed readiness of 300 participants involved in formal adult education programs. She found significant differences in SDLRS scores based on gender. Guglielmino and Roberts (1987) found that women scored "slightly higher" than men on the SDLRS.

Litzinger, Wise, Lee, and Bjorklund (2003) found no gender differences in a cross-sectional study. Roberts (1986) stated that self-directed learning has no significant correlation with gender. Using both the OCLI and SDLRS Oliveira & Simões (2006) found no significant association between gender and SDLR (r [Gender, SDLRS] = .067; r [Gender, OCLI] = .074). Yoo, Cheong, and Cheong (2000) investigated demographic and psychological determinants of SDLR in South Korea. They found no significant correlation between SDLR and gender. McCauley and McClelland's (2004) study with undergraduate and postgraduate students at the University of Limerick Ireland, found that there is no significant correlation between the gender of the postgraduate population and their SDLRS score. Oliveira, Silva, Guglielmino, and Guglielmino (2009) in their study with a sample of 145 managers and non-managers of top Portuguese companies, found that gender was not significantly associated with SDLRS scores.

Level of Education and Self-directed Learning

Research examining the relationship between level of education and SDL has produced evidence of a significant and positive relationship (Alspach, 1991; Brockett, 1983, 1985; Bryan & Schultz, 1995; Confessore & Confessore, 1994; Cunningham, 1988; Curry, 1983; Freed, 1997; Fullerton, 1998; Gardner, 1989; George, 1995;

Guglielmino & Guglielmino, 1988; Hassan, 1981; Lacey, 1988; Leeb, 1983; Long, 1986; Long & Agyekum, 1983; Long & Stubblefield, 1994; McCarten, 1999; McCune et al., 1990; Morris, 1997; Mourad & Torrence, 1979). However, even here, findings are mixed. In a study of 390 women between 55 and 96 years of age, Freed (1997) reported that number of years of education affects SDLRS scores. Fontaine (1996) also concluded that level of education is a predictor of an older adult's tendency to participate in a SDL activity. Dixon's (1992) study of adult inmates indicated a significant relationship between SDLR and level of formal education. Curry's (1983) investigation of the self-directed readiness of 300 adult education participants found significant differences in SDLRS scores based on educational background. Durr (1992) found measures of SDL on the SDLRS were positively related to the education level of his sample of employees.

The work of Oliveira and Simões (2006) showed SDLR scores to be positively related to education (r [Educational level, SDLRS] = .344; r [Educational level, OCLI] = .263). Martin (1992) conducted research with 575 adults from the ages of 22 to 93 and found that persons with a low educational level are less likely to be self-directed learners. Leeb (1983) found that level of formal education correlated significantly with total SDLRS scores. Brockett's (1985) study of 64 older adults reported a significant correlation (.05 level) between SDLR and level of education. Long (1991) found a significant relationship between educational achievement level and the SDLRS scores. Guglielmino and Roberts' (1992) research with 753 individuals selected from a large American utility company found individuals who had completed higher levels of education tend to have higher SDLRS scores. Congreve (1965) similarly reported higher levels of educational achievement, with preference for SDL.

Fisher (1986, 1988) reported a positive relationship between formal education and SDL. Ralston (1979) compared the differences between an older White and non-White sample on learning projects. He found that amount of formal education was positively correlated to SDL. In a study of 1,000 people in Czechoslovakia, Hungary, Poland, France, the Soviet Union, Yugoslavia, the United States, and Canada, Savicevic (1985) found a positive relationship between level of education and SDL. Preczewski (1997, 1998) found significant changes in female self-regulating sub-scores on the OCLI and no significant changes in males during their freshman and sophomore years. The research of Martin (1992) with 575 adults from the ages of 22 to 93 showed that persons with a low educational level are less likely to be self-directed learners, as measured by the OCLI. Oliveira, Silva, Guglielmino, and Guglielmino (2009) in their study in Portugal found that educational level was significantly associated with SDLRS scores. Finally, McCauley and McClelland's (2004) study with undergraduate and postgraduate students at the University of Limerick Ireland, found the majority of postgraduate students are 'above average' and 'high' in their SDL readiness. They asserted that this implied that the postgraduate students are at a stage where most of them are ready to self-direct their learning. They further asserted that "consequently, the postgraduate sample scored significantly higher than the undergraduate sample in terms of their SDL readiness, which is not surprising due to the nature of their work, maturation and changes in expectations and methods of instruction" (p. 34).

Using a sample of 136 college students Long & Agyekum (1983) employed a multitrait-multi-method approach based on correlations between scores and SDLRS and other measures, in order to test 37 hypotheses related to the validation of the SDLRS.

They reported no significant correlation between level of education and SDLRS scores. Finestone (1984) reported no correlation between educational achievement level and SDLR. Long (1991) conducted research involving ninety-two full time and part-time college students at two Georgia colleges, including levels between freshmen and graduate students. He found "no significant correlation between SDLRS scores and educational achievement level defined in terms of years of school completed" (p. 114). Studies by Long & Smith, 1996; Preczewski, 1999; and Hassan, 1981 also reported no significant correlation between SDLRS scores and educational achievement.

Definition and Assessment of SDL

SDL is a multifaceted construct that lacks a single unified definition in the literature (Ellinger, 2004; Guglielmino & Guglielmino, 2008; Reio & Davis, 2005; Tenant, 2006). Knowles (1975) defined SDL as a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes (p. 18). Brockett (1983) defined SDL as learning activities in which "primary responsibility for planning, carrying out, and evaluating a learning endeavor is assumed by the individual learner" (Brockett, 1983, p. 16). Garrison (1997) defined the concept as "an approach where learners are motivated to assume personal responsibility and collaborative control of the cognitive and contextual processes in constructing and confirming meaningful and worthwhile learning outcomes" (p. 18). Notwithstanding its multiple definitions, the central theme of the construct is the learner taking responsibility

for his or her own learning and directing that process to the achievement of some learning goal (Davis, Bailey, Nypaver, Rees, & Brockett, 2010).

Two units of measurement have been proposed to operationalize SDL. The first proposed by Tough (1979) is the learning project. Tough (1979) defined a learning project as "a highly deliberative effort to gain certain knowledge or skill" (p. 1). The second operational definition measures SDL in terms of levels self-directed learning readiness. Self-directed learning readiness is defined in the literature as, "the degree the individual possesses the attitudes, abilities, and personality characteristics necessary for self-directed learning" (Wiley, 1983, p. 182). This operational definition, the most widely used of the two existing definitions, forms the focus of this study. As such, the next two sections will review the two instruments that have gained prominence as measures of self-directed learning readiness: the Self-Directed Learning Readiness Scale (SDLRS) (Guglielmino, 1977) and the Oddi Continuing Learning Inventory (OCLI) (Oddi, 1986).

The Self-Directed Learning Readiness Scale

The SDLRS was developed by Guglielmino (1977) as part of her doctoral dissertation to measure the degree to which people perceive themselves as possessing the attitudes, values and abilities of learners to engage in self-directed learning at the time of response. Since, its development, the SDLRS has become one of the most widely used instruments in the study of SDLR (Caffarella & Caffarella, 1986; Long & Agyekum, 1984; McCune, 1988; McCune & Guglielmino, 1991). The instrument has further been translated into several major languages and has been used by more than 500 major

organizations, and administered to over 70,000 individuals (Guglielmino & Associates, n.d.).

The SDLRS is not an instrument for measuring actual behavior (Brockett & Hiemstra, 1991). The 58 item survey requires respondents to specify the extent to which a statement describes them on a 5-point Likert scale, ranging from 1 "almost never true of me" to 5 "almost always true of me." Several items are reverse-worded to minimize response set influence. These items are reverse-scored. The SDLRS can be administered individually or in groups. Administration is not timed; respondents are permitted as much time as they need to complete the instrument (Merriam et al., 2007). In scoring the instrument, the 58 items are totaled to determine the total SDLRS score. The total score is converted into bands of 'high,' 'above average,' 'average,' 'below average,' and 'low' readiness.

Reliability assessments of the instrument have reflected acceptable to notably high levels of internal consistency, with coefficient alpha and split-half between .67 and .96 (Brockett, 1985; Delahaye & Smith, 1995; Finestone, 1984; Graeve, 1987; Guglielmino, 1977, 1989; Hall-Johnsen, 1981; Hassan, 1981; Skaggs, 1981). Test-retest reliability assessments conducted by Finestone (1984) and Wiley (1981) reported values of .82 and .79 respectively. Guglielmino (1977) originally reported an initial reliability coefficient of 0.87. She later reported that "based on a 1988 compilation of 3151 respondents to the SDLRS, the Pearson split-half reliability estimate is .94" (Guglielmino & Associates, n.d.). Additionally, Finestone (1984) and Wiley (1981) reported test-retest reliability coefficients of .82 and .79, respectively. Therefore the instrument is regarded as highly reliable.

Guglielmino (1977) established the content validity of the instrument by using a modified Delphi technique that employed a panel of experts, with three rounds of surveys. Criterion validity of the SDLRS has been further established by several studies. Notably, Hall-Johnsen (1981) and Hassan (1981) found a significant positive relationship between the number of self-directed projects completed, SDLRS total scores, and seven of eight factor scores. Graeve (1987) reported a significant positive relationship with hours spent on self-directed learning. Jones (1989) also found a significant positive relationship with observable student behaviors related to self-directed learning readiness. Finestone (1984) further confirmed validity of the instrument by demonstrating congruence between the original Delphi results and an extensive review of available literature on self-directed learning. Estimates of construct validity are further indicated through correlation of the SLDRS with a variety of related measures. Posner (1989) reported convergent validity ($p<0.01$) with several constructs, including: preference for challenge (.81), curiosity for learning (.79), perceived scholastic competence (.69), use of internal criteria for evaluation (.64), independent mastery (.56), and independent judgment (.54). Finally, Russell (1988) provided support for divergent validity with an inverse linear relationship on preference for structure ($r=.31$, $p<.03$).

Overall, there has been extensive support for the SDLRS in the literature as an accurate and useful instrument for measuring readiness for self-directed learning (Adenuga, 1989; Brockett & Hiemstra, 1991; Caffarella & O'Donnell, 1987; Cunningham, 1989; Long, 1987; Long & Redding, 1991). However, there has also been much criticism. Therefore, as it is the instrument that will be used in the study, a more complete analysis of this instrument is presented in Chapter 3.

The Oddi Continuing Learning Inventory

The OCLI was developed to describe the personality characteristics of self-directed continuing learners and to develop an instrument to identify such learners (Oddi, 1984). To define the propensity for SDL, Oddi (1984, 1986), using a content validation process that involved psychological and SDL experts, developed a list of personality characteristics associated with self-directed continuing learners and categorized these characteristics into three pairs of attributes.

These characteristics were described as follows:

1. *Proactive Drive versus Reactive Drive* – "ability to initiate and persist in learning without immediate or obvious external reinforcement" (p. 98);
2. *Cognitive Openness versus Defensiveness* – "openness to new ideas and activities, ability to adapt to change, and tolerance of ambiguity" as opposed to "rigidity, fear of failure, and avoidance of new ideas and activities" (p. 99); and
3. *Commitment to Learning versus Apathy or Aversion to Learning* (p. 99).

Using these three domains, Oddi (1984) developed an initial pool of items, which were administered to 100 candidates. The items were ultimately refined into an instrument consisting of 11 items from the proactive/reactive learning drive domain, 7 from commitment/aversion to learning, and 6 from cognitive openness/defensiveness, for a total of 24 statements. Each item has a 7-point response ranging from *strongly disagree* to *strongly agree.* Total scores range from 24 (least characteristic of self-directed continuing learners) to 168 (most characteristic).

A psychometric evaluation of the instrument revealed an internal reliability (coefficient alpha) of .87 and a 2-week test-retest correlation of .89. A factor analysis of the instrument by Oddi (1984) identified three factors that differed from the original three domains. This three-factor model accounted for 45.7% of total variance. The first factor, which accounted for 30.9% of the total variance and consisted of 15 items, was described by Oddi as a "general factor relating to several other elements of self-directed continuing learning, such as ability to work independently and learning through involvement with others" (p. 134). The second factor, which accounted for 8.0% of the variance and was comprised of three items, was thought to represent the ability of an individual to be self-regulating. Factor three, which accounted for 6.8% of the total variance and was made up of four items, was described as reading avidity.

Five major studies have investigated the psychometric construction of the OCLI. The first, conducted by Six (1989a), concluded that the OCLI is not sensitive to demographic characteristics of the respondents, an obviously problematic failing with respect to the purpose of this study. The second study, a follow up study by Six (1989b), sought to determine the extent to which the three factors of the OCLI identified by Oddi (1984) "replicate across study samples" (Six, 1989b, p. 44). Six's analysis included the responses of 328 business administration and secretarial science students, the original 271 student responses analyzed in Oddi's (1984, 1986) final developmental assessment, and 98 responses of adult education students gathered by Landers (1989) during his study comparing the OCLI and Guglielmino's (1977) SDLRS. The analysis identified a factor structure very similar to Oddi's (1984,1986). He found that the factors derived from his earlier data were consistent with the factors identified earlier by Oddi (1984). Six

(1989b) therefore endorsed the OCLI as robust with broad applicability. However, he lamented the modest total explained variance, which he suggested compromises the validity of the instrument.

The third study, in which Landers (1989) compared the SDLRS and the OCLI, found evidence that the internal reliability of the scale was statistically weak. Landers concluded that SDLRS was a more psychometrically sound instrument for measuring SDL than the OCLI. He further acknowledged that many criticisms of the OCLI in the literature remain unanswered (Landers 1989). The fourth study, a more recent analysis of the OCLI by Harvey, Rotham, and Frecker (2006), asserted that the underlying dimensions of the OCLI are better defined by four factors. Through confirmatory factor analyses, the authors identified the following four underlying dimensions: Learning With Others, Learner Motivation/Self-Efficacy/Autonomy, Ability to be Self-Regulating, and Reading Avidity. They estimated construct validity through correlation of scores with measures of educational participation, adult intelligence, self-confidence, endurance, and affiliation, and declared the instrument a valid measure of SDL.

The fifth study by Straka (1996) sought "to test the stability of the Oddi's factor solution by using the procedure as Oddi (1984) and Six (1989a) with a sample from a different culture" (p. 68). Straka translated the OCLI to German and administered it to a total of 548 Bremen University students, including those in education, economics, law, psychology, and engineering. The factor structure identified by Straka's analysis differed from Oddi's (1984) in that the ability to learn with others items loaded with the reading avidity items rather than within the general factor found by Oddi. Straka's study yielded a Cronbach's alpha of .74 for the total set of items. Only two thirds of the items were

assigned to the same factors, and his factor analysis indicated a similar solution to Six's and Oddi's. The percent of variance explained, however, was 32%, which was lower than in Six's or Oddi's studies. He attributed this outcome to the fact that Oddi and Six accepted loadings that were ≥ .5 whereas Straka included loadings >.5. Straka (1996) further included the fact that there may have been cultural differences in the understanding of self-directed learning and unidentified translation effects as additional confounds that may have impacted his findings.

The OCLI was not selected for use in this study due to limited validation studies and unanswered criticisms as compared to the SDLRS (Brockett & Hiemstra, 1991; Harvey et al., 2006; Landers, 1989). Harvey et al. (2006) asserted that, "further development and testing of the OCLI may be warranted" (p. 199). Additionally, the finding that the instrument is insensitive to demographic characteristics of respondents (Brockett & Hiemstra, 1991) further contributed to it not being selected.

Deficits in the Literature

The results of this review reflect three critical gaps in the literature to be addressed by this study. First, inconclusive results in the effort to investigate how demographic variables predict SDLR, combined with theoretical assertions that the influence of these variables may be linked to the cultural context, suggest a need to investigate whether the cultural context may moderate the extent to which demographic variables such as age, gender, and level of education predict SDLR. This gap in the knowledge, though mentioned in the literature, has not been addressed by the methodology in the bulk of the research that has examined the relationship between

SDLR and demographic variables (Cho, Ellinger, & Hezlett, 2005; Derrick, Rovai, Ponton, Confessore, & Carr, 2007; Reio & Davis, 2005).

Second, this review suggests that further research into the role of the cultural context in the development of SDLR may have important implications for SDL theory. Of the three theoretical perspectives mentioned in the literature, all three emphasize the pervasive facilitating and constraining influence of the cultural context in the development of SDLR. This suggests that while personal attributes and process may be important in SDLR, the cultural context may be more critical in the prediction of SDLR than is currently recognized in the literature. As such there is need for further inquiry into the contextual perspective, as a means of strengthening the theoretical foundations of SDL.

Third, the literature reflects controversy over the assessment of SDLR (Harvey et al., 2006). Two instruments have gained prominence in the SDL literature. These are the OCLI developed by Oddi (1984) and the SDLRS developed by Guglielmino (1977). Both instruments view SDLR as a set of personal attributes present or absent in a learner, rather than a process reflecting interaction between the whole person and the context. As such research is needed to clarify whether interaction between the person and his or her cultural context should be a factor in the design of instruments developed to measure SDLR.

Contributions of the Study

Consistent with the deficits identified in the previous section, this study aimed to make three potentially significant contributions to the HRD literature. First, it responded to a direct call in the literature to further investigate the implications of the cultural

context and demographic variables for SDLR. Second, it tested theoretical postulations in the literature that suggest or support the notion that the cultural context may moderate the extent to which age, gender and level of education predict SDLR. Third, it shed further light on the assessment controversy by providing insight into whether interaction between the person and his or her cultural context should be a consideration in the design of instruments developed to measure SDLR. By addressing these deficits in the literature, the results of this study may hold theoretical significance in that they may help to provide new research directions in the pursuit of understanding the association between demographic variables and SDLR. The results of this study may also hold practical significance in that they may help to clarify whether there is a need to vary approaches to developing SDLR across cultural and demographic backgrounds.

Summary

The preceding sections provided a review of the literature that laid the foundation for the research questions, methodology, and theoretical framework of this study. Specifically, these sections provided the background of the study, the theoretical framework, a sampling of the research that has investigated the association between the variables of age, gender, and level of education and SDLR, and issues regarding the definition and assessment of SDL.

The next chapter of this study describes the philosophical perspective, research design, variables, population and selection of participants, instrumentation, reliability and validity, data-collection, techniques for data management, and the statistical procedures that constitute the methodology of this study.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

The purpose of this study was to test an inference from Jarvis' (1987, 2006) model of experiential learning that the cultural context may moderate the extent to which demographic variables such as age, gender, and level of education predict SDLR. This chapter describes the methodology that was used in this study. The philosophical perspective, research design, variables, population selection of participants, instrumentation, data collection, techniques for data management and the statistical procedures are described in this chapter.

Philosophical Framework: Positivism

The philosophical framework that undergirds a researcher's approach to the scientific process is the domain of epistemology. Slife and Williams (1995) described epistemology as being concerned with "the nature, origins and limits of knowledge" (p. 66). Given the variety of approaches to deriving knowledge that has been proposed in the social sciences, it is important to define the epistemological foundation of a study (Rosenberg, 2008).

The foundation of the scientific approach in this study was positivism. The positivistic philosophy of science views the purpose of science as a quest to formulate a meaningful, unified model of reality. According to this perspective, researchers derive knowledge of the world through empirical observation, from which they formulate laws and constructs that they use to explain phenomena. Put differently, rather than proposing that a given reality exists, positivists do not assume that a viable construct is, in fact, a literal description of real world phenomena. Rather, they accept constructs that

coherently and meaningfully explain observable empirical regularities. Additionally, positivists believe that theoretical constructs must explain observable phenomena (Rosenberg, 2008).

The work of Hempel (1965) is particularly representative of the brand of positivism espoused by this research. Hempel postulated that the purpose of science is the formulation of universal laws. These general laws explain a variety of phenomena over an equally varied range of conditions, including limiting conditions. Accordingly, the purpose of behavioral research is to discover universal laws of human behavior, specify the conditions under which they will apply, and identify the factors that moderate the extent to which the law applies. In this way, it is possible to predict and control behavior in the real world through manipulation of the relevant variables (Rosenberg, 2008).

Study Setting

This section describes the specific individualistic and collectivistic settings that provided the sample for this study. A description of the individualism-collectivism construct is first provided as a context within which to frame their selection.

The Individualism-Collectivism Construct

The construct of individualism-collectivism has been described as "the most important dimension for capturing cultural variation" (Heine, 2008, p. 189). Following a pioneering, worldwide study by Hofstede (1980) involving over 40 countries, the construct attracted significant research attention and has been applied in numerous cross-cultural studies. Hofstede's analysis produced an individualism-collectivism index score ranging from 0 to 100 that rated the extent to which countries and regions in the study

could be described as having individualistic or collectivistic national cultures. Lower scores indicate collectivistic cultures and higher scores individualistic cultures (Kalogeraki, 2009). Hofstede's research found high levels of individualism in most developed countries. Notably, his analysis revealed an individualism index score of 91 for the United States, a score of 90 for Australia and a score of 89 for the United Kingdom.

Hofstede (1980) described individualistic cultures as cultures that support unbinding relationships between individuals. In these cultures, autonomy of the individual is valued and members look after their own personal needs and the needs of their family or ingroup with a relatively low expectation of support from the wider society. Conversely, Hofstede described collectivistic cultures as cultures that focus on loyalty and foster strong relationships among members, where each member takes responsibility for other members of their group (Thomas, 2008). In collectivistic cultures, the ideals of individualism and self-growth are not highly valued or pursued. Likewise, in individualistic cultures the ideals of social interests, collective action, and interdependence are not highly valued or pursued (Leeder, 2004).

As dimensions of culture, individualistic and collectivistic attitudes and values are reflected in social structures such as those defined by age, gender, and level of education (Dohi & Fooladi, 2008). For example, gender structure in the United States facilitates female pursuit of advanced education and career growth while functioning in the role of mother. However, in many collectivistic societies such a pursuit would be viewed as an immoral act of subverting motherhood, which serves the good of the family and the society, to individualistic pursuits. For example, Leeder (2004) observed that in Japan, a

collectivistic society, “mothers postpone their own independence until later in life,” and are “pleased to wait until their children are grown to begin other activities” (p. 213). Similarly, Dohi and Fooladi (2008) observed that “Japanese women with a successful career and economically independent are forced to choose a life style incompatible with the collectivist norms and face detrimental consequences to their marriage and family life” (p. 8). Therefore, in a collectivistic culture, gender may restrict the options for “self-directedness” to a much greater extent than in an individualistic culture. Consequently, gender would be expected to be a stronger predictor of SDLR in a collectivistic culture.

The United States

Hofstede (1980) rated the United States as a highly individualistic culture. He reported an individualism index score of 91 for the United States as compared to a worldwide average of 43. This rating as a highly individualistic culture makes the United States an appropriate setting for investigating whether the cultural context may moderate the extent to which age gender, and level of education in the predict SDLR.

St. Kitts-Nevis

The twin island nation of St. Kitts-Nevis is an English-speaking state in the Caribbean. Based on a sample from the island of Jamaica, Hofstede (1980) identified the Caribbean region as scoring low on individualism, which means that the Caribbean region reflects collectivistic national cultures. This finding that countries in the Caribbean region score low on individualism has been affirmed in a number of scholarly publications. Notably, drawing upon Hofstede’s (1980) assertion that the level of economic development influences levels of individualism, Punnett, Dick-Forde, and

Robinson (2004) rationalized that the region's low score on individualism is consistent with the fact that the countries are developing countries.

Additionally, Punnett et al. (2004), in an analysis of the results of empirical studies in a sample of English-speaking Caribbean countries, asserted that "the similarity in cultural antecedents (i.e., the factors thought to shape cultural values), such as economy, geography, history, political systems, and so on, suggests that cultural values should be relatively similar across English-speaking countries in the region" (p. 1). Thus, St. Kitts-Nevis provides a valid population for investigating the role of collectivistic cultures in the development of SDLR.

Research Questions

In the effort to explore whether the cultural context may moderate the extent to which age, gender, and level of education predict SDLR, this correlational study investigated the following research questions:

1. To what extent is age associated with the criterion variable of SDLRS scores in the individualistic sub-sample?
2. To what extent is age associated with the criterion variable of SDLRS scores in the collectivistic sub-sample?
3. To what extent is gender associated with the criterion variable of SDLRS scores in the individualistic sub-sample?
4. To what extent is gender associated with the criterion variable of SDLRS scores in the collectivistic sub-sample?
5. To what extent is level of education associated with the criterion variable of SDLRS scores in the individualistic sub-sample?

6. To what extent is level of education associated with the criterion variable of SDLRS scores in the collectivistic sub-sample?
7. To what extent are there interactions between the predictors of SDLRS scores and an indicator variable identifying the individualistic or collectivistic cultural context when the sub-samples are aggregated?

Hypotheses

The following research and null hypotheses were proposed:

H_1: Age is significantly positively associated with the criterion variable of SDLRS scores in the individualistic sub-sample.

H_2: Age is significantly positively associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

H_3: Gender is significantly associated with the criterion variable of SDLRS scores in the individualistic sub-sample.

H_4: Gender is significantly associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

H_5: Higher level (years) of education is significantly associated with higher SDLRS scores in the individualistic sub-sample.

H_6: Higher level (years) of education is significantly associated with higher SDLRS scores in the collectivistic sub-sample.

H_7: There are significant interactions between the predictors and an indicator variable identifying the two samples when the samples are aggregated.

Null Hypotheses

H_{01}: Age is not significantly associated with the criterion variable of SDLRS

scores in the individualistic sub-sample.

H_{02}: Age is not significantly associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

H_{03}: Gender is not significantly associated with the criterion variable of SDLRS scores in the individualistic sub-sample.

H_{04}: Gender is not significantly associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

H_{05}: Higher level (years) of education is not significantly associated with higher SDLRS scores in the individualistic sub-sample.

H_{06}: Higher level (years) of education is not significantly associated with higher SDLRS scores in the collectivistic sub-sample.

H_{07}: There are no significant interactions between the predictors and an indicator variable identifying the two samples when the samples are aggregated.

Methods

Sample and Sampling Procedures

In its broadest conceptualization, this study was intended to address the population of adults in collectivistic and individualistic countries. However, it was impractical to select a sample that is representative of each culture in every respect. Accordingly, a purposive sampling approach was used to sample the population. Purposive sampling involves deliberate, non-random targeting of a particular group of people who fit the study's inclusion criteria (Teddlie & Yu, 2007). This approach necessarily subjects the study to the possibility of self-selection bias and specific area bias, both of which limit the extent to which the findings can be generalized (Babbie,

2008).

The criteria for inclusion specified that participants must be at least 18 years old, and born and raised in either the United States or St. Kitts-Nevis. The sample size was selected on the basis of Green's (1991) guideline for determining minimum sample size. Assuming alpha equals .05, Green (1991) recommends: sample size = 50 + (8) x (number of independent variables). Thus for the current study a total sample size of 82 is acceptable.

Instrumentation

The Self-Directed Learning Readiness Scale

The SDLRS is a self-report instrument developed by Guglielmino (1977) to assess an individual's perception of the attitudes, abilities, and characteristics associated with self-directedness in learning (Merriam et al., 2007). The instrument is acclaimed in the literature as the most widely used and researched instrument for assessment of self-directed learning readiness (Merriam et al., 2007). The instrument includes 58-items with 41 positively phrased items and 17 negatively phrased. The 5-point Likert response scale for each item ranges from almost always true to almost never true. Administration is not timed. However, respondents on average take 20 to 30 minutes to complete the scale. The SDLRS test results reflect an overall score of self-directed learning readiness, which ranges from a low of 58 (indicating a low level of ability to direct one's own learning) to a high of 290 (indicating a high level of ability to direct one's own learning). The average score for adults completing the SDLRS is 214 (Guglielmino, 1977).

In constructing the SDLRS, Guglielmino (1977) solicited 14 authorities in the field of SDL to participate in a Delphi study to determine characteristics exhibited by

self-directed learners. The technique, defined by Keeney, Hasson, and McKenna (2011) as a method to "achieve agreement among a group of experts on a certain issue where none previously existed" (p. 4), involved the listing and rating of characteristics that the authorities considered important for self-direction in learning, including attitudes, abilities, and personality characteristics. Characteristics emerging from the Delphi survey with a rating of desirable, necessary, or essential for self-direction in learning were used as a basis for the construction of items for the SDLRS. The resulting instrument was field-tested and items were further revised to create the final 58-item measure. Internal reliability was estimated using the Cronbach-Alpha procedure on the scores obtained from the field test producing a reliability coefficient of .87. A subsequent sampling of over 3,151 individuals produced a reliability estimate of 0.94 (McCune, Guglielmino, & Garcia, 1990).

Factor analysis of the new instrument revealed eight factors measured by the test items. These factors included:

1. openness to learning opportunities (nine items with factor loadings ranging from .323 to .660),
2. self-concept as an effective learner (nine items with factor loadings ranging from .311 to .671),
3. initiative and independence in learning (nine items with factor loadings ranging from .353 to .572),
4. informed acceptance of responsibility for one's own learning (10 items with factor loadings ranging from .320 to .625),
5. love of learning (six items with factor loadings ranging from .318 to .597),

6. creativity (seven items with factor loadings ranging from .312 to .608),
7. positive orientation to the future (five items with factor loadings ranging from .389 to .676), and
8. the ability to use basic study skills and problem solving skills (four items with factor loadings ranging from .377 to .689) (Guglielmino, 1977, pp. 62-69).

This factor structure has since been used in several studies to investigate some of the personal attributes that may be associated with the propensity to be self-directed in learning. Most of these studies have been favorable, supporting both the validity and reliability of the SDLRS, but also raising important concerns, some of which have been answered, and some which continue to be debated in the literature (Bonham 1991; Brockett, 1985; Landers, 1989; Leeb, 1983).

In a study of 77 randomly selected participants from Ames Iowa, Hassan (1982) found a significant positive relationship between the number of self-directed projects completed, SDLRS total scores, and seven of eight factor scores. Landers (1989) conducted research comparing the SDLRS with the Oddi (1984) OCLI, and found that each of the eight factors of the SDLRS correlated significantly with the total score. Landers identified only 6 of the 58 items as statistically weak. Landers therefore concluded that the internal reliability of the SDLRS was very high. Leeb (1983) found that several factors, such as view of learning as a beneficial process, acceptance of responsibility of one's own learning, love of learning, and tolerance of risk, complexity, and ambiguity in learning, were statistically significant. Eleven of the items on the SDLRS did not correlate significantly with the total scale. She also noted that many respondents were confused by some of the wording of the scale. She specified examples

of potentially problematic wording that included "Almost always true of me" to "I hardly ever feel this way" and "Almost always true of me" to "There are very few times I don't feel this way." Similarly, Brockett (1985) noted concern regarding reverse worded and reverse-scored items. They also noted that respondents had a degree of difficulty with the wording of the items, consistent with their education level. However, the research also affirmed reliability coefficient of .87 originally reported by Guglielmino (1977).

Finestone (1984) and Wiley (1982) reported test-retest reliability coefficients of 0.82 and 0.79 respectively. Long and Agyekum (1983) conducted research to test 37 hypotheses related to the validation of the SDLRS, using a sample of 136 college students. They found validation support for the SDLRS. However, among their findings, they found that, instructor ratings were not significantly related to SDLRS scores. As a consequence they suggested that perhaps the instrument does not measure self-direction in learning. Bonham (1991) examined the design of the SDLRS, items that comprised it, and several studies linking SDLRS scores and level of formal education, and raised questions about the construct validity of the scale. She concluded that the data collected pointed toward dislike for learning in general as the cause of low SDLRS scores. As such high scores seem to represent a positive attitude toward learning in general and not specifically toward the kind of learning called self-directed. Brockett and Hiemstra (1991) conducted an analysis of item-to-total correlations for the instrument. They found that (12 of the 58 items) did not correlate significantly with the total scale.

Field's (1989) investigation of the structure, validity, and reliability of the SDLRS stirred significant debate controversy regarding the psychometric design of the instrument. Although he reported a reliability coefficient of 0.89, which was notably

close to previously reported findings (Brockett, 1985; Guglielmino, 1977; Guglielmino & Associates, n.d.) Field indicated that internal consistency analysis revealed that the strongest item-to-score correlations for the SDLRS were produced by those items dealing with love and/or enthusiasm for learning (17.6% of total variance) and those items that appear to be intimately connected with readiness for SDL have low correlations with total SDLRS scores (less than 5% for each factor). He leveled four other criticisms regarding the development of the SDLRS. First, Field raised concern regarding the Delphi technique employed in the development of the instrument given the lack of a universal definition of SDL in the literature. Second, Field questioned Guglielmino's (1977) failure to define the terms "self-directed learner" and "readiness." Third, Field challenged the use of negatively phrased and reverse-scored items. Fourth, Field questioned the addition of items after validation of the scale. Overall, Field concluded that the instrument was significantly flawed. He wrote, "the problems inherent in the scale are so substantial that it should not continue to be used" (p. 138).

Guglielmino's (1989) response to Field's criticisms challenged the assertion that the Delphi process was used for the selection of individual items; rather, she pointed out, it was used to determine characteristics exhibited by self-directed learners. Additionally, Guglielmino pointed out that the participants in the Delphi process defined the term "self-directed learner." With regard to the use of reverse-items, Guglielmino stated that these items were worded to avoid the potential for "response set," where a participant stops reading the items carefully because he or she assumes all of the items will be similar. Guglielmino pointed out that "17 additional items were added after the initial field test, not 'after validation of the scale,' as stated by Field" (p. 238).

Two other investigations criticized Field's (1989) study. Long (1989) stated that Field omitted important references in the SDL literature and often used quotations in ways that were "out of context" or "misleading" (p. 241). McCune (1989) noted problems with Field's statistical analysis, including criticisms of Field's discussion of reliability, factor analysis, and reverse-scored items.

Notwithstanding the concerns raised about its construction, the SDLRS has continued to be used. Scholars point to the high reliability and validity coefficients derived in its initial construction and in subsequent analyses, its broad use in the majority of the SDL research, and Guglielmino's response to criticisms as justification for its continued use although they acknowledge that all issues relative to the instrument have not been resolved. Most published studies on populations over twenty years of age report similar reliability figures that fall within a range of 0.72 – 0.92 (Guglielmino & Guglielmino, 2006). Redding (1997) reported that the majority of studies of self-directed learning employed the *SDLRS*. A comprehensive review by Delahaye and Choy (2000) concluded, "There has been extensive support for the SDLRS in the literature as an accurate and useful instrument for measuring readiness for self-directed learning" (p. 2). Merriam and Caffarella (1999) and Merriam, Caffarella, and Baumgartner (2007) reviewed studies that examined the validity and reliability of the instrument. They concluded that the SDLRS was the most appropriate tool for measuring learner beliefs, values, attitudes, and behaviors related to self-directed learning.

Concerns about the SDLRS, though not entirely resolved in the SDL literature (Brockett & Hiemstra, 1991), have not diminished its use. The SDLRS has been widely utilized and it has contributed significantly to the knowledge base in the literature

(Merriam et al., 2007). Nonetheless, it is evident that the SDLRS is problematic in its psychometric construction and have unresolved concerns. However, given the urgent nature of the problem in this study, the SDLRS was selected for use in this study because it is the most widely researched and, most widely used instrument in the SDL literature.

Design of the Study

This study employed a correlational research design. Correlational designs provide quantitative description of the extent to which variables are related, and particularly useful for testing theory dealing with relationships designs (Anderson, 1998).

Therefore, the study plan involved the gathering of information about demographic variables and SDLR among adults born, raised, and residing in the United States and the Caribbean nation of St. Kitts-Nevis. The selected criterion and predictor variables of age, gender, and level of education were not manipulated by the researcher; rather, any observed differences in the association between the criterion variable and the selected predictor variables were ex-post facto in nature in that they will reflect differences in measurement of age, gender, and level of education and SDL scores.

This study had one dependent variable and three independent variables. A fourth independent variable was the indicator variable identifying to which culture the respondent belongs. SDLR as measured by the SDLRS is the dependent variable in this study. The independent variables were age, gender, and level of education. The hypothesis tests were conducted using multiple linear regression analysis. Multiple predictor variables are useful when predicting human behavior, as human behavior is likely to be influenced by a combination of several factors (Brace, Kemp, & Snelgar, 2006). Multiple linear regression allows an estimate of the unique contribution of each

predictor while controlling for the potentially confounding influence of the other predictors (Babbie, 2008). Thus, multiple linear regression was used to determine the extent to which a linear combination of the demographic variables predicts SDLRS scores.

This study was designed to evaluate the interaction between the variables of age, gender, and level of education and the social context, by examining the extent to which the interaction terms between cultural context and demographic variables predict SDLR scores in the aggregated sample. If the interaction terms are statistically significant, the demographic variables predict SDLR scores differently in a sample from an individualistic society (the United States) and a sample from a collectivist society (St. Kitts-Nevis). All statistical tests in this study were conducted at the .05 level of significance.

Data Collection and Processing Procedures

Data collection was executed over a four-month period between September 2011 and December 2011. Recruitment as conducted in two separate locations. One effort involved data collection in the United States and the other involved data collection in St. Kitts-Nevis. The protocols for data collection in both these contexts are discussed separately below.

Data Collection in the United States

Data collection in the United States involved four stages. In the first stage, potential organizations from which candidates might be recruited were identified. This pool of organizations was selected from local business and industry. In the second stage, permission was solicited from all institutions identified in stage 1. A cover letter seeking

such permission is included as appendix B. In the third stage, the recruitment process was implemented in organizations that granted permission to recruit participants from their organization. The recruitment process began by identifying a "gatekeeper" in the selected institution to post recruitment flyers and set up a locked drop box in a selected central location. An employee lounge was suggested as ideal, if such an area is available in the organization. However, this decision was left to the gatekeeper. A copy of the proposed recruitment flyer is included as appendix C. The flyer instructed individuals responding to the flyer to pick up a participant packet from the central location at the selected site. Participants completed the packet at that time or submitted the completed survey to the centrally placed locked drop box.

The participant packet contained a copy of the SDLRS, an answer sheet, a number 2 pencil, a copy of the consent form, and a return envelope for the survey answer sheet and consent form. A copy of the consent form is included as appendix D. The consent form specified that no names or identifiers should be included on the survey answer sheet. Rather, each survey response was assigned an ID number. Issues of confidentiality of participant responses were addressed in the consent form. Available completed surveys were picked up weekly by the researcher. Recruitment continued until the number of participants in the combined sub-samples met or exceeded the required total of 82.

The data was placed in a locked case and remained in the personal custody of the researcher until they were mailed, via certified mail, to the test developers for scoring. As required by the Barry University Institutional Review Board (IRB), the test developer was required to sign a third party confidentiality form since they had temporary custody

of the data. The raw data, scored answer-sheets, and the accompanying data report, were returned to the researcher by the test developers, via certified mail. All collected data were analyzed using the Statistical Package for Social Sciences for Windows (SPSS, 18.0). Descriptive statistics were calculated and data relationships were analyzed. Data will be maintained for five years in a locked safe and will be shredded after that period has expired, as required by the Barry University IRB.

Data Collection in St. Kitts-Nevis

Data collection in St. Kitts-Nevis involved four stages. In the first stage, potential organizations from which candidates might be recruited were identified. This pool of organizations was selected exclusively from local business and industry. In the second stage, permission was solicited from all institutions identified in stage 1. A cover letter seeking such permission is included as appendix B. In the third stage, the recruitment process was implemented in organizations that granted permission to recruit participants from their organization. The recruitment process began by identifying a "gatekeeper" in the selected institution to post recruitment flyers and set up a locked drop box in a selected central location. An employee lounge was suggested as ideal, if such an area is available in the organization. However, this decision was left to the gatekeeper. A copy of the proposed recruitment flyer is included as appendix C. The flyer instructed individuals responding to the flyer to pick up a participant packet from the central location at the selected site. Participants could either complete the packet at the time of pick up, or submit the completed survey to the centrally placed locked drop box.

The participant packet contained a copy of the SDLRS, an answer sheet, a number 2 pencil, a copy of the consent form, and a return envelope for the survey answer sheet

and consent form. A copy of the consent form is included as appendix D. The consent form specified that no names or identifiers should be included on the survey answer sheet. Rather, each survey response was assigned an ID number. Issues of confidentiality of participant responses were addressed in the consent form. Contact was maintained with the gatekeeper to monitor the number of submissions. Recruitment continued until the number of participants in the combined sub-samples met or exceeded the required total of 82.

The gatekeeper was provided with a self-addressed stamped envelope to mail all collected data to the researcher via certified mail. The data was then mailed, via certified mail, to the test developers for scoring. As required by the Barry University IRB, the test developer was required to sign a third party confidentiality form since they had temporary custody of the data. The raw data, scored answer sheets, and the accompanying data report were returned to the researcher via certified mail. All collected data were analyzed using SPSS 18.0. Descriptive statistics were calculated and data relationships were analyzed. Data will be maintained for five years in a locked safe and will be shredded after that period has expired, as required by the Barry University IRB.

Data Analysis Procedures

Data analysis included descriptive statistics and multiple linear regression. All data was be analyzed using SPSS, 18.0. Descriptive statistics for all of the study variables were obtained. A preliminary analysis was completed to explore reliability estimates (Cronbach's alpha) for the SDLR instrument. Partial correlation coefficients were calculated to determine the strength of the relationships between SDLR and the demographic variables of age, gender, and educational level. Effect sizes were

calculated, interpreted, and reported according to Cohen's (1988) classification for partial correlation coefficients: small effect size, $r < 0.20$; medium effect size, $0.40 > r \geq 0.20$; and large effect size, $r \geq 0.40$. Cohen noted that small effect sizes are not readily observable, medium effect sizes are readily observable, and large effect sizes are evident.

This analysis provided information regarding the contribution of each predictor variable to the criterion variable and account for the level of variance contributed by the three demographic variables to the overall SDLRS score. This procedure also allowed the researcher to establish the statistical significance of the unique contribution of each predictor variable toward the variance in SDLR.

Ethical Considerations

All data gathered from participants was collected with explicit permission from the participants and in full compliance with Barry University IRB guidelines. Additionally, this study addressed four ethical concerns identified by Fink (2009), generally observed in implementing survey research. These guidelines included voluntary participation, privacy and anonymity, confidentiality, and identification of purpose and sponsor.

Voluntary participation was ensured through the consent form, which emphasized the potential participant's right to be fully informed in granting consent and the option to not participate or withdraw at any time without penalty. In order to protect privacy and anonymity no identifying information will be collected. The instructions did not require explicit identifiers such as name, student or employee ID number, or social security number. In addition to not requiring explicit identifiers, confidentiality was protected by ensuring all data is secured in a locked box, to be shredded after a period of five years.

Finally, in accordance with Fink's (2009) recommendation to advise all prospective participants of the purpose of the survey and of the sponsoring organization, the consent form provided the purpose of the study and explained that the results of the study will be used in a dissertation in partial fulfillment of a doctoral degree.

Chapter Summary

This chapter presented an account of the research philosophy and methodology according to which the proposed research will be conducted. The discussion placed the research in the positivist camp, reviewed the proposed contexts, and presented the research questions and hypotheses. Additionally, the chapter detailed the broad procedures for sampling, data collection, and data analysis as well as steps for addressing IRB compliance standards and other relevant ethical concerns.

CHAPTER 4

RESULTS OF THE STUDY

Introduction

The purpose of this study was to test an inference from Jarvis' (1987, 2006) model of experiential learning that the cultural context may moderate the extent to which demographic variables such as age, gender, and level of education predict self-directed learning readiness (SDLR). This chapter presents a description of the sample, results of exploratory data, and results of hypothesis tests.

Description of the Sample

A total of 180 SDLRS surveys were collected from individuals in business and industry in the selected individualistic and collectivistic contexts (U.S. & St. Kitts-Nevis). The criteria for inclusion specified that participants had to be at least 18 years old, and born and raised in either the United States or St. Kitts-Nevis. A total of 104 participants came from the collectivistic context of St. Kitts-Nevis and 76 from the United States, an individualistic context.

A chi square analysis was conducted to evaluate the extent to which demographic differences between the sub-samples were statistically significant. The difference between cultures in gender distribution was not statistically significant, $\chi^2(2) = 2.94$, $p = .23$. Approximately one quarter from the collectivistic context and one third from the individualistic context were men. The difference between cultures in the distribution of educational level was statistically significant, $\chi^2(5) = 132.293$, $p < .001$, with the collectivistic culture having a higher level of education (Median = 15 years) than the individualistic culture (Median = 12 years). More than half the sample from the

individualistic context had only a high school education while none from the collectivistic context had only a high school education. In both contexts approximately one third had a college degree or more. This difference in educational level was not considered a major problem in the analysis since regression provides statistical controls for the potentially confounding influence of the differences in educational level. Table 2 presents the descriptive statistics for the two cultures regarding gender and educational level.

Table 2

Participant Demographics by Culture

	Collectivistic Context		Individualistic Context	
Characteristic	Frequency	Percent	Frequency	Percent
Men	26	25.0%	28	36.8%
Women	75	72.1%	46	60.5%
Missing	3	2.9%	2	2.6%
Total	104	100.0%	76	100.0%
Years of Schooling				
12	0	0.0%	42	55.3%
13	1	1.0%	7	9.2%
14	35	33.7%	3	3.9%
15	33	31.7%	0	0.0%
16	12	11.5%	24	31.6%
17	23	22.1%	0	0.0%
Total	104	100.0%	70	100.0%

The difference in average age between cultures was not statistically significant, t(172) = .449, p = .654. Both groups had average age of approximately 30 years. The average scores on the Self-Directed Learning Readiness Scale (SDLRS) for the two sub-samples were significantly different, t(178) = 1.997, p = .047, with the individualistic culture have a slightly higher SDLRS score (M = 226, SD = 23.94) than the collectivist culture (M = 218, SD = 27.59). This result was consistent with the literature and gave confidence to the sampling method and the instrument. However, the difference in levels was not the primary interest of the study. The effect size for differences in average SDLRS between sub-samples, as measured by the standardized difference in the means, was small, d = .30. Table 3 summarizes the t-test findings.

Table 3

Means, Standard Deviations, and t-scores for Age and SDLRS

	Collectivist Context		Individualistic Context		
Characteristic	*M*	*SD*	*M*	*SD*	*t*
Age	29.23	10.946	30.21	15.222	0.449
SDLRS	217.95	27.558	225.82	23.935	1.997*

*$p < .05$.

Exploratory Data Analysis

The SDLRS was utilized to operationalize the SDLR in the study. Cronbach's alpha was used to evaluate the reliability of the scale. A value of α equal to .8 or higher is generally accepted as an indication of a reliable scale (Field, 2005). The scale was

highly reliable, $\alpha = .917$, which is consistent with previous studies. The validity of the instrument has been well established in the literature and will not be addressed here.

One of the required assumptions of regression analysis is normal distribution of the scale variables (Field, 2005; McMillan, 2012). The assumption of normality was satisfied for SDLRS; see Figure 2.

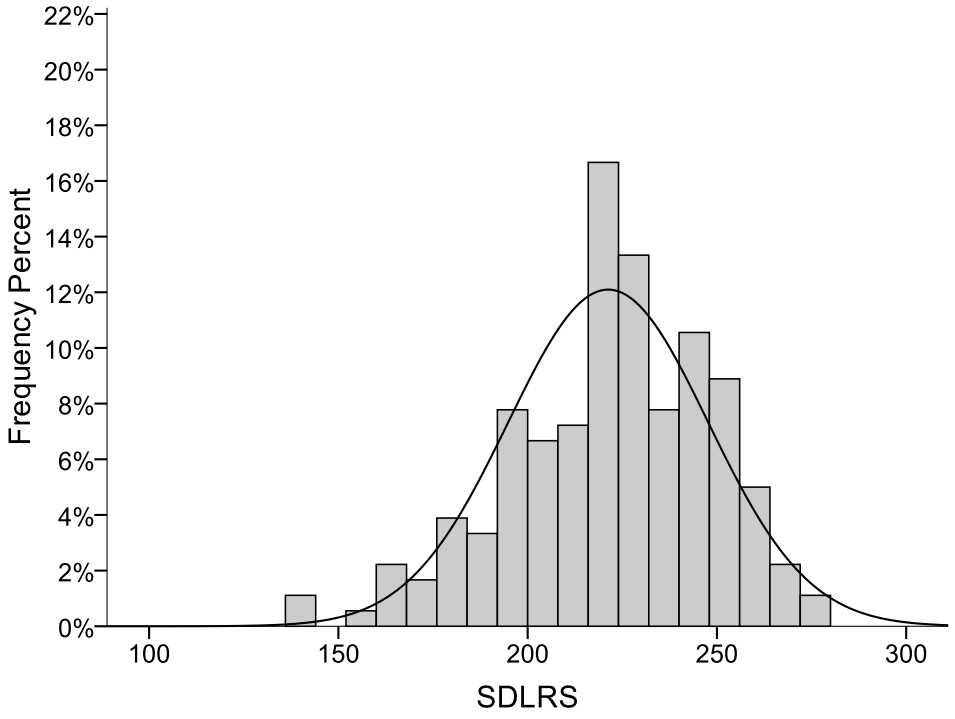

Figure 2. Distribution of SDLRS.

There were missing data for age (3%) and gender (3%); however, because so little data is missing it was not likely to be a source of bias and it requires no treatment. For the regression analysis there must be data for all the variables. Since individuals who did not report age were not the same as individuals who did not report gender, there are 169

useable records for the regression analysis. This was an attrition of 6.1%, which is sufficiently low that it was unlikely to be a source of bias.

Hypotheses Tests: Correlational Analyses

H_{01}: Age is not significantly associated with the criterion variable of SDLRS scores in the individualistic sub-sample.

H_1: Age is significantly positively associated with the criterion variable of SDLRS scores in the individualistic sub-sample.

A correlational analysis was conducted to evaluate the association between SDLRS and age in the individualistic culture. The hypothesis was tested with a one-tail test because the literature has firmly established that the expected association between age and SDLRS is positive. The association was statistically significant and in the expected direction, $r(73) = .206$, $p = .038$. The effect size as measured by the correlation was medium (Cohen, 1988). The null hypothesis was rejected.

H_{02}: Age is not significantly associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

H_2: Age is significantly positively associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

A correlational analysis was conducted to evaluate the association between SDLRS and age in the collectivist culture. The hypothesis was tested with a one-tail test because the literature has firmly established that the expected association between age and SDLRS is positive. The association was statistically significant and in the expected direction, $r(97) = .461$, $p < .001$. The effect size as measured by the correlation was large. The null hypothesis was rejected.

H_{03}: Gender is not significantly associated with the criterion variable of SDLRS scores in the individualistic sub-sample.

H_3: Gender is significantly associated with the criterion variable of SDLRS scores in the individualistic sub-sample.

An independent samples t-test was conducted to evaluate the association between gender and SDLRS in an individualistic culture. The hypothesis was tested with a two-tail test because the literature is inconclusive regarding gender differences in SDLRS. The t-test was not significant $t(72) = 1.793$, $p = .076$. Men ($M = 224.93$, $SD = 25.929$) and women ($M = 227.33$, $SD = 22.925$) had no significant difference in average SDLRS. The researcher failed to reject the null hypothesis.

H_{04}: Gender is not significantly associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

H_4: Gender is significantly associated with the criterion variable of SDLRS scores in the collectivistic sub-sample.

An independent samples t-test was conducted to evaluate the association between gender and SDLRS in a collectivistic. The hypothesis was tested with a two-tail test because the literature is inconclusive regarding gender differences in SDLRS. The t-test was not significant $t(99) = .415$, $p = .679$. Men ($M = 209.58$, $SD = 32.606$) and women ($M = 220.72$, $SD = 25.257$) had no significant difference in average SDLRS. The researcher failed to reject the null hypothesis.

H_{05}: Higher level (years) of education is not significantly associated with higher SDLRS scores in the individualistic sub-sample.

H_5: Higher level (years) of education is significantly associated with higher SDLRS

scores in the individualistic sub-sample.

A correlational analysis was conducted to evaluate the association between SDLRS and educational level in the individualistic culture. The hypothesis was tested with a two-tail test because the literature is inconclusive regarding the expected direction of the association between educational level and SDLRS. The association was not statistically significant, $r(74) = .153$, $p = .187$. The researcher failed to reject the null hypothesis.

H_{06}: Higher level (years) of education is not significantly associated with higher SDLRS scores in the collectivistic sub-sample.

H_6: Higher level (years) of education is significantly associated with higher SDLRS scores in the collectivistic sub-sample.

A correlational analysis was conducted to evaluate the association between SDLRS and educational level in the collectivistic culture. The hypothesis was tested with a two-tail test because the literature is inconclusive regarding the expected direction of the association between educational level and SDLRS. The association was statistically significant, $r(102) = .394$, $p < .001$. The effect size as measured by the correlation was medium. The null hypothesis was rejected.

Hypotheses Tests: Regression Analysis

H_{07}: There are no significant interactions between the predictors and an indicator variable identifying the two samples when the samples are aggregated.

H_7: There are significant interactions between the predictors and an indicator variable identifying the two samples when the samples are aggregated.

A hierarchical linear regression analysis was conducted to determine if adding culture as a moderator of age, gender, and level of education (Model 2) added significantly to explained variance compared to Model 1 with only culture, age, gender, and level of education as predictors. The criterion variable was the self-directed learning readiness score. In the hierarchical linear regression culture and the demographic predictors were entered as the first block and each demographic predictor moderated by culture were entered as the second block. Green (1991) gives the following guideline for determining minimum sample size assuming alpha equals .05: sample size = 50 + (8) x (number of independent variables). For the current study a sample size of 82 is acceptable.

For Model 1, the linear combination of predictors was significantly related to the SDLRS, $F (4, 164) = 6.884$, $p < .001$. The sample multiple correlation coefficient was .379, indicating that approximately 14% of the variance of SDLRS can be accounted for by the linear combination of predictors (Table 4). The effect size for the linear combination of the four predictors was large, $f2 = R^2 / (1 - R^2) = 0.27$.

For Model 2, the demographic moderators added significantly to the predictive power of the model, $F(7, 161) = 6.115$, $p = .001$. The demographic moderators improved the predictive power of the model by 50%, raising the R^2 from .14 to .21 (Table 4). The effect size of the contribution of the moderators was moderate, $f^2 = R^2 / (1 - R^2) = 0.07$.

Table 4

Model Summary for Hierarchical Regression Evaluating Effect of Culture as Moderator for Demographic Predictors of SDLRS

Model	R	R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
1	.379[a]	0.144	24.665	0.144	6.884	4	164	0.001
2	.458[b]	0.21	23.911	0.066	4.502	3	161	0.005

a. Predictors: (Constant), Educational Level, Gender, Culture, Age

b. Predictors: (Constant), Educational Level, Gender, Culture, Age, Gender Moderator, Age Moderator, Education Moderator

The regression analysis summary is presented in Table 5. In Model 1, culture and age were significant predictors. In Model 2, by including culture as a moderator, gender was revealed to be a significant predictor in addition to culture and age.

Summary

The findings derived from the data analysis, Table 6, supported the main purpose of this research, which was to investigate whether the cultural context moderates the extent to which age, gender, and level of education predict SDLR. The data analysis revealed that in the aggregated sample, culture predicts SDLRS with a large effect size. Moreover, when analyzed as a moderator, culture predicts SDLRS with a medium effect size.

Table 5

Regression Analysis Summary for Hierarchical Regression Evaluating Effect of Culture as Moderator for Demographic Predictors of SDLRS

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	185.242	22.162		8.359	.000
	Culture	10.438	4.806	.197	2.172	.031
	Age	.609	.192	.295	3.181	.002
	Gender	6.744	4.166	.119	1.619	.107
	Educational Level	.634	1.657	.041	.382	.703
2	(Constant)	117.945	38.041		3.100	.002
	Culture	101.113	44.486	1.907	2.273	.024
	Age	.981	.303	.475	3.233	.001
	Gender	14.506	5.629	.255	2.577	.011
	Educational Level	3.990	2.774	.255	1.439	.152
	Age Moderator	-.651	.385	-.447	-1.692	.093
	Gender Moderator	-13.173	8.222	-.223	-1.602	.111
	Education Moderator	-4.209	3.437	-1.088	-1.225	.222

a. Dependent Variable: SDLRS

Note: $R^2 = .14$ for Step 1, $\Delta R^2 = .07$ for Step 2 ($p < .005$)

Table 6

Summary of Findings

Demographic Predictor	Culture		
	Individualistic	Collectivistic	Aggregated
Age	medium effect size	large effect size	medium effect size
Gender	not significant	not significant	small effect size
Educational Level	not significant	medium effect size	small effect size
Culture			large effect size
Culture as Demographic Moderator			medium effect size

The data analysis further revealed that individually, the variables variously predict SDLRS in each of the two samples. Age predicts SDLRS in both cultures, but to a different degree. In the collectivistic culture age predicts SDLRS with a large effect size while in the individualistic culture it predicts SDLRS with a medium effect size. In the aggregated sample age predicts SDLRS with a medium effect size. Level of education, only predicts SDLRS only in the collectivistic sample with a medium effect size. In the individualistic sample the relationship between level of education and SDLRS is not significant and the effect size is small in the aggregated samples. Finally, gender does not predict SDLRS in either culture. However, it does predict SDLRS when the cultures are aggregated.

CHAPTER 5

CONCLUSION AND DISCUSSION

This chapter includes a summary of the design of this study, the research questions, and the findings. The findings of the study are discussed in detail and are related to the self-directed learning (SDL), and human resource development (HRD) literatures. This chapter also includes recommendations for further research, and implications of the study.

Purpose, Problem, and Methods

The purpose of this study was to test an inference from Jarvis' (1987, 2006) model of experiential learning that the cultural context may moderate the extent to which age, gender, and level of education predict SDLR. This purpose stemmed from an extensive review of the self-directed learning (SDL), and human resource development (HRD) literatures. The review revealed three important developments that suggested this study. First, SDL has emerged as a means of meeting the complex learning demands associated with the changing workplace, (Cho, 2002; Ellinger, 2004; Guglielmino, 2008; Guglielmino & Guglielmino, 2006; Mitlacher, 2008; Pink, 2009). Second, unprecedented patterns of diversity in age, gender, and level of education in the workplace, have contributed to a need to understand the implications of these variables for developing learning. Third, despite a wealth of literature linking learning behavior and the cultural context (Alfred, 2003; Brockett & Hiemstra, 1991; Caffarella & Merriam, 2000; Candy, 1989, 1991; Guglielmino & Guglielmino, 2006; Hammond & Collins, 1991; Winne & Stockley, 1998), few studies that have investigated the relationship between demographic variables and SDLR, have addressed the role of the

cultural context in their methodology (Cho, Ellinger, & Hezlett, 2005; Derrick, Rovai, Ponton, Confessore, & Carr, 2007; Reio & Davis, 2005; Yoo, Cheong, & Cheong 2000). Rather most studies have focused on differences in levels of SDLR across cultures.Accordingly, this study employed a correlational design to investigate the following research questions:

1. To what extent is age associated with the criterion variable of SDLRS scores in the individualistic sub-sample?
2. To what extent is age associated with the criterion variable of SDLRS scores in the collectivistic sub-sample?
3. To what extent is gender associated with the criterion variable of SDLRS scores in the individualistic sub-sample?
4. To what extent is gender associated with the criterion variable of SDLRS scores in the collectivistic sub-sample?
5. To what extent is level of education associated with the criterion variable of SDLRS scores in the individualistic sub-sample?
6. To what extent is level of education associated with the criterion variable of SDLRS scores in the collectivistic sub-sample?
7. To what extent are there interactions between the predictors of SDLRS scores and an indicator variable identifying the individualistic or collectivistic cultural context when the sub-samples are aggregated?

Data was collected from a sample of (N=180) participants recruited from business and industry in an individualistic and a collectivistic context (U.S. & St. Kitts-Nevis). To determine the association between gender and SDLRS, an independent samples *t*-test was

utilized. The Pearson Product Moment correlation coefficient was used to determine if a relationship existed between the mean scores on the SDLRS and the following independent variables: age and level of education. Multiple regression analysis was used to evaluate how well age, gender, and level of education predicted SDLRS and to test whether culture moderated age, gender, and level of education as a model.

Interpretation of Findings

Analysis of the data provided four key findings regarding the relationships hypothesized in the research questions. First the analysis suggests that for this sample, culture is a moderator of age, gender, and level of education collectively. This is a particularly important finding since the main purpose of the research was to test an inference from Jarvis' (1987, 2006) model of experiential learning that the cultural context may moderate the extent to which age, gender, and level of education predict SDLR.

A number of studies in North America and a few in the international context have explored the extent to which these variables individually predict SDLR. However, few studies have explored whether the cultural context moderates the extent to which age, gender, and level of education and predict SDLR. This finding therefore, affirms the inference from Jarvis (1987, 2006) that culture moderates the influence of age, gender, and level of education in learning.

Second, the analysis revealed that in this sample, age predicts SDLRS in both cultures, but to a different degree. This finding is particularly interesting in the context of previous findings in the literature, for three reasons. First, the finding agrees in part with a majority of research studies that have investigated the individual influence of age on

SDLR, in that a majority of the studies have concluded a positive relationship between age and SDLR (Guglielmino, Mazmanian, Guglielmino, Hoban, & Pololi, 2002; Hoban & Sersland, 2000; Jones, 1992; Long & Stubblefield, 1994; McCune, Guglielmino, & Garcia, 1990; Morris, 1997; Reio & Davis, 2005). Second, the finding reveals that age is a predictor of SDLR regardless of cultural orientation. Third, the finding that age more strongly predicts SDLR in collectivistic cultural settings suggests that in individualistic cultural settings the influence of the cultural context is more pervasive. However, in collectivistic contexts it appears that the influence of the cultural context is not as pervasive. Rather its influence is channeled largely through the manner in which the cultural context treats certain age levels. Thus the assertion of Knowles (1980), that people develop a psychological need to be self-directed as they mature and become increasingly responsible for their own lives, is more likely to hold true.

The third finding that educational level predicts SDLRS only in the collectivistic culture compares with mixed findings in the SDL literature. While several studies have found a relationship between level of education and SDLR, many have not. This suggests that in individualistic cultural contexts, level of education is one avenue through which the cultural context contributes to the prediction of SDLR, but is not the only avenue. As appears to be the case for age, individualistic cultural contexts seem to more broadly influence prediction of SDLR with level of education reflecting only a segment of the overall cultural influence. This may be one explanation for the mixed findings of studies that have examined the relationship between SDLR and level of education in individualistic settings. In some cases level of education was critical to the prediction of SDLR, and in other cases culture was the more significant factor. This scenario is

reflected in the research of Heberson (1991) who studied adults enrolled in community college (n=31), undergraduate study (n=32), and graduate study (n=33) in the individualistic cultural context of Australia. Herbeson (1991) found that although learning readiness appears to increase with attainment of a bachelor's degree, the increase was not statistically significant. Therefore it appears that education level did little to change the SDLR already instilled by the overall culture. However, factors related to how culture treats higher levels of education, though only slightly, further advanced SDLR.

The fourth finding indicated that gender does not predict SDLRS in either culture, but it does predict SDLRS when the cultures are aggregated. This finding is consistent with findings in the SDL literature, in that although some studies have concluded a relationship between gender and SDLR, the majority has not. A t-test analysis revealed there was no significant gender difference in either the collectivistic or the individualistic culture. However, when both cultures were aggregated into a single sample, and the effect of cultural orientation, age, and educational level were controlled for, the results supported significant gender differences averaging 14.5 points. This finding again reveals that gender like age and level of education is merely a proxy for processes in the cultural context. As such the fact that gender does not individually predict SDLR in either sample indicates that the effect size of gender was so small that it became statistically significant only when the sample size was enlarged by aggregating the samples.

Implications of the Study

Studies that have examined the relationship between and SDLR and age, gender, and level of education have been inconclusive. However, despite these inconclusive results and a body of theoretical and empirical literature suggesting that the influence of these variables may be related to the context (Caffarella & Merriam, 2000; Jarvis; 1987, 2006; Knowles 1980; Nugraha, 2005; Oliveira & Simões, 2006), few studies have addressed the role of the cultural context in their methodology.This study therefore aimed to extend our understanding of the role of the cultural context in the prediction of SDLR. In so doing it pursued a new research direction that may have implications for theory, research, and practice. Four major implications are explored in this section. First, by taking a cross cultural approach, this study addressed concern in the SDL literature regarding the need to clarify cultural biases in theory, particularly the error in thinking that findings derived from research in more developed countries are universally applicable (Brookfield, 1993; Rowland & Volet, 1996). Nugraha, (2005) asserted that cross-cultural variations in patterns of self-directed learning represent a critical under-researched area of self-directed learning research. Brockett and Hiemstra (1991) acknowledged the merit of this criticism stating that, "there does not yet exist, a large volume of related literature outside of North America" (p. 182). Similarly, Brookfield (1986) asserted that much of the research and writings, related to self-direction in learning have emanated from North America, and "the majority of studies in this field have been conducted with samples of advantaged, white, middle-class Americans" (p. 51). Brookfield (1984) noted that the operation of self-direction in specific contexts has received little attention from scholars. Understanding how adult learners embrace the

level of control placed upon or expected of them in an online learning context can assist instructors with implementation. Accordingly, this study not only affirms the relevance of culture in the prediction of SDLR, but it further provides needed cross-cultural study of SDL.

Second, today's organizational environment is increasingly global and demographically diverse, challenging human resource development professionals to develop training and development strategies that are more consistent with the learning patterns of a variety of populations (Guglielmino & Guglielmino, 2006; Guglielmino & Guglielmino, 2008; Rowden, 2007). Guglielmino and Guglielmino (2006) asserted, "given the expanding globalization of business and industry, it becomes increasingly important that we seek to understand differences in cultures that could impact the effectiveness of HRD approaches in multinational corporations" (p. 26). Jarvis (1987, 2006) emphasized the significance of understanding the culture into which learners "are born and within which they live, if we are to understand their learning processes" (2006, p. 61). Further, Knowles, Holton, and Swanson (2005) postulated, "the more adult learning professionals can anticipate and understand adults' life situations and readiness for learning, the more effective they can be" (p. 195). Therefore, the findings of this study may contribute useful insight that could aid HRD professionals in understanding the development of SDLR across different cultural contexts and demographic backgrounds.

Third, adult learners are presumed in the human resource development literature to be equally self-directed (Ellinger, 2004; Knowles, 1980). This assumes that they make their own choices regarding approaches to learning. However, this study shows that this

assumption is not necessarily correct. The extent to which learners may be self-directed in their learning appears to be a function of experiences within the cultural context.

Fourth, assessment of SDL remains controversial in literature. Debate remains not only about the psychometric construction of instruments designed to measure SDL, but also about whether the theoretical assumptions on which such tests are based are accurate. The findings of this study suggest that significant involvement of the cultural context may be an important theoretical assumption in the design of instruments to measure SDL.

Strengths, Limitations, and Delimitations

This study addressed an important gap in the literature regarding the extent to which the cultural context moderates the extent to which age, gender, and level of education, predicts SDLR. Specifically the study built on the deficits in the literature by investigating the individual and combined influence of age, gender, and level of education across two samples characterized by two major cultural orientations described by Hofstede (1980). However, despite this strength, several limitations were identified in this study.

First, this study employed survey data, which tests a cross section of the population at one time, and thus cannot account for changes over time in learning and development. Therefore the analysis could not determine a causal link (Christensen, 2007). Another limitation is the study sample. This exploratory study utilized a purposive sample of participants rather than random sampling. Participants were selected in a deliberative and non-random fashion based on the study's criteria for inclusion. As a result, the study could not be generalized to the average workplace in either of the

settings examined. However, this study is exploratory in nature. Thus it represents only a preliminary step in investigating how culture may interact with age, gender, and level of education.

A final limitation of this study is that data collection relied entirely on self-reporting. Because participants provided their own assessment of their attributes, their perceptions were based on their own unique understanding. Marsick (2003) posited that when a participant is self-reporting this poses a limitation to the study due to "the very nature of informal learning makes it prone to self-distortion because it is, by its nature, tacit, opportunistic, and not typically highly conscious" (p. 391). Because individuals differ in their perceptions of themselves, self-report data may not be congruent with the researchers' understanding and may also differ from the conceptualizations of other participants.

Recommendations for Future Research

Based on the results of this exploratory study, the following suggestions for future research are offered:

1. This study did not consider variations in levels of individualism and collectivism in the development of SDL. Several cross-cultural theorists have distinguished two levels of individualism and collectivism. Cross-cultural scholars distinguish between horizontal and vertical collectivism and horizontal and vertical individualism. As such, it may be useful to investigate the combined influence of age, gender, and level of education on SDLR using instruments that psychometrically measure these dimensions of cultural orientation. In this way scholars can more precisely define

how these variables predict SDLR across the two levels of individualism and collectivism.

2. This study did not consider effect of globalization on cultural values. A recent observation by cross-cultural scholars that cultures traditionally viewed as collectivistic may be drifting toward individualistic values may need to be considered in further study of the extent to which the cultural context may moderate how age, gender, and level of education predict SDLR. Modernization theory, an influential theory of cultural change, predicts a rise in individualism as nations enter a modern era of global economic development (Hamamura, 2011; Kalogeraki, 2009). Dohi and Fooladi (2008) observed that, "Japan's individualistic score has been rising due to the increasing industrialization" (p. 2). Ahmad and Majid (2010) found learners from Malaysia, a collectivist nation according to Hoftstede's index, to be "more oriented to individualism, less collectivist" (p. 244). Therefore future studies may be undertaken in populations that are considered to be changing toward a more individualistic orientation to verify how this evolution may affect how age, gender, and level may predict SDLR.

3. A third recommendation concerns how within-culture, demographic variation in individualism/collectivism, may affect SDLR. Some cross-cultural scholars have proposed that adults tend to become more collectivists they age **(**Zhang, 2009; Zhang & Shavitt, 2003). Others have reported that, in collectivistic cultures, higher education has been found to be associated with greater individualism (Altrocchi & Altrocchi, 1995; Triandis, 1989, 1995; Watkins & Regmi, 1996). Still, others have associated individualism with masculinity, and linked collectivism to femininity (Bakan, 1966; Bem, 1974; Dohi & Fooladi, 2008; Gilligan, 1982; Lalwani & Shavitt, 2010; Lorenzi-

Cioldi & Dafflon, 1998). These assertions suggest that demographic manifestation of SDLR in a given culture may vary depending on the level of the demographic variable being investigated.

4. An analysis of studies investigating age, gender, and level of education as predictors of SDLR may identify methodological issues and other interactions in the cultural context that may contribute to the inconclusive results in the existing literature.

Summary

With the emergence of SDL as a viable approach to HRD, and increasing cultural and demographic diversity in the workplace, several scholars have affirmed the need for adult learning professionals to better understand the implications of culture and demographics for self-directed learning readiness (SDLR) the most widely used operational definition of SDL (Guglielmino & Guglielmino 2006; Knowles, Holton, and Swanson, 2005; Merriam, Caffarella, & Baumgartner, 2007; Reio & Davis, 2005).

Several studies, have investigated these variables as predictors of SDLR, the most widely used operational definition of SDL (Merriam, Caffarella, & Baumgartner, 2007), with overall inconclusive results. However, despite these inconclusive results and a body of theoretical and empirical literature suggesting that the influence of these variables may be related to the context (Caffarella & Merriam, 2000; Jarvis; 1987, 2006; Knowles 1980; Nugraha, 2005; Oliveira & Simões, 2006), few studies have addressed the role of the cultural context in their methodology. A need therefore exists for research to examine extent to which demographic variables such as age, gender, and level of education, may predict

SDLR differently across different cultural contexts (Adenuga, 1991; Oliveira & Simões, 2006; Reio & Davis, 2005). This study aimed to address this need by testing an inference from the experiential learning theory of Jarvis (1987, 2006) that the cultural context may moderate the extent to which demographic variables such as age, gender, and level of education predict SDLR. The study pursued this purpose by investigating the extent to which age, gender, and level of education as model predict SDLR scores differently in a sample from an individualistic cultural context and a sample from a collectivistic cultural context.

Seven hypotheses were proposed. The first hypothesis that age predicts the criterion variable of SDLRS scores in the individualistic sub-sample was supported. In the individualistic culture it predicted SDLRS with a medium effect size. The second hypothesis that age predicts the criterion variable of SDLRS scores in the collectivistic sub-sample was also supported. In the collectivistic culture age predicted SDLRS with a large effect size.

The third and fourth hypotheses that gender predicts the criterion variable of SDLRS scores in the individualistic and collectivistic sub-samples were not supported. The hypotheses that higher level (years) of education predicted higher SDLRS scores was supported for the collectivistic sub-sample, but not for the individualistic group.

The seventh hypothesis that there are significant interactions between the predictors and an indicator variable identifying the two samples when the samples are aggregated was supported. The predictors were culture, age, gender, and educational level. The criterion variable was the self-directed learning readiness score. The linear

combination of predictors was significantly related to the SDLRS and showed a large effect size. In the first model, culture and age were significant predictors. In the second model, by including culture as a moderator, gender was revealed to be a significant predictor in addition to culture and age.

It thus appeared from this study that the extent to which age, gender, and level of education predict SDLR is moderated by factors within the cultural context. As such, both individualistic and collectivistic cultures appear to create a "demographic fingerprint" reflecting the extent to which the cultural context constrains or facilitates SDLR across a given set of demographic attributes.

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APPENDIX A

SELF-DIRECTED LEARNING READINESS SCALE

SDLRS-A

Name_____ Sex_____ Birthdate_____

Date of Testing_____ Location of Testing_____

LEARNING PREFERENCE ASSESSMENT

Instructions This is a questionnaire designed to gather data on learning preferences and attitudes towards learning. After reading each item, please indicate the degree to which you feel that statement is true of you. Please read each choice carefully and circle the number of the response which best expresses your feeling.

There is no time limit for the questionnaire. Try not to spend too much time on any one item, however. Your first reaction to the question will usually be the most accurate.

ITEMS:	RESPONSES				
	Almost never true of me; I hardly ever feel this way.	Not often true of me; I feel this way less than half the time.	Sometimes true of me; I feel this way about half the time.	Usually true of me; I feel this way more than half the time.	Almost always true of me; there are very few times when I don't feel this way.
1. I'm looking forward to learning as long as I'm living.	1	2	3	4	5
2. I know what I want to learn.	1	2	3	4	5
3. When I see something that I don't understand, I stay away from it.	1	2	3	4	5
4. If there is something I want to learn, I can figure out a way to learn it.	1	2	3	4	5
5. I love to learn.	1	2	3	4	5
6. It takes me a while to get started on new projects.	1	2	3	4	5
7. In a classroom, I expect the teacher to tell all class members exactly what to do at all times.	1	2	3	4	5
8. I believe that thinking about who you are, where you are, and where you are going should be a major part of every person's education.	1	2	3	4	5
9. I don't work very well on my own.	1	2	3	4	5

		Almost never true of me: I hardly ever feel this way.	Not often true of me: I feel this way less than half the time	Sometimes true of me: I feel this way about half the time.	Usually true of me: I feel this way more than half the time.	Almost always true of me: there are very few times when I don't feel this way.
10.	If I discover a need for information that I don't have I know where to go to get it.	1	2	3	4	5
11.	I can learn things on my own better than most people.	1	2	3	4	5
12.	Even if I have a great idea I can't seem to develop a plan for making it work.	1	2	3	4	5
13.	In a learning experience, I prefer to take part in deciding what will be learned and how.	1	2	3	4	5
14.	Difficult study doesn't bother me if I'm interested in something.	1	2	3	4	5
15.	No one but me is truly responsible for what I learn.	1	2	3	4	5
16.	I can tell whether I'm learning something well or not.	1	2	3	4	5
17.	There are so many things I want to learn that I wish that there were more hours in a day.	1	2	3	4	5
18.	If there is something I have decided to learn, I can find time for it, no matter how busy I am.	1	2	3	4	5
19.	Understanding what I read is a problem for me.	1	2	3	4	5
20.	If I don't learn, it's not my fault.	1	2	3	4	5
21.	I know when I need to learn more about something.	1	2	3	4	5
22.	If I can understand something well enough to get a good grade on a test, it doesn't bother me if I still have questions about it.'	1	2	3	4	5
23.	I think libraries are boring places.	1	2	3	4	5
24.	The people I admire most are always learning new things.	1	2	3	4	5

		Almost never true of me: I hardly ever feel this way.	Not often true of me: I feel this way less than half the time.	Sometimes true of me: I feel this way about half the time.	Usually true of me: I feel this way more than half the time.	Almost always true of me: there are very few times when I don't feel this way.
25.	I can think of many different ways to learn about a new topic.	1	2	3	4	5
26.	I try to relate what I am learning to my long-term goals.	1	2	3	4	5
27.	I am capable of learning for myself almost anything I might need to know.	1	2	3	4	5
28.	I really enjoy tracking down the answer to a question.	1	2	3	4	5
29.	I don't like dealing with questions where there is not one right answer.	1	2	3	4	5
30.	I have a lot of curiosity about things.	1	2	3	4	5
31.	I'll be glad when I'm finished learning.	1	2	3	4	5
32.	I'm not as interested in learning as some other people seem to be.	1	2	3	4	5
33.	I don't have any problem with basic study skills.	1	2	3	4	5
34.	I like to try new things, even if I'm not sure how they will turn out.	1	2	3	4	5
35.	I don't like it when people who really know what they're doing point out mistakes that I am making.	1	2	3	4	5
36.	I'm good at thinking of unusual ways to do things.	1	2	3	4	5
37.	I like to think about the future.	1	2	3	4	5
38.	I'm better than most people are at trying to find out the things I need to know.	1	2	3	4	5
39.	I think of problems as challenges, not stopsigns.	1	2	3	4	5
40.	I can make myself do what I think I should.	1	2	3	4	5

		Almost never true of me; I hardly ever feel this way.	Not often true of me; I feel this way less than half the time	Sometimes true of me; I feel this way about half the time.	Usually true of me; I feel this way more than half the time.	Almost always true of me; there are very few times when I don't feel this way.
41.	I'm happy with the way I investigate problems.	1	2	3	4	5
42.	I become a leader in group learning situations.	1	2	3	4	5
43.	I enjoy discussing ideas.	1	2	3	4	5
44.	I don't like challenging learning situations.	1	2	3	4	5
45.	I have a strong desire to learn new things.	1	2	3	4	5
46.	The more I learn, the more exciting the world becomes.	1	2	3	4	5
47.	Learning is fun.	1	2	3	4	5
48.	It's better to stick with the learning methods that we know will work instead of always trying new ones.	1	2	3	4	5
49.	I want to learn more so that I can keep growing as a person.	1	2	3	4	5
50.	I am responsible for my learning — no one else is.	1	2	3	4	5
51.	Learning how to learn is important to me.	1	2	3	4	5
52.	I will never be too old to learn new things.	1	2	3	4	5
53.	Constant learning is a bore.	1	2	3	4	5
54.	Learning is a tool for life.	1	2	3	4	5
55.	I learn several new things on my own each year.	1	2	3	4	5
56.	Learning doesn't make any difference in my life.	1	2	3	4	5
57.	I am an effective learner in the classroom and on my own.	1	2	3	4	5
58.	Learners are leaders.	1	2	3	4	5

APPENDIX B

EMAIL REQUEST SOLICITING ORGANIZATIONAL PARTICIPATION

Dear Sir/Madam:

My name is Dale Maynard and I am a doctoral candidate at Barry University in Miami, Florida. I am requesting permission to recruit members of your organization for participation in my dissertation research project. The title of the study is Demographic Individual Differences in Self-Directed Learning Readiness and the Cultural Context. Participants in the study will be administered a questionnaire that takes approximately 30 minutes to complete. The information obtained in this study will be useful in the field of human resource development.

If permissible, I would need you to identify someone in your organization to distribute recruitment flyers as well as to set up a drop box and supply of participant packets in a central location frequented by your staff. Details of the research project are provided in the attached consent form. I may be reached at d.Maynard@mail.Barry.edu or by telephone at (321) 945- 2654 to clarify any questions or concerns.

Thank you for your consideration.

Sincerely,

Dale Maynard

APPENDIX C

RECRUITMENT FLYERS

Adrian Dominican School of Education

Barry University

PARTICIPANTS NEEDED FOR

DISSERTATION RESEARCH IN SELF-DIRECTED LEARNING

Are you over 18 years of age?
Were you born, raised, and currently reside in the United States?

If you answered YES to these questions, you may be eligible to participate in a study of self-directed learning readiness and individualism-collectivism.

This study is anonymous. As a participant, you would be asked to complete a survey called the Self-directed Learning Readiness Scale. The survey will take approximately 30 minutes to complete.

Copies of the survey and participant consent form are available in the employee lounge, and may be returned to the drop-box provided.

For more information about this study, contact:

Dale Maynard, the researcher, at (321) 945-2654

Dr. David Kopp, the researcher's advisor, at (305)899-3708 or

Mrs. Barbara Cook, the Barry University Institutional Review Board point of contact, at

(305) 899-3020.

This study has been reviewed by, and has received ethics clearance through, the Office of Research Ethics, Barry University.

Adrian Dominican School of Education

Barry University

PARTICIPANTS NEEDED FOR

DISSERTATION RESEARCH IN SELF-DIRECTED LEARNING

Are you over 18 years of age?
Were you born, raised, and currently reside in
St. Kitts-Nevis?

If you answered YES to these questions, you may be eligible to participate in a study of self-directed learning readiness and individualism-collectivism.

This study is anonymous. As a participant, you would be asked to complete a survey called the Self-directed Learning Readiness Scale. The survey will take approximately 30 minutes to complete.

Copies of the survey and participant consent form are available in the employee lounge, and may be returned to the drop-box provided.

For more information about this study, contact:

Dale Maynard, the researcher, at (321) 945-2654

Dr. David Kopp, the researcher's advisor, at (305)899-3708 or

Mrs. Barbara Cook, the Barry University Institutional Review Board point of contact, at

(305) 899-3020.

This study has been reviewed by, and has received ethics clearance through,
the Office of Research Ethics, Barry University.

APPENDIX D

INFORMED CONSENT FORM

Approved by Barry University IRB

Date: SEP 27 2011

Signature:

Barry University

Informed Consent Letter

Your participation in a research project is requested. The title of the study is: **DEMOGRAPHIC PREDICTORS OF SELF-DIRECTED LEARNING READINESS AND THE CULTURAL CONTEXT**

The research is being conducted by **Dale Maynard**, a student in the school of education at Barry University, and is seeking information that will be useful in the field of human resource development. **The purpose of this exploratory, ex-post facto study is to evaluate the interaction between demographic predictors of SDLR and the cultural context.** In accordance with this purpose, the following procedures will be used: (1) administration of Self-directed Learning Readiness Scale. We anticipate the number of participants to be **120.**

This study is anonymous. If you decide to participate in this research, you will be asked to complete the Self-directed Learning Readiness Scale, a self-report instrument on learning attitudes. This instrument typically takes 30 minutes to complete.

Your consent to be a research participant is strictly voluntary and you are free to decline to participate or to drop out at any time during the study. There are no known risks to you. However, it may be useful for you to discover your level of self-directed learning readiness.

As a research participant, information you provide will be held in confidence to the extent permitted by law. Any published results of the research will refer to group averages only and no names will be used in the study. Data will be kept in a locked file in the researcher's office. Your signed consent form will be kept separate from the data. All data will be destroyed after 5 years.

If you have any questions or concerns regarding the study or your participation in the study, you may contact me, Dale Maynard, at (321) 945- 2654, my advisor, Dr. David Kopp, at 305-899-3708, or the Institutional Review Board point of contact, Mrs. Barbara Cook, at (305) 899-3020. If you are satisfied with the information provided and are willing to participate in this research, please signify your consent by signing this consent form.